

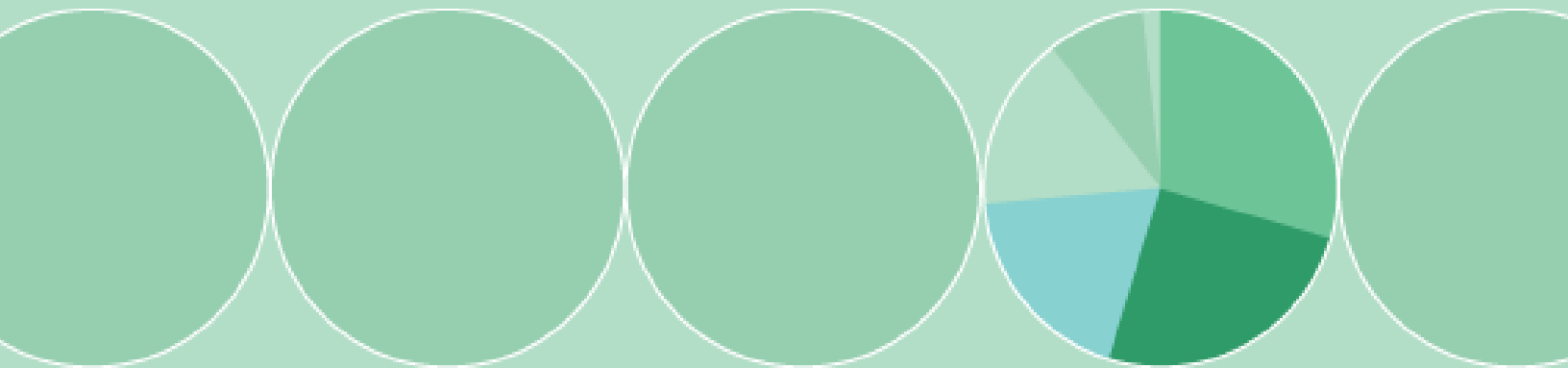


**WHERE KNOWLEDGE IS POWER**

IBISWorld Industry Report

30 May 2011

## Global Fruit and Vegetables Processing and Preserving: **C1112-GL**

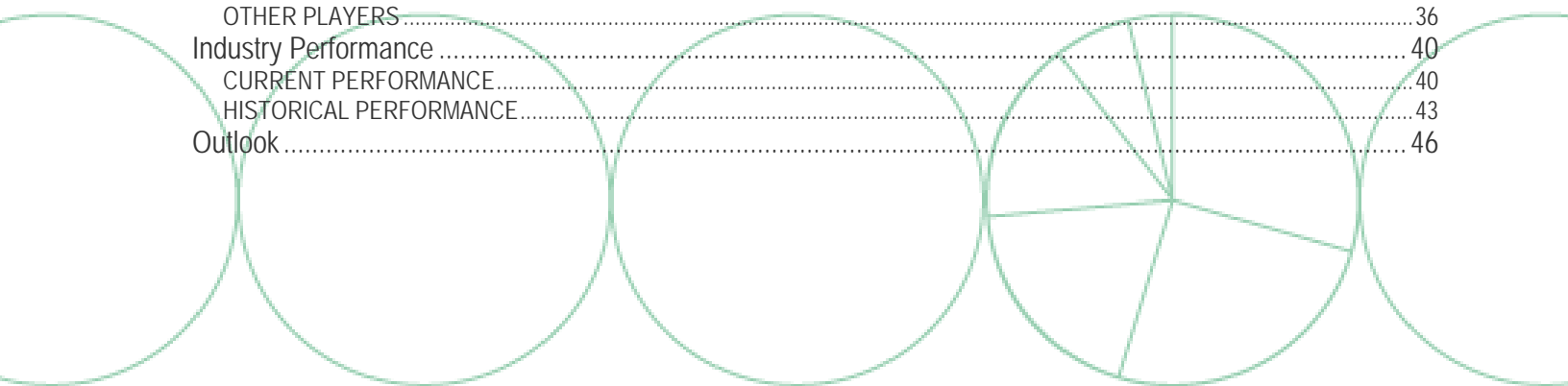


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## Industry Definition

The Global Fruit and Vegetable Processing and Preserving industry processes fresh fruit and vegetables into food products packaged in jars, cans, bottled, preserved, quick-frozen or dried (except sun-dried). It also acquires other ingredients like seasoning, salt, sugar, preservatives, and colorings that are blended with the fresh fruit and vegetables to make a final consumer food product. The industry then sells such products to grocery wholesalers, retailers and export markets.

### ACTIVITIES (PRODUCTS AND SERVICES)

The primary activities of this industry are:

- Baby food, canned or bottled, production (except milk based)
- Canned dry bean production
- Canned juice and soup production
- Canned tomato-based sauce production
- Dehydrated or evaporated fruit production (except sun-dried)
- Dried soup mix and bullion production
- Fruit and vegetable salad production
- Fruit pulp, puree, spread and jam production
- Pickle, chutney or relish production
- Vinegar production (except wine vinegar)


The major products and services in this industry are:

- Canned fruit and vegetables
- Canned specialties
- Fruit and vegetable juices
- Dried and dehydrated food

### SIMILAR INDUSTRIES

Industry:  C1119-GL - Other Global Food Product Manufacturing

Description: Establishments in this industry manufacture food, including mixing purchased fresh, dried and dehydrated ingredients.

Industry:  C1123-GL - Global Wine Manufacturing

Description: Companies in this industry manufacture wine. These manufacturers may purchase fruit juices from fruit and vegetable processors.

Industry:  C1124-GL - Global Soft Drink and Bottled Water Manufacturing

Description: Firms in this industry primarily engaged in one or more of the following: manufacturing soft drinks; manufacturing ice; and purifying and bottling water.

Industry:  F4512-GL - Global Convenience Store Chains

Description: Generally known as supermarkets and grocery stores, enterprises in this industry retail a general line of processed fruit and vegetables.

## DEMAND & SUPPLY INDUSTRIES

- ☐ A0119-GL - Other Global Agriculture
- ☐ C1115-GL - Global Sugar Manufacturing
- ☐ C1119-GL - Other Global Food Product Manufacturing
- ☐ C1512-GL - Global Cardboard Container Manufacturing
- ☐ C1951-GL - Global Plastic Product Manufacturing
- ☐ C2111-GL - Global Glass and Glass Products Manufacturing
- ☐ C2321-GL - Global Alumina and Aluminum Production and Processing
- ☐ F4512-GL - Global Convenience Store Chains
- ☐ F4513-GL - Global Supermarkets
- ☐ G4611-GL - Global Hotels and Resorts
- ☐ G4621-GL - Global Fast Food Restaurants

## Key Statistics

### CONSTANT PRICES

	2007	2008	2009	2010	2011	
Industry Revenue	*156,581.9	*161,956.8	*156,384.1	*152,302.8	*158,063.0	\$Mill
Industry Gross Product	*28,725.1	*29,868.4	*28,015.6	*27,489.9	*28,672.2	\$Mill
Number of Establishments	*8,822	*9,240	*9,360	*9,520	*9,780	Units
Number of Enterprises	*5,500	*5,761	*5,818	*5,893	*6,071	Units
Employment	*462,174	*478,980	*499,006	*513,096	*528,815	Units
Exports	*41,791.2	*44,925.6	*43,541.0	*42,722.6	*44,001.6	\$Mill
Imports	*41,791.2	*44,925.6	*43,541.0	*42,722.6	*44,001.6	\$Mill
Total Wages	*14,152.2	*14,646.3	*13,602.4	*13,214.0	*13,650.0	\$Mill
Total Assets	N/A	N/A	N/A	N/A	N/A	Acres
Domestic Demand	*156,581.9	*161,956.8	*156,384.1	*152,302.8	*158,063.0	\$Mill
Production Volume	*965.0	*978.7	*983.6	*996.9	*1,058.2	Million Metric Tons

### CURRENT PRICES

	2007	2008	2009	2010	2011	
Industry Revenue	*148,480.4	*156,900.2	*152,896.5	*150,400.7	*158,063.0	\$Mill
Industry Gross Product	*27,238.9	*28,935.8	*27,390.8	*27,146.5	*28,672.2	\$Mill
Number of Establishments	*8,822	*9,240	*9,360	*9,520	*9,780	Units
Number of Enterprises	*5,500	*5,761	*5,818	*5,893	*6,071	Units
Employment	*462,174	*478,980	*499,006	*513,096	*528,815	Units
Exports	*39,628.9	*43,522.9	*42,570.0	*42,189.0	*44,001.6	\$Mill
Imports	*39,628.9	*43,522.9	*42,570.0	*42,189.0	*44,001.6	\$Mill
Total Wages	*13,420.0	*14,189.0	*13,299.0	*13,049.0	*13,650.0	\$Mill
Total Assets	N/A	N/A	N/A	N/A	N/A	Acres
Domestic Demand	*148,480.4	*156,900.2	*152,896.5	*150,400.7	*158,063.0	\$Mill
Production Volume	*965.0	*978.7	*983.6	*996.9	*1,058.2	Million Metric Tons

## REAL GROWTH

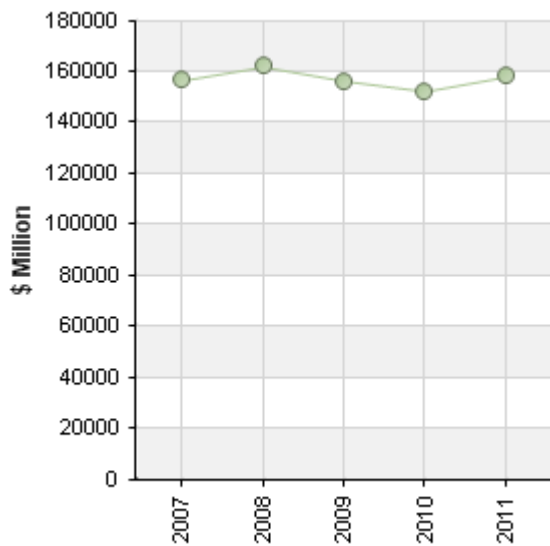
	2007	2008	2009	2010	2011
Industry Revenue	*9.5	*3.4	*-3.4	*-2.6	*3.8 %
Industry Gross Product	*11.9	*4.0	*-6.2	*-1.9	*4.3 %
Number of Establishments	*4.7	*4.7	*1.3	*1.7	*2.7 %
Number of Enterprises	*3.6	*4.7	*1.0	*1.3	*3.0 %
Employment	*7.3	*3.6	*4.2	*2.8	*3.1 %
Exports	*19.8	*7.5	*-3.1	*-1.9	*3.0 %
Imports	*19.8	*7.5	*-3.1	*-1.9	*3.0 %
Total Wages	*6.5	*3.5	*-7.1	*-2.9	*3.3 %
Total Assets	N/A	N/A	N/A	N/A	N/A %
Domestic Demand	NC	*3.4	*-3.4	*-2.6	*3.8 %

## RATIO TABLE

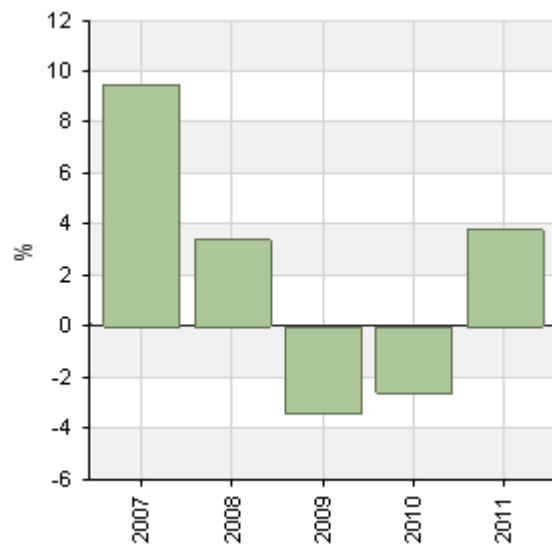
	2007	2008	2009	2010	2011
Imports share of domestic demand	*26.69	*27.74	*27.84	*28.05	*27.84 %
Exports Share of Revenue	*26.69	*27.74	*27.84	*28.05	*27.84 %
Average Revenue per Employee	*0.34	*0.34	*0.31	*0.30	*0.30 \$Mill
Wages and Salaries Share of Revenue	*9.04	*9.04	*8.70	*8.68	*8.64 %

## GRAPHS

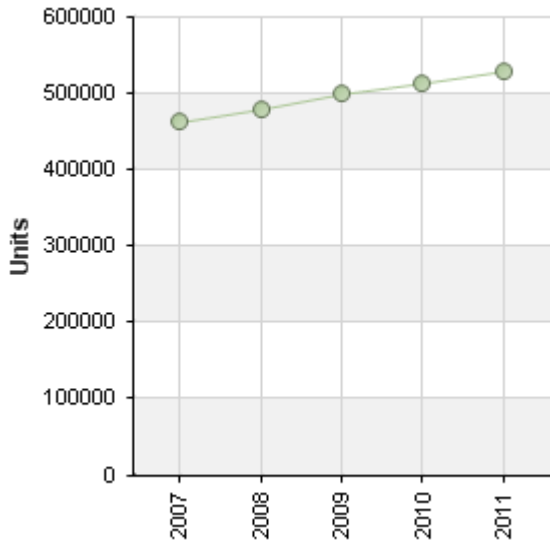
Revenue



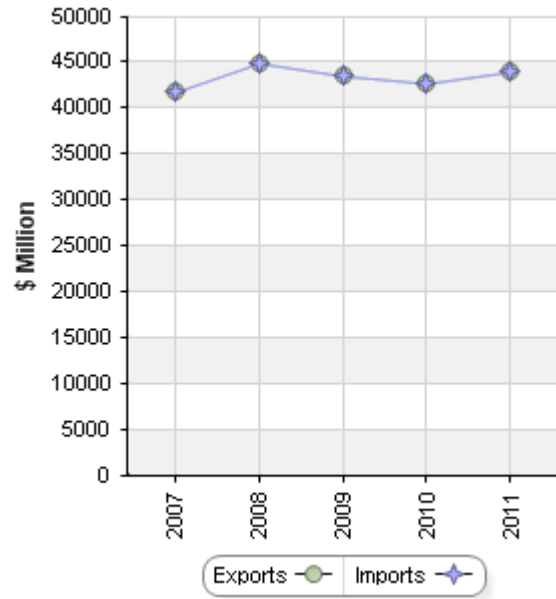
Revenue Growth Rate



Employment



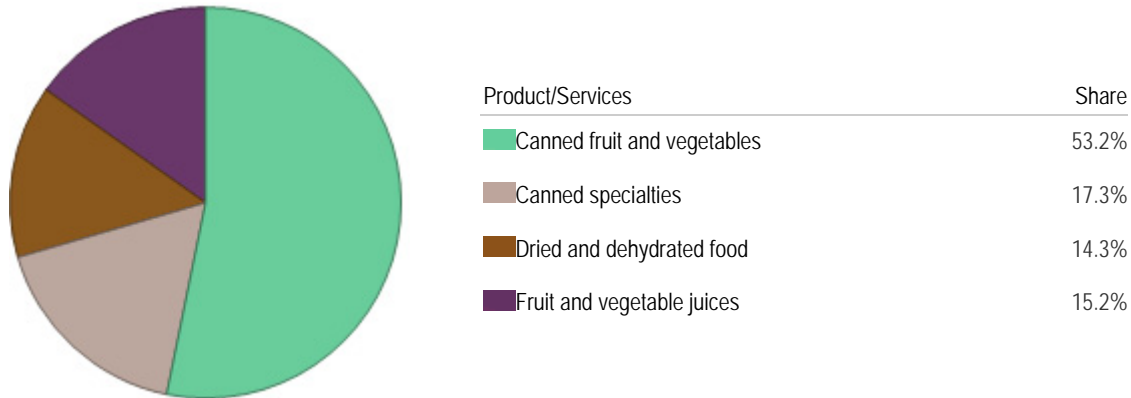
Imports and Exports



Note: Unless specified, an asterisk (\*) associated with a number in a table indicates an IBISWorld estimate and references to dollars are to US dollars.

