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AU INDUSTRY (ANZSIC) REPORT C1911

Plastic Bag and Film Manufacturing in Australia

Bag check: The COVID-19 outbreak has boosted demand from the retail and food service sectors

Yin Huey Yeoh | March 2021

Contents

About IBISWorld

IBISWorld specializes in industry research with coverage on thousands of global industries. Our comprehensive data and in-depth analysis help businesses of all types gain quick and actionable insights on industries around the world. Busy professionals can spend less time researching and preparing for meetings, and more time focused on making strategic business decisions that benefit you,your company and your clients. We offer research on industries in the US, Canada, Australia, New Zealand, Germany, the UK, Ireland, China and Mexico, as well as industries that are truly global in nature.

Covid-19

Coronavirus Impact Update

IBISWorld's analysts constantly monitor the industry impacts of current events in real-time – here is an update of how this industry is likely to be impacted as a result of the global COVID-19 pandemic:

• This industry relies on other downstream markets, an increase in demand from other markets due to COVID-19 has led to industry growth in the current year. Revenue in the Plastic Bag and Film Manufacturing industry is forecast to rise by 0.3% in 2020-21. In a non COVID-19 environment, the industry would have been projected to increase at a faster rate.

• Despite easing in COVID-19 restrictions, some restaurants and cafe operations have limited their service to takeaway and home delivery. Consequently, demand for industry product is anticipated to increase as many restaurants and cafes pack food in plastic bags. Similarly, supermarkets and grocery stores have packed home delivery and “click and collect” groceries in plastic bags.

• The instances of grocery stockpiling have led to a short term spike in demand of industry products from manufacturers. For more detail, see Current Performance chapter

About This Industry

Industry Definition

Industry companies manufacture unsupported polymer films and sheets into packaging materials such as plastic bags, thin plastic films, food wrapping, garbage bags and bubble wrap packaging.

Major Players

- Amcor Pty Ltd
- Pro-Pac Packaging Limited
- Sealed Air Australia (Holdings) Pty Limited

Main Activities

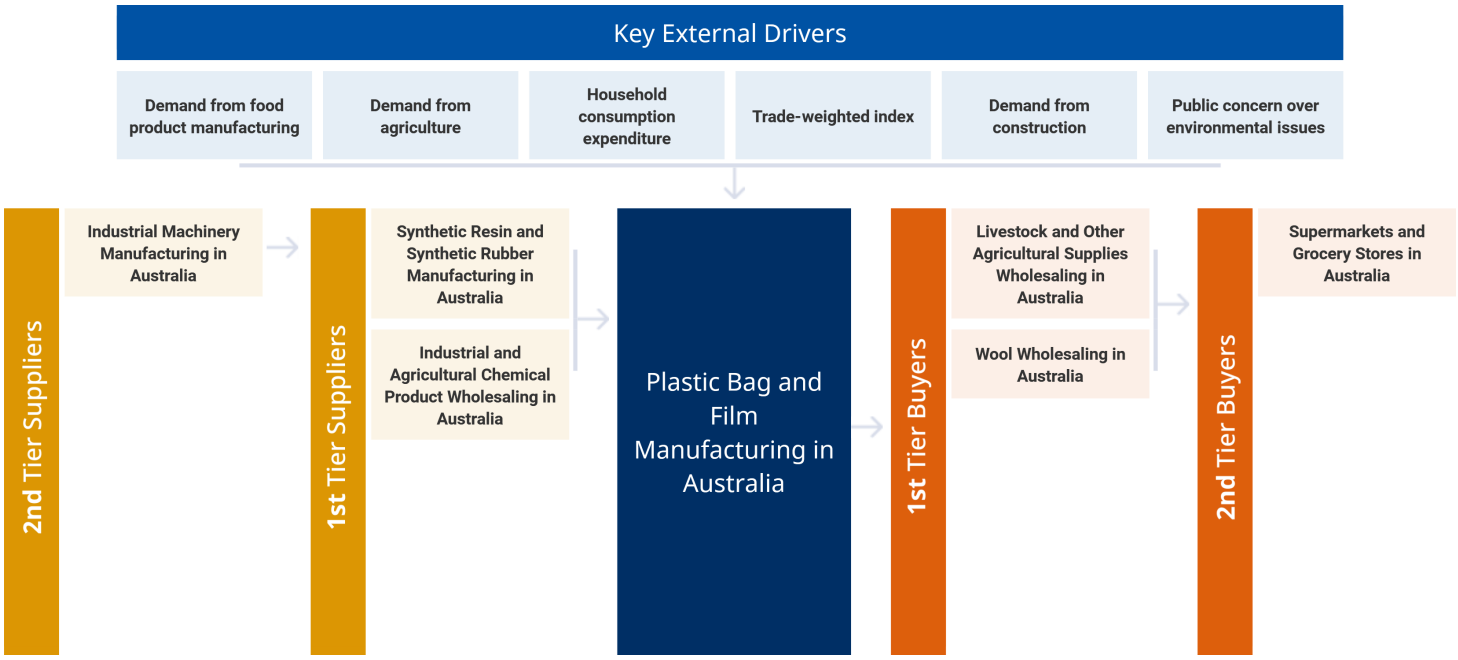
The primary activities of this industry:

- Plastic bag manufacturing
- Plastic food wrapping manufacturing
- Plastic film manufacturing
- Plastic garbage bag manufacturing
- Bubble wrap packaging manufacturing

The major products and services in this industry:

- Plastic films
- Plastic bags
- Other

Supply Chain



SIMILAR INDUSTRIES

Pulp, Paper and Paperboard Manufacturing in Australia

Competitor

Plastic Bottle Manufacturing in Australia

Complementor

Plastic Flooring and Other Polymer Product Manufacturing in Australia

Complementor

Plastic Foam Product Manufacturing in Australia

Competitor

Plastic Pipe and Plastic Packaging Material Manufacturing in Australia

Competitor

RELATED INTERNATIONAL INDUSTRIES

Global Plastic Product & Packaging Manufacturing

Plastic Packing Goods Manufacturing in the UK

Plastic Film, Sheet & Bag Manufacturing in the US

Plastic Film, Sheet & Bag Manufacturing in Canada

Laminated Plastics Manufacturing in the US

Polymer Film and Sheet Packaging Material Manufacturing in New Zealand

Plastic Board, Pipe & Sheet Manufacturing in China

Plastic Packing Goods Manufacturing in Ireland

Industry at a Glance

Key Statistics

$2.2bn
Revenue

Annual Growth 2016-2021	Annual Growth 2021-2026	Annual Growth 2016-2026
-2.8%	2.3%	

$50.1m
Profit

Annual Growth 2016-2021	Annual Growth 2016-2026
-15.4%	

2.3%
Profit Margin

Annual Growth 2016-2021	Annual Growth 2016-2026
-2.3%	

262
Businesses

Annual Growth 2016-2021	Annual Growth 2021-2026	Annual Growth 2016-2026
-1.1%	-1.0%	

3,976
Employment

Annual Growth 2016-2021	Annual Growth 2021-2026	Annual Growth 2016-2026
-3.9%	-4.3%	

$296.2m
Wages

Annual Growth 2016-2021	Annual Growth 2021-2026	Annual Growth 2016-2026
-7.0%	-3.1%	

Key External Drivers

% = 2016-2021 Annual Growth

-1.2%
Demand from agriculture

0.1%
Demand from food product manufacturing

-1.4%
Demand from construction

1.5%
Public concern over environmental issues

1.0%
Household consumption expenditure

0.3%
Trade-weighted index

Industry Structure

POSITIVE IMPACT

Technology Change
Low

MIXED IMPACT

Revenue Volatility
Medium

Capital Intensity
Medium

Concentration
Medium

Regulation
Medium

Barriers to Entry
Medium

NEGATIVE IMPACT

Life Cycle
Decline

Industry Assistance
Low

Globalization
High

Competition
High

Key Trends

- COVID-19 has significantly affected industry operators that rely on the construction sector
- Industry wage costs have declined as a share of revenue due to improved efficiency
- Many consumers have been favouring cheaper imports over locally produced industry goods
- Growth in food product manufacturing and construction sectors is projected to aid revenue
- Industry participation is likely to decline due to intense internal and external competition
- The Australian dollar is forecast to appreciate, increasing import competition
- The COVID-19 outbreak is expected to increase demand from the retail and food service sectors

Products & Services Segmentation

Plastic Bag and Film Manufacturing
Source: IBISWorld

Major Players

% = share of industry revenue

- 21.8% Amcor
- 14.5% Pro-Pac Group
- 13.8% Sealed Air Australia
- 49.9% Other

Plastic Bag and Film Manufacturing
Source: IBISWorld

SWOT

S STRENGTHS

Low Customer Class Concentration
High Revenue per Employee

W WEAKNESSES

Low & Steady Level of Assistance
High Competition
Decline Life Cycle Stage
High Imports
Low Profit vs. Sector Average
High Product/Service Concentration
High Capital Requirements

O OPPORTUNITIES

High Revenue Growth (2021-2026)
Public concern over environmental issues

T THREATS

Very Low Revenue Growth (2005-2021)
Low Revenue Growth (2016-2021)
Low Performance Drivers
Demand from food product manufacturing

Executive Summary

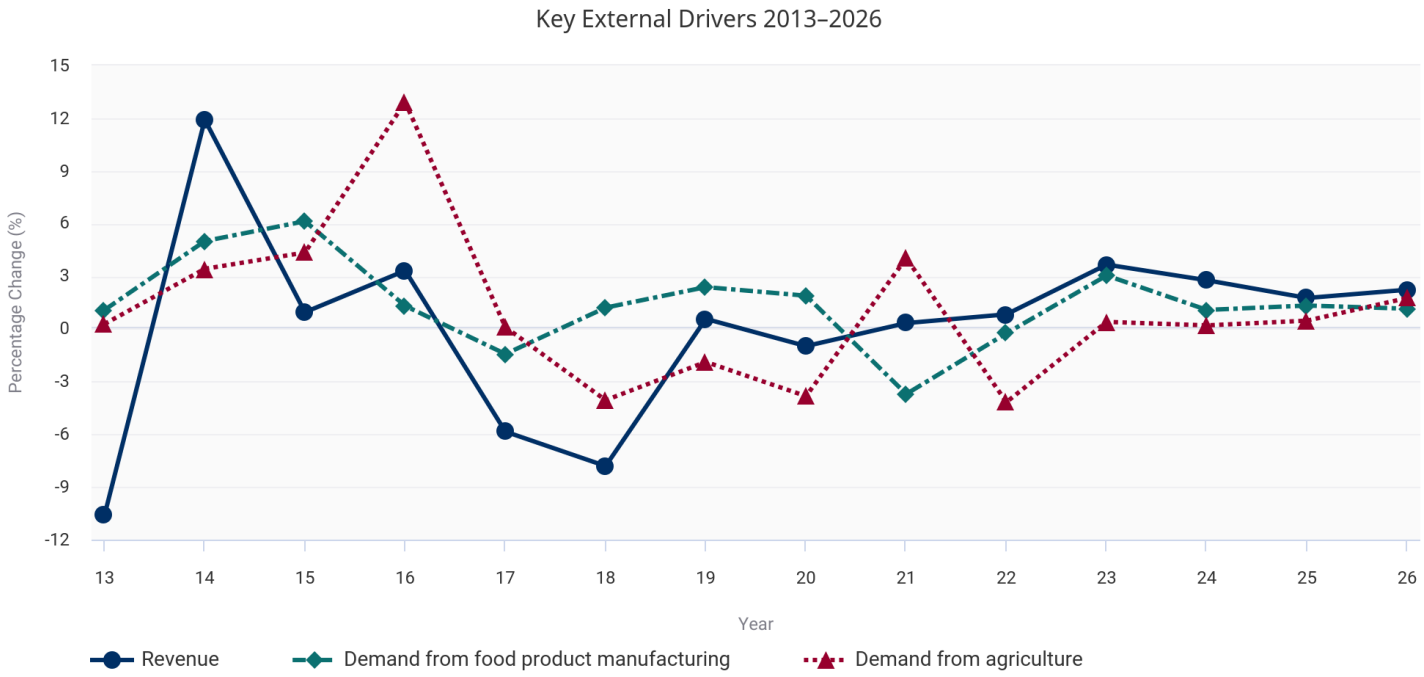
Revenue for the Plastic Bag and Film Manufacturing industry has declined over the past five years due to strong import competition.

The industry primarily serves firms in the food manufacturing, agriculture, construction and retail markets. Industry revenue is expected to fall at an annualised 2.8% over the five years through 2020-21, to $2.2 billion. Profit has fallen over the period as imports have put downward pressure on industry product prices.

The industry manufactures products such as flexible plastic strips, film and sheets, and plastic bags and sacks. Many of these products are used to store, package and transport agricultural and food goods. Government bans on plastic bags have limited industry revenue over the past five years, as retailers are a significant market for the industry. Increased public concern for the environment has also constrained demand for plastic bags. However, the COVID-19 pandemic is expected increase demand from the retail and food service sectors as restaurants and supermarkets use plastic bags for takeaways to reduce the risk of transmitting the COVID-19 virus. Despite a fall in demand from the construction sector, industry revenue is anticipated to grow by 0.3% in the current year. Over the past five years, major players have fared better against the threat of imports than the industry's smaller players. Following Pro-Pac Packaging's merger with former major player, Integrated Packaging Group, Pro-Pac Packaging has become a major industry player and key source of competition for Amcor.

Industry revenue is forecast to rise at an annualised 2.3% over the five years through 2025-26, to total $2.4 billion. A forecast recovery in the Construction division and rising demand from food product manufacturers and the agriculture sector are projected to underpin growth in domestic demand. However, smaller manufacturers of low-price goods are forecast to struggle over the next five years due to increasing import penetration. Imports have grown as a share of domestic demand over the past five years, as they can be priced lower than domestically manufactured products due to their lower production costs. This trend is forecast to continue over the next five years, reducing demand for industry players specialising in mass-produced low-cost products.

Industry Performance



Plastic Bag and Film Manufacturing
Source: IBISWorld

Key External Drivers

Demand from food product manufacturing

Food product manufacturers use industry products to process and prepare food, and downstream food producers and processors use plastic bags and plastic film to keep food fresh and unspoiled. Greater demand for food products therefore tends to increase demand for plastic bags and films. Demand from food product manufacturers is expected to decline over 2020-21.

Demand from agriculture

Plastic films are used on farms to wrap silage and hay bales and to line irrigation and water management systems. Plastic sacks are also used to prepare produce for storage and transport. As output from agriculture rises, demand for industry products increases. Demand from agriculture is expected to increase in 2020-21, providing an opportunity for industry participants to expand.

