



# The Indonesian noodle market

## ■ ITS IMPORTANCE TO AUSTRALIAN WHEAT EXPORTS





# Contents

Key findings	2	Non-instant noodle market	24
Recommendations	3	Noodle-driven demand for wheat	27
Introduction	4	The Indonesian noodle market – implications for Australian wheat	29
The Indonesian noodle market: an overview	5	Conclusion	31
Dominance of instant noodles	5	Appendix A: The role of wheat and rice in Indonesia	32
Urbanisation and rice self-sufficiency	5	References	35
Major uses of wheat flour in Indonesia	6	Glossary	36
Manufacturing pathways for noodles	6		
Instant noodles	9		
Major players in Indonesia’s instant noodle segment	20		
Third country demand	22		
‘Premiumisation’ of instant noodles in Indonesia	23		



# Key findings

## Indonesian noodles: crucial for Australian wheat

Australian wheat remains highly regarded for both instant and fresh noodles in Indonesia. Indonesia imports 3–3.5mmt of wheat for noodles, mostly from Australia. Over half the flour used in Indonesia is for noodles; with instant noodles being by far the main type of noodles consumed. Fresh noodles account for 20% of all forms of noodles consumed.

## A vast instant noodle market

Each year, about 13 billion packets of instant noodles are sold in Indonesia. It is the world's second largest instant noodle market, accounting for almost 15% of all instant noodle consumption on earth. Two companies, Indofood and Wings Corp, dominate instant noodle sales, with a combined market share of over 80%. Indofood is by far the dominant supplier with its Indomie brand.

## Instant noodle consumption per capita is plateauing, but population increasing

Instant noodle consumption per person does not appear to be increasing in Indonesia. However, Indonesia's strong population growth will sustain demand for noodles for the foreseeable future.

By 2030, an additional 350,000t of wheat will be needed to meet consumer demand for instant noodles. This equates to 170 million more packets of instant noodles.

## Australian wheat under pressure

Price is (and will remain) the dominant driver in the lower half of the instant noodle market. While Australian wheat is preferred due to its unique quality attributes, noodle producers are finding ways to use more and more low-cost wheat from Russia, Ukraine and Argentina without sacrificing too much quality.

## Instant noodle “premiumisation”

A small but growing premium instant noodle segment is emerging. As incomes increase, demand shifts into higher quality noodles and/or the inclusion of other products such as meat.

Australian wheat is more likely to be retained in this premium segment.

## Instant noodle demographics

Young people are more likely than older generations to view instant noodles as a staple food, with 18% of 10–19-year-olds eating more than one serve a day. Young people are more likely to continue to consume instant noodles as they age.

As people become more wealthy and urbanised, instant noodles are expected to remain the dominant type of noodles, with more money spent on complementary products, such as meat.

## Indofood's global expansion

The company Indofood, whose brand Indomie dominates the instant noodle market, is expanding rapidly into other markets, exporting wheat-based food products into neighbouring South-East Asian countries. This expansion supports third-country demand for Australian wheat.

## Australia's finite wheat capacity

Instant noodles, and other products made from imported wheat, help Indonesia achieve its food security objectives. However, Indonesia's strong growth is generating a food security challenge; causing them to increasingly look beyond Australia to meet their growing demand. Australia cannot affordably supply enough wheat for *all* of Indonesia's needs and so will face continued competition from other wheat exporters, including Russia, Ukraine and Argentina.

## The importance of fresh noodles

Fresh noodles are more popular among wealthy and urbanised consumers than among rural or lower-income consumers. Fresh noodles, which make up about 20% of noodle consumption in Indonesia, have more sophisticated wheat quality requirements than instant noodles. Australian wheat is recognised for its superior colour attributes and texture. There is some potential room for improvement that can be made to noodle textural properties.

# Recommendations

How should Australia position its wheat offering to Indonesia to serve Indonesian needs while delivering value for Australian grain producers?

## 1 Defend Australia's instant noodle share... ...especially at the premium end of the market

To maintain sales volumes in Indonesia in the face of heightened competition, Australian wheat breeders, farmers and supply chain operators need to cooperatively ensure affordable, high-yielding, fit-for-purpose wheats continue to be grown and delivered to the Indonesian market. The production and sales of those wheats need to generate sufficiently attractive margins for all transactional parties, including farmers.

In particular, the Australian wheat industry must ensure Indonesian processors understand the value of using Australian wheat at the premium end of the instant noodle market, and, where possible, help them grow this market.