# Segmentation

## PRODUCTS AND SERVICE SEGMENTATION



### Canned fruit and vegetables

The canned fruit and vegetables segment includes canned, pickled, and brined fruits and vegetables. Examples of products made are canned juices, canned jams and jellies, canned tomato-based sauces (such as catsup, salsa, tomato paste, and chili, spaghetti and barbeque sauces), pickles, relishes and sauerkraut. This product segment performed at a steady rate during the past five years, slightly declining its share of total industry to an estimated 53.2%. The total consumption of canned fruit and vegetables declined slightly over the past five years in North America as consumers sought fresh fruit and vegetables. In contrast, consumption of canned fruit and vegetables increased in areas such as North Asia as the region became more westernized. Overall, this segment's contribution to industry profitability was above average during the five years through 2009 as associated raw materials costs declined overall.

### Canned specialties

Canned specialties make the second largest product segment. Examples of products made are canned baby food, canned dry beans, canned soups (except seafood), canned spaghetti and other canned nationality foods. This product segment is more volatile than the larger fruit and vegetable canning segment because specialized products are more subject to price fluctuations from year to year.

In some places such as Europe and North America, the price of canned specialties increased, indicating that the market for these products is becoming increasingly mature. Therefore, future growth will rely mainly on rising infant populations and demand for more ethnically based products, such as canned nationality foods. Other geographic regions experienced the opposite effect, experiencing strong growth within the industry.

This segment's overall share of industry revenue fell over the past five years, down marginally to an estimated 17.3%. Total sales of canned specialties decreased while sales of dried fruits and vegetables rose in the same period, which led to a fall in the proportion of sales attributable to canned specialties. In addition, canned specialties' share of industry value added fell more quickly than their contribution to industry revenue during this period, down to 18.4%. This indicates rising ingredient costs relative to unit prices received during this time.



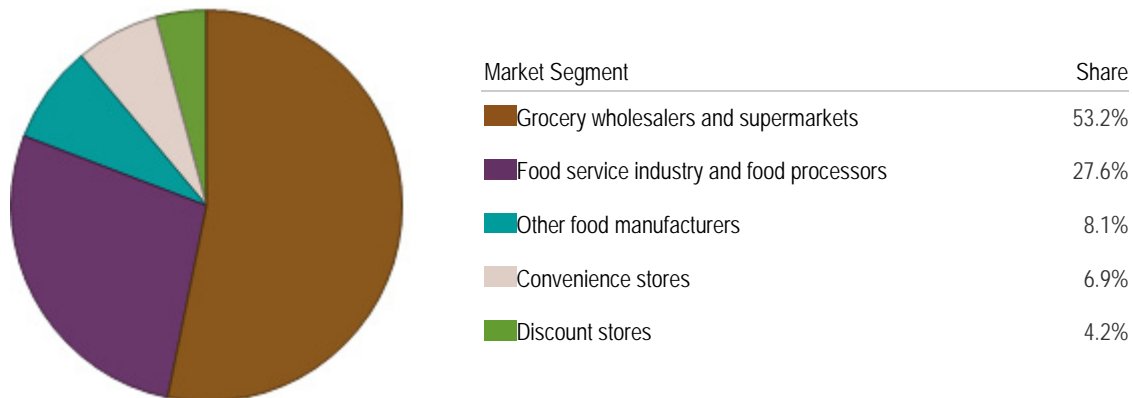
### Dried and dehydrated food

The dried and dehydrated food segment includes dried (including freeze-dried) and dehydrated fruits, vegetables, soup mixes and bouillon. It also includes combining these products with other purchased ingredients, such as rice and dry pasta. Demand for the products within this segment also fluctuated slightly since 2003. Thus, the dried and dehydrated food segment's share of the total industry's revenue increased during some years and decreased in others. This segment is especially vulnerable to the volatility of demand levels and cost competition for the sale of ingredients to soup and other higher value added packaged food manufacturers. The result is that its share of total industry revenue has increased to an estimated 14.3%. Meanwhile, its share of value added rose to 15.1% because of an increase in the supply of dried and dehydrated food, which indicates a higher contribution to industry profitability than some other products made by the industry.

### Fruit and vegetables juices

The fruit and vegetables segment includes canned juices and fruit and vegetable juices, single strength or concentrated. Demand for these products increased over the past five years, as consumers in a majority of countries become more health conscious, consuming larger proportions of non-carbonated drinks. The result is that its share of total industry revenue increased to an estimated 15.2%. Meanwhile, its share of value added rose to 17.8%, largely because of higher levels of demand. This indicates a higher contribution to industry profitability than some other products made by this industry.

## MAJOR MARKET SEGMENTS



Just over half of this industry's revenue is derived from grocery wholesalers, who sell onto supermarkets and convenience stores. This continues to be the largest buyer for this industry as they have expertise in distributing to retail outlets and can do it cost effectively with minimal administration on behalf of the manufacturer. However, in recent years, they have lost a little ground to convenience stores in some countries such as the United States as online ordering systems allowed the purchase of groceries directly from some manufacturers. However, in Asia and Latin America, supermarkets numbers increased dramatically as rising income levels increased consumer demand for processed food products.

### Foodservice industry and Food Processors

A significant part of industry product is sold to the foodservice industry, i.e. the hospitality sector, including restaurants, bars, hotels, motels, casinos and catering companies. Economic conditions and tourism development are key factors determining the level of demand from this sector. It too is volatile because demand for foods eaten outside the home is dependent on general economic prosperity.

### **Other food manufacturers**

Other food manufacturers, including other frozen food, bakery product and pet food producers, buy vegetables and fruit shapes processed within this industry as key ingredients. Demand from this market segment is driven by consumers' tastes with respect to buying new and established baked foods and ownership of pets, which is highly dependent on the general level of prosperity among households as well as lifestyles.

Processed and preserved fruit and vegetable products are also sold to other retail outlets including grocery store chains, mass merchandisers, convenience stores, smaller retail grocery outlets, warehouse club stores and grocery warehouses. Additionally, discount stores represent an important channel in parts of Western Europe, especially Scandinavia. Included in this channel is Aldi, the German retailer, which is expanding globally.

## **INDUSTRY CONCENTRATION**

Industry concentration is low

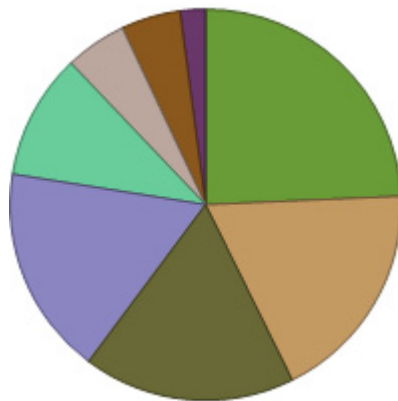
A significant number of producers exist within their respective domestic markets and participate in the global market through international trade. While entry into any particular geographic market may be difficult due to capital requirements, the multitude of markets within the global industry means that market entry is relatively easy, leading to a low level of market concentration.

IBISWorld estimates that the four largest companies in this industry, Heinz, Campbell Soup Company, Kraft Foods, and McCain Foods, account for 19.2% of global industry revenue. These companies each account for a significant proportion of their respective domestic markets, and in some cases account for a significant proportion of market share in foreign markets. For example, both Kraft and McCain's enjoy significant market share through their subsidiaries in Australia. However, on a global basis their overall market share is relatively small.

## GEOGRAPHIC SPREAD

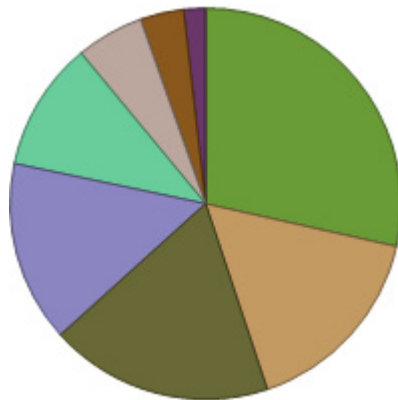
Year: 2008

Production of processed & preserved fruit & vegetables



Region	Percentage
North America	24.3
South East Asia	18.4
Europe	17.5
South America	17.3
North Asia	10.4
Oceania	5.1
India & Central Asia	4.9
Africa & Middle East	2.1

Revenue



Region	Percentage
North America	28.5
South East Asia	16.4
Europe	18.4
South America	15.0
North Asia	10.7
Oceania	5.6
India & Central Asia	3.6
Africa & Middle East	1.8

The Global Fruit and Vegetable Processing and Preserving industry is not particularly dominated by any one geographic segment as many countries produce or specialize in a variety of processed or preserved fruit and vegetables. There has however in the last five years or so been an increase in concentration throughout North Asia and more recently, India and Central Asia where technology has become more available and consumer trends have changed.

Processed fruit and vegetable consumption is affected by health and social trends as well as development factors. For example, frozen vegetable consumption is likely to be low in countries where refrigeration is less available, and a cold supply chain is not widely available. Furthermore, countries where subsistence agriculture is widespread, a smaller proportion of the population will consume processed foods.

Factors that determine the geographic spread of processed fruit and vegetable production include the availability of inputs such as fresh fruit and vegetables and packaging materials, and the extent to which the manufacturing sector is developed. The value of production in different countries also depends on the price level and costs of inputs that particular country. Thus, IBISWorld estimates that the geographic spread production and consumption differ, based on different societal and economic factors across regions.

## North America

North America is the largest region of the Global Fruit and Vegetable Processing and Preserving industry, in both revenue and volume terms: accounting for about 28.5% and 24.3% of revenue and production volume respectively. In the US, around 70% of fresh fruit and vegetables are processed. The major fruit and vegetable processing region is in the Far West, with an estimated 36.2% of industry establishments, followed by the Great Lakes. California is the most dominant state, as processors are close to freshly grown fruits and vegetables grown in the state, while Mexico also provides an abundant supply of fruit and vegetables, with a high proportion that are processed. Because of increasing consumer demand and advances in technology, Canada has continued to increase its production volume, with frozen potato products being the largest product group within the industry.

North America is also home to the headquarters of some of the most profitable processed and preserved fruit and vegetable companies in the world: Coca-Cola (US), Campbell Soup Company (US), H.J. Heinz Company (US), McCain (Canada), Kraft (US), and Simplot (US). The populations of North America are also some of the highest consumers of processed and preserved fruit and vegetables in the world per capita, with Heinz ketchup being an example of this as a result of strong advertising worldwide and having a long well recognized reputation for a number of years.

## South East Asia

South East Asia is the second largest producer of processed and preserved fruit and vegetables, accounting for an estimated 18.4% of production and 16.4% of revenue. Even though it produces more processed and preserved fruit and vegetables than Europe, it generates less revenue than Europe because of price differences. The Philippines, Thailand and Malaysia are the largest producers, utilizing about 70-80% of fresh fruit and vegetables. Common processed vegetables include, chili peppers pickled in vinegar, drinks made from ginger and a significant product manufactured that is important for their market is tofu (bean curd).

## Europe and South America

Europe and South America are the third and fourth largest producers of processed and preserved fruit and vegetables, accounting for 17.5% and 17.3% of production, respectively. Germany is considered the largest producing country in Europe, where its canning industry, which includes a wide range of pickled vegetables such as sauerkraut dominate the market. Production levels have increased in recent years in Hungary, with players such as Bonduelle taking advantage of the fertile land to process a number of canned and frozen vegetables. Brazil is the largest producing country in South America and utilizes 70% of its fresh fruit and vegetables to be processed. The biggest market for Brazil is the fruit and vegetable juice segment. This is followed by Chile, which is one of the largest producers of concentrated juices in the Americas.

## North Asia

North Asia has experienced the most growth over the last five years, with production in China increasing significantly. Strong economic growth has enabled improved technology, meaning a larger proportion of fruit and vegetables are able to be processed, while a majority of Chinese diets are becoming more westernized, meaning consumption of processed fruit

and vegetables has been increasing. Production volumes account for about 10.4%, while revenue accounts for about 10.7%.

### **Oceania, India and Africa**

Production volume in Oceania has remained stabled, accounting for an estimated 5.1%. This segment continues to be a relatively small market with medium levels of trade. Fruit and vegetable processing and preserving occurs in all Australian states with Victoria and New South Wales containing the highest number of operating units.

Although India is the largest producer of both fresh fruit and vegetables, it only processes about 0.5-1% of their raw materials. However, an increase in economic development has enabled production levels to begin to increase in recent years. Therefore, it is estimated that India and Central Asia accounts for about 4.9% of production and 3.6% of revenue.

Africa and the Middle East account for an estimated 2.1% of production, with Israel and South Africa considered as the two biggest producing countries. South Africa produces canned fruit and vegetables, while Israel specializes in the production of frozen and canned vegetables.

## Market Characteristics

### MARKET SIZE

Increased demand for convenient prepared meals, increased health and nutrition awareness, increased significance of branding, and greater competition from private labels largely influenced the industry over the past five years. These factors had varying effects on industry revenue, which grew at an annualized rate of 2.0% over the five years through 2011. This year, total revenue globally is expected to grow 3.8% to reach \$158.1 billion.

The availability of inputs like fresh fruit and vegetables, packaging materials, and the extent of the manufacturing sector's development determined the geographic spread of the industry. The value of production in different countries also depends on the price level and costs of inputs in that particular country.

Health and social trends, and development factors affected processed fruit and vegetable consumption. For example, frozen vegetable consumption is likely to be low in countries where refrigeration is limited and cold supply chains are not widely available. Furthermore, in countries where subsistence agriculture is widespread, a smaller proportion of the population will consume processed foods.