Household consumption expenditure

Growing domestic consumer spending positively influences demand for industry products. Many consumer goods are packaged in some form of plastic and are often carried in plastic bags. A rise in consumer spending therefore tends to increase demand for industry products. Household consumption expenditure is set to decline slightly in 2020-21, posing a threat to industry operators.

Trade-weighted index

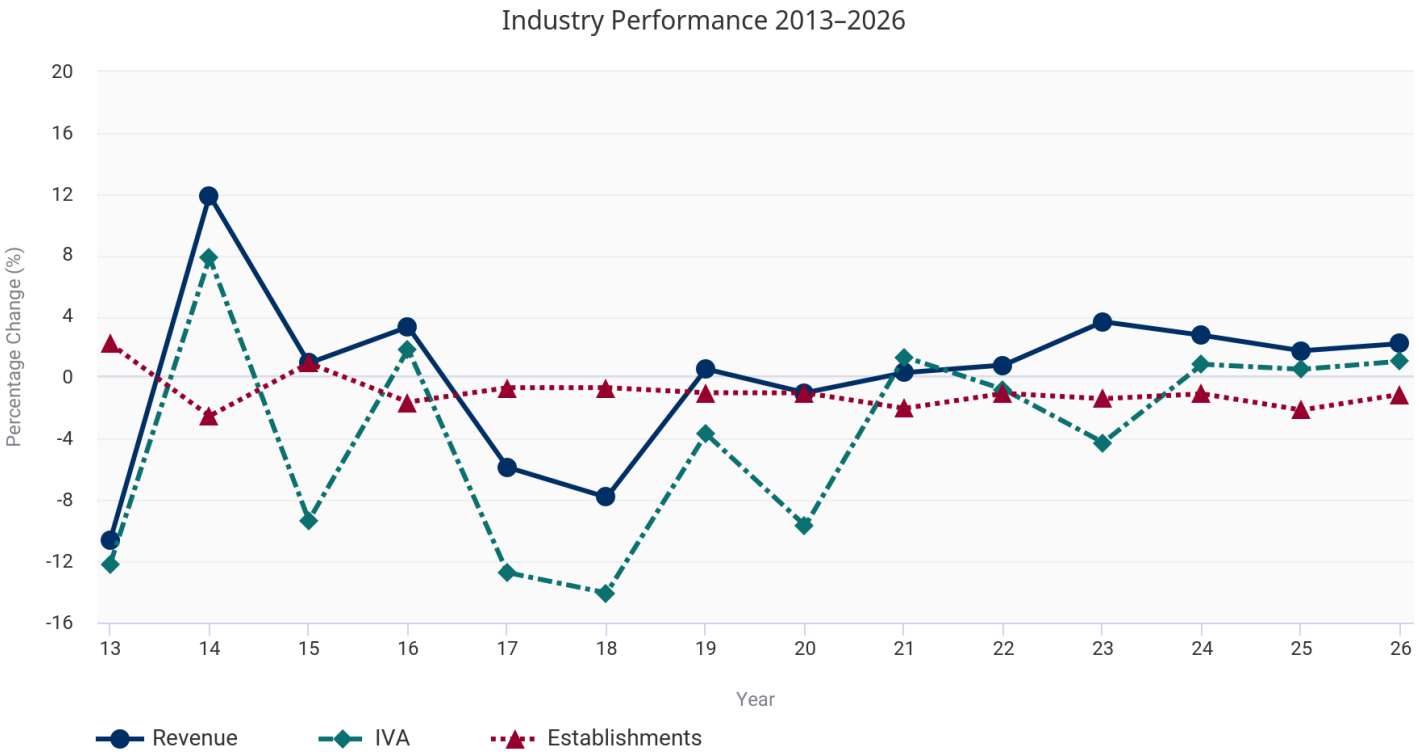
The strength of the Australian dollar affects import penetration and the competitiveness of industry exports. Growth in the Australian dollar negatively affects the industry, as it typically makes imported products more affordable for domestic customers, while making exports more expensive in overseas markets. The Australian dollar exchange rate is projected to rise in 2020-21.

Demand from construction

Construction materials are typically packaged, stored and transported in plastic stretch films and other plastic products to prevent damage. Greater construction activity therefore tends to increase demand for industry products. Demand from the Construction division is expected to fall significantly in 2020-21 as the Australian economy slips into recession due to the COVID-19 pandemic.

Public concern over environmental issues

Many environmental groups have been pressuring governments and businesses to ban plastic bags and films. As of April 2020, all states in Australia will have banned, or introduced legislation to ban, single-use plastic bags from major retailers. NSW is the last state to phase out single-use plastic bags. Although many High-Density Polyethylene (HDPE) supermarket bags and other Low-Density Polyethylene (LDPE) retail bags are imported, these environmental concerns can negatively influence the small-scale industry players that manufacture these products. Public concerns over environmental issues are set to increase over 2020-21, negatively affecting industry performance.



Plastic Bag and Film Manufacturing
Source: IBISWorld

Current Performance

Firms in the Plastic Bag and Film Manufacturing industry produce a range of plastic bags, wraps and sheeting for many downstream markets.

Favourable trends in the downstream food manufacturing, food retailing and agricultural markets over the past five years have supported industry demand. However, operators have struggled with rising import penetration from Asian producers with low-cost manufacturing methods.

Domestic demand for plastic bags and film products has declined at an annualised 2.4% over the past five years. However, imports are expected to rise at an annualised 0.1% over the same period, capturing a greater share of the domestic market. Consequently, revenue is expected to decline at an annualised 2.8% over the five years through 2020-21, to $2.2 billion. Despite the ongoing impacts of the COVID-19 pandemic, the industry is expected to grow by 0.3% in the current year.

COVID-19

The COVID-19 pandemic has had mixed effects on industry players.

As industry players rely on other downstream industries, an increase in demand from some markets, like food business operators, supermarkets and grocery stores, has benefited some industry operators over the past two years. During the COVID-19 pandemic, some restaurants and other food businesses limited their service to takeaway or home delivery services. Food business operators that offer takeaway or home delivery services pack food in plastic bags. Additionally, supermarkets and grocery stores have packed home-delivered groceries and click-and-collect groceries in plastic bags instead of reusable bags, to prevent the spread of COVID-19.

Incidents of grocery stockpiling led to short-term spike in demand for industry products. Both fresh and pre-prepared food often require plastic film during packaging and transportation for preservation. Growing demand for cleaning products such as disposable wipes, cleaning agents, gloves and hand sanitisers has led to an increase in demand for plastic bags and plastic film. Like many food products, cleaning products are also packaged with plastic bags, with plastic wraps used during transportation. Despite this trend, industry operators that rely on the construction division have been significantly affected. The pandemic has contributed to declines in new building activity, reducing demand from the construction sector.

Import penetration

Over the past five years, strong and increasing competition from import markets has weakened industry performance.

Overseas manufacturers generally operate with far lower labour and overhead costs than Australian companies and can pass these cost savings on to customers through lower prices. Australian operators have found it increasingly difficult to

compete on price over the past five years. Imports are expected to account for an estimated 32.6% of domestic demand in 2020-21, having increased from 29.2% in 2015-16.

Import penetration is particularly prevalent in the High-Density Polyethylene (HDPE) supermarket bag and Low-Density Polyethylene (LDPE) retail bag segments. Most of the plastic bags used at supermarkets such as Coles, Woolworths and IGA, and retail outlets such as Myer are imported. It is far more cost effective for these major retailers to source plastic bags from overseas manufacturers that offer much lower per-unit prices. Small-scale local companies that manufacture these products, such as Vicpac Flexibles, Pinpak-Grayson and Siupak Plastic Bags, have therefore struggled to remain competitive. As a result, both industry enterprise and establishment numbers have declined over the past five years.

Many remaining industry players have been targeting food manufacturing and agricultural businesses. Operators in these industries have high speed-to-market requirements, which make it difficult for importers to compete due to their high shipping and processing times. Consumer expectations of food products in relation to spoilage and freshness have also been growing. This has provided an opportunity for local manufacturers to develop value-added products that are differentiated from low-cost imports. These products include vacuum packaging for meat products that maintain the freshness and look of its contents.

Downstream uses

Plastic film dominates industry production and currently accounts for approximately two-thirds of industry revenue.

Increased demand from downstream markets that use plastic packaging materials, stretch films, protective sheets and other plastic films has supported the industry over the past five years. Manufacturing industries that require plastic wraps to bundle products for storage or transport are the largest source of demand for the industry. Food product manufacturers, another key market for the industry, require plastic film to preserve fresh food such as meat or fruits, or pre-prepared food such as potato chips. The industry's stretch films are also used to bundle single-serve food products prior to transport. Demand from food product manufacturing has grown over the past five years, supporting the industry.

The industry has also derived demand for specialist packaging materials from the local agriculture and construction sectors over the past five years. The agricultural market has provided opportunities for the industry's smaller, regional operators. Growth in agricultural production over the past five years has supported demand for films used to bundle silage and hay, and grain bags and printed plastic bags for packed lawn and garden products. Demand from the agriculture sector is expected to increase in 2020-21.

The Construction division has also been an important source of demand over the past five years. Operators in this division use plastic stretch film to package building materials such as bricks, insulation and fittings. Despite this, the building construction market has fallen over the past five years due to the ongoing impacts of the pandemic, reducing demand for building products packaging. This trend has constrained the industry's growth.

Profit weakens

Despite falling purchase costs, industry profit margins have declined over the past five years due to competition from imports.

Imports put downward pressure on demand for locally produced goods by offering buyers a low-cost alternative. Industry operators must then lower their prices or increase their product quality to compete. Competing on quality typically increases input costs. Over the past five years, the world price of crude oil has increased, negating the benefits of the fall in the world price of natural gas. As raw materials such as resin, natural gas and petroleum are often sourced internationally, a volatile Australian dollar over the past five years has affected industry firms.

However, large industry players such as Amcor typically pass on input price increases to customers. Profitability varies depending on a firm's main product segments and the size of its operations. The range of specialist and niche products the industry manufactures has limited demand declines associated with increasing prices, as there are few direct substitutes for goods such as plastic stretch films, bulk carton liners and mulch films. Despite this, industry profitability has declined over the past five years.

Industry wage costs have declined as a share of revenue over the past five years, as many manufacturers have improved their efficiency and productivity to remain competitive against imports. Many firms have invested in automation to lower their dependence on labour over the period. As a result, industry employment numbers have declined over the past five years.

Historical Performance Data

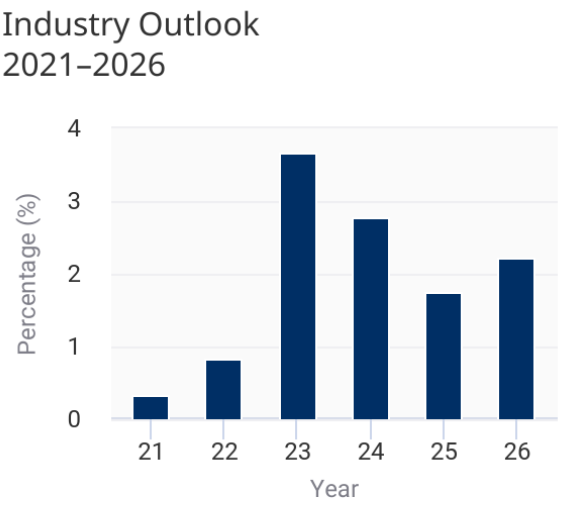
Year	Revenue ($m)	IVA ($m)	Estab. (Units)	Enterprises (Units)	Employment (Units)	Exports ($m)	Imports ($m)	Wages ($m)	Domestic Demand ($m)
2012–13	2,151	597	321	280	4,826	58.1	615	415	2,709
2013–14	2,408	643	313	284	5,156	56.1	749	441	3,101
2014–15	2,431	583	316	277	4,935	62.9	831	436	3,199
2015–16	2,512	594	311	277	4,852	49.9	1,015	426	3,477
2016–17	2,365	519	309	273	4,580	56.0	931	402	3,240
2017–18	2,180	446	307	269	4,393	62.3	912	371	3,030
2018–19	2,193	430	304	275	4,240	62.6	929	313	3,060
2019–20	2,172	388	301	267	4,113	63.6	973	299	3,081
2020–21	2,179	393	295	262	3,976	65.5	1,018	296	3,132

Industry Outlook

Outlook

Over the next five years, plastic bag and film product manufacturers are forecast to face mixed operating conditions.

Following the likely containment of the COVID-19 pandemic in 2021-22, industry revenue is forecast to grow in the same year. Despite this trend, the ongoing effects of the COVID-19 pandemic are projected to decrease demand in many downstream markets, constraining industry growth. However, as the economy gradually recovers from the COVID-19 pandemic, downstream demand for industry products is projected to increase, benefiting industry players.



Plastic Bag and Film Manufacturing
Source: IBISWorld

Conditions in the Construction division are projected to recover, benefiting industry players. Demand from the food product manufacturing sector is also forecast to grow over the next five years. However, competition from cheaper imported products and public concerns regarding the environmental effects of plastic products are projected to constrain industry growth. Domestic demand is forecast to increase at an annualised 2.5% over the five years through 2025-26, to reach $3.5 billion. However, the value of imports is projected to rise at an annualised 3.0% over the same period, capturing a greater share of domestic demand at the expense of local manufacturers. Industry revenue is forecast to rise at an annualised 2.3% over the five years through 2025-26, to reach $2.4 billion.

The Australian dollar is forecast to appreciate over the next five years, increasing import competition. Overseas manufacturers typically operate with lower wage and overhead costs than domestic players, which allows them to undercut Australian manufacturers. Prices for imported products will decline further as overseas producers boost their economies of scale and efficiency, placing further pressure on domestic manufacturers' profitability over the next five years.

Downstream demand

Plastic films are the most popular industry product, and are therefore projected to underpin industry revenue growth over the next five years.

Food product manufacturers require a range of plastic films, such as polyvinyl chloride food films, stretch films and other protective packaging materials. Demand from this market is forecast to grow steadily over the period. Demand for silage films, mulch films and films for greenhouses from agricultural operators is also

forecast to increase over the next five years, due to favourable conditions in key crop growing industries.

Food product retailers use plain and printed plastic bags to package and carry fresh produce. Supermarkets and grocery stores also buy fine plastic wrap, which is referred to as polyvinyl chloride food film or cling wrap, to onsell to consumers. Wholesalers use large volumes of plastic stretch film to package, transport and store fragile products and other consumer goods. Demand for these industry products is likely to grow modestly over the next five years, in line with rising household consumption expenditure. However, imports are likely to account for a growing share of these goods, limiting demand for Australian-made products.

Industry structure

Industry profitability is forecast to recover slightly over the next five years from the low at the start of the five-year period.