## 2 A whole of industry approach

The Australian wheat industry needs to present a united front in Indonesia.

## 3 Support the fresh noodle industry

Australia should defend the fresh noodle segment by ensuring our wheat continues to meet specific market requirements for fresh noodles. Previous AEGIC research has confirmed Australian wheat is preferred for its superior colour and texture and improvements can be made to textural attributes.

## 4 Continued market intelligence

Australia must continue market research to understand consumer trends and preferences for different wheat-based end products, so the Australian industry can more quickly respond to emerging opportunities and issues in Indonesia.

## 5 Build skills and capacity in our Indonesian customers

The Australian wheat industry should increase efforts to provide technical training and support to Indonesian customers to enhance their understanding of the value of using Australian wheat for instant and fresh noodles.

## 6 Capture premium opportunities in bread, cakes and biscuits

While noodles will continue to underpin Australia's wheat exports to Indonesia, there are other emerging premium markets to consider. As Indonesians become more wealthy and urbanised, they will likely demand a wider variety of wheat-based foods, including breads, cakes, biscuits and confectionary. Providing wheats tailored to a wider spectrum of market segments in Indonesia is a sound risk-diversification strategy.

The next report in this series investigates these opportunities further.





# Introduction



The AEGIC overview report<sup>1</sup> on the Indonesian wheat market outlined the fundamental reasons why the Indonesian market was of strategic importance to Australia and its wheat industry. That report promised subsequent detailed analyses of Indonesia’s demand for wheat. Accordingly, this report examines Indonesia’s noodle market. The nature and trends in noodle consumption in Indonesia are explored and the implications for Australia’s wheat industry are discussed.

This report shows how Australia can play a key role in helping Indonesia meet its caloric needs by providing stable access to wheat suitable for producing noodles — particularly instant noodles. The percentage of Indonesia’s caloric requirements supplied by Australian wheat has grown over the past few decades, helping Indonesia to focus on producing other crops and food types that can be viably produced with the land, water and labour at its disposal. A key advantage of wheat imports is that they help Indonesia to achieve its singular and strong commitment to rice self-sufficiency (see Appendix A).

Unlike some other grains imported by Indonesia, Australian wheat displaces no Indonesian farmers, which means there is an unambiguous net benefit for Indonesian food sovereignty. Wheat is an uncommonly versatile food source for underpinning urbanisation as it is easily processed into a range of foods that share some common traits — they are cheap to buy, easy to prepare and cheap to store.

# The Indonesian noodle market: an overview

## Dominance of instant noodles

Indonesia’s noodle market is dominated by instant noodles, called ‘instant’ because the time for cooking is generally less than three minutes. The predominant brand in Indonesia’s instant noodle market is Indofood’s *Indomie*. So prevalent and dominant is this brand that *Indomie* is consistently rated as Indonesia’s most recognised national brand — not just among food brands but *all* brands.

Surprisingly, instant noodles (and noodles more generally) are a relatively recent phenomenon in Indonesia. Unlike rice and tempeh (soybeans), noodles are not a traditional staple in Indonesia. Understanding how and why instant noodles have come to play such an integral role in the Indonesian diet is important, as it provides clues to their possible future role. It is also important to understand the centrality of rice in the Indonesian diet and the country’s agricultural production (see Appendix A). Whatever future there is for noodles and other wheat-based foods in Indonesia, it will take place against the backdrop of a country and culture steeped in the tradition of growing and consuming rice.

## Urbanisation and rice self-sufficiency

Indonesia’s instant noodle demand is supported by several factors. First, instant noodles are an affordable source of calories, which is an important consideration in a country where household incomes are limited. Second, instant noodles are cheap and convenient to prepare. Third, instant noodles facilitate the country’s commitment to rice self-sufficiency.

As outlined in Appendix A, for cultural and historical reasons, rice plays a dominant role in the diet of Indonesian people. Self-sufficiency in rice production is therefore a central tenet of Indonesia’s overall food sovereignty objectives. However, population growth over the past 30 years (Figure 1), combined with constraints on arable area and water resources, are challenging Indonesia’s ability to meet this objective. This is compounded by the fact that those Indonesians shifting from rural areas to urban centres go from being net producers to net consumers of food (Figure 1). Imported wheat provides not only a dense source of caloric energy, but also contributes a broader range of important dietary nutrients to the typical rice-centric Indonesian diet. It dilutes Indonesia’s sole dependence on rice and thus allows the Indonesian government to more easily ensure the nation’s self-sufficiency in rice.