Overall, the industry is highly globalized but relatively low in concentration, with international trade accounting for a growing share of industry revenue, up from 24.4% in 2006 to 27.8% in 2011. The low value-to-weight ratio of the industry's product restricts international trade to some extent. Nonetheless, discrepancies in costs of production do create some incentives to import and export these goods.

Looking ahead, the industry is expected to expand over the next five years with major growth coming from China and India but marginal growth in the United States. Demand for product segments will vary around the world but overall changing consumer diets and rising income especially in developing countries will result in strong overall growth. This will be further reinforced by companies that can capitalize on the lack of vegetable consumption across the United States and Europe. Overall, industry revenue is expected to increase at an annualized rate of 3.7% to reach \$189.8 billion in 2016.

### LINKAGES

#### Demand Linkages

##### C1119-GL - Other Global Food Product Manufacturing

Processed and preserved fruit and vegetable products are used in various other food products.

##### F4512-GL - Global Convenience Store Chains

Demands high-margin products to sell directly to the consumer.

##### F4513-GL - Global Supermarkets

Major retailers with significant purchasing power can purchase products directly from the manufacturer in most cases.

##### G4611-GL - Global Hotels and Resorts

Demands processed and preserved fruit and vegetable products to sell to hotels and resorts guests.

##### G4621-GL - Global Fast Food Restaurants

Demands processed and preserved fruit and vegetable products for sale as part of meals. Major industry players tend to have pre-existing arrangements with the largest fast food outlets.

## Supply Linkages

### A0119-GL - Other Global Agriculture

A variety of raw materials, such as fruit, vegetables and dry peas and beans is a necessary input for this industry.

### C1115-GL - Global Sugar Manufacturing

Sugar is a crucial ingredient for some products such as canned fruit and juice.

### C1512-GL - Global Cardboard Container Manufacturing

Packaging is important for transportation of these goods throughout the distribution channel.

### C1951-GL - Global Plastic Product Manufacturing

Supplies plastic containers that are used to bottle the industry product. The industry frequently changes packaging configurations.

### C2111-GL - Global Glass and Glass Products Manufacturing

Bottles for packaging products such as jams and baby foods are sourced from this industry.

### C2321-GL - Global Alumina and Aluminum Production and Processing

This industry provides manufacturers with aluminum cans for packaging.

## DEMAND DETERMINANTS

Many processed and preserved fruit and vegetable products face a maturing domestic market. This can be seen in places such as Europe, North America and Australia where domestic demand growth is largely a function of rising population, while countries in North Asia and India are facing the opposite effect. An increasing population will generally lead to higher sales and rising demand for processed and preserved fruit and vegetables.

Changes in lifestyles have increased the demand for convenience products, and this has encouraged the consumption of processed product (including vegetable and fruit juices). In particular, consumers are becoming more health conscious but increasingly time poor in places such as North America. As a result, many buy foods that are easy to prepare, yet healthy. Countries such as China have become more westernized and have therefore increased their consumption of processed and preserved fruit and vegetables.

Health considerations also encouraged consumers to switch from processed to fresh fruit and vegetables. In recognition of this, producers are becoming increasingly determined to improve the nutritional value of their goods.

### Changes in real disposable income

A rise in the real disposable income of consumers increases their spending capacity. However, in the case of canned beans for example, which are often regarded as inferior products, purchases tend to fall as household incomes increase. Conversely, the consumption of luxury products such as fruit and vegetable salads will increase as household incomes increase.

The relative price of processed and preserved fruit and vegetables influence the level of demand to a certain extent. Price is also influenced by product quality and changes in raw material costs.

### Quality

The actual or perceived quality of processed fruits and vegetables relative to fresh produce will have an effect on demand. This can be impacted by product recalls, or food scares for particular fresh produce. For example and outbreak of salmonella in tomatoes will result in increased demand for tinned tomatoes. Product recalls for a particular firm or type of product can significantly influence future demand for that product or company.

While the best quality fruit and vegetables are sold fresh in markets, the medium quality produce will be canned or pickled and the poorer quality goods made into fruit or vegetable juice. However, the taste of each of these products relative to alternative brands will largely determine demand. Increases in technology in recent years have enabled the quality of processed and preserved fruit and vegetables to increase.

Fresh fruit and vegetable consumption has increased at the expense of processed products. This reflects, in part, the greater availability and improved quality of fresh products due to better storage and transport facilities. In addition, an expanding range of other dessert products on supermarket shelves has also increased competition for processed fruit. Similarly, the increased variety of fresh vegetables has increased competition with processed vegetables.

## DOMESTIC AND INTERNATIONAL MARKETS

### Domestic and International Markets Trade

Trade in this industry is high

The trade trend is increasing

### Domestic and International Markets Analysis

International trade in processed fruits and vegetables has been increasing over the past five years. This is largely due to the non-perishable nature of processed produce relative to fresh produce. While fresh produce is also traded, it more costly to transport fresh produce and spoilage is more likely. Improvements in refrigerated transportation have facilitated increased international trade in fresh produce, however, IBISWorld expects that trade in fresh produce is limited to countries with a better-developed cold supply chain and transport infrastructure. In 2011, imports and exports are expected to value \$44 billion, representing an annualized increase of 4.7% over the last five years.

Certain processed fruit and vegetables are more likely to be produced in certain countries. For example, canned peaches are most likely to be exported from Greece, China and Chile. Tinned pears on the other hand, are most likely to be exported from South Africa, China, or Spain. Frozen potato products are most intensively exported from the Netherlands and Canada, while canned tomatoes are most likely to have originated from Italy or Spain.

More broadly, imports and exports are divided into four categories: preserved fruit and fruit preparations, fruit and vegetable juices, frozen and preserved vegetables (including dried leguminous vegetables), and preserved vegetable roots and tubers. Data up to 2008 indicate that the leading preserved fruit and fruit preparation exporting countries were China (12.3%), the US (5.8%), Germany (5.6%), Poland (5.4%) and the Netherlands (5.4%). The leading fruit and vegetable juice exporting countries were Brazil (15%), Belgium (9.5%), the Netherlands (9.5%), China (9%) and the US (6.9%). The frozen and preserved vegetables exporting countries were Belgium (17.5%), China (15.1%), the Netherlands (7.7%) and France (6.4%).

Data up to 2008 indicate that the leading preserved fruit and fruit preparation importing countries were the US (18.7%), Germany (16.3%), France (11.6%), the UK (8.8%) and Japan (7.2%), There has been moderate growth in all countries since 2000, with the largest growth coming from Poland, while Japan continues to be the leading destination for dried fruit imports. The leading fruit and vegetable juice importing countries were the US (12.5%), Germany (11.1%), the Netherlands (8.5%), the UK (7.9%), France (7.6%), and Belgium (7.1%). The frozen and preserved vegetables (including



dried leguminous vegetables) importing countries were the France (11.5%), the US (10.9%), Germany (10.8%), Japan (9%) and the United Kingdom (6.3%.) Over the last five years, the strongest growth has emerged from China, largely because of a strong increase in demand for vegetables as consumer diets have been changing.

## BASIS OF COMPETITION

Industry competition is medium  
Industry competition is increasing

Industry competition is reasonably intense between manufacturers since current major players are well established and recognized. This competition is gradually increasing with more aggressive promotional activity taking place in order to attain such sales increases. Additionally, competition for sales to grocers, wholesalers and retailers is most intense since these are the most important link to the mass consumer market.

Given the wide variety of inexpensive generic branded products, price is a chief source of competition among processors. Price is particularly important for processors of generic products and those supplying fruit concentrate to downstream food industries. For premium products, price is less important as it competes on other variables, such as product positioning.

Some of the players in this industry have used their fruit-growing investments in the developing world to minimize raw material costs, thereby maximizing value added. This typically increases profitability with respect to industry rivals who do not undertake such practices.

Processors supplying the prestige market segment (e.g. pickled vegetables sold in delicatessens) rely more heavily on quality than price for competitiveness. These include processors of premium gourmet preservatives. Quality can be a function of processing methods and the quality of fruit inputs used.

Many processors are taking advantage of consumer concerns about health by introducing products with reduced sugar and salt. Similarly, some processors are using the nutritional benefits of their products as a major platform for gaining market share - especially for manufactured fruit snacks consumed by schoolchildren.

Branding and product positioning is a key method used by processors to differentiate their products from their competitors. The industry is placing greater emphasis on promotion and advertising as it places greater focus on consumer values. This coincides with the increasing range of new products entering the marketplace. Fruit juice is a good example of this where branding is one of the main determinants a consumer considers when determining the type of brand to purchase.

Relationships to key purchasers, particularly large retailers are an important factor in the success of a processor. The degree of service and the provision of in-store promotional material can be used to differentiate a firm from its competition.

In recent years, many industry participants have expanded their product range to include new innovative products (for example, Heinz microwavable soup range) along with products that contain natural/organic ingredients in order to attract new consumers.

## External Competition

Competition from outside this industry, especially processing and selling of un-canned fresh fruit and vegetables is a direct source of competition since some consumers (and chefs) prefer to use fresh ingredients for cooking meals. Such competition has increased during the past several years in many countries as the quality of packaged frozen foods has improved markedly. However, the reality is that most companies producing fresh and frozen fruit and vegetables also operate in the canning industry as well.

## LIFE CYCLE

### Life Cycle Stage

This industry is in the mature stage of its life cycle

### Life Cycle Reasons

- This industry faces strong competition from substitute foods, such as fresh fruit and vegetables
- Emphasis of technology on process innovation and minor improvements on quality
- Moderate levels of product innovation, aiming at new consumers and changing consumer trends
- The consumption of processed and preserved fruit and vegetables has increased strongly in some countries, whilst declining marginally in others

### Life Cycle Analysis

The industry is set to move from a mature to declining phase of its life cycle. Industry ownership has not changed; a large proportion of these industry operators are American owned. Industry value added will have grown at an average annual rate of 3.0% over the ten years to 2011, compared to average real GDP growth of 5.5% during the same period. Future growth however, will be far more in line with the respective economies. The products are wholly accepted by consumers, with seemingly less scope to diversify the product range. For example, the industry has introduced new products like flavors and colors for sauces, ketchup and soups along with organic products. However, most groupings are clearly segmented.

The structure of industry ownership has also not changed in the last five years, with some consolidation by existing firms to close less efficient establishments. Processed and preserved fruit and vegetable products in countries such as the US and Australia has stagnated, as a result of an increase in substitute products, while countries in Asia, particularly China, followed by India have experienced strong increases in processed foods. This is because of strong economic growth, urbanization, westernization of their diets and an increase in technology. There are still very strong growth options for existing players, like major export opportunities, especially given the current restructure of the EU agricultural sector and the significant increase in the production of Asian processed food products.

# Industry Conditions

## BARRIERS TO ENTRY

Barriers to entry in this industry are low  
These barriers are steady

Entry into this industry is relatively straightforward since the technology needed for production is readily available and specialist processors can operate on a relatively small scale in the processing of some products. There are currently a hundred or more firms entering and exiting the industry each year. Some of the minor barriers include sunk costs and brand competition.

Sunk costs represent the expenditure required to establish production. They include the construction or purchase of a processing facility, warehouse, plant and equipment. These costs are particularly high in canning operations that are characteristically capital intensive.

Branding and the presence of brand proliferation are widespread in the processing industry. Incumbent firms regularly invest heavily in advertising campaigns. New entrants will also need to invest significant funds into creating brand image and consumer awareness.

Branding is, however, less important for firms wishing to compete in the generic products market and as a supplier of ingredient to downstream manufacturers. This requires low average costs that can typically only be obtained from scale economies. Entry into this segment usually requires significant outlays necessary for large-scale production.

## TAXATION

There are no specific taxes imposed on the production of fruit or vegetables in the United States of America or Australia. However, the Australian industry players are affected by the operation of the GST. Introduced in July 2000, the 10% broad based tax is payable on most goods and services sold or consumed in Australia. Most items produced by the Fruit and Vegetable industry escape GST since the ATO has exempt many food items from the tax. This means that processors do not need to include GST on supplies to customers. However, industry players are still entitled to claim input tax credits for GST paid on purchases.

There are many differences in the way value added taxes are implemented across Europe, however the most common feature includes VAT. Value added taxes are taxes on the consumption of fruit or vegetable processed or preserved products and are paid by the final consumer.

## INDUSTRY ASSISTANCE

The level of Industry Assistance is medium  
The trend of Industry Assistance is increasing

### Key Tariffs

Goods	Low Rate*	High Rate*
Per cent/kilogram - US	0.0	16.0
Cents/kilogram - US	0.0	10.6
Fruit Juice - Australia	0.0	5.0
Processed Fruit and Vegetables - Australia	0.0	5.0

\*Percentage of value unless otherwise specified

Tariffs imposed on processed fruit and vegetable products imported are varied and complex globally. Generally, industry protection is very high, which has the effect of reducing the total level of imports. However imports were still relatively strong because of greater competitiveness from overseas sources and improved domestic demand conditions in the US and parts of Europe. Industry protection also misallocates resources towards this industry, in favor of more productive uses of land, labor and capital.

### Europe

EU tariffs on processed fruits and vegetables vary significantly depending on the country of origin and the produce in question. Below are three examples for processed tomatoes, homogenized mixed vegetables and jams and jellies.

Jams and jellies from the USA, and Brazil attract an ad valorem tariff of 24%, in addition to 4.20 euro per 100 kg of produce. From Mexico and India, the same products attract an ad valorem tariff of 20.4% in addition to 4.20 euro per 100 kg of produce. The same products from Zimbabwe or Jordan attract no tariff.

In the case of homogenized mixed vegetables, EU countries will apply an ad valorem tariff of 17.6% for imports from the USA, Mexico and Brazil, while imports from India will be at a concessional rate of 14.1%. Again, the same product imported from Zimbabwe or Jordan will be free of tariff. Processed tomatoes imported into the EU from the USA, Mexico, Brazil or India will attract an ad valorem tariff of 14.4%, while imports from Jordan and Zimbabwe will be tariff free.

### United States

Again, US tariffs vary greatly but have a general rate applied to most countries (those not covered by free trade agreements). The main free trade agreements of the US are the North American Free Trade Agreement and the Central American Free Trade Agreement. The US also gives preferential treatment to many less developed countries.

Tariffs imposed on processed fruit and vegetable products imported into the United States are varied and complex. Preserved fruits and vegetables attract tariffs ranging from 1.5 cents per kilogram to 14 cents per kilogram, depending on the type of produce imported. Frozen fruit and vegetables can carry tariffs between 3.2% of the product's value per kilogram to 14.9 cents per kilogram. Jams, jellies and other similar pastes have tariffs ranging between 1.3 cents per kilogram and 14 cents per kilogram. Juices made from fruits or vegetables also have imposed import tariffs, ranging between 0.14 cents per kilogram and 7.9 cents per kilogram.