Despite strong price competition from imports, industry prices are likely to remain flat over the period as overseas manufacturers seek to undercut domestic firms to stimulate demand. Industry firms with long-term sales contracts or well-defined market positions are likely to fare better against imports over the next five years and maintain profitability. The price of inputs is projected to continue growing, putting further pressure on profit. However, wages are likely to decline as a share of revenue over the period, alleviating some pressure on profit margins. Local players are likely to increase their use of automation over the period to remain competitive against imports, reducing employment. Some local players may also offshore unprofitable plants or production processes.

Industry enterprise and establishment numbers are projected to fall over the next five years as competition forces some firms out of the industry. In particular, small-scale local manufacturers of High-Density Polyethylene (HDPE) supermarket singlet bags, Low-Density Polyethylene (LDPE) boutique retail bags and other plastic garbage bags are forecast to struggle. In addition, plastic bag bans at retail outlets throughout Australia have reduced demand for plastic supermarket and retail bags. Many retail outlets are likely to transition to more environmentally friendly packaging materials. As a result, industry players will likely invest in biodegradable plastic technology due to demand for environmentally friendly products from retail markets and to fend off growing external competition from alternatives such as paper bags.

Performance Outlook Data

Year	Revenue ($m)	IVA ($m)	Estab. (Units)	Enterprises (Units)	Employment (Units)	Exports ($m)	Imports ($m)	Wages ($m)	Domestic Demand ($m)
2021–22	2,197	390	292	261	3,826	69.3	1,029	284	3,157
2022–23	2,278	374	288	259	3,685	72.1	1,059	266	3,264
2023–24	2,341	377	285	255	3,515	74.8	1,107	258	3,373
2024–25	2,382	379	279	252	3,352	77.8	1,146	254	3,451
2025–26	2,436	383	276	249	3,196	80.6	1,182	253	3,537

Industry Life Cycle

The life cycle stage of this industry is ⚠ Decline

LIFE CYCLE REASONS

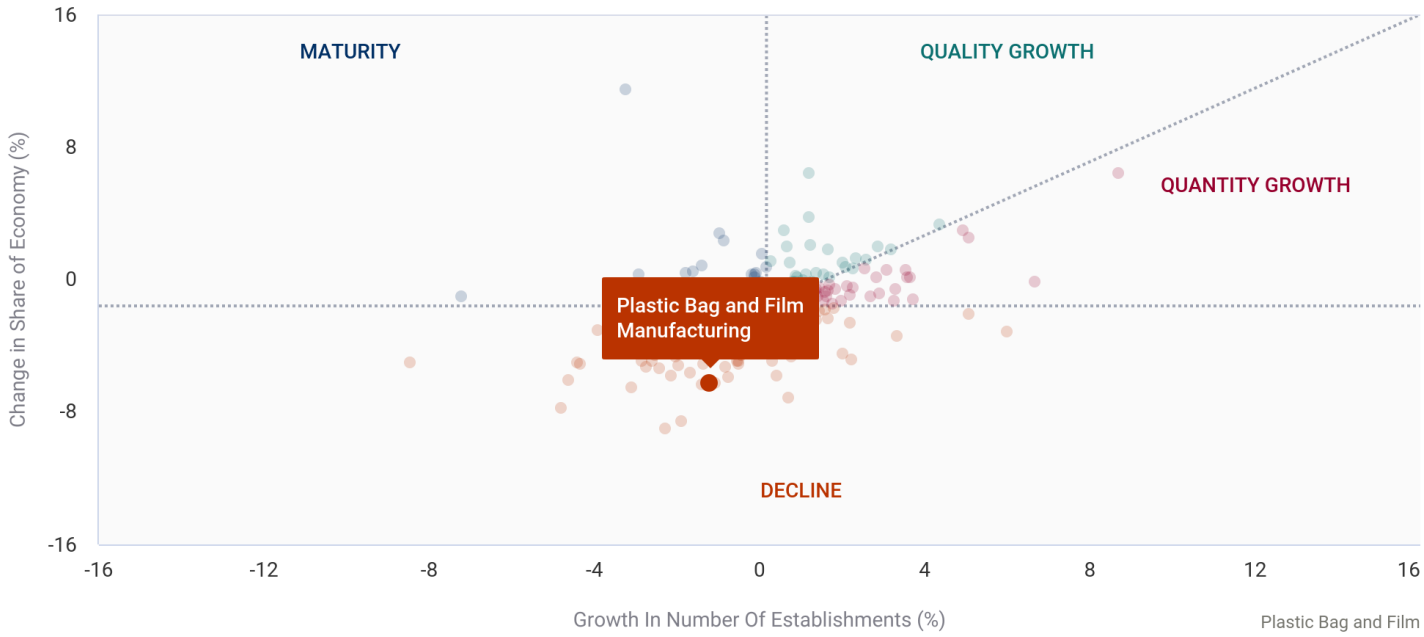
Industry value added is declining while the overall economy is growing

The number of establishments has fallen over the past five years

The industry has clearly segmented and fairly stable products

The industry is losing market share to import competition

Indicative Industry Life Cycle



Plastic Bag and Film Manufacturing
Source: IBISWorld

The Plastic Bag and Film Manufacturing industry is in the declining stage of its economic life cycle. The industry's plastic bag and film products are used by a range of downstream industries. Manufacturers, wholesalers, retailers, construction companies and agricultural firms all require different industry products, such as bread and fresh produce bags, stretch films, large-scale pallet liners and agricultural films. However, these downstream markets have increasingly sourced plastic bags and films from overseas manufacturers over the past five years.

Industry value added (IVA), which is used to measure an industry's contribution to the overall economy, is forecast to decline at an annualised 4.3% over the 10 years through 2025-26. The industry is therefore projected to significantly underperform the wider economy, with real GDP growth forecast to increase at an annualised 2.1% over the same period. This trend is characteristic of a declining industry.

Over the past five years, the number of industry establishments has declined due to strong competition from imports and moving of production offshore. In addition,

technological change has remained low over the period, as most of the industry's production processes are well established. Investment in new machinery has been focused on improving production efficiency. The industry also has clearly segmented and fairly stable product groups. These trends are all indicative of a declining industry.

Products and Markets

Supply Chain

KEY BUYING INDUSTRIES

1st Tier

Livestock and Other Agricultural Supplies Wholesaling in Australia

Wool Wholesaling in Australia

2nd Tier

Supermarkets and Grocery Stores in Australia

KEY SELLING INDUSTRIES

1st Tier

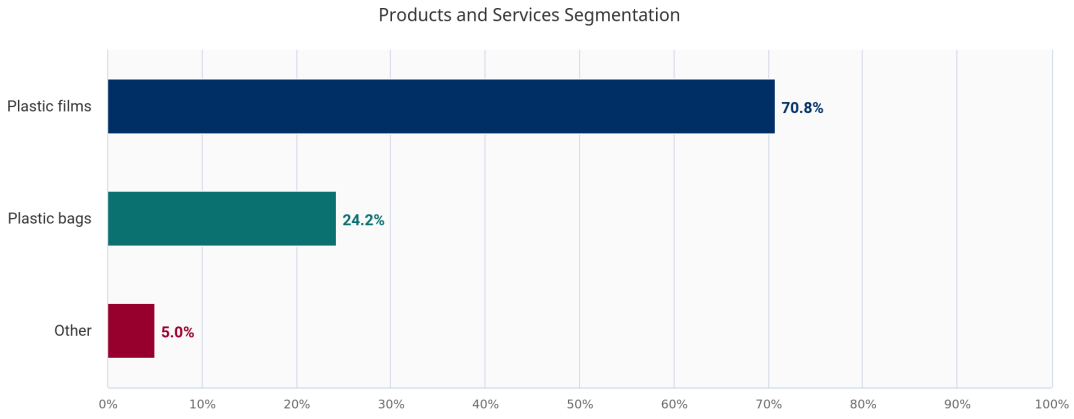
Synthetic Resin and Synthetic Rubber Manufacturing in Australia

Industrial and Agricultural Chemical Product Wholesaling in Australia

2nd Tier

Industrial Machinery Manufacturing in Australia

Products and Services



2021 INDUSTRY REVENUE

$2.2bn

Plastic Bag and Film Manufacturing
Source: IBISWorld

Industry participants manufacture a range of flexible plastics that can be broadly segmented into plastic films and plastic bags.

Many downstream manufacturers use plastic films and protective plastic sheets during transportation to prevent the likelihood of contamination and to minimise damage. The COVID-19 pandemic has affected demand for industry products.

Plastic films

The industry derives approximately two-thirds of its revenue from manufacturing plastic films.

This includes fine plastic wrap that household consumers and professionals use to preserve food, and plastic stretch wrap that is used to package cans, plastic bottles

and other consumer goods. This segment also includes agricultural and horticultural products such as silage films, grain bags, silage tubes and mulch films. Plastic mulch films are typically used to suppress weeds and conserve water in landscaping and crop production. Plastic wrap decreases the likelihood of contamination during food and beverage production processes. Fragile packages are also often wrapped in protective plastic sheets and films during transportation and storage. Plastic stretch film is used to package construction materials. Delivery companies use these products to package pallets or boxes together to minimise damage during shipping.

Demand for plastic films has grown over the past five years, particularly those used to package fresh and perishable food stocked in supermarkets and grocery stores. Consumer demand for fresh produce has increased over the period, increasing demand for plastic films. Demand has also increased from the agriculture sector, as output has risen over the past five years. Increased commitment to drought-assistance processes, such as using plastic film mulch to aid water retention in the soil, has also aided the industry. Overall, this segment has grown as a share of revenue over the past five years.

Plastic bags

Industry operators manufacture a variety of plastic bags.

This segment includes plastic packets and sacks, and plain and printed plastic bags that are used in food processing, food retailing and agricultural markets. This segment also includes vacuum seal products. Vacuum seals are used to package food products to extend their shelf life. During this process, a machine extracts all the air from inside the package, which reduces the risk of airborne contaminants. This segment has declined as a share of revenue over the past five years due to intensifying import penetration and environmental consciousness.

This segment also includes plastic supermarket, retail and garbage bags. Plastic supermarket bags are typically made from High-Density Polyethylene (HDPE), while other plastic bags that are used at retail outlets are generally made from Low-Density Polyethylene (LDPE). Growing public concerns about plastic bag waste has limited demand for this segment. Most states in Australia have rolled out, or are pending, limits on plastic bag use. Victoria has rolled out a ban on single-use plastic shopping bags from late 2019, while New South Wales (NSW) is the last state to ban single-use plastic bags. In March 2020, the NSW Government announced plans to phase out single-use plastic bags. However, the ban is likely to be postponed due to the COVID-19 pandemic. The NSW government will draft legislation based on the feedback, with plastic bags likely to be phased out six months after the legislation is passed. Garbage bags, and plastic bags used by supermarkets, account for a small share of industry revenue, as most are imported. Despite this factor, demand for plastic bags is expected to increase in the current year due the COVID-19 pandemic. During the pandemic, restaurants, supermarket and grocery stores have packed takeaway food, home-delivered groceries and click-and-collect groceries in plastic bags instead of reusable bags to reduce the risk of spreading the COVID-19 virus.

Other

Other plastic products include bubble wrap and paper lamination that is used in industrial applications.

Bubble wrap is a transparent plastic material with small air-filled bubbles that is typically used to pack and protect fragile items. Some polycarbonate films are also classified in this segment. This segment has fallen as a proportion of revenue over the past five years, due to the growth of the industry's plastic films segment.

Demand Determinants

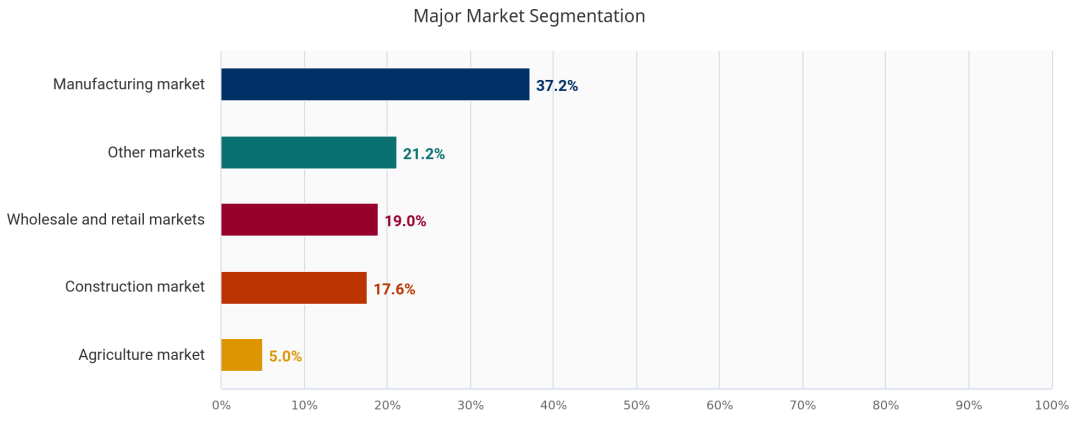
Product price, the availability of substitute goods, product quality and retail food sales typically influence demand for plastic bags and films.

Environmental issues and technological developments can also affect demand for industry products. A decrease in the price of plastic bags and films generally boosts demand, as these goods become more affordable for downstream customers. The price relative to imports is also vital, as it has become increasingly easy for businesses to source packaging from overseas markets.

Major markets tend to demand high-quality and reliable plastic products, as packaging and goods protection are crucial to their industry products. Customers are often willing to pay more for consistently high-quality products, which ensures that goods are not broken, spoiled or damaged. An increase in product quality therefore tends to boost demand for some product segments. Plastic bags and films are used extensively to package food products that are sold in supermarkets, cafes, restaurants and fast-food restaurants. Higher demand for these food items therefore tends to increase demand for industry products, as more plastic bags and films are required for packaging purposes.

Growing environmental concerns tend to negatively affect demand for industry products, as they are often viewed as damaging to the environment if they are disposed of incorrectly. This trend has been particularly evident over the past five years. Most state and territory governments have banned the use of plastic bags in supermarkets and grocery stores. This trend is also becoming prevalent in the agriculture sector, as concern over the disposal of agricultural plastics has been growing over the past five years. Industry products that are recyclable, or are developed using recycled materials, can have a competitive advantage against rival products and brands that are not as environmentally friendly. Some biodegradable plastics are being scrutinised as being more harmful to the environment than regular plastics. Any findings that affirm this will boost demand for traditional plastics, increasing industry demand.

Major Markets



2021 INDUSTRY REVENUE

$2.2bn

Plastic Bag and Film Manufacturing
Source: IBISWorld

Industry players manufacture products for a range of markets, including manufacturers, wholesalers, retailers and construction companies.