## Major uses of wheat flour in Indonesia

Production of noodles is the dominant use of wheat flour in Indonesia, accounting for over half (55%) of flour usage. By contrast, bakery products account for around one-quarter of total flour usage, with the remainder going to the country’s growing confectionery sector (Figure 2).

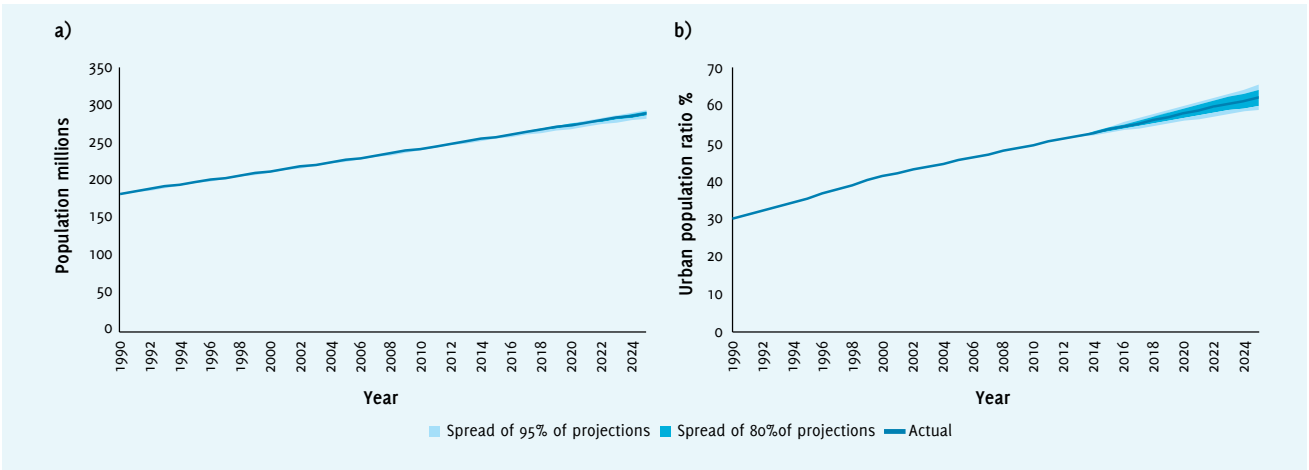


Figure 1  
Growth in the Indonesian population (a) and in the Indonesian urban population (b) ratio

Source: World Bank estimates

<sup>1</sup> Kingwell *et al.* (2018) The Indonesian wheat market: Its strategic importance to Australia. Available at [www.aegic.org.au/wp-content/uploads/2018/08/AEGIC-The-Indonesian-wheat-market-its-strategic-importance-to-Australia\\_.pdf](http://www.aegic.org.au/wp-content/uploads/2018/08/AEGIC-The-Indonesian-wheat-market-its-strategic-importance-to-Australia_.pdf)



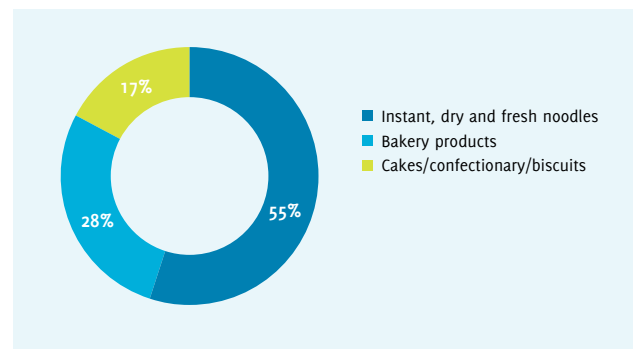


Figure 2  
End uses of wheat flour in Indonesia, 2018

Source: AEGIC estimates

In contrast to the estimates in Figure 2, projections by the United States Department of Agriculture (USDA, 2018) are much higher for noodles. AEGIC used those estimates in its overview report on Indonesia (Kingwell *et al.*, 2018). The USDA claims that rapid growth in the use of flour for noodles is leading to 70% of Indonesia's wheat flour being used for noodle consumption. Our more conservative estimates in Figure 2 draw on a range of industry sources and are underpinned by very recent trends in flour use.