The American Frozen Food Institute (AFFI) offers various assistance programs to producers of frozen food products in the US. The AFFI is the national trade association representing the frozen food industry supply chain, including manufacturers, distributors, suppliers and packagers. Its assistance measures include research and development, technical advice, public and trade relations.

The NFRA represents the interests across every segment of the Frozen and Refrigerated Foods industry including manufacturers, distributors, retailers, wholesalers, suppliers and sales agents. Headquartered in Harrisburg, PA, the NFRA works in close association with the AFFI and offers assistance to producers relating to marketing, promotion, research and development, and communicating category strengths and new product innovations.

## Asia

Japan's tariffs on canned peaches are 8.0%, while frozen peaches are 7.0%. Korea's tariffs on grapefruit juice are 30%, while tariffs on sweet corn are set at 15%. The Philippines has continued to reduce its tariffs, with canned peaches and canned fruit mixtures now at 35%, and sweet corn at 45%.

The Frozen Food Manufacturing Industry in China is protected by import tariffs and export rebates. Generally, the import tariff of frozen foods varies from 10.5% to 80%, and the export rebate is 5%. In June 2009, the Ministry of Finance and State Administration of Taxation increased the export rebate of cooked and stuffed foods to 15%.

In recent years, the Chinese government has increased assistance and protection to the agricultural sector, increasing agricultural incomes, adjusting the agriculture structure, promoting the rural economy, and developing industrialized operations for agriculture. Additionally, the Chinese government selects leading agricultural enterprises to assist their development and promote the development of agricultural product processing industries. The Chinese government supplies direct subsidies to frozen food manufacturers and sales companies to encourage the local industrialized operations of agriculture and exports of frozen foods.

In 2009, the Chinese government issued a restructuring and revitalization plan on light industry. The planning period is from 2009 to 2011. According to the plan, local governments are encouraged to actively adopt measures, including offering discounts for circulating fund loans, to assist enterprises store agricultural products, including frozen foods, which is helpful to ease product sales pressures. In addition, there will be increasing financial support to frozen food manufacturers.

Import tariff rates for canned and bottled foods vary with different products. Tariff rebates for most-favored-nations (MFNs) range from 5% to 19%, while tariff rebates for others countries are between 80% and 90%. The export rebate rate for canned food is 13%.

Import tariffs on juice products protect domestic juice manufacturers from competing imports to a certain extent. Generally, the import duty rate for fruit juices is 90% and for vegetable juices is 80%, which are very high, while the import VAT rate is 17%. For most favored nations, the import duty rates are much lower, the lowest of which is 7.5%. Conversely, the current export rebate rate for juice is 15%, an increase from 13% prior to June 1, 2009, to stimulate repressed exports.

## Australia

Historically, the Fruit and Vegetable Processing industry has been protected from foreign competition by tariffs and Australia's geographical position. Today, the industry receives limited protection. The level of protection has been reduced considerably over the past decade as respective Australian governments have pursued free trade policies. General tariffs

on citrus concentrate, for example, fell from 15% in the late 1980s to 5.0% by 1996. From time to time, the Federal Government also imposed countervailing duties on imported products from Eastern Europe. However, these incidents have been rare. Today, many of the industry's natural protection have also disappeared as advances in transportation have reduced costs for importers.

Fruit and vegetable processes currently have access to the range of assistance measures available to industry generally and to food processors in particular. Industry players are also eligible to participate in government programs offered to the broader Food Manufacturing Sector. The industry benefits from efforts by the Australian Government to improve access to export markets through trade agreements. To this end, the government participates in various bodies such as the World Trade Organization and is a signatory to various bi-lateral trade agreements. Australia is currently a signatory to free-trade agreements with the US and New Zealand. In addition to public funding, fruit and vegetable processors also benefit from the activities of various industry bodies and associations.

The federal government also runs assistance programs to boost productivity and innovation within Australia's food sector. For example in 2009 the federal government established a four year Regional Food Producers Innovation and Productivity Program which provides finding grants between AU\$50,000 and AU\$2 million to food and seafood businesses for projects including the design and implementation of new technologies, production processes and techniques; the adoption of overseas food production or processing technologies and the innovative redesign of existing production lines to boost productivity and efficiency.

There are also key industry associations such as Horticultural Australia Limited that indirectly assist processors through their research efforts focusing on fruit and vegetable production. The association's primary function is to manage government-funded research and development projects aimed at lifting the competitiveness of local fresh produce. Meanwhile, broader-based associations such as the Australian Industry Group can provide support, networking opportunities, and lobbying efforts on behalf of paid-members.

At a state level, industry participants can receive funding under assistance programs targeting the general Manufacturing sector. Commonly, state governments operate a range of export programs aimed at encouraging manufacturers to develop markets abroad. For example, the Victorian Government currently operates export programs such as the Targeted Trade and Investment Mission, the Grow Your Business program, Export Networks and Global Export Engagement Program. These programs offer funding and support for export initiatives in form of grants, research and intelligence, marketing, assistance in the development of relationships as well as general business advice. Government funding has also played a critical role in helping upstream fruit growers and processors gain better access to export markets.

## REGULATION AND DEREGULATION

The level of Regulation is medium  
The trend of Regulation is increasing

Fruit and Vegetable processors must adhere to various food and health regulations. These are aimed at maintaining high levels of food hygiene and safeguarding the community against health scares associated with poor food safety. In recent years, much attention has been given to food labeling as one means of protecting consumers. Details of some labeling requirements are described.

### Europe

The EU is constantly reviewing regulations for this industry in order to keep ahead with the changing marketplace and international trade demand. One of the key bodies for food safety is The European Food Safety Authority (EFSA) which was established in 2002 following the outbreak of several food crises during the previous decade. The EFSA works to uphold consumer protection as well as the integrity of the EU food supply through objective scientific advice and risk assessment for EU legislation, EU authorities and member states. Topics covered by the ESFA include food and feed safety, nutrition, animal welfare and health, plant protection and health.

The EU food safety framework incorporates safe food as well as welfare and health for plants and animals. In conjunction with the "farm to fork" program, the program tracks the movement of food from production to manufacturing and across EU borders for both EU production and imports. Overall, EU food regulations on food safety standards are complex and focused on quality control, process verification, labeling and traceability. These regulations have influenced other countries to adopt stringent regulations of the same level.

After two years of discussion, regulations for processed fruit and vegetables were adopted in 1996. Fruits and vegetables produced for consumers have to meet the quality parameters according to requirements given in European Council Regulation, which surrounds the principle of product quality and safety.

In 2005, The European Commission adopted a proposal for new regulations for organic production and labeling, which will make the use of the EU logo or wording obligatory for all organic food products sold in the EU. The aim of this is to make it clearer for consumers to identify organic products. These regulations will come into force in 2009.

In 2007, the EU reached an agreement to bring the fruit and vegetable sector into closer line with the rest of the reformed Common Agriculture Policy. The reforms will improve competitiveness and market orientation, while reducing income fluctuations and promote consumption.

EU regulations also cover food contamination and environmental safety in the production of food. There are regulations to track the use of forbidden chemical substances in farming or processing, genetically modified organisms and food packaging. The EU also tries to contain environmental pollution for water or air along with exposure to radioactivity.

## **Australia**

The Australia New Zealand Joint Food Standards Code places labeling requirements on industry players. Under the Code, manufacturers are required to provide information on the percentage share of ingredients used as well as the nutritional value of the food product. These requirements have been widely criticized for placing significant costs on the industry. In the last few years, consumer groups have been intensifying their calls for more detailed nutritional information on a wider range of food labels. Opponents of this move claim that it is not the role of food regulators to educate consumers about food nutrition. They argue that issues of nutrition and diet are better addressed by health departments through public information initiatives.

Since December 2001, all food manufacturers (including fruit and vegetable processors) have also been required to take reasonable steps to establish whether their raw ingredients contain any genetically modified food. Final food products must be labeled accordingly to provide consumers with adequate information. This move by State Health Ministers was aimed at addressing perceived health and safety issues in the community.

Similarly, processors are required by legislation to correctly declare the country from which produce has been sourced. In the past, processors have experienced difficulty in complying with these Country of Origin Labeling requirements. In November 1998, the Australian Competition and Consumer Commission found that Golden Circle Limited had misled consumers by incorrectly labeling a product as Australian grown.

Although not industry-specific, regulations relating to employment and the environment are important considerations for fruit and vegetable processors. Like fellow manufacturers, fruit and vegetable processors must comply with various laws governing wages and employee rights. Equally important is compliance with Occupational Health and Safety regulations to minimize workplace injuries and avoid stiff penalties and fines. Fruit and vegetable processors also need to be aware of environmental regulations set out by the Federal and State governments. Generally, these regulations relate to odors, water usage, wastewater generation and the treatment of waste arising from processing.

Finally, failure to comply with any regulations, laws and other rules governing fruit and vegetable processing can subject industry players to civil remedies, administrative penalties, injunctive relief and possible recalls of products. It can also result in considerable negative publicity that can damage the reputation and public image of producers. Give this; non-compliance can potentially have a material effect on the earnings and competitive position of firms operating in this industry. It is worth noting that industry sources believe that laws and regulations relating to food production are becoming more stringent, resulting in increasing compliance costs for Australian fruit and vegetable processors.

## United States

EPA and state governments enforce environmental issues pertaining to the fruit and vegetable processing industry, whereas USDA enforces health issues, which has a greater effect than environmental regulations on the way business is done in the industry. The US Food and Drug Administration (FDA) preside over food safety regulations that are likely to impact on fruit and vegetable processors. In late 2010, the US Congress boosted the regulatory powers of the FDA to increase safety inspections, instigate food recalls and monitor the records of food producers and processors to minimize the risk of food-related diseases. The Food Safety Modernization Act aims to minimize the high percentage of the population prone to food borne illnesses each year and subjects imported food to the same level of scrutiny as locally produced food.

The Nutrition Labeling and Education Act, which amended the FD&C, requires most foods to bear nutrition labeling and requires labels that bear nutrient content claims and certain health messages to comply with specific requirements. It is the responsibility of the manufacturers to remain current with the legal requirements for food labeling. The FDA has also instituted the Food Ingredient Safety Program that governs and evaluates claims about ingredients, nutritional content and other such claims made by food producers.

The United States and its consumers are demanding more stringent rules relating to food labeling, advertising, packaging and other nutritional claims made by manufacturers. Failure to abide by them can seriously impair a producer's credibility, result in expensive product recalls, and be liable to civil or criminal penalties. Pending enforcement of new FDA regulations has created new opportunities for food manufacturers to differentiate themselves from the competition. Those who can respond proactively rather than reactively to safety requirements can eclipse the competition in terms of efficiency, quality and brand integrity.

Various federal environmental regulations and statutes, such as the Federal Water Pollution Control Act or the Clean Water Act (CWA), Clean Air Act (CAA), Pollution Prevention Act (PPA), and Resource Conservation and Recovery Act (RCRA), have changed the way processing facilities handle their products and dispose of their waste. The CWA's increasingly stringent regulations for discharging wastewater are becoming important regulatory drivers for the fruit and vegetable processing industry. RCRA regulations typically apply only to solid waste disposal issues.

Most federal and state regulations and statutes are typically met with resistance from private industry. Conversely, the federal pollution prevention principles and the subsequent development of clean technologies have been viewed as ways to provide cost savings and sometimes even improve product quality, while simultaneously improving public relations for



companies and industries that aggressively pursue their implementation. Pollution prevention has proved to be an effective means of reducing compliance and treatment costs for fruit and vegetable processing manufacturers.

Pollution prevention and clean technologies are meant to focus on a multimedia (i.e., air, water, and land) approach to reducing waste. Solid waste and wastewater discharges tend to dominate activity for implementing pollution prevention advances. Unless located in a remote area, most food processing facilities pre treat and discharge wastewater directly to a publicly owned treatment works. When a facility discharges to the environment, they are required to have a National Pollutant Discharge Elimination System (NPDES) permit as mandated in the CWA.

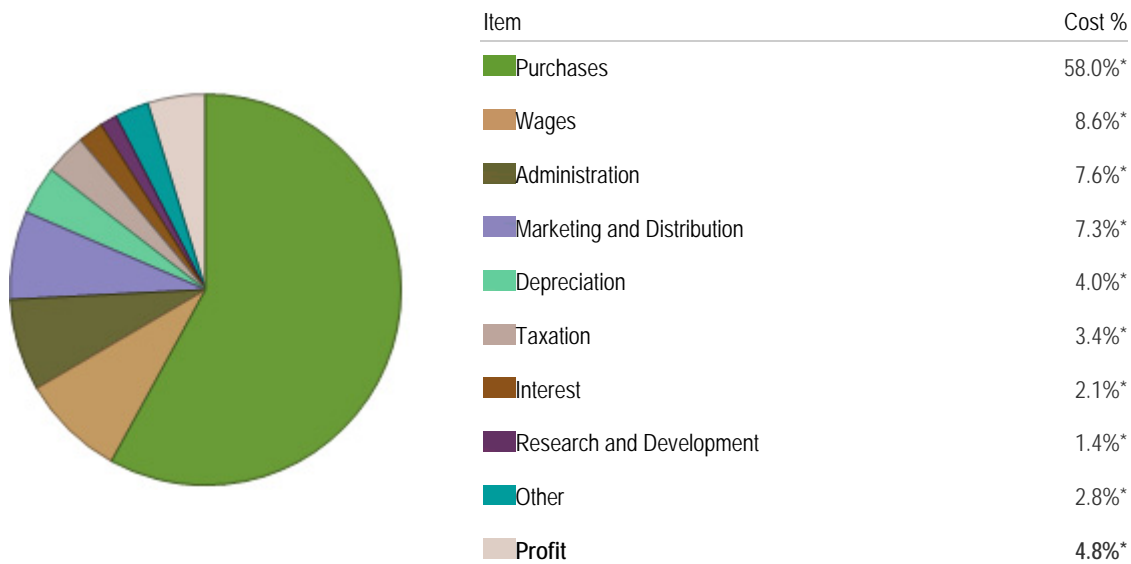
The EPA is looking for several ways to promote voluntary pollution prevention. The PPA lacks the regulatory powers needed to force companies to implement pollution prevention practices into their production processes. Agencies are exploring ways to write more flexible permits to allow companies to make process changes without having to resubmit a lengthy permit modification. Environmental agencies are encouraging pollution prevention by doing such things as reducing the cost of a permit or extending the compliance schedules for companies that are proactive in pollution prevention practices.

With respect to companies acquiring raw materials (i.e. fruit and vegetables) from overseas, the US government has little or no control over the activities of American firms. While initiatives such as the Rainforest Alliance's Better Banana Project are in place, most producers in this industry have ignored such measures to become more environmentally and socially responsible. Hence, some have eliminated workers' rights overseas and have left developing countries with irreversible environmental damage.