Manufacturing market

The manufacturing sector represents the industry's largest market and is expected to account for over one-third of industry sales in 2020-21. Food manufacturers require plastic films to preserve food products until they are consumed and to bundle together single-serve portions of food and beverages. Other customers in this market include manufacturers of electronic equipment, alcoholic beverages, chemicals and cleaning compounds. These operators generally wrap products in plastic film during transportation, for storage and when selling in bulk.

This market has increased as a share of revenue over the past five years due to rising demand from fresh food processors and other food product manufacturers. Fresh food processors and food product manufacturers require quick turnaround times that cannot always be met by imports, and therefore are less likely to turn to low-cost imports. This has ensured robust demand and stable contribution to industry revenue. However, non-food manufacturers with longer production and sales processes tend to opt for cheaper import substitutes.

Wholesale and retail markets

Wholesalers use plastic stretch films to bundle pallets and boxes. In addition, farm produce wholesalers use plastic films to preserve the freshness of their products during transportation between farms and the point of sale. Household consumption of plastics such as rubbish bags is also included in this market. Retailers such as supermarkets and grocery stores use plastic produce bags to hygienically package fresh meat, fruit and vegetables. Most of the generic High-Density Polyethylene (HDPE) and Low-Density Polyethylene (LDPE) plastic bags that retailers use are imported, and therefore account for a small share of revenue from the industry.

The wholesale and retail market has declined as a share of revenue over the past five years due to growth in the manufacturers' market and increased plastic-bag imports. Many consumers have been opting for cheaper imports over the period, especially for basic plastic products that are easily mass-produced and are therefore at the greatest risk of pricing pressures. Environmental concerns have

pushed many retailers and consumers towards using reusable bags, further contracting the market. While plastic remains the most cost- and time-effective way to bundle goods for transport, end consumer concerns may prompt companies to make more environmentally conscious decisions, such as using wool- or paper-based products, especially for premium products.

Construction market

Construction contractors use plastic films for residential and commercial building applications. Building materials and pallets are generally packaged using plastic stretch films to protect equipment during transportation and storage. Plastic sheets may also be used to protect projects under construction, such as using plastic sheets to protect floorboards from scuffing and paint spills. The size of this market typically depends on building construction activity. Residential and non-residential construction have grown over the past five years.

However, large construction companies have been buying more imported construction goods. These companies can order in bulk from international markets, which reduces purchase costs, but decreases demand for locally produced and packaged goods. The COVID-19 pandemic has decreased new building activity, reducing demand from construction sector. Therefore, this market has declined as a share of revenue over the past five years.

Agriculture market

Agricultural businesses use plastic films for bundling stock such as hay bales, and plastic bags for storage and transport of goods like seeds, grains and soils. The agricultural market has grown as a share of revenue over the past five years, due to increased output and greater commitment to reducing water use. Plastic films are used in greenhouses and irrigation systems to maximise water efficiency. Plastics are also used for other waste reduction purposes, such as crop coverages to keep away birds and insects. However, environmental concerns over plastics have negatively affected this market over the past five years, prompting some farmers to consider more environmentally friendly alternatives, such as bioplastics.

Other markets

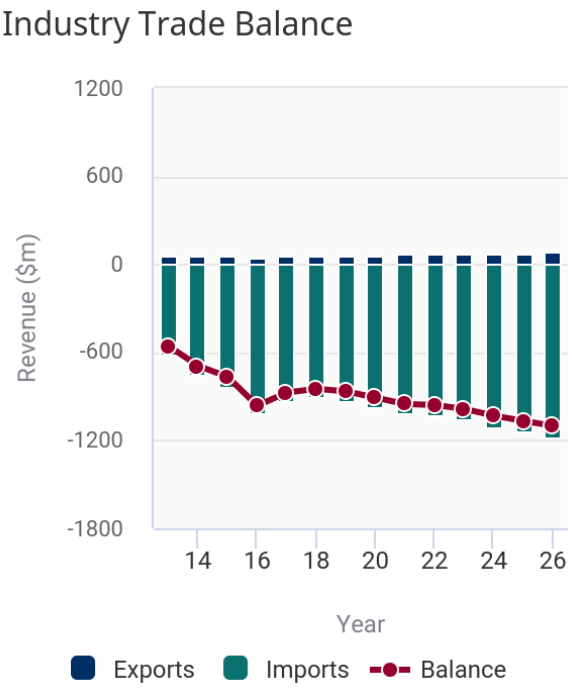
Other industry markets include public administrators, defence industries, personal services, accommodation providers and professional caterers that use fine plastic wrap and gas-permeable plastic films to preserve food. Demand from professional catering market has reduced as a share of revenue over the past five years as some caterers have opted for eco-friendly non-plastic catering ware. However, demand from personal services, such as laundry services have increased. Dry-cleaners wrap freshly laundered garments with plastic films to keep the laundry clean. Overall, this market has remained fairly steady as a share of industry revenue over the past five years.

International Trade

Exports in this industry are ⊖ Medium and Increasing

Imports in this industry are ⚠ High and Increasing

Import levels are high in the industry, while exports are moderate. Intensifying competition from cheaper imported goods has contributed to increased competitive conditions in the industry.



Plastic Bag and Film Manufacturing in Australia
Source: IBISWorld

Imports

The value of imports is expected to rise at an annualised 0.1% over the five years through 2020-21, to $1.0 billion. Imports are forecast to account for 32.5% of domestic demand in the current year, up from 29.2% in 2014-15. Domestic manufacturers typically face strong competition from overseas firms with lower labour and production costs. These cost savings can then be passed on to customers through lower prices. Many local firms have therefore struggled to compete on price over the past five years.

Imports have risen over the past five years due to free-trade agreements with Malaysia and China. Both agreements, introduced in 2013 and 2015 respectively, will reduce tariffs to zero on most plastics. Previously, Chinese imports for the industry were subject to tariffs as high as 10%, but will now be completely removed by the end of 2018. Imports have grown over the past five years, despite the Australian dollar depreciating, which typically makes imports more expensive.

Exports

Exports are expected to grow at an annualised 5.6% over the five years through 2020-21, to $65.5 million. Weaker Australian dollar at the start of the five year period has contributed to export demand returning to growth. Overall, the trade-weighted index has increased over the past five years, potentially affecting exporters.

Exports

2021 EXPORTS

$65.5m

Plastic Bag and Film Manufacturing
Source: IBISWorld

Imports

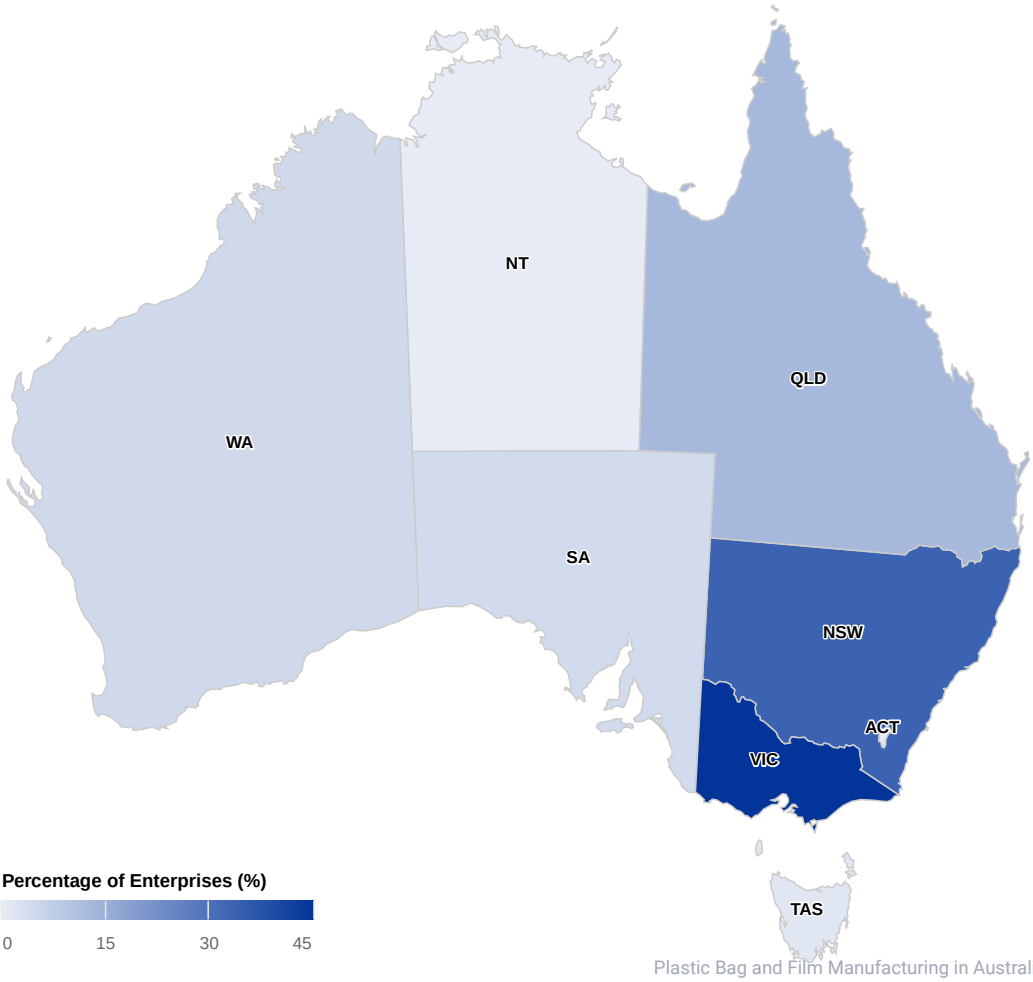
2021 IMPORTS

$1.0bn

Plastic Bag and Film Manufacturing
Source: IBISWorld

Business Locations

Business Concentration in Australia



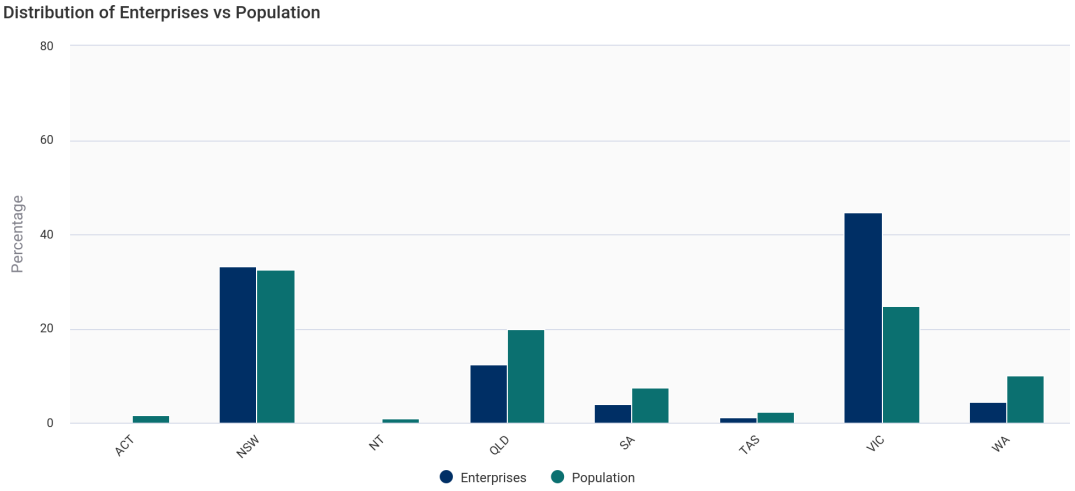
Plastic Bag and Film Manufacturing in Australia
Source: IBISWorld

The distribution of industry enterprises is skewed towards Victoria, which is expected to account for 44.7% of enterprises in 2020-21. This significantly exceeds

the state's share of national population and economic activity. The industry's four largest players are headquartered in Victoria and have substantial manufacturing operations in that state. This includes Amcor Ltd, Sealed Air Australia, Integrated Packaging Group and Innovia Films (Asia Pacific). Victoria is also the main location for food manufacturing companies, which are a major demand market.

Most of the remaining enterprises are located in New South Wales and Queensland. High fuel and transportation costs have encouraged many manufacturers to establish or relocate their facilities closer to their major downstream markets. New South Wales is home to many food and beverage companies, while Queensland has a significant agricultural market. Many of the industry's smaller players are likely to require close proximity to buyers.

Plastic bag bans, which have been in place the longest in South Australia, Tasmania, the Northern Territory and the Australian Capital Territory, limit the number of manufacturers in these states and territories. Although most of these goods are imported, several small-scale Australian companies also manufacture these products. Manufacturers are less likely to operate in areas where downstream supermarkets and retail outlets are banned from providing HDPE and LDPE plastic bags. Operators that are forced to deliver goods interstate, where regulations are more favourable, may not be able to remain competitive due to the added distribution costs.



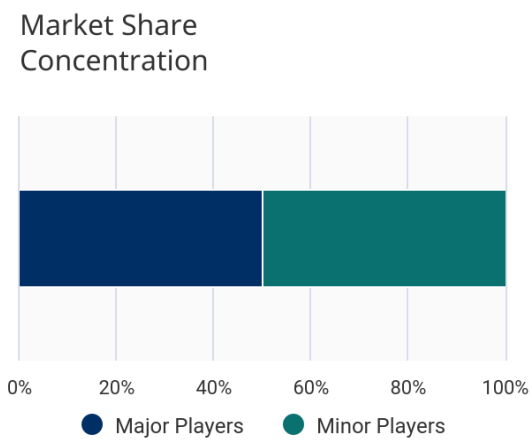
Plastic Bag and Film Manufacturing
Source: IBISWorld

Competitive Landscape

Market Share Concentration

Concentration in this industry is ⊖ Medium

The Plastic Bag and Film Manufacturing industry exhibits moderate market share concentration. In 2019-20, the industry's major players are expected to account for approximately 48.0% of revenue. This number has expected due to the merged entity of Pro-Pac and Integrated Packaging. Major players have an advantage in the markets they serve over smaller competitors in economies of scale and scope.



Plastic Bag and Film Manufacturing
Source: IBISWorld

Many small industry firms satisfy niche markets. According to ABS counts of business data, most industry firms generated less than $2.0 million in revenue in 2017-18. These trends indicate that a large number of small-scale firms manufacture plastic bags and films in Australia. Outside retail products, several smaller firms manufacture regionally for the agricultural sector. The industry's market share concentration has increased slightly over the past five years, as most of the major players have outperformed the industry over the period.

Key Success Factors

IBISWorld identifies 250 Key Success Factors for a business. The most important for this industry are:

Economies of scale: Larger industry players can build substantial economies of scale, reducing their marginal costs and improving profitability.