Through the US Department of Agriculture's Agriculture Marketing Service, the majority of canned vegetables are graded according to quality. The USDA also provides an inspection service for processed vegetables, which certifies the quality based on their US grade standards. Processed vegetables are inspected during preparation, processing and packaging. This method in return helps determine the value of the product.

## COST STRUCTURE

Year: 2011



The major cost is the purchase of raw material inputs including food inputs, such as fruits, vegetables, dry peas and beans, sugar, preservatives, emulsifiers, and packaging materials, including aluminum cans, glass jars and flexible plastic, are also significant. Purchases accounted for an estimated 58.0% of revenue. As these raw materials are grown throughout most of the world, it is difficult to determine whether purchases have increased or decreased over the last five years. It appears there have been number of small price fluctuations since 2005 because of adverse weather conditions reducing or increasing the demand and supply. Overall, food prices in the developed world have been increasing over the last five years because of the anticipated national carbon emissions trading scheme and the growing markets in China and India.

Wages account for around 8.6% of industry revenue, which is about average for the food processing industry, representing an acceptable level of production efficiency. Wages are estimated to have changed little as a proportion of revenue over the current period, reflecting little change in technologies or processing systems. Distribution and marketing expenses have been increasing. Distribution costs have been rising as a result of higher fuel prices, marketing costs have grown in line with branding and advertising activities. Depreciation is reasonably significant since this industry has become very capital intensive over the last decade. Thus, depreciation is estimated to have increased from an estimated 3.6% to 4.0% of industry revenue in this time.

The industry is relatively profitable with moderate value added to its products, and it is estimated that profit returns as a share of sales to producers have increased marginally to 4.8% over the five years to 2011 due to higher productivity and reduced purchasing costs for some raw materials.

The cost structure of this industry enables substantial profits to be made by most operators, with the major constraint being the cost of purchasing packaging and ingredients. This is unavoidable since reasonably good quality fruit and vegetables are needed for canning and for making other products like baby food. Hence, the only way of avoiding such

costs is to invest in the growing of such raw materials, which ties up significant levels of capital in a lower value added activity.

## CAPITAL AND LABOR INTENSITY

The level of Capital Intensity is high

- Substantially higher investment in new plant and equipment by major players has occurred in recent years
- A mixed response in labor productivity over the last five years
- A conscious effort by producers to increase their value added share of revenue by minimizing input costs

The capital intensity of this industry is increasing. While many major players are spending increasing amounts on labor-intensive functions such as management and marketing, increased capital intensity in developing countries countered this trend. Today, high-speed production lines have dramatically increased throughput, allowing fruit and vegetable processing to raise production without requiring corresponding increases in employment. Recent years have seen industry participants invest considerable resources into new technologies that have served not only to increase the level of capital invested in the industry, but also to reduce labor requirements. North Asia for example has been allowed to invest significantly in simple to advanced technology because of strong economic growth.

The industry currently requires approximately \$2.15 worth of labor for every dollar of capital. Thus, fruit and vegetable processing is classified already as highly capital intensive. This ratio also reflects the relatively large production units of the major industry participants. Within the industry, labor intensity varies among different segments. Canning and bottling tend to employ large quantities of capital equipment.

The number of processed product options has also increased dramatically over the last five years. Options range from ready to go salads to sliced apple pieces to vegetable juices of every combination under the sun. This does considerably influence the investment requirements. Once a company has established a location in proximity to both their supply and demand partners, market power can either be increased through overall expansion in operations, or by increasing the product range. With private labels limiting contracts, innovative expansion in product range is certainly a strong growth option. Though, the investment requirements of which will also considerably increase, as facilities used for one product type are often created to maximize efficiency for that one product, and nothing else.

## TECHNOLOGY AND SYSTEMS

The level of Technology Change is low

Fruit and vegetables can be processed in many different ways depending on the type of raw material and the end product. One of the largest influences this industry has stems from advances and innovations more specific to packaging. A principle example is microwave-proof plastic. Processed output frequently comes in the form of canning or bottling accompanied by heat treatment, refrigeration or freezing, fermentation, drying, pickling and chemical preservation. In most cases the aim is to lengthen the shelf life of the product, but there are often secondary objectives such as to make the product more convenient to use, to improve the packaging and presentation, improve the eating quality or to produce an entirely new product such as juices, purees, jams, or wine.

One industry player, Kraft Foods Inc. is now using the electronic supply chain network of EFS Network, Inc. The EFS electronic order management system eliminates costs from the foodservice supply chain and enhances the trading relationships between foodservice distributors and suppliers. The solution is highly configurable to address the diversity of technology capabilities among the companies in the industry. Participation in EFS reduces the costs associated with ordering goods and managing supply chain transactions by replacing manual, error-prone processes with more efficient and accurate electronic processing.

### **Fruit processing**

The technology used by the fruit processing industry is generally simple. The basic nature of fruit canning and juicing has changed little over the years. The main innovations in fruit juice production to date have been in the development of products that do not require refrigeration, and in packaging.

However, new technology was introduced in the mid 1990's with the development in the juicing industry of counter-current extraction (CCE). This process increases yields by up to 60% over conventional processing. In addition, the treatment reduces acidity and bitterness, thus producing a superior tasting product. A method of concentrating orange juice so that, on arrival at its destination, it is reconstituted as fresh juice by adding water has also come about.

Packaging methods have been important sources of efficiency gains. For example, the raw pack method is used by placing raw prepared fruit into jars and covering it with hot syrup, juice or water. Meanwhile, the hot pack method heats fruit in syrup, water, extracted juice or steam before placing it in jars.

The EU introduced a technology initiative called E-Fruitrace in 2004, which came into effect in 2005. This is aimed at the fruit sector and designed to overcome the problem of traceability where there exists incompatibility of different platforms used in different countries.

### **Vegetable processing**

Almost all vegetable processing is highly automated, and because new plants are more fully automated, they are also more capital intensive. Processes such as peeling, washing and steaming or freezing were automated long ago.

Some new processing techniques, such as retort cooking, were introduced into vegetable processing. However, the major innovations in technology have been associated with sorting and grading vegetables for processing and in packaging, handling and storage of processed vegetables.

## **INDUSTRY VOLATILITY**

Industry revenue volatility is medium

Changes in the price and supply of fresh fruits and vegetables are the primary sources of volatility in this industry. Crop failures can lead to decreased production but increased demand for processed fruits and vegetables. Because there is a lag between production and sales, demand for processed fruits and vegetables can increase with a positive effect on revenue, while production declines, with a negative effect on revenue to be felt in the future. Overall however, these effects are generally restricted to one geographic region and will not produce whole industry revenue volatility. Specific geographic regions can benefit occasionally from one of food safety issues affecting either fresh or processed produce. When concerns are raised regarding the possible contamination of fresh produce, consumers will switch to processed foods.

## GLOBALIZATION

The level of Globalization is high

The trend of Globalization is increasing

Industry globalization has risen over the last decade, as international trade in both finished manufactured products and inputs has increased. The share of industry revenue attributable to international trade has increased from 24.4% in 2006 to 27.8% in 2011. This has occurred as producers have taken advantage of price differentials between countries, basing production activities in low-cost regions and reselling them in higher value markets. The extent to which producers engage in such practices is, however, constrained by transportation costs.

All of the major players in this industry operate across a number of geographical regions. Campbell Soup employs over 18,000 people in numerous operations around the globe, including the United States, Canada, Europe, Latin America, Asia and Australia. Kraft Foods Inc has operations in 68 countries and sells its products in more than 145 countries. Heinz has production facilities worldwide, including Spain, Portugal and New Zealand, the Netherlands, Indonesia, the Philippines, Singapore, Costa Rica and others.

## Key Factors

### KEY SENSITIVITIES

The key sensitivities affecting the performance of the Global Fruit and Vegetables Processing and Preserving industry include:

#### **Competition from Substitutes - Fresh Fruit and Vegetable Wholesaling**

Consumers may go through phases of preferring fresh fruit to the canned alternative, but processed fruits are more convenient for some.

#### **Domestic Goods Prices - Agricultural - Horticulture - Fruit**

The price of raw materials supplied has some impact on value added and profitability, but most industry participants buy cheap fresh fruit and vegetables from developing countries.

#### **Domestic Goods Prices - Vegetables**

The price of raw materials supplied domestically has some impact on value added and profitability, but most industry participants buy cheap fresh fruit and vegetables from developing countries.

#### **Downstream Demand – Other Grocery and Related Product Wholesalers**

This industry is a key source of demand for processors' products, and so manufacturers are sensitive to its level of activity.

#### **Nutrition - Vegetable Consumption**

Nutritional information made available to consumers may either assist or hinder industry growth, depending on its content. For example, medical research might show that some processed vegetables are just as healthy as their fresh counterparts.

#### **Nutrition – Fruit Consumption**

Nutritional information made available to consumers may either assist or hinder industry growth, depending on its content. For example, medical research might show that some processed fruits are just as healthy as their fresh counterparts.

#### **Population Growth - World**

Population growth affects the fruit and vegetable processing industry. Strong growth will increase the retail demand for processed fruit and vegetables, impacting upon the demand at the manufacturing level.

### KEY SUCCESS FACTORS

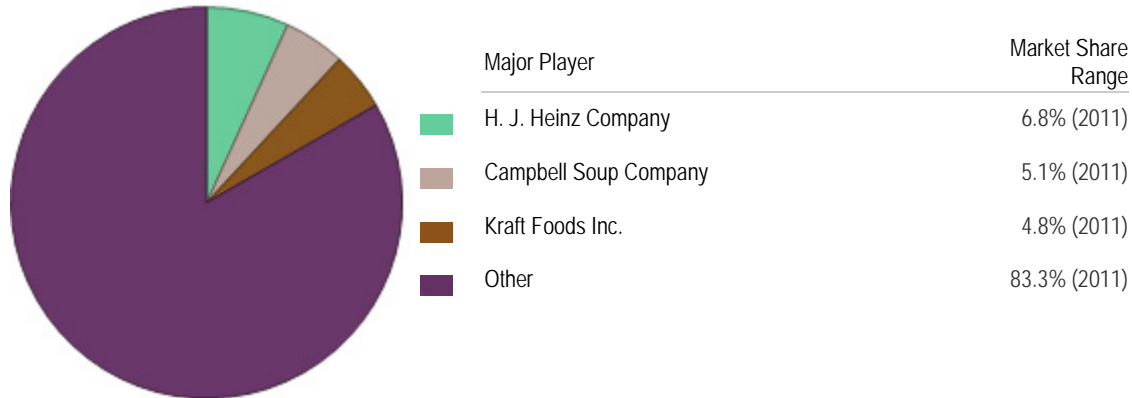
The key success factors in the Global Fruit and Vegetables Processing and Preserving industry are:

- Marketing of differentiated products  
A diversified range of products enables high capacity utilization, rather than seasonal operation only. It also assists with brand recognition.
- Ability to quickly adopt new technology  
Adoption of new technology will raise productivity and improve product quality.
- Upstream vertical integration (ownership links)  
Linkages to suppliers, either via ownership or through contracts, will ensure raw materials are available at an inexpensive rate.
- Access to high quality inputs  
This holds some importance for processors since firms compete strongly with respect to product taste.
- Attractive product presentation  
This is an important way of generating brand recognition, and hence, maximizing sales.

## Key Competitors

### MAJOR PLAYERS

#### Market Share



### PLAYER PERFORMANCE

#### H. J. Heinz Company

Market Share: 6.8%

Dating back to 1869, H. J. Heinz Company today is an enterprise involving more than 45,800 people in over 200 major locations worldwide. One of the world's largest food producers, Heinz markets ketchup, condiments, sauces, soups, pasta meals and infant foods to the grocery and food service channels. The company's most well known product is ketchup and it dominates the US ketchup market.

Heinz's brand names within the Global Fruit and Vegetable Processing and Preserving industry include Heinz (ketchup, organic ketchup, pickles, relishes, sauces); Chef Francisco (frozen soups); Plasmon (baby food, Europe); Wyler's (bouillon and soups); Ore-Ida (frozen potatoes and potato products); HP (sauces); Amoy (Asian sauces); Classico (pasta sauce); and Orlando (tomato products, Europe).

Company restructuring plans were implemented in the late 1990s to focus on core categories such as ketchup, condiments and sauces, frozen meals and snacks, tuna and seafood, quick-serve meals and soups, pet products and infant feeding/nutritional.

Heinz sold some of its underperforming businesses to Del Monte for \$1.8 billion in December 2002. The deal included Heinz' North American pet food and pet snacks, US tuna, US private label soup and infant feeding businesses – brands that went to Del Monte are Kibbles 'n Bits, 9-Lives, Starkist and Pup-Peroni. These businesses generated approximately \$1.8 billion in annual revenue.

In 2004, the company acquired Unifine Richardson, a Canadian foodservice sauce and salad-dressing maker, and sold its frozen-food brands Ethnic Gourmet and Rosetto to Hain. In 2007, Heinz Australia acquired Cadbury Schweppes' jams, toppings and jellies business, which is currently a popular and fast-growing segment.

This industry accounts for the ketchup and sauces segment, along with the infant foods segment. Revenue also partially accounts for the meals and snacks segment.



## Annual performance

Heinz reported record sales in 2009-10 with revenue rising 3.4% to reach \$10.5 billion. Strong growth from emerging economies across Asia and effective marketing and product innovation for Heinz's big-name products drove the positive results. The company invested heavily in marketing its products in core markets with the launch of campaigns in the United Kingdom and the United States. However, it was the exceptional growth in emerging economies that underpinned Heinz's success by accounting for 30% of growth for total revenue in 2009-10. Emerging countries such as China, Russia, India, Indonesia and Latin America are the fastest growing market segment for Heinz products. Their contribution to sales revenue is expected to grow over the next three years.

In 2008-09, the company managed to continue its year-on-year running growth, though subdued. Heinz, along with Kraft and other major food processors all committed to reducing the salt content of their major product lines, and may influence the results of 2009-10. Heinz will reduce the salt content of their popular ketchup by 15%, its first recipe change in 40 years.

Revenue increased by a substantial 11.9% during 2007-08. Revenue growth net of acquisitions was 6.9%, the highest rate in 15 years. The company reported that growth accelerated in emerging markets, accounting for 24% of the company's total revenue growth. The top 15 brands grew by 13.4% during the year. The company attributed the growth to focused innovation and marketing support for its brands. Growth in operating income was attributed to strong sales growth, productivity improvements and favorable foreign exchange rates, but offset to some extent by higher commodity prices.