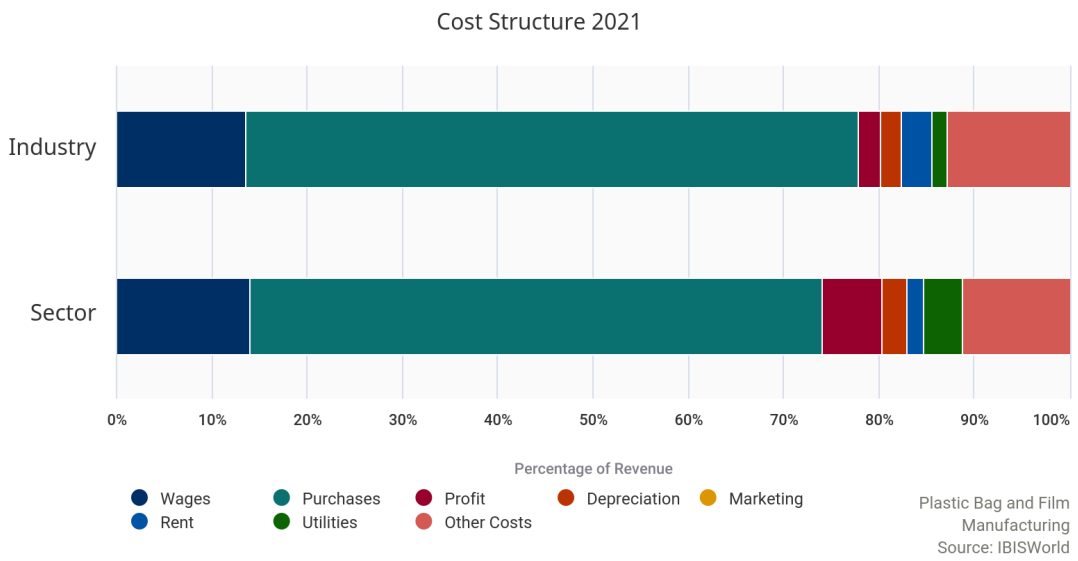
Optimum capacity utilisation: Operators that maximise their potential output volumes can reduce the unit costs of production. The industry's exposure to import competition makes it imperative that firms minimise their local production costs to remain competitive.

Supply contracts in place for key inputs: Companies that establish a reliable supply of key chemical or plastic inputs at competitive prices are better placed to avoid short-term fluctuations in purchase costs, which can help stabilise profit margins.

Economies of scope: Firms that offer a diversified range of products can appeal to several downstream markets. This can protect manufacturers from any downturns from specific customers and can yield production cost efficiencies.

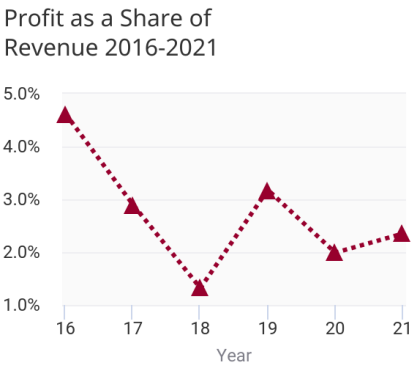
Ability to accommodate environmental requirements: As public concern about plastic bag use grows, players that can offer environmentally friendly plastic bags and films can gain a competitive advantage.

Cost Structure Benchmarks



Plastic Bag and Film Manufacturing
Source: IBISWorld

Profit



Plastic Bag and Film Manufacturing
Source: IBISWorld

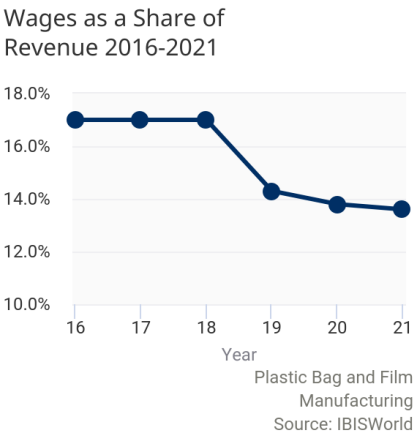
The industry's profitability has fallen over the past five years, narrowing to an expected 2.3% of revenue in 2020-21. Despite this, industry profitability is anticipated to increase slightly in the current year as the Australian economy gradually recovers from the COVID-19 pandemic. As the industry relies on other downstream industries, an increase in demand from other markets such as restaurants and supermarkets during the pandemic has supported profitability in the current year. Industry operators that rely on the construction sector are expected to be significantly affected as new building construction declines in the current year.

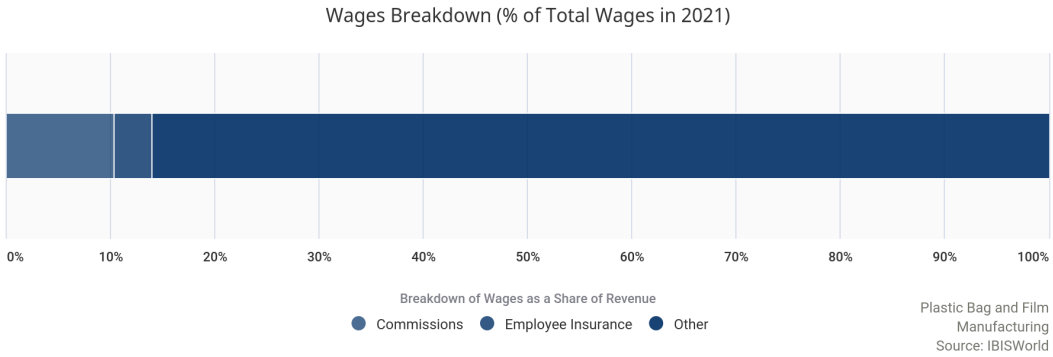
Over the past five years, competition has increased as firms have struggled to retain market share in the face of rising demand for low-cost imports and substitute products. However, profitability varies depending on a manufacturer's size and main product segments. For example, plastic bag products are high-volume low-margin goods, and have to compete against cheaper imported goods. Plastic supermarket, garbage and retail bag manufacturers are therefore forced to reduce their prices to remain competitive, and generally have lower profit margins. In contrast, manufacturers of products that are less exposed to import competition, such as agricultural and industrial packaging, are likely

to have shored up profitability through price increases and increased domestic demand over the past five years.

Wages

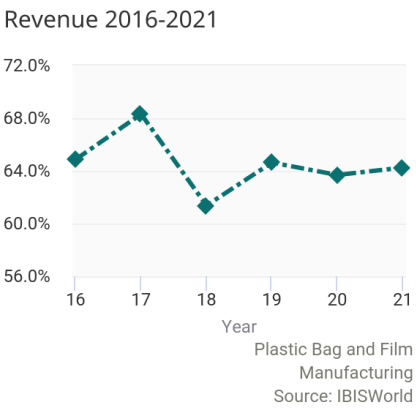
Industry labour costs vary according to the size of the firm and the products it manufactures. Large firms typically benefit from economies of scale and manufacture standardised mass-produced products. These firms generally have lower than average wage costs. In contrast, wage costs tend to be higher for smaller firms that typically have a higher manual labour component of production. Some products require weaving or custom printing, which increases labour costs. The Manufacturing division has been shifting towards process automation, as has the Plastic Bag and Film Manufacturing industry. In addition, some manufacturers have continued to move some production overseas. Amcor, a major player in the industry, has indicated plants in developed markets will be closed or restructured. Overall, wage costs have declined as a proportion of revenue over the past five years.





Purchases

Purchases represent the largest individual cost for operators. Companies use raw materials such as resin, natural gas and petroleum to produce plastic bags and films. Major materials include High-Density Polyethylene (HDPE) and Low-Density Polyethylene (LDPE), linear low-density polyethylene and polyvinyl chloride. Plastic resin, one of the industry's key raw materials, is produced from petroleum feedstock. In early 2017, the price of resin increased by 15% and placed cost pressures on many industry players. Over the past five years, the domestic price of basic polymers used as

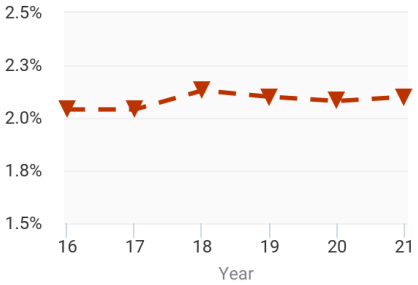


inputs in the manufacturing process has grown modestly. Despite a decline in the world price of natural gas, industry purchase costs have fluctuated over the past five years due to a volatile Australian dollar and a rise in the world price of crude oil. As raw materials such as resin, natural gas and petroleum are often sourced internationally, a volatile Australian dollar over the past five years has affected industry firms. Ultimately, purchase costs have declined slightly as a proportion of revenue over the past five years.

Depreciation

Depreciation expenses have increased marginally over the past five years. While some companies invest in capital to improve efficiency, most vital machinery in well-established production processes is older and attracts lower depreciation expenses. Depreciation is anticipated to account for 2.1% of revenue in the current year.

Depreciation as a Share of Revenue 2016-2021

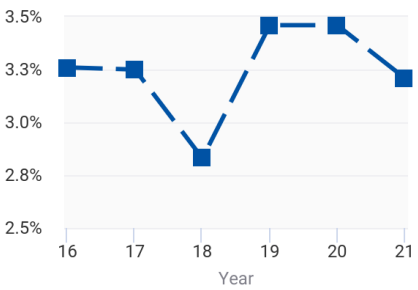


Plastic Bag and Film Manufacturing
Source: IBISWorld

Rent

Rent is expected to account for 3.2% of revenue in the current year, having decreased slightly over the past five years. This has mainly been due to firms having some flexibility in the location of storage facilities and being able to adapt to market conditions.

Rent as a Share of Revenue 2016-2021

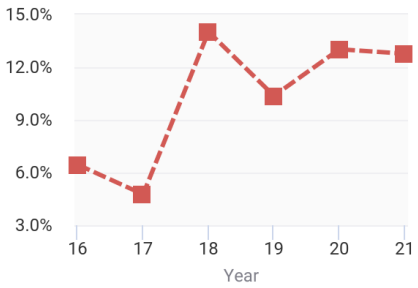


Plastic Bag and Film Manufacturing
Source: IBISWorld

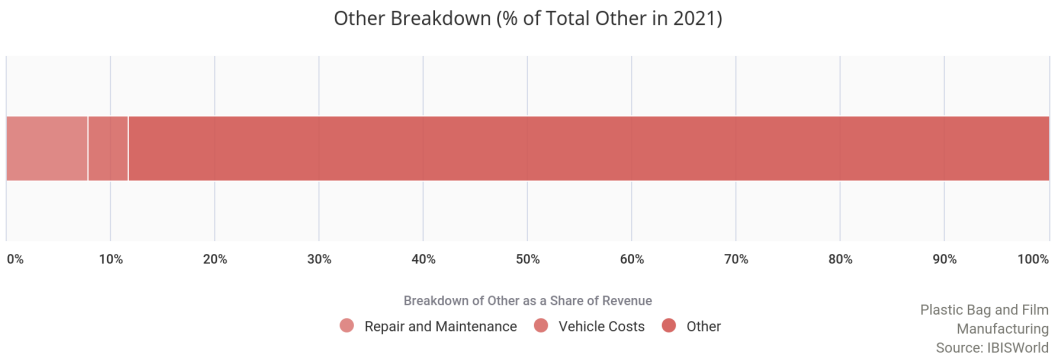
Other Costs

Other costs include marketing, insurance, administration, distribution, depreciation and professional service expenses. This segment has increased as a share of revenue over the past five years. Other costs vary depending on company size, production capacity and product range.

Other Costs as a Share of Revenue 2016-2021



Plastic Bag and Film Manufacturing
Source: IBISWorld



Basis of Competition

Competition in this industry is ⚠ High and Increasing

The Plastic Bag and Film Manufacturing industry has high competition and this trend has remained steady over the past five years.

Both internal and external competition is high.

Internal competition

Internal competition is primarily based on price, quality, range, consistency and reliability.

Pricing is important, as many industry products are homogenous and difficult to differentiate. Production costs also influence prices, as efficient manufacturers that can maximise production volumes and plant capacity can generate savings that can be passed to consumers. Reliability is vital for many customers, such as those in food manufacturing. The quick turnaround required puts pressures on the output of industry players. Not meeting order demands through human error or faulty equipment can risk loss of contracts with buyers.

Another competitive factor is product range. Customers can minimise their suppliers and use one firm offering a range of different products. For example, a farm may require plastic sheeting for mulch and crop protection, as well as bags for farmed stock. Providing value-added products and services such as total packaging solutions, artwork and printing capabilities, and recycling solutions can also help manufacturers to develop competitive advantages.

External competition

The industry is exposed to intense external competition from imported and substitute goods.

Imports currently capture approximately half of domestic demand, with import penetration most evident in the low value-added markets, such as plastic supermarket and retail bags. This trend is mainly due to the lower operating costs in countries such as China. Free trade agreements between Australia and import nations are also anticipated to increase external competition.

Many Australian plastics manufacturers have claimed that higher labour and input costs for locally made products have increased output prices and competition from import markets. Plastic bags and films also compete with other packaging products such as paper and cardboard, based on product weight, performance, safety, presentation, environmental factors and recycling costs. The durability and weight of plastic products make them ideal for many food packaging purposes.

Barriers to Entry

Barriers to entry in this industry are ⊖ Medium and Increasing

The industry displays moderate barriers to entry and this trend has increased over the past five years. Barriers to entry generally differ based on company size and the type of products offered. Production of low-value product items such as plastic supermarket bags requires high-volume production to reduce marginal costs and gain competitive advantages. Any large-scale production requires significant capital investment in plant and equipment. Larger producers may also be able to negotiate lower prices for raw materials and equipment. Prospective small-scale entrants may be unable to compete on price with the industry's well-established larger players.

Barriers to entry checklist

Competition	High	⚠
Concentration	Medium	⊖
Life Cycle Stage	Decline	⚠
Technology Change	Low	✓
Regulation & Policy	Medium	⊖
Industry Assistance	Low	⚠

Industry niche product segments typically have lower barriers to entry, despite still requiring expensive machinery and equipment. Over two-thirds of industry enterprises generate annual revenue of less than $2.0 million, which demonstrates the prevalence of small companies in the industry. These firms often target niche product segments, such as the supply of specialist vacuum sealed plastic bags or bubble wrap. Increasing consolidation over the past five years has boosted barriers to entry, as it has become increasingly difficult to compete with the large firms that dominate the industry.

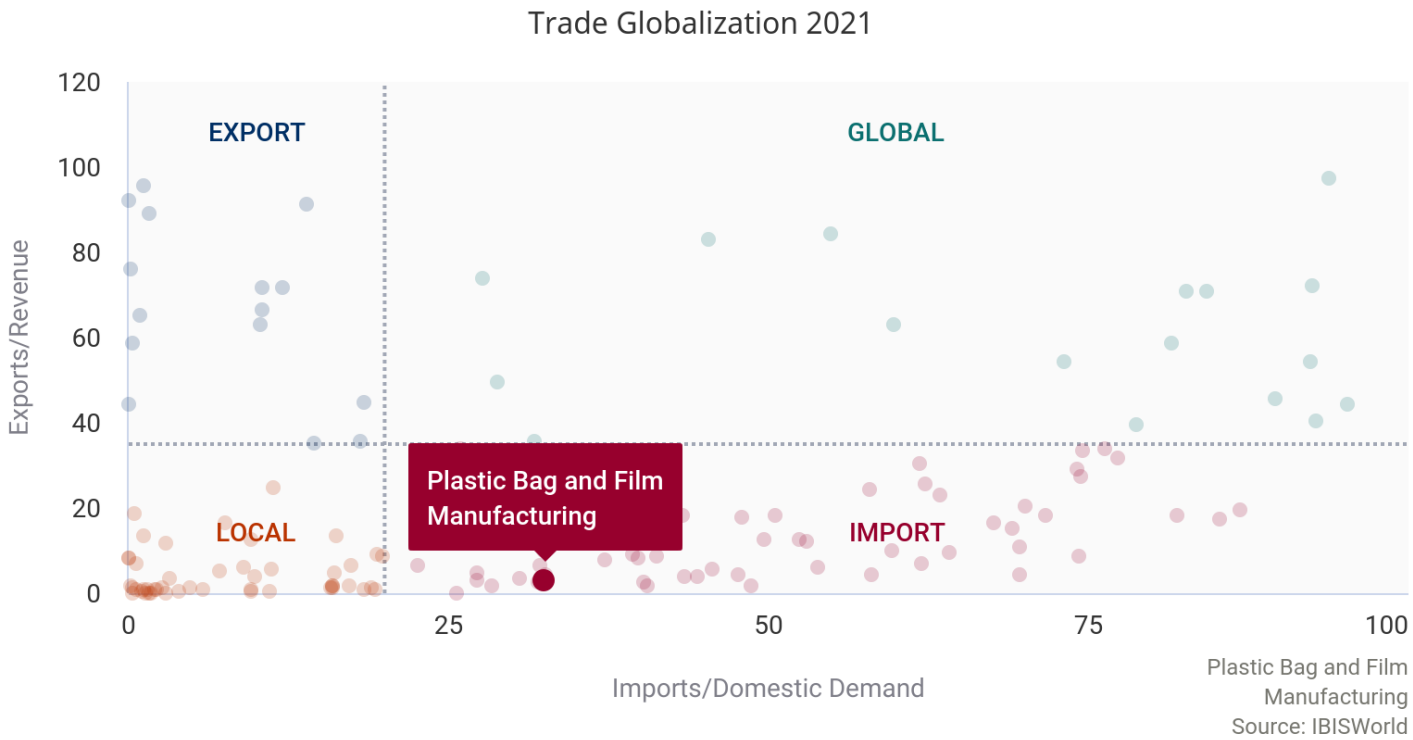
Industry Globalization

Globalization in this industry ⚠ High and Increasing

The Plastic Bag and Film Manufacturing industry is characterised by high globalisation and this trend has increased over the past five years due to growing international trade. An industry's degree of foreign ownership and international trade contribute to its globalisation level. International companies dominate the industry. While the largest company, Amcor Ltd, is an Australian company, it generates most of its revenue from overseas operations. Sealed Air Australia is a domestic subsidiary of US-based Sealed Air Corporation. Pro-Pac Packaging, a new major player after its merger with (Australian-owned) Integrated Packaging, is publicly listed but majority Australian-owned.

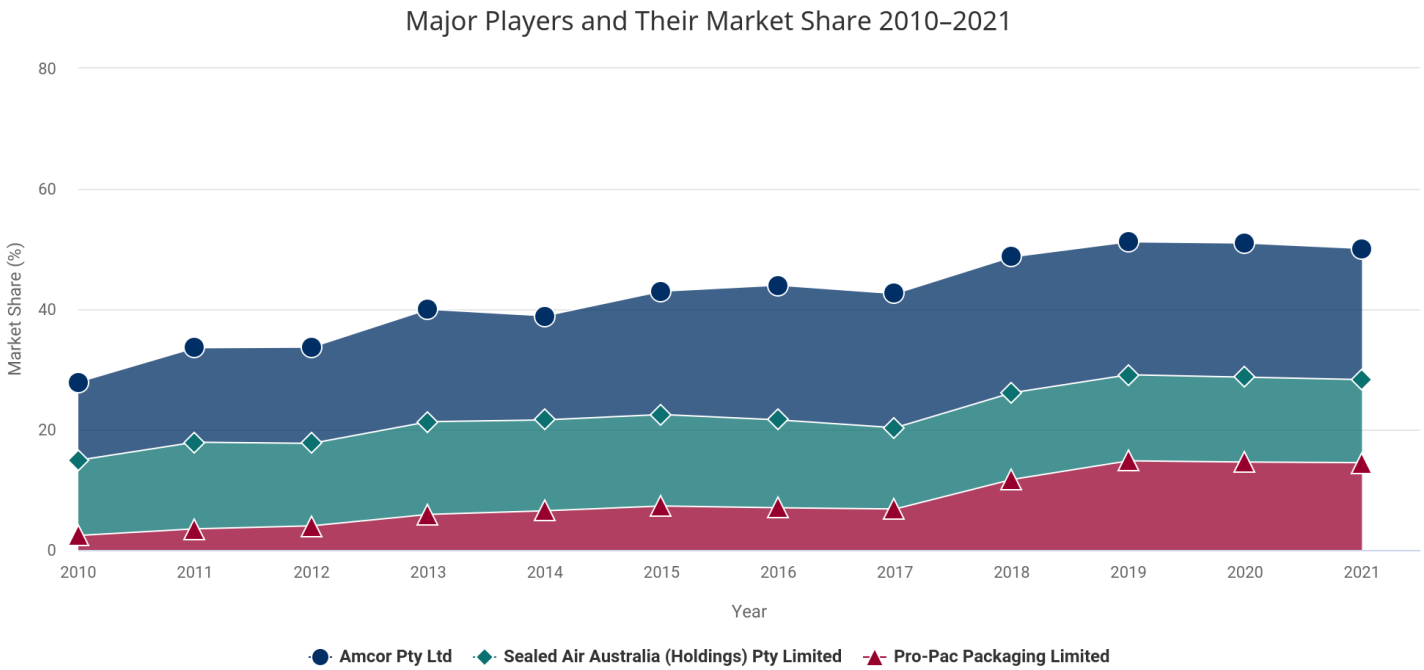
Industry players also engage in moderate international trade. Import penetration is high, with imports accounting for approximately half of domestic demand. Import

penetration has grown over the past five years. Many overseas manufacturers can operate with far lower labour and production costs, resulting in lower prices. In contrast, industry exports account for a small share of revenue. However, exports volumes have grown over the past five years, contributing to increased industry globalisation.



Plastic Bag and Film Manufacturing
Source: IBISWorld

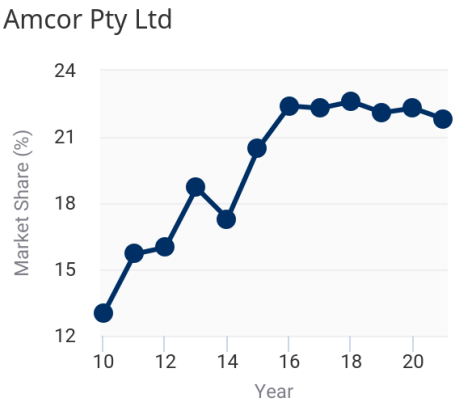
Major Companies



Plastic Bag and Film Manufacturing in Australia
Source: IBISWorld

Major Players

AMCOR PTY LTD



Market Share: 21.8%

Amcor Ltd is a publicly listed Australian firm that manufactures fibreboard packaging, beverage cans and glass wine bottles along with plastic, flexible and rigid packaging products. Amcor operates in over 40 countries, with 195 manufacturing sites around the world and a head office in Southbank, Melbourne. Amcor generates most of its revenue from operations across North America and Western Europe. Amcor's major global products include high-barrier films, laminate films, plastic produce bags and plastic bottles. In December 2013, Amcor demerged Orora Limited, its Australasian beverage packaging, fibre packaging and distribution business. As a result, Amcor's two main production segments are now flexible and rigid plastics manufacturing. To extend its footprint in the flexible packaging segment, Amcor acquired Aperio Group and Detmold Flexibles in 2013-14.

Amcor operates in the industry through its flexibles segment. However, only approximately 3% of this segment's revenue is generated in Australia. Amcor's

Australian operations are part of the Amcor Flexibles Asia Pacific business, which provides food and beverage packaging used to produce and distribute confectionery, coffee, fresh food and dairy. The business also produces packaging for pharmaceuticals and personal care products. Australia and New Zealand is the firm's smallest geographic segment. The firm's other segments are North America, Europe and emerging markets. Amcor has grown its influence as a local major player over the past five years through acquisitions, production efficiency and capital investments. However, Amcor has also sold or closed plants over the period.

Financial performance

Amcor's industry-related revenue is expected to decrease at an annualised 1.1% over the five years through 2020-21, to reach $475.0 million. This represents an underperformance of the overall industry in nominal terms over the period. Amcor benefits from its large production capacity and competitive advantages in the food manufacturing sector. Amcor primarily services the domestic food manufacturing segment with flexible plastic packaging and wraps. The firm's flexibles product segment has grown organically and through several strategic acquisitions over the past five years. However, the company's industry-related performance has since declined, primarily due to slowing demand from food product manufacturers. Despite this, Amcor's profitability has remained steady over the past five years, as the firm has the ability to pass on any input price increases to customers.

Amcor Pty Ltd - industry segment performance*

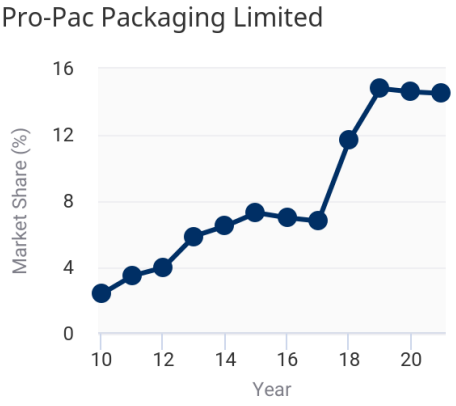
Year	Revenue ($m)	Growth (% change)
2010-11	336.0	4.9
2011-12	343.0	2.1
2012-13	357.3	4.2
2013-14	375.2	5.0
2014-15	446.9	19.1
2015-16	501.5	12.2
2016-17	488.8	-2.5
2017-18	465.3	-4.8
2018-19	472.2	1.5
2019-20	479.7	1.6
2020-21	475.0	-1.0

Source: IBISWorld
Note: *Estimate

PRO-PAC PACKAGING LIMITED

Market Share: 14.5%

Established in 1987, Pro-Pac Packaging Limited (Pro-Pac) is headquartered in Sydney and manufactures and wholesales industrial, agricultural and horticultural plastic packaging products domestically and abroad. The company was listed on the ASX in 2005 and entered the industry through its merger with Integrated Packaging Group (IPG) in November 2017. The new entity operates in



the industry under the Integrated Packaging brand, with Pro-Pac as the parent company.

Integrated Packaging's manufacturing operations combined with Pro-Pac's distribution capabilities allow the new entity to offer total packaging solutions. The firm's agricultural and horticultural products include silage films, silage tubes, grain bags and mulch films. Its industrial products include blown films, pre-stretch films, bundle and pallet shrink wrap, pallet liners, printed and plain bags, cast films, printed and plain films, and PVC food films. Pro-Pac products are used in a range of downstream markets, including agricultural, horticultural, food processing, wholesaling and logistics industries. IPG was a major player before the merger, with industry-related revenue totalling $145.5 million in 2016-17. The company acquired three manufacturing facilities from Amcor in October 2012. These facilities expanded its plastic bag and film operations, boosting revenue in 2012-13 and 2013-14.

Financial performance

Pro-Pac's industry-specific revenue is expected to grow at an annualised 15.1% over the five years through 2020-21, to $316.9 million. This represents a significant outperformance of the industry over the same period. The company's revenue has grown significantly over the past five years due to several key acquisitions, while other players in the industry have struggled to compete with low-cost imported products. Pro-Pac's profit margins have risen over the period as the company has expanded the scale of its operations.

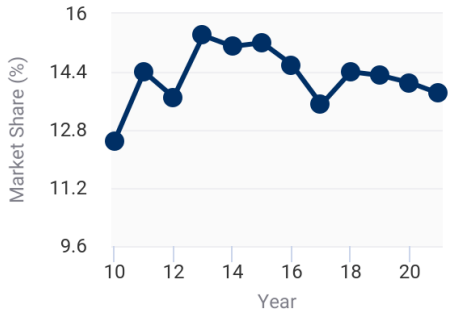
Pro-Pac Packaging Limited - industry segment performance*

Year	Revenue ($m)	Growth (% change)
2010-11	75.1	26.9
2011-12	86.6	15.3
2012-13	112.7	30.1
2013-14	142.2	26.0
2014-15	158.5	11.5
2015-16	156.6	-1.2
2016-17	149.1	-4.8
2017-18**	241.5	61.5
2018-19	316.5	31.1
2019-20	310.8	-1.8
2020-21	316.9	2

Source: IBISWorld

Note: *Estimate **Combined Pro-Pac and Integrated Packaging revenue

SEALED AIR AUSTRALIA (HOLDINGS) PTY LIMITED



Market Share: 13.8%

Sealed Air Australia (Holdings) Pty Limited is a private firm that manufactures and distributes plastic packaging and cleaning products. The company's ultimate parent is Sealed Air Corporation, a global packing firm based in the United States that services customers in 122 countries. The parent company acquired Diversey Holdings Inc. in October 2011 in an effort to increase its revenue and diversify its existing product range. Sealed Air Australia is based in Fawkner, Melbourne.

Sealed Air Australia manufactures and distributes food, protective and specialty packaging. It generates industry-specific revenue through its subsidiary, Cryovac Australia. Cryovac's protective and shrink-packaging plant is based in Tullamarine, Melbourne. Cryovac's products include barrier bags, laminate materials, shrink films, rigid trays, tubs, lids and absorbent pads. These products are used to package and preserve goods such as fresh meat, smoked and processed food products, fruit, individual meals and dairy products. Cryovac's film packaging products can be used for modified atmosphere or vacuum packaging, where all of the air is removed from the package to boost shelf life and reduce the risk of contamination.