Revenue increased by 4.1% to \$9 billion in 2006-07, driven by strong growth in the North American Consumer Products, Asian, Latin American and Australia businesses. Strong growth was seen in Classico sauces, up by 12% and Heinz global ketchup business increasing by 9.0%. Pricing in Europe increased by 1.7% as the Italian infant food segment increased its value-added innovation and reduced promotions. Latin America also experienced strong growth in baby foods. Operating income increased by 21.7% to \$785.8 million due to increased pricing and volume.

For 2005-06, sales decreased by 3.0% to \$8.6 billion. Although volumes increased by 3.8% because of strong growth in the North American, Australian, Indonesian and Italian business, the European frozen food business declined. The strongest growth occurred in Heinz ketchup, Classico pasta sauces and Ore-Ida potatoes. Operating income declined by 14.2% to \$645.6 million. This was due to increased commodity costs and declining sales.

For 2004-05, sales increased by 5.9% to \$8.9 billion as volume increased by 1.9%. This reflected strong growth in Ore-Ida frozen potatoes, which was the result of newly launched products Extra Crispy, and microwaveable Easy Fries lines. Segment operating income decreased by 6.4%, totaling \$752.7 million, as gross profits decreased, due to increased commodity costs and lower pricing. Heinz Ketchup continued to dominate the market, with a 60% retail market share. Meanwhile, consumption increased by 10% in Ore-Ida potatoes, and Classico sauces increased by 6.0%.

### Heinz - financial performance

Year*	Million Dollars Revenue	% change Growth	Million Dollars Net Income	% change Growth
2004-05	8912.3	5.9	752.7	-6.4
2005-06	8643.4	-3.0	645.6	-14.2
2006-07	9001.6	4.1	785.8	21.7
2007-08	10070.8	11.9	844.9	7.5

2008-09	10148.1	0.8	923.1	9.3
2009-10	10495.0	3.4	882.3	-4.4

Source: Annual Report  
Note: \*Year end April

## Campbell Soup Company

Market Share: 5.1%

Formed in Camden, New Jersey, in 1869, Campbell Soup Company (originally called the Joseph A. Campbell Preserve Company) first produced canned tomatoes, vegetables, jellies, soups, condiments and minced meats. Today, the company employs 19,000 people worldwide and is a global manufacturer and marketer of soup, sauces, beverages, biscuits, confectionery and prepared food products. The company owns a portfolio of more than 20 businesses each with more than \$100 million in sales.

Campbell Soup brand names within the Global Fruit and Vegetable Processing and Preserving industry include Campbell's (soups); Prego (pasta sauces); Pace (Mexican sauces); Stockpot (foodservice soups); V8 and V8 Splash (vegetable and fruit juices); Erasco (soups, Germany); Heisse Tasse (soups, Germany); Lesieur (sauces, France); Royco (soups, Belgium and France). The Campbell Soup Company comprises the following business units: US soup, sauces and beverages; international soup and sauces; baking and snacking; and other.

### Annual performance

In 2010, the Campbell Soup Company recorded marginal growth of 1.2% with sales revenue reaching \$7.7 billion. The company attributed the year's stagnant growth to an overall decline in soup sales in the United States, which sales growth for Heinz healthy beverages and baked snacks offset to some extent. On a positive note, the company recorded substantial growth in operating profit of 13.8% thanks to greater productivity and a decrease in per unit costs.

Like most major food processing companies, Campbell's had to discount product prices from the second half of 2008 and right through 2009, as consumers were forced into tighter spending habits. Consequently, total revenue fell in 2009 by 5.2%. In 2008, the company recorded strong increases in its international soup, sauces and beverages segment, and its baking and snacking segment. Company revenue increased by 8.3% from the previous year, but operating profit fell by 11.7%. Significant events for the company during the year included the sale of Godiva Chocolatier for \$850 million, and certain Australian snack food brands (proceeds of this sale were nominal). The company also acquired the US-based Wolfgang Puck soup business from its competitor, Country Gourmet Foods. Acquisitions and sales resulted in increased restructuring charges.

In 2007, revenue increased by 7.1% to \$7.4 billion, with volume increasing by 3.0% and prices and sales allowances increasing by 2.0%. In the United States, sales increased for V8 vegetable juice, V8 V-Fusion and V8 Splash juice drinks, while Prego pasta sauces increased by double digits because of strong advertising. Sales of soup and sauces increased in Europe due to favorable currency and gains in Germany and France, while soup sales increased strongly in Canada thanks to strong demand. Operating profit increased by 13.3% to \$1.2 billion, driven by higher selling prices and partially offset by higher advertising costs.

In 2006, sales increased 3.6% to \$6.9 billion, despite its international soup and sauces segment increasing by 2.0% and the US soup, sauces and beverages segment increasing by 7.0%. Campbell's continued to expand its soup varieties, adding Campbell's Select Gold Label soups and Campbell's classic varieties, partially offset by declines in Campbell's Chunky soups and the discontinuation of Campbell's Kitchen Classics soups. In the United States, there was also significant growth in V8 vegetable juice and the introduction of V8 V-Fusion, while Mexican sauces, Prego and Pace,

delivered moderate sales growth. Operating profit increased by 1.4% to \$1.1 billion, driven by higher selling prices and productivity improvements.

In 2005, sales increased by 6.2% to \$6.7 billion, with the US soup, sauces and beverages segment sales increasing by 2.0%, while the international soup and sauces segment increased by 3.0%. This was because of successful marketing and merchandising, as advertising increased along with higher prices. In Europe, sales increased because of strong sales of liquid and dehydrated soups in France and Belgium, while sales in Canada increased significantly because of volume gains and favorable currency. In the United States, the introduction of Campbell's Chucky Chili in 2005 also added to sales growth. V8 vegetable juice sales also increased because of higher prices and improved volume. Operating profit increased to \$1.1 billion due to productivity improvements and higher sales volume and prices. This was partially offset by increased marketing costs.

#### Campbell Soup Company - financial performance

Year	Million Dollars Revenue	% change Growth	Million Dollars EBIT	% change Growth
2005	6652	6.2	1082	9.3
2006	6894	3.6	1097	1.4
2007	7385	7.1	1243	13.3
2008	7998	8.3	1098	-11.7
2009	7586	-5.2	1185	7.9
2010	7676	1.2	1348	13.8

Source: Annual Report

#### Kraft Foods Inc.

Market Share: 4.8%

Kraft Foods Inc. is the top selling food manufacturer worldwide. Its business spans five core sectors, which include snacks, beverages, cheese, grocery and convenience meals. The company was spun off from Philip Morris (now Altria, Inc.) during 2001 but the tobacco company retains a majority share of Kraft Foods Inc. Kraft Foods North America, was created from a 1995 merger of Kraft and General Foods. Philip Morris then combined its Kraft operating companies under the holding company Kraft Foods. Kraft Foods' major brands within the fruit and vegetable processing industry include Kraft and Bull's-Eye barbecue sauces, Kraft, Grey Poupon and Sauceworks condiments as well as A.1. Steak Sauce and Claussen pickles and sauerkraut.

The company employs 103,000 workers and its headquarters is located in Northfield, IL. It conducts its business through its subsidiaries: Kraft Foods North America, Inc. (KFNA) and Kraft Foods International, Inc. Brand names falling within the Global Fruit and Vegetable Processing and Preserving industry include: Fresh (fruit beverage); Verao (fruit beverage); Frisco (fruit beverage); Tang (fruit beverage); Miracoli (prepared dinners and sauces); Kraft Ketchup and Sauces. The company reports on the following segments: beverages, snacks, cheese and dairy, convenient meals, and grocery.

#### Annual performance

For 2010 Kraft reported a 27% increase in overall revenue thanks to a substantial boost to net revenue from the company's recent acquisition of Cadbury. On the other hand, growth was restricted by unfavorable currency movements and the negative impact of divestitures. Input costs for raw materials rose during the year, however, this was offset by a combination of higher pricing, favorable product mix and increased operating income from the Cadbury acquisition.

Kraft underwent several structural changes in the past couple of years by way of buying into other food producers. The most significant was the purchase of Cadbury in 2009, costing the company \$18.4 billion. To commit to the purchase, they had to sell off the company's frozen pizza line. In 2009, revenue declined because of heavy discounting to maintain market share of the cash-strapped consumers. However, this is a minor blip to the company's overall performance given such strong growth in 2008 thanks to the acquisition of *LU*Biscuit brand and higher pricing to offset rising input costs.

In 2007, the company sold its Fruit20 water and Veryfine juice brands to Sunny Delight Beverages Co. Although revenue increased for the year, operating income declined in 2007. The decline in operating income attributed to higher manufacturing costs, driven by higher commodity costs, and a greater marketing spend. Revenue growth attributed to favorable currency fluctuations, an improved product mix and higher pricing. The company continued to reorganize its operations as part of its overall growth strategy. This included changes to incentive systems, the senior management team and organizational structure. In November 2007, the company acquired the global biscuit business of Danone (however, the results of this business are not reflected in financial reporting or analysis for 2007).

Revenue increased by 0.7% to \$34.4 billion in 2006 because of higher volumes and improved product mix across all segments. Strength within this segment was found in powdered beverages such as Crystal Light and ready-to-drink beverages such as Capri Sun. Net revenue increased by 6.0% to \$34.1 billion in 2005, driven by higher pricing and lower promotional spending. Refreshment beverages growth benefited from the Veryfine beverages acquisition and strength in Crystal Light powdered beverages, partially offset by a decline in full-sugar powdered beverages. New products Crystal Light Sunrise Ruby Red Grapefruit and Crystal Light On-The-Go performed well. Growth in refreshment beverages was because of strong performance in Capri Sun ready-to-drink beverages and increased volume in Fruit20 flavored water.

#### Kraft Foods - financial performance

Year	Million Dollars Revenue	% change Growth	Million Dollars Net Income	% change Growth
2004	32168	N/C	4612	N/C
2005	34113	6.0	4749	3.0
2006	34356	0.7	4521	-4.8
2007	36134	5.2	3966	-12.3
2008	42201	16.8	3817	-3.8
2009	38754	-8.2	5183	35.8
2010	49207	27.0	5666	9.3

Source: Annual Report

## OTHER PLAYERS

A large majority of worldwide food and beverage companies such as Coca-Cola and Campbell Soup make some products that are included in the segments of this industry, while thousands of small companies specialize in one particular product or a variety. There are estimated to be around 6,071 firms currently operating within the Global Fruit and Vegetable Processing and Preserving industry, implying that the industry is highly competitive. Therefore, many firms control a relatively low percentage of the global market. The most significant of these include:

### Nestle

**Estimated market share: 2.9%**

Nestle SA is a Swiss-based multinational company and is the world's largest food producer. The company manufactures a range of chocolate, confectionery, beverage, dairy and pet food products that are sold in over 61 countries across all major continents. Nestle organizes its worldwide operations into the following geographic segments or zones: Europe; Americas; and Asia, Oceania and Africa.

Its six divisions include beverage; milk products, nutrition and ice-cream; prepared dishes and cooking aids; chocolate, confectionery and biscuits; pharmaceutical products; and pet care. Nestle products that are related to the industry fall in the prepared dishes, beverages and nutrition segment.

Over the past few years, the company made several strategic disposals and acquisitions in an attempt to cement its position within the frozen food market. In 2002, Nestle USA purchased frozen food brand Chef America for an estimated \$2.6 billion. Chef America included household brand names such as Hot Pockets, Lean Pockets, Pizza Minis and Toaster Melts. Furthermore, reflective of the changing needs of marketplace, Nestle announced the removal of harmful trans fats from a majority of its snack and frozen foods, including across Stouffer's and Lean Cuisine product lines. In 2006, the company also acquired Jenny Craig and Uncle Toby's food brands.

In January 2010, Nestle secured a major acquisition in the Frozen Foods Manufacturing industry with its takeover of Kraft's North American frozen pizza business for \$3.7 billion. Kraft, which held a 10.0% market share in the industry prior to this move, exited the frozen foods business in order to pursue its \$19.0 billion purchase of Cadbury. With this purchase, Nestle nearly doubled its market share in this industry. The popular frozen pizza brands Tombstone, Tony's and California Pizza Kitchen will add to Nestle's lineup.

## McCain Foods Pty Ltd

### Estimated market share: 2.6%

McCain Foods Limited began production with one small frozen French fry plant in New Brunswick, Canada in 1957. Today, the company is the largest producer of french fries in the world. The Company operates in Canada, United Kingdom, United States, Netherlands, Belgium, France, Poland, Australia, New Zealand, Argentina, Mexico and South Africa. McCain also exports to more than 100 countries. While frozen potato products are the major product made by the company, McCain also makes green vegetables, desserts, pizzas, juices and beverages, oven meals and entrees.

In 1997, the company bought the frozen fry and appetizer food service operations of Ore-Ida. McCain Foods USA, based in Chicago, supplies its products for the food service and retail grocery industries – including McDonald's outside the United States. Its domestic operations employ approximately 5,500 people at its headquarters and eight plants.

Over the past decade McCain's global food operations have continued to expand in the United States, Canada, Taiwan, China, Mexico, South America and the company also entered the South African market. McCain Foods acquired the production facilities and food service business of Anchor Food Products Inc. in September 2001 while H.J. Heinz Company purchased Anchor's branded products sold to retail outlets, including supermarkets and club stores. Anchor Foods has sales of about \$500 million per annum and produces specialty cheese appetizers, onion rings, stuffed jalapeno peppers, vegetable appetizers, and rolled and specialty appetizers. In 2003, McCain acquired Belleisle Foods, a top frozen Chinese food manufacturer and some of the assets and businesses of specialty food producer Summersweet Fine Foods from Sepp's Gourmet Foods.

In 2006, the company acquired Jon-Lin Frozen Foods, whose brands include Chef Sensations and Grabitizers. In 2008, the company opened its newest potato processing plant in Florenceville, Canada, valued at \$65 million. As a private company, limited financial information is available for McCain.

## **J.R. Simplot Company**

**Estimated market share: 2.0%**

Simplot is a major food manufacturer with its food product range including fruit and vegetables under the Roastworks and Simplot Classic Labels, along with frozen potatoes, where it produces the largest proportion of frozen potatoes in the world. Today, the principle activities of Simplot include the processing, manufacture and marketing of a range of frozen, canned and baked foods. The company continues to be the major french fry supplier to McDonald's, Burger King, KFC and Wendy's. Simplot also harvests and processes a wide range of vegetables including potatoes, corn, beans, peas, carrots, broccoli, cauliflower, onions and tomatoes.

The company has operations in the United States, Canada, China, Europe, Korea, Mexico, Central America and Australia. Of particular relevance to this industry are the potato and vegetable processing operations in the United States, the manufacturing and selling of frozen, canned and baked products in Australia, potato processing operations in Canada and China. J.R. Simplot sells food service products in Europe such as appetizers, frozen tropical fruit, avocado products and tortillas. In Korea, the company specialized in the introduction of western products to the national foodservice industry and in Central America the company sells potato products, frozen vegetables, avocado products plus other frozen garnishes and appetizers.