Financial performance

Sealed Air Australia's industry-related revenue is expected to decrease at an annualised 1.7% over the five years through December 2021, to total $300.0 million. This represents an underperformance of the overall industry in nominal terms over the same period. Similar to other players, the company is expected to be affected by COVID-19 pandemic. Sealed Air Corporation's industry-related profit has declined over the period as industry competition has increased.

Sealed Air Australia (Holdings) Pty Limited - industry segment performance*

Year**	Revenue ($m)	Growth (% change)
2011	308.1	-0.3
2012	293.9	-4.6
2013	295.5	0.5
2014	328.0	11.0
2015	331.5	1.1
2016	327.4	-1.2
2017	296.6	-9.4
2018	295.3	-0.4
2019	304.7	3.2
2020	301.7	-1
2021	300.0	-0.6

Source: IBISWorld

Note: *Estimate **Year end December

Other Players

Aside from the major players, the industry comprises several small-scale manufacturers. According to ABS counts of business data, in 2017-18 approximately 70.7% of enterprises generated less than $2.0 million in revenue. Other companies in the industry include Innovia Films, Vicpac Flexibles, Pin-Pak Grayson and Siupak Plastics.

INNOVIA FILMS (ASIA PACIFIC) PTY LTD

Market Share: 3.0%

Innovia Films (Asia Pacific) Pty Ltd is a subsidiary of UK-based Innovia Films (Holding 1) Ltd. Innovia Films (Holding 1) Ltd is a global manufacturer and supplier of specialty biaxially oriented polypropylene and cellulose-based films. These products are used in specialty packaging, labelling, graphic arts and industrial applications. In Australia, Innovia Films produces biaxially oriented polypropylene coated packaging products, which include the brands Propafilm, Propafoil, Propaream and Propafresh. Propafilm is used to protect dry food such as biscuits and cakes, while Propafresh film products are mainly used to protect food with high respiration rates, such as heated food. Innovia Films is based in Craigieburn, Melbourne.

PINPAK-GRAYSON

Market Share: 1.0%

Established in 1987, Pinpak-Grayson is a family business located in Melbourne. The company manufactures a range of packaging products, from plastic bags, adhesive tapes, made to order printed retail bags to promotional die cut carry bags. Pinpak also specializes in manufacturing disposable car seat covers for the automobile industry.

SIUPAK PLASTIC BAGS

Market Share: 1.0%

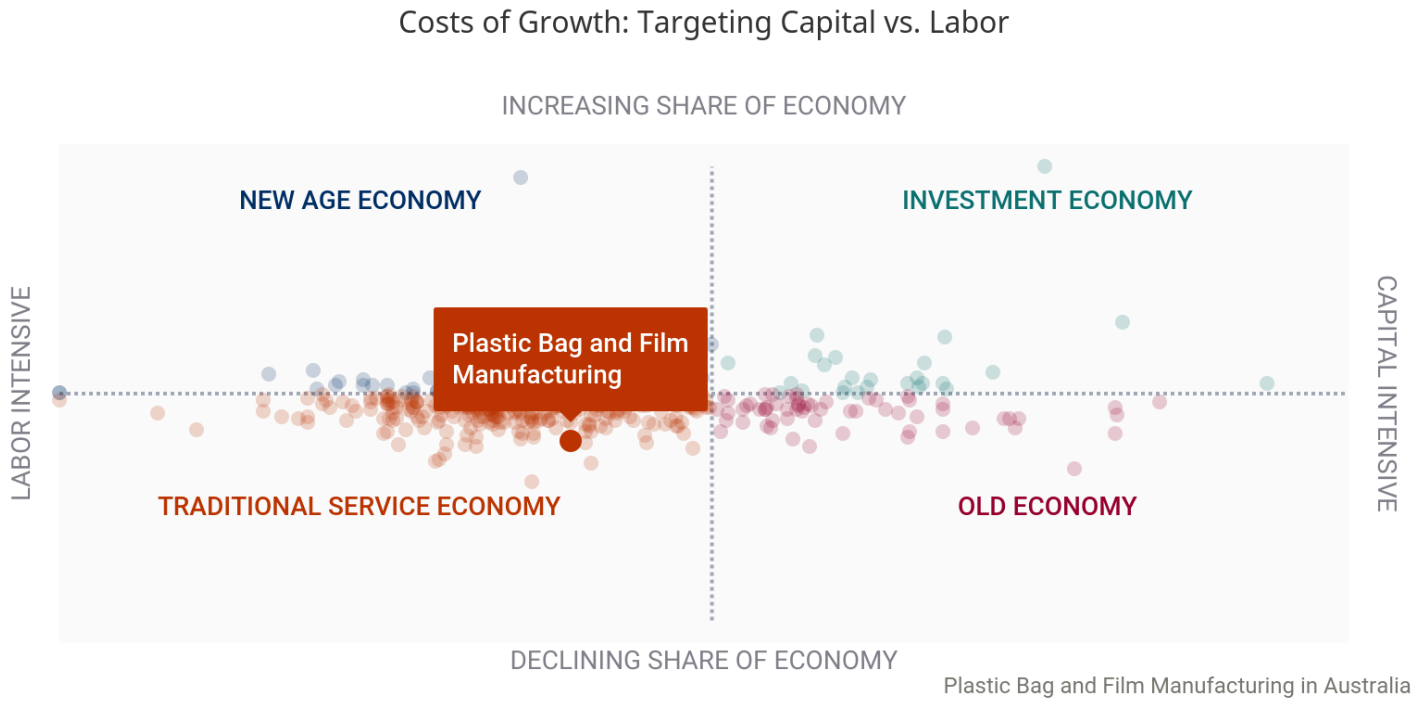
Siupak Plastic Bags is a family-operated plastic bag manufacturer located in Seaford, Victoria. Established during the late 1990s, the company specialises in bakery product packaging and retail shopping bags. Siupak offers a range of products, from bakery packaging bags to customised plastic shopping bags and waste disposal bags. The firm also produces made to order printed show bags.

VICPAC FLEXIBLES AUSTRALIA PTY LTD

Market Share: 1.0%

Vicpac Flexibles Australia Pty Ltd manufactures flexible packaging products, and provides composition and professional design services. Vicpac Flexibles is based in Oakleigh, Melbourne. Vicpac Flexibles is a small-scale manufacturer that is an ISO9001-2015 Certified company that produces specialist products including courier satchels, printed rewind films, finished bags and pouches, and tamper-evident security bags. The firm's customer base includes Air Express, Australia Post, Qantas and Nestle. The company is estimated to generate less than 1.0% of industry revenue.

Operating Conditions

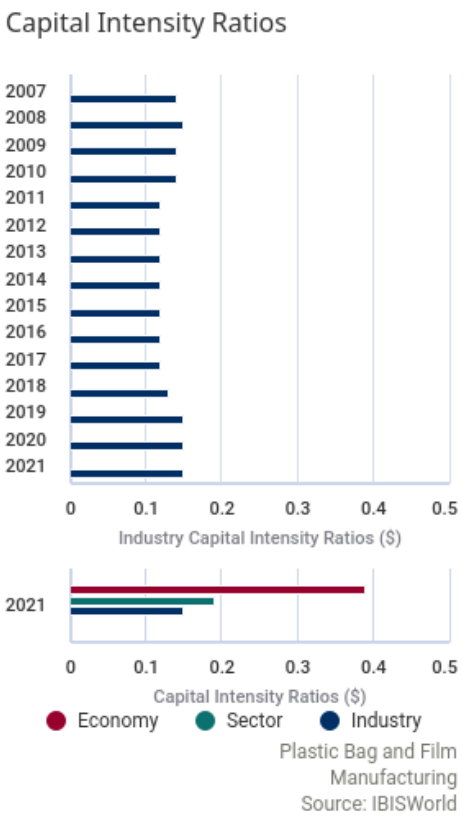


Plastic Bag and Film Manufacturing in Australia
Source: IBISWorld

Capital Intensity

The level of capital intensity is ⊖ Medium

The Plastic Bag and Film Manufacturing industry exhibits medium capital intensity. The capital-to-labour ratio has steadily climbed over the past five years, as the larger firms have invested in new technology and increased automation to improve competitiveness against imports and substitute products. Industry wage costs have declined as a share of revenue over this same period.



In 2020-21, for every dollar spent on wages, an estimated $0.15 is spent on capital. The investment required to manufacture industry products is high, as firms use large-scale resin extrusion machines that can produce large product volumes. Operators invest in more efficient machinery and equipment for larger production volumes and lower per-unit production costs. However, high wage costs have offset some of these capital requirements, prompting moderate capital intensity. Although players use automated processes, staff is still required to monitor and service machinery and ensure that production is safe. Wages are higher for smaller niche operators, as production depends more on manual labour.

Technology And Systems

Potential Disruptive Innovation: Factors Driving Threat of Change

Level	Factor	Disruption	Description
⚠ High	Ease of Entry	Likely	A qualitative measure of barriers to entry. Fewer barriers to entry increases the likelihood that new entrants can disrupt incumbents by putting new technologies to use.
⊖ Moderate	Market Concentration	Potential	A ranked measure of the largest core market for the industry. Concentrated core markets present a low-end market or new market entry point for disruptive technologies to capture market share.
✓ Low	Rate of Innovation	Unlikely	A ranked measure for the number of patents assigned to an industry. A faster rate of new patent additions to the industry increases the likelihood of a disruptive innovation occurring.
✓ Low	Innovation Concentration	Unlikely	A measure for the mix of patent classes assigned to the industry. A greater concentration of patents in one area increases the likelihood of technological disruption of incumbent operators.

Level	Factor	Disruption	Description
✓ Low	Rate of Entry	Unlikely	Annualized growth in the number of enterprises in the industry, ranked against all other industries. A greater intensity of companies entering an industry increases the pool of potential disruptors.

The industry is experiencing a low level of both the rate of new patents and the concentration of patents in the industry. This creates an environment where the threat of new technologies driving disruption is low.

The technological factors supporting the disruptive innovation potential are connected to an industry structure that is accommodative to new entrants. The relative ease of entry into the industry magnifies the threat of disruption regardless of other factors as one-off occurrences are more likely to succeed. However, the current rate of new entrants is low, suggesting that there is a limited number of new companies that are potential innovators within the industry.

Technology disruption has not significantly affected the Plastic Bag and Film Manufacturing industry over the past decade.

However, this is likely to change in the near future, due to growing consumer attention regarding plastics waste. Rising environmental awareness has led to consumers minimising the use of plastic bag and plastic films. As a result, more businesses have chosen to use sustainable packaging, such as paper bags. Currently, it is not feasible to completely recycle postconsumer flexible packaging due to its thin film structure, multi-layered composition and contamination by food waste. This situation is forecast to change with more easily recyclable materials to be introduced over the next five years. For example, biodegradable plastic bag and plastic film would help in disposing and recycling packaging material, in turn reversing the social aversion to single-use plastic packaging.

Another area for technological disruption is the emergence of smart materials and connected packaging. Smart materials are plastics that can adapt to the environment through a variety of factors, including temperature and pH, or light intensity. Connected packaging integrates technology into packaging designs by adding NFC and QR codes, providing an interactive experience for consumers. While the emergence of smart materials and connected packaging may put pressure on industry operators by shifting demand away from traditional industry products, opportunities for industry players to adopt smart packaging will grow as new technologies, including blockchains, intelligent inks and printable circuits and sensors, are further developed.

The level of technology change is ✓ Low

Technological change in the industry is low.

Manufacturers use a range of processes and techniques including coextrusion, monoextrusion, cast coextrusion, blown film extrusion, gravure printing, wax laminating and coating, and multilayer laminating. Extrusion involves forming melted resin, which is then forced through a nozzle or die that produces thin plastic

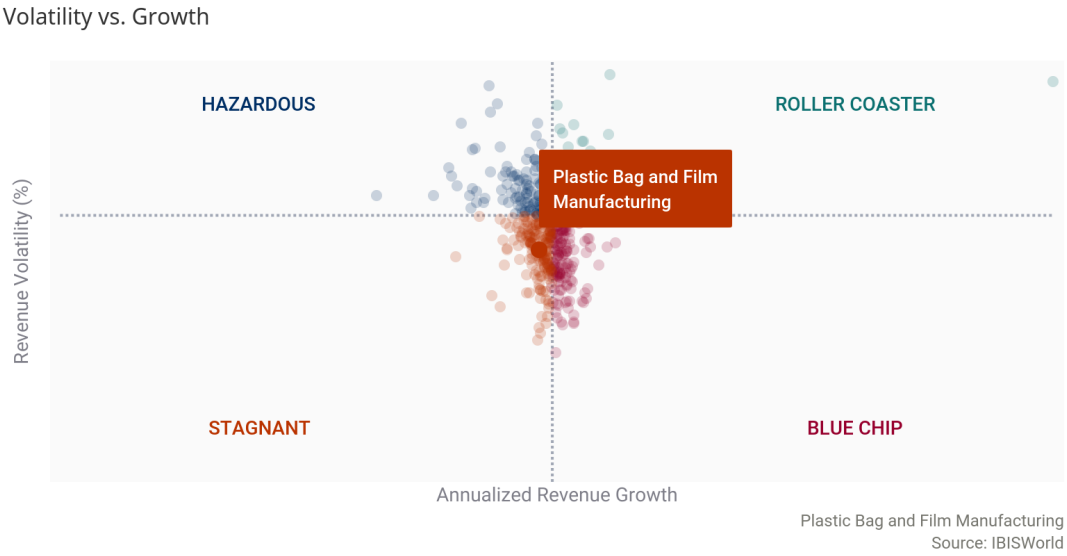
sheets and films. These processes are well established among industry operators, and technological change has therefore remained fairly low over the past five years.

Plastic film manufacturing process involves blending resins with chemicals and other materials to achieve a range of specified product characteristics, such as colour, clarity, tensile strength, toughness, thickness, surface friction, transparency and permeability. The gauges of film products range from less than one millimetre to more than 20 millimetres. The blending of various resins, chemicals and colour additives can also be computer controlled to avoid waste and maximise product consistency. The blended mixture is melted through a combination of applied heat and friction, and is then mixed mechanically.

In food production and manufacturing, control of oxygen levels is a vital component to keeping food unspoiled and can very across products. For example, chicken requires no oxygen as oxidisation of chicken spoils it, while red meat required low oxygen inflow to maintain colour. Oxygen controls are also beneficial in baling. Minor technological advancements have been made in these areas over the past five years, and can be a competitive advantage in a flooded market.

Revenue Volatility

The level of volatility is ⊖ Medium



Note: Revenue growth and decline reflective of 5-year annualized trend. Y-axis is in logarithmic scale. Y-axis crosses at long-run GDP. X-axis crosses at high volatility threshold.

The industry is characterised by a moderate level of revenue volatility.

Industry revenue volatility has reduced over the past five years, following wide annual fluctuations in the Australian dollar exchange rate earlier in the five year period. Large amounts of low-priced imports leave industry players exposed to fluctuations in the Australian dollar. Volatility is also closely aligned with

downstream industries that use plastic bags and films as input materials, such as retail outlets.

In addition, population growth and greater household consumption produces more demand for industry products. Food and beverages trends affect the packaging type and amount for products sold at retail level. Consumer demand can affect demand from agricultural producers, such as greater demand for fresh fruit and vegetables increasing demand for industry products. Industry demand is also tied to construction trends, as growth in building construction typically boosts industry revenue.

Regulation & Policy

The level of regulation is ⊖ Medium and is Steady

> **The Plastic Bag and Film Manufacturing industry is moderately regulated, and this trend has remained steady over the past five years.**

Products that are used to contain and package food and beverages are required to meet state and territory government health regulations. In addition, industry operators must comply with dangerous goods, hazardous materials and environmental regulations, and occupational health and safety requirements in their respective states and territories. Many Australian standards also apply to plastic products that are used in food and beverage packaging to ensure that the goods are safe for consumption.

Most states have banned the use of light-weight single-use LDPE plastic bags. In 2009, South Australia was the first state to ban single-use bags. In November 2017, Victoria followed this trend by banning single-use plastic bags. In March 2020, New South Wales (NSW) announced plans to phase out single-use plastic bag as part of its Plastics Plan and 20 Year Waste Strategy. NSW is the last state in Australia to announce a ban in single-use bags. Following the passage of public feedback and drafting legislation, it could take up to a year for NSW to roll out a ban the single-use plastic bags. However, as most of these types of plastic bags are imported, these bans have a minimal effect on industry manufacturers.

Over the past decade, changes to policies addressing climate change have affected the industry. In July 2014, the Federal Government repealed the carbon tax, reducing regulations for local manufacturers. The carbon tax was introduced in July 2012, requiring large-scale manufacturers to pay $23.00 per tonne on the emission of carbon dioxide or equivalent pollution. The industry's largest player, Amcor Ltd, reported cost increases from the imposition of the carbon tax and would have benefited from its repeal.

In October 2014, the Senate then passed the Federal Government's Direct Action legislation, which included a $2.5 billion Emissions Reduction Fund. The aim of the Direct Action Plan is to reduce the country's carbon emissions to 5.0% below 2000 levels by 2020. This plan is still in place.

Modern Slavery Act

In November 2018, the Federal Government passed the Modern Slavery Act 2018.

The act, which came into force on 1 January 2019, is a new reporting requirement for larger Australian businesses. Companies that generate an annual consolidated revenue of at least $100.0 million will have to report on how they act to mitigate the risks of modern slavery in their operations and supply chains. The first reports will relate to 2018-19, with most reports being released in 2020. The New South Wales Government is also considering its own state-based version of the report, which would make businesses with consolidated annual revenue of at least $50.0 million have to report. The NSW Modern Slavery Act 2018 was due to come into force on 1 July 2019, but was delayed for further consultation on the day it was set to be implemented.

The Plastic Bag and Film Manufacturing industry has a moderate risk of modern slavery occurring in its direct supply chain. With the new act in place, industry players that source raw materials such as plastic resin, natural gas and petroleum, or that import products from overseas manufacturing operations in Asia-Pacific countries must take significant action to make sure that modern slavery is not found in their supply chains. Numerous countries in this region are at a moderate to high risk of modern slavery.

Industry Assistance

The level of industry assistance is ⚠ Low and is Steady

Plastic bag and film manufacturers receive little industry assistance and this trend has remained unchanged over the past five years.

Imported plastic bag and film products are subject to a maximum general tariff of 5.0%. These tariffs indirectly assist industry manufacturers, making selling products in the domestic market more expensive for overseas companies. However, free trade agreements, such as those with Malaysia and China, have removed tariffs on plastic. The 5.0% tariff is being phased out for Chinese imports between 2015 and 2019.

Chemistry Australia, formerly the Plastics and Chemicals Industries Association (PACIA), represents firms in a range of Australian plastic and chemical manufacturing and distributing industries, including plastic bag and film manufacturers. Chemistry Australia represents businesses ranging from small-scale family owned firms to large multinational companies. The association aims to lead sustainability programs, provide support to members and develop relationships with governments.

Some industry participants are also members of the Australian Institute of Packaging (AIP). The AIP was established to enable greater interaction among packaging technologists. The institute provides members with education, training, professional development and networking opportunities.

COVID-19 assistance policies

The Australian Government has introduced a range of assistance packages for SMEs since the start of the COVID-19 pandemic.

For example, SMEs are eligible to receive up to $100,000 through the Boosting Cash Flow for Employers scheme, which is intended to help SMEs retain employees. The Federal Government will also guarantee half of the value of $40 billion in loans to SMEs, reducing risks for lenders. This will enable SMEs to borrow up to $250,000 for a period of three years at a lower interest rate.

To encourage businesses to invest, the Federal Government has increased the instant asset write-off threshold from $30,000 to $150,000. Allowable depreciation tax deductions will also be accelerated until June 2021. To reduce insolvency risk for SMEs, the Federal Government has also temporarily increased the minimum threshold for creditors issuing a statutory demand on a company from $2,000 to $20,000.

To help businesses retain employees, the Federal Government is providing a fortnightly wage of up to $1,500 per worker through the JobKeeper Payment scheme, while businesses are negatively affected by the COVID-19 pandemic. Businesses that receive this subsidy will be under a legal obligation to retain the employee. To be eligible, SMEs must have lost over 30% of their revenue relative to the prior year. The wage subsidy fell to $1,200 per worker ($750 for part-time staff) at the end of September 2020 and then again to $1,000 ($650 for part-time staff) in January 2021. The current scheme is set to end in March 2021.

Key Statistics

Industry Data

Year	Revenue ($m)	IVA ($m)	Estab. (Units)	Enterprises (Units)	Employment (Units)	Exports ($m)	Imports ($m)	Wages ($m)	Domestic Demand ($m)
2012–13	2,151	597	321	280	4,826	58.1	615	415	2,709
2013–14	2,408	643	313	284	5,156	56.1	749	441	3,101
2014–15	2,431	583	316	277	4,935	62.9	831	436	3,199
2015–16	2,512	594	311	277	4,852	49.9	1,015	426	3,477
2016–17	2,365	519	309	273	4,580	56.0	931	402	3,240
2017–18	2,180	446	307	269	4,393	62.3	912	371	3,030
2018–19	2,193	430	304	275	4,240	62.6	929	313	3,060
2019–20	2,172	388	301	267	4,113	63.6	973	299	3,081
2020–21	2,179	393	295	262	3,976	65.5	1,018	296	3,132
2021–22	2,197	390	292	261	3,826	69.3	1,029	284	3,157
2022–23	2,278	374	288	259	3,685	72.1	1,059	266	3,264
2023–24	2,341	377	285	255	3,515	74.8	1,107	258	3,373
2024–25	2,382	379	279	252	3,352	77.8	1,146	254	3,451
2025–26	2,436	383	276	249	3,196	80.6	1,182	253	3,537

Annual Change

Year	Revenue (%)	IVA (%)	Estab. (%)	Enterprises (%)	Employment (%)	Exports (%)	Imports (%)	Wages (%)	Domestic Demand (%)
2012–13	-10.6	-12.2	2	-3	-12	-35.4	3.39	-8.70	-6.97
2013–14	11.9	7.84	-2	1	7	-3.45	21.7	6.26	14.5
2014–15	0.95	-9.32	1	-2	-4	12.1	10.9	-1.18	3.15
2015–16	3.32	1.86	-2	0	-2	-20.7	22.2	-2.28	8.69
2016–17	-5.85	-12.7	-1	-1	-6	12.2	-8.29	-5.55	-6.82
2017–18	-7.81	-14.1	-1	-1	-4	11.3	-2.01	-7.79	-6.47
2018–19	0.57	-3.66	-1	2	-3	0.48	1.89	-15.6	0.98
2019–20	-0.98	-9.67	-1	-3	-3	1.59	4.74	-4.60	0.71
2020–21	0.33	1.36	-2	-2	-3	2.98	4.63	-0.84	1.64
2021–22	0.83	-0.77	-1	-0	-4	5.80	1.04	-4.19	0.80
2022–23	3.66	-4.23	-1	-1	-4	4.04	2.86	-6.21	3.40
2023–24	2.77	0.88	-1	-2	-5	3.74	4.59	-3.16	3.35
2024–25	1.76	0.55	-2	-1	-5	4.01	3.52	-1.52	2.29
2025–26	2.23	1.08	-1	-1	-5	3.59	3.14	-0.32	2.50

Key Ratios

Year	IVA/Revenue (%)	Imports/Demand (%)	Exports/Revenue (%)	Revenue per Employee ($'000)	Wages/Revenue (%)	Employees per estab.	Average Wage
2012–13	27.7	22.7	2.70	446	19.3	15.0	85,993
2013–14	26.7	24.2	2.33	467	18.3	16.5	85,531
2014–15	24.0	26.0	2.59	493	17.9	15.6	88,308
2015–16	23.7	29.2	1.99	518	17.0	15.6	87,778
2016–17	21.9	28.7	2.37	516	17.0	14.8	87,838
2017–18	20.4	30.1	2.86	496	17.0	14.3	84,453
2018–19	19.6	30.4	2.85	517	14.3	13.9	73,844
2019–20	17.9	31.6	2.93	528	13.8	13.7	72,623
2020–21	18.1	32.5	3.01	548	13.6	13.5	74,497
2021–22	17.8	32.6	3.15	574	12.9	13.1	74,177
2022–23	16.4	32.4	3.17	618	11.7	12.8	72,239
2023–24	16.1	32.8	3.20	666	11.0	12.3	73,343
2024–25	15.9	33.2	3.27	711	10.7	12.0	75,746
2025–26	15.7	33.4	3.31	762	10.4	11.6	79,193

Additional Resources

Additional Resources

Australian Bureau of Statistics

http://www.abs.gov.au

Australian Packaging Covenant Organisation

http://www.packagingcovenant.org.au

Chemistry Australia

http://chemistryaustralia.org.au

Australian Institute of Packaging

http://aipack.com.au

Industry Jargon

EXTRUSION

A process used to create objects with fixed cross-sectional profiles, by pushing or drawing input materials through a die.

FLEXIBLES

Packaging containers made of flexible or yielding materials that can easily change shape.

HIGH-DENSITY POLYETHYLENE (HDPE)

A type of thermoplastic made from petroleum that is used to make plastic supermarket bags.

LOW-DENSITY POLYETHYLENE (LDPE)

A type of thermoplastic made from petroleum that is used to make thicker retail bags.

POLYMER

A large, molecular compound used as an input in the production of synthetic fibres such as plastic.

RESIN

A natural or synthetic compound that can take many forms, depending on its chemical composition.

Glossary Terms

BARRIERS TO ENTRY

High barriers to entry mean that new companies struggle to enter an industry, while low barriers mean it is easy for new companies to enter an industry.

CAPITAL INTENSITY

Compares the amount of money spent on capital (plant, machinery and equipment) with that spent on labour. IBISWorld uses the ratio of depreciation to wages as a proxy for capital intensity. High capital intensity is more than $0.333 of capital to $1 of labour; medium is $0.125 to $0.333 of capital to $1 of labour; low is less than $0.125 of capital for every $1 of labour.

CONSTANT PRICES

The dollar figures in the Key Statistics table, including forecasts, are adjusted for inflation using the current year (i.e. year published) as the base year. This removes the impact of changes in the purchasing power of the dollar, leaving only the 'real' growth or decline in industry metrics. The inflation adjustments in IBISWorld's reports are made using the Australian Bureau of Statistics' implicit GDP price deflator.

DOMESTIC DEMAND

Spending on industry goods and services within Australia, regardless of their country of origin. It is derived by adding imports to industry revenue, and then subtracting exports.

EMPLOYMENT

The number of permanent, part-time, temporary and casual employees, working proprietors, partners, managers and executives within the industry.

ENTERPRISE

A division that is separately managed and keeps management accounts. Each enterprise consists of one or more establishments that are under common ownership or control.

ESTABLISHMENT

The smallest type of accounting unit within an enterprise, an establishment is a single physical location where business is conducted or where services or industrial operations are performed. Multiple establishments under common control make up an enterprise.

EXPORTS

Total value of industry goods and services sold by Australian companies to customers abroad.

IMPORTS

Total value of industry goods and services brought in from foreign countries to be sold in Australia.

INDUSTRY CONCENTRATION

An indicator of the dominance of the top four players in an industry. Concentration is considered high if the top players account for more than 70% of industry revenue. Medium is 40% to 70% of industry revenue. Low is less than 40%.

INDUSTRY REVENUE

The total sales of industry goods and services (exclusive of excise and sales tax); subsidies on production; all other operating income from outside the firm (such as commission income, repair and service income, and rent, leasing and hiring income); and capital work done by rental or lease. Receipts from interest royalties, dividends and the sale of fixed tangible assets are excluded.

INDUSTRY VALUE ADDED (IVA)

The market value of goods and services produced by the industry minus the cost of goods and services used in production. IVA is also described as the industry's contribution to GDP, or profit plus wages and depreciation.

INTERNATIONAL TRADE

The level of international trade is determined by ratios of exports to revenue and imports to domestic demand. For exports/revenue: low is less than 5%; medium is 5% to 20%; and high is more than 20%. Imports/domestic demand: low is less than 5%; medium is 5% to 35%; and high is more than 35%.

LIFE CYCLE

All industries go through periods of growth, maturity and decline. IBISWorld determines an industry's life cycle by considering its growth rate (measured by IVA) compared with GDP; the growth rate of the number of establishments; the amount of change the industry's products are undergoing; the rate of technological change; and the level of customer acceptance of industry products and services.

NONEMPLOYING ESTABLISHMENT

Businesses with no paid employment or payroll, also known as nonemployers. These are mostly set up by self-employed individuals.

PROFIT

IBISWorld uses earnings before interest and tax (EBIT) as an indicator of a company’s profitability. It is calculated as revenue minus expenses, excluding interest and tax.

VOLATILITY

The level of volatility is determined by averaging the absolute change in revenue in each of the past five years. Volatility levels: very high is more than ±20%; high volatility is ±10% to ±20%; moderate volatility is ±3% to ±10%; and low volatility is less than ±3%.

WAGES

The gross total wages and salaries of all employees in the industry.

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