## **Del Monte Foods Company**

**Estimated market share: 1.9%**

Del Monte produces and distributes 96% of its processed fruit, vegetable and tomato products in the United States. The company specializes in canned soup, canned fruit, sauces, tomatoes and vegetables. The Del Monte brand was introduced in 1892 and today the company's products are sold through national grocery chains, independent grocery stores, warehouse club stores, mass merchandisers, drug stores and convenience stores. The company's products are sold under the Del Monte, Contadina, S&W and Sunfresh brands. The company also sells its products to the US military, export markets, the foodservice industry and food processors.

Del Monte has production facilities in California, the Midwest, Washington, Texas, and in seven distribution centers. The company also has operations in Venezuela and owns Del Monte brand marketing rights in South America, where it has faced strong opposition and legal action with respect to labor rights and environmental destruction.

Heinz sold some of its underperforming businesses for \$1.8 billion to Del Monte in December 2002. The deal included Heinz's North American pet food and pet snacks, US tuna, US private label soup and infant feeding businesses – brands that were acquired by Del Monte included Kibbles 'n Bits, 9-Lives, Starkist and Pup-Peroni. These businesses generate approximately \$1.8 billion in annual revenue.

In 2004, Del Monte expanded its baby food product line, introducing the Nature's Goodness line. Following this, it acquired a Mexican processed tropical and citrus fruit producer and distributor, Industries Citricolas de Montemorelos, S.A. de C.V. By 2006, the company sold its private label soup and baby food business (Nature's Goodness) for \$275 million to Treehouse Foods. In 2007, the company launched a new product called Fruit Chillers, a shelf-stable sorbet line.

## **Bonduelle S.A.**

**Estimated market share: 1.8%**

Bonduelle is one of Europe's largest processed vegetable businesses. The company, founded in 1901 by three family branches in France, produces canned and frozen vegetables, along with ready-made salads. The company sells its products to the retail food, foodservice, and food manufacturing industries.

In 1960 and onward, three European subsidiaries were established: Germany in 1969, Italy in 1972 and the United Kingdom in 1973. By 1973, the company was generating over half of its revenue from exports. Since then, the company continued to grow through its acquisitions. In 1980, it acquired the leading Belgian vegetable canner, Marie-Thumas, followed by Cassegrain, before expanding its products to Eastern Europe.

By 2001, Bonduelle acquired the Frudesa brand of Unilever Foods Spain, which included frozen vegetables. In 2003, it acquired Vita, a German company that manufactures non-seasoned green salads. Other acquisitions included Ortobelli and Cielo e Campo in Italy. In 2007, the company acquired Aliments Carriere, a Canadian frozen and preserved vegetable company. In 2007, about 48% of the company's products were canned, while 23% were frozen. France currently accounts for 42% of the market, followed by Italy accounting for 15%. In 2008, the company entered into an alliance with frozen vegetable manufacturer Coopagri Bretagne and acquired Belgian canned vegetable producer La Corbeille.

# Industry Performance

## CURRENT PERFORMANCE

The trends more common in developed markets have had a stronger influence on the industry's performance than developing markets. In developing nations, the increasing availability of cold supply chains facilitated increased production of frozen food products. Again, this push was driven by retailers seeking to increase the range of products available to consumers, in order to drive revenue growth. Increasing affluence, particularly in Asian nations facilitated this trend. The costs of operating a cold supply chain are significant, so the differential between farm and retail prices has to be significant to cover these extra costs. The running costs and investment requirements for a cold warehouse have been reported to be ten times higher than ambient storage.

In the developed markets, concerns over health and nutrition had an indeterminate effect on industry revenue. However, health awareness is a significant factor in product positioning. It has become increasingly important to produce nutritious products and communicate this message to consumers. Food labeling standards are increasing across several markets. Organic products are a growing niche, with production of organic processed foods increasing strongly off a small base and some retail chains producing their own private label organic products. Marketing, branding, and advertising are increasingly used by major players in an attempt to extract a premium from consumers, especially in developed, mature markets. In such markets, consumption growth is constrained by population growth, with per capita consumption levels vacillating marginally from year to year. Thus, achieving higher unit prices becomes increasingly significant. Since product innovations are generally limited to new packaging and serving styles, the marketing support behind these products is important.

Increased demand for convenient meals drove value growth within the frozen fruit and vegetables segment. This also drove growth in soup lines, with many consumers trading up from powdered or condensed soups to heat and serve products. Increasingly time poor consumers and product marketing drove these factors. Private label products account for a growing share of industry revenue, putting downward pressure on average prices, and eroding the market dominance of brand owners, such as the major players. Large retailers drove the greater presence of private labels. Growing consumer acceptance facilitated the increased presence. Large retailers can earn higher margins on private labels, and can further their own brand as a retailer by producing quality private label products.

Overall industry performance in the past five years has been influenced by general factors such as global population and GDP growth. The more industry specific issues such as increased demand for convenient prepared meals, increased health and nutrition awareness, increased significance of branding and greater competition from private labels also played their part. Total industry revenue across the globe grew at an annualized rate of 2.0% over the five years through 2011 to reach \$158.1 billion; however, growth differed between product lines and markets.

### Performance breakdown

Despite the overall increase during the past five years, industry revenue has fluctuated year on year due to a mixture of foreign currency movements, fluctuating commodity prices, varied growth patterns in developed and developing regions. Added to this has been the lingering impact of the global economic downturn since late 2008. The recession put downward pressure on demand and revenue especially in developed countries, as unemployment rose and consumer sentiment plummeted alongside disposable income levels. As a result, consumers became increasingly risk averse, value conscious and cautious in their spending, which encouraged them to trade down their food purchases in favor of inexpensive food items. This trend reduced overall revenue in 2009 and 2010. The strong depreciation of the euro and pound against the US dollar also contributed to this decline in revenue in US dollar terms.



Revenue growth was also restricted by the aggressive discounting of private labels as supermarkets competed fiercely to increase market share of grocery markets around the world and promote their image as low-cost and convenient shopping destinations. In contrast, there were still trends that supported industry demand, such as people choosing to cook at home instead of eating out, which helped boost demand for processed fruit and vegetable ingredients. Demand also rose for generic or medium to low value products. Consumers seeking convenience, nutrition and value for money purchased processed fruit and vegetable products because they are less perishable than fresh produce and generally sold at a lower per unit cost to fresh produce. However, this reinforced the popularity of discounted private supermarket labels.

Moreover, volatile movements in commodity prices affected industry profitability over the past five years. Purchases of raw materials account for approximately 58% of industry revenue, which means the price of raw inputs such as fresh produce, preservatives and packaging materials including aluminum cans, glass jars and flexible plastic, have a profound impact on the bottom line for all operators. For example, rising prices for plastics, aluminum and iron during 2007 contributed to moderate price growth across many segments in the industry. However, the extent to which manufacturers can pass on these costs to consumers is limited by customer expectations of low prices for processed fruit and vegetable products. This expectation threatens industry profitability as operators may be forced to absorb rising input costs themselves. This has been further reinforced by the introduction of private labels and cautious consumer spending patterns over the past few years.

On the other hand, the decline in commodity prices due to the subprime crisis and associated stock market effects helped reduce packaging prices. These lowered prices reduced overall industry revenue in 2009 and 2010 as manufacturers passed on cost savings to consumers amid tough price competition from supermarket private labels. Furthermore, fresh produce prices rose in Australia and Europe during 2006 and 2007 as dry conditions reduced the supply of vegetable and fruit inputs. This generally leads to an overall increase in manufacturing costs and prices, however, the extent to which a manufacturer can pass these costs on to consumers once again determines the affect on profitability.

Over the five years through 2011, industry value added grew at an annualized rate of 2.2%. Value added grew at a higher rate than revenue growth due to a higher share of revenue attributable to profits and depreciation, while wages share of revenue remained roughly constant. Increased packaging material prices put downward pressure on value added growth. However, this was largely offset by fruit and vegetable prices, which declined in real terms over the past five years. An increasing proportion of fruit and vegetable production is located in low-cost regions such as China, India and Brazil, which account for 36.6%, 9.2%, and 3.2% of vegetable production respectively. Relocation of production towards regions with abundant (lower-priced) fruits and vegetables, or the import of these raw inputs, meant that producers could reduce production costs.

## Consumption and production

Over the five years leading into 2011, processed and preserved fruit and vegetable consumption increased globally. This was because of technological advances, an increase in time-poor consumers and increasing evidence on the health benefits of processed fruit and vegetables. The production of processed and preserved fruit and vegetable products is estimated to have increased at an average annual rate of 2.7% over the past five years to total 1058.2 million metric tons.

While China, India and Brazil produced the largest proportion of fruit and vegetables, rates of processing in these countries were low, due to high domestic fresh produce production. It is estimated that the United States produces the largest quantities, followed by Europe and Latin America. Drought and warm weather conditions caused production levels to drop in Europe, along with Australia, which also suffered the loss of processors, like McCain, shifting vegetable production offshore.

Increased investment will see China eventually produce similar proportions of processed fruit and vegetables over the next 10 years, while the United States and Europe are focusing on enhancing the quality of their products and incorporating healthier and organic ingredients. In the United States, production of canned dry beans increased over the past five years. This occurred as restaurants in the United States used this product more, and consumers saw canned dry beans as a healthy alternative to meat.

Varied consumption patterns and production growth between developing and developed nations have affected industry performance over the past five years. Rising health consciousness around the world during this period has been a strong influence on overall food consumption especially for processed fruit and vegetables. On the one hand, consumers in higher income countries have become increasingly concerned about the health benefits of processed food compared to fresh produce and this has resulted in a decline in demand for fruit and vegetable products high in fat, sugar, preservatives and artificial flavoring. It has also been demonstrated by the popular organic food movement, especially in the United Kingdom where organic fruit and vegetable consumption has increased substantially over the past five years.

On the other hand, greater awareness of the nutritional content in food has also boosted demand for processed products that are seen as healthier, such as frozen vegetables, which reportedly contain a higher proportion of vitamins than fresh vegetables. Added to this trend has been significant growth across markets in North Asia, India and Central Asia where consumption of fresh and processed fruit and vegetables has increased over the past five years. Globalization and economic growth across these regions has resulted in consumers with increased disposable income and a stronger tendency to adopt western diets, which has boosted demand for the industry. Steady growth is also estimated to have occurred in Europe, with prominent growth coming from countries such as Bulgaria, Hungary and Slovakia. Growth has been particularly significant for China, where consumers have increased their vegetable consumption – mainly french fries and frozen corn – as their diets become more westernized.

### **International trade**

The value of imports and exports totaled \$34.9 billion in 2006 and is estimated to reach \$44 billion in 2011. Globally, there was an overall increase in production. For some countries, this was because of an increase in domestic consumption, while in others there has been an increase in exports. Imports and exports declined strongly in 2005 because of declines in juices and frozen and preserved vegetables, notably because of lower production levels in some countries.

The United States continued to have the highest import levels for preserved fruit products, followed by Germany and France, while fruit and vegetable juice was dominated by Germany and the United States. These two countries also had the highest level of imports for frozen and preserved vegetables (including dried leguminous vegetables). Again, the United States was the highest importing country of preserved vegetable roots and tubers, followed by Japan. Although United States and European countries still largely dominate the market, an emerging trend in recent years is the rapid growth in imports to Asian countries. The most rapid growth occurred in China.

Over the past five years, China increased its market share of exports for both preserved fruit and preserved vegetable roots and tubers. Brazil continued to be the highest exporting country of fruit and vegetable juice, while Spain overtook the Netherlands as the biggest exporter of frozen and preserved vegetables (including dried leguminous vegetables).

### **Size and profit**

The size of processing and preserving plants range from large multinational companies, to smaller and niche market companies. The size of the industry grew at a relatively steady rate during the past five years as demand levels rapidly increased in the geographic areas of North Asia, India and Latin America. There has also been a large degree of industry-wide consolidation and merger activity, with some major players seeking greater productive efficiency. An example of this

is major players Heinz and McCain acquiring several smaller companies in the early part of the decade. Accordingly, industry employment has increased at an annualized rate of 4.2% over the past five years.

Profitability declined marginally in the past five years. Rising commodity costs made operating conditions for processors difficult, which has put strong upward pressure on the price of packaging. While these costs declined strongly in late 2008, other costs (such as financing costs) rose, and demand weakened. Operators that were able to effectively hedge against rising commodity costs are expected to have enjoyed marginally higher profits than the industry average. IBISWorld estimates that profits after tax are equal to 4.8% of revenue in 2011, down marginally from an estimated 5.0% in 2006

## HISTORICAL PERFORMANCE

Fruit and vegetable processing dates back to the prehistoric ages when processing incorporated fermenting, sun drying, preserving with salt, along with various types of cooking such as roasting, smoking, steaming, and oven baking. Up until the introduction of canning methods, salt-preservation was very common for certain processed foods. These processing techniques remained essentially the same until the advent of the industrial revolution.

By the 19th and 20th century, there was an increase in fruit and vegetable processing technology, largely developed to serve military needs. In 1809 a vacuum bottling technique was invented which would supply food for French troops. This then helped influence the development of tinning and then canning in 1810. Although initially expensive and somewhat hazardous due to the lead used in cans, canned goods would later become a staple around the world. This soon led to pasteurization which was a significant advance in ensuring the micro-biological safety of food.

With the impact of World War II and the rising consumer society in developed countries such as the US, new advances were made that contributed to growth such as juice concentrates, freeze drying and the introduction of artificial sweeteners, colorants, and preservatives. In the late 20th century products such as dried instant soups, reconstituted fruits and juices, and self cooking meals were developed.

Because the 20th century witnessed a rise in the pursuit of convenience, food processors especially marketed their products to middle-class working wives and mothers. Frozen vegetables found their success in sales of juice concentrates and "TV dinners". As consumers have become increasingly time-poor, fruit and vegetables processors have utilized this with strong product innovation to appeal to the postwar population that has continued to carry on in the following years.

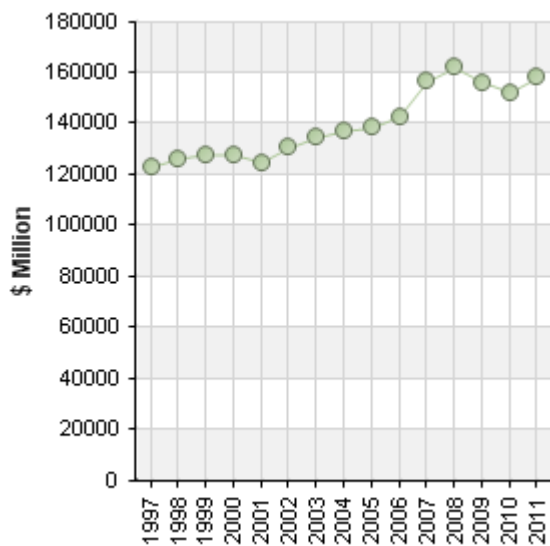
By the early 90s the US, Canada, Australia, New Zealand and a small portion of European countries had a large but slowly growing population and reliance on domestic demand, combined with increasing per capita consumption of sugar based foods in diets, placing the industry in a mature state. Therefore, revenue changed little throughout the 1990's for these countries. For many other areas of the world, it was not until the late 90's and up until 2002 where countries in Asia and Latin America were in a growth phase.

IBISWorld estimates that revenue from the Global Fruit & Vegetable Processing & Preserving industry is thought to have experienced a decline of 1.9%, totaling \$132.3 billion in 2003 as the world economy was still recovering from the stagnation of 2001. This was further impacted by a decline in revenue in the US, one of the most profitable countries in this industry. Growth is thought to have declined because consumption of most processed fruit and vegetable products was falling, in particular fruit juice because of dietary trends and shifting national tastes. In Europe, the UK Food Commission challenged Heinz for misleading consumers that their products were equivalent to fresh fruit and vegetables. This however is thought to have had little effect on revenue as Heinz provided concise and relevant evidence. Latin America and Asia continued to improve, with increased production levels and economic growth, with the most notable growth emerging from China, largely because of income and population growth.

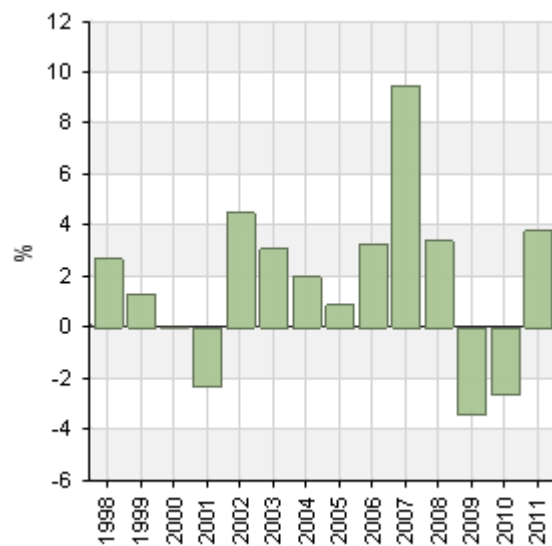
Revenue (constant prices)

	Revenue \$ Million	Growth %
1997	123,007.1	N/A
1998	126,291.1	2.7
1999	127,943.9	1.3
2000	127,874.5	-0.1
2001	124,913.8	-2.3
2002	130,540.6	4.5
2003	134,562.3	3.1
2004	137,197.0	2.0
2005	138,378.7	0.9
2006	142,946.4	3.3
2007	156,581.9	9.5
2008	161,956.8	3.4
2009	156,384.1	-3.4
2010	152,302.8	-2.6
2011	158,063.0	3.8

Revenue



Revenue Growth Rate

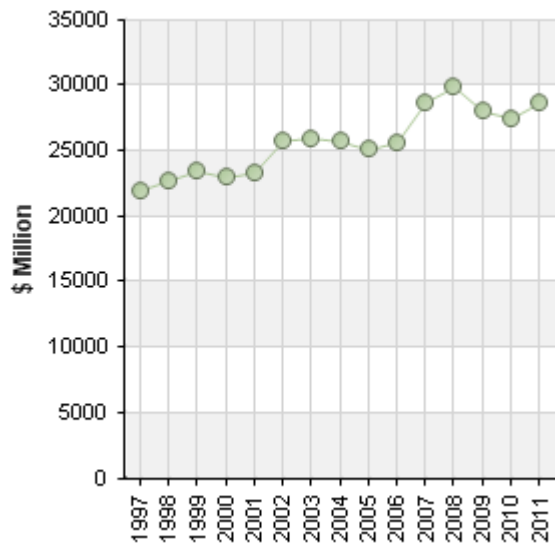


Gross Product (constant prices)

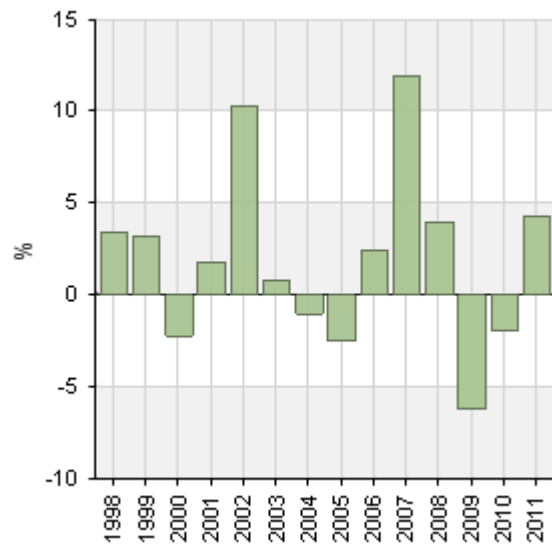
	Gross Product \$ Million	Growth %
1997	21,986.7	N/A
1998	22,735.5	3.4
1999	23,469.2	3.2
2000	22,954.4	-2.2
2001	23,363.3	1.8

2002	25,780.9	10.3
2003	25,980.5	0.8
2004	25,719.4	-1.0
2005	25,077.7	-2.5
2006	25,673.4	2.4
2007	28,725.1	11.9
2008	29,868.4	4.0
2009	28,015.6	-6.2
2010	27,489.9	-1.9
2011	28,672.2	4.3

Gross Product



Gross Product Growth Rate

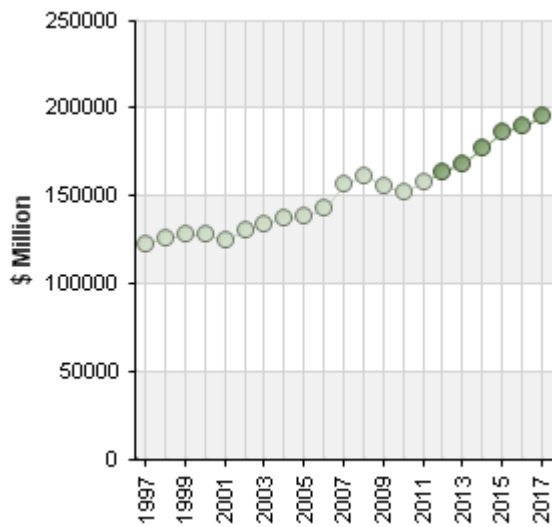


# Outlook

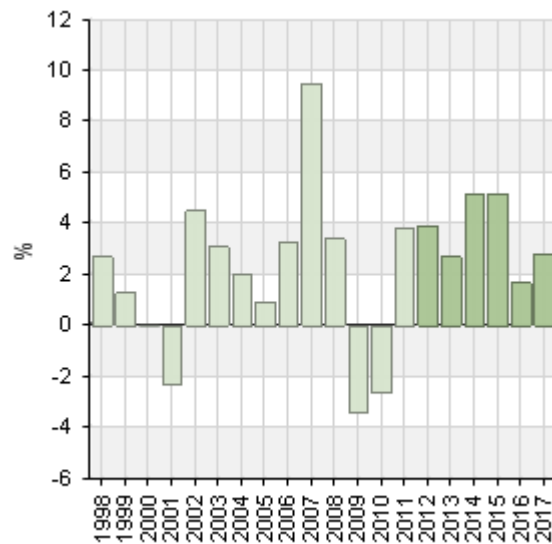
Revenue (constant prices)

	Revenue \$ Million	Growth %
2012	164,259.1	3.9
2013	168,766.3	2.7
2014	177,491.6	5.2
2015	186,667.8	5.2
2016	189,841.1	1.7
2017	195,233.0	2.8

Revenue



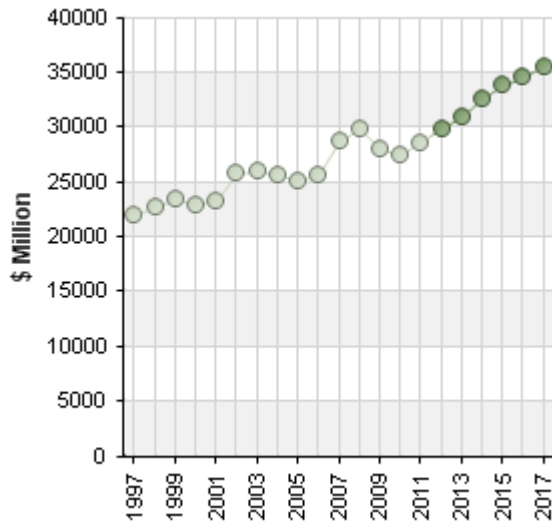
Revenue Growth Rate



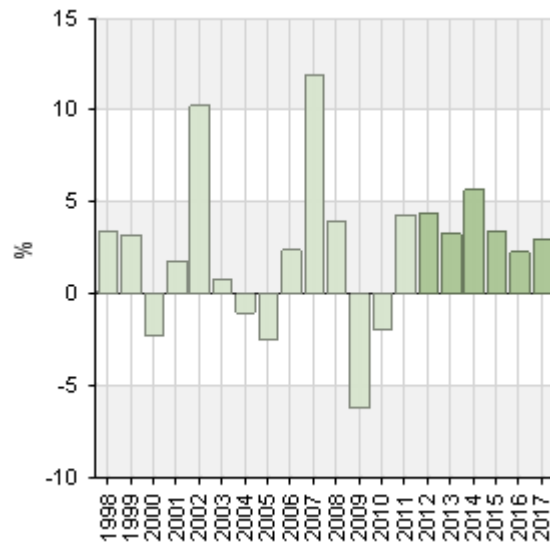
Gross Product (constant prices)

	Gross Product \$ Million	Growth %
2012	29,945.2	4.4
2013	30,920.7	3.3
2014	32,681.9	5.7
2015	33,793.1	3.4
2016	34,570.4	2.3
2017	35,612.0	3.0

Gross Product



Gross Product Growth Rate



In the coming five years, global processed and preserved fruit and vegetable production is expected to continue its rise, though at a considerably stronger rate. Growth will stem from China and India exceeding average production, while the United States will continue to grow at marginal rates. Major exporting countries such as China are likely to see continued growth as consumption increases, along with positive changes to production incentives and investment in technology. Depending on the geographic location, certain product segments are expected to grow strongly as a result of changing consumer diets and higher incomes. Meanwhile, further evidence that populations in the United States and Europe do not consume enough fruit and vegetables will encourage further growth. Total industry revenue generated is projected to increase by an average annual rate of 3.7% over the five years through 2016 to \$189.8 billion.

### Revenue and growth by region

Increased demand for convenience in most markets is expected to drive demand for processed fruits and vegetables. The United States is expected to face increasingly stiff import competition especially from Mexico. Production of processed fruit and vegetables is expected to be strong over the next five years. Revenue growth is forecast to remain positive over the coming years with particularly strong results expected from 2014 through 2015. It will most likely take four years before principle economic markets, like those of Europe, to return to full-strength growth. Therefore, over most of the coming five-year period, revenue for each geographic segment is expected to vary, with marginal annual growth of less than 1.0% in Europe, North America and Oceania; and annual growth of over 5.0% for North Asia, followed by moderate growth in India and Latin America.

The second largest market, Europe, is expected to remain in a mature life cycle, with strong growth expected to emerge from its value-added products. The greatest proportions of fruit and vegetables will continue to grow in Poland and Hungary. Germany will continue to process and preserve the greatest quantities of fruit and vegetable products. One of the biggest concerns and challenges for Europe over the next five years is the ongoing decline in consumption of processed fruit and vegetable products – linked to changing life styles and eating habits – with consumption levels well below the World Health Organization (WHO) recommendations.

North America should remain in a mature life cycle, which is expected to be influenced by consumer health concerns. A large proportion of consumers will seek to have a balanced diet, after increasing evidence suggests that Americans do not consume enough fruit and vegetables. Product innovation is forecast to be strong, as major players introduce more products to satisfy time-poor consumers. There is also expected to be a continued rise in organic produce and private labels. Production is also projected to remain strong, as many varieties of fruit and vegetables will exhibit improved disease resistance, and a trend towards precision farming. This will be partially offset by rising consumer prices that will likely cause a drop in consumption.

There is expected to be improved growth in industry revenue for Oceania, as countries such as Australia will be influenced by factors like population growth, the general economic setting, import competition, and raw input prices. The most notable growth to occur globally over the next five years is in China. The production of processed fruit and vegetables in China is set to increase substantially each year. There will be a continued expansion of companies in China, caused by rising average incomes, higher world prices and strong domestic demand. This trend is likely to continue at a faster rate as the economy continues to grow strongly and consumers slowly adopt a more westernized diet. Introductions of new and advanced technology will be a major factor that will contribute to growth. South East Asia is expected to obtain moderate to strong growth over the next five years, because of increased consumption due to higher disposable income, along with an abundant supply of raw materials.

South America, notably Brazil, will continue to exhibit strong growth in the fruit and vegetable juice segment. Continued growth in the processed fruit and vegetable sector for Chile is likely to continue because of its excellent conditions for fruit and vegetable production, commitment to free trade and environmental sustainability. Moderate growth is likely to come out of South Africa over the next five years, as demand is likely to increase moderately.

### **Opportunities and trends**

With improved technology, there are opportunities for manufacturers to improve the quality of processed fruit and vegetable products, along with improvements in selected ingredients. The health benefits of these products will increasingly appeal to consumers worldwide, most notably in North America, Europe and Australia. The health benefits of the industry's products will also appeal to specific age groups such as the baby boomers, who will endeavor to maintain good health during later years of life. There is also an expanding range of fat-free and low-fat products, which will help boost sales in westernized countries. At the same time, significant growth will occur in a variety of processed fruit and vegetable products for developing countries – consumption only began to increase dramatically in the previous five-year period. The use of organic ingredients in these products could also prove a success in certain countries, as can already be seen in the United States.

Growth in world exports is estimated to continue at a moderate pace over the next five years. This will occur as increased processed fruit and vegetable production in China, India, the Netherlands and Brazil will see these countries able to supply their consumption from internal sources, thereby reducing import demand levels. There could also be production constraints in major exporting countries as producers try to maximize earnings. By 2016, trade markets will account for approximately 29% of global revenue.

### **The bottom line**

IBISWorld expects that profits for global fruit and vegetable processors will remain relatively strong over the coming years. In 2011, profitability will average 4.8% of industry revenue. It is expected that profit margins will improve as major players continue to exploit price differentials between high- and low-cost production countries. However, the extent of profit level growth will be limited by competition between major players and the availability of fresh produce as an alternative to



purchasing processed fruit and vegetables. This will limit the margins that manufacturers can achieve. However, industry profits are sure to be clearing 5.0% of revenue by 2016.