Three main types of noodles are produced: instant noodles, dried noodles and fresh noodles, with fresh noodles only accounting for about 20% of noodle consumption. Instant noodle manufacture is by far the dominant form, with large-scale manufacturers producing instant noodles in state-of-the-art facilities (Figure 3 and Figure 4). By contrast, fresh noodles are produced by small- to medium-sized food producers. This latter group makes up about two-thirds of Indonesia's flour milling customers.

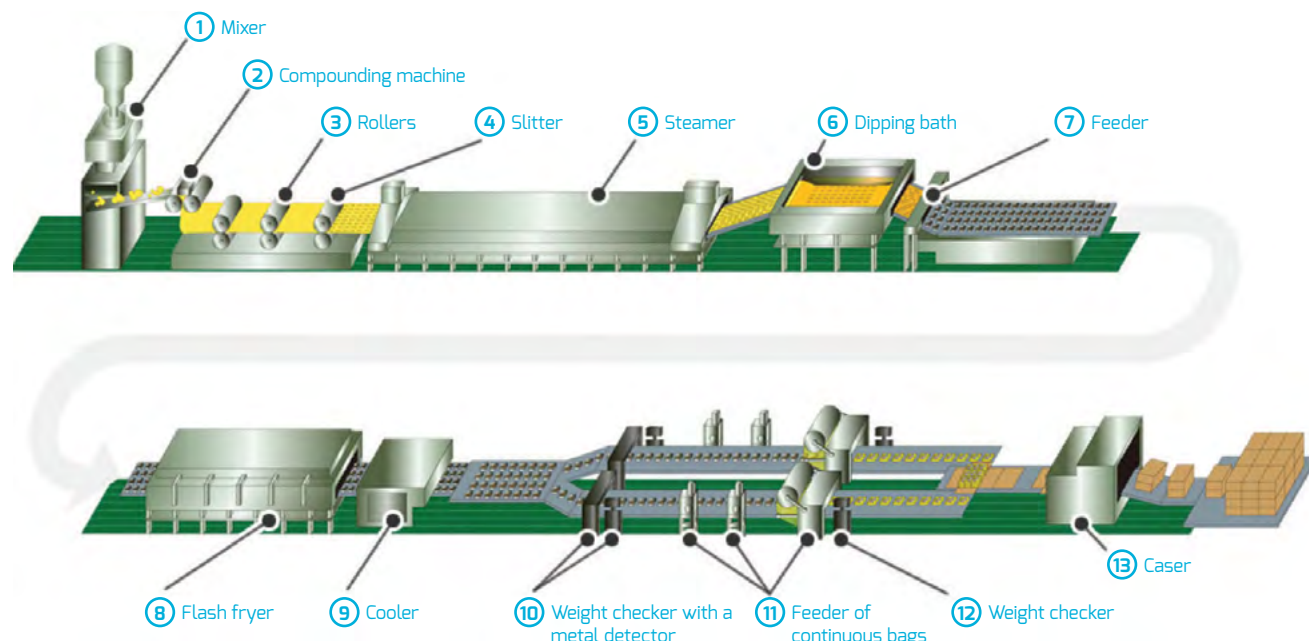


Figure 3  
Main production pathways for types of instant noodles

Source: WINA <https://instantnoodles.org/en/noodles/process.html>

Wheat flour and rice are food staples in Indonesia and so need to be produced cheaply. As shown in Figure 5, the price of wheat flour has been very stable, especially compared to other food items, such as chicken meat, fish and eggs. Moreover, rice is increasingly expensive when compared to the cost of wheat flour.

On a per serving basis, instant noodles are currently cheaper than rice, and despite rice-eating being a deeply held food tradition in Indonesia (see Appendix A), some lower income consumers have begun to replace rice with cheap instant noodles as a meal component. Consumption of instant noodles is supported by their convenience, ease of preparation, accessibility and mass advertising. Instant noodles are popular among people of all groups owing to noodles' taste, nutrition, convenience, safety, longer shelf life and reasonable price. Quality factors important for instant noodles are colour, flavour, texture, cooking quality, rehydration rates during final preparation, and the presence or absence of a 'rancid' taste after extended storage.

## Manufacturing pathways for noodles

Instant noodles are packaged and sold to consumers in a variety of ways. Figure 4 outlines the main differentiated products (instant dried noodles, instant fried noodles, bag-type noodles and cup-type noodles) that arise from the instant noodle production process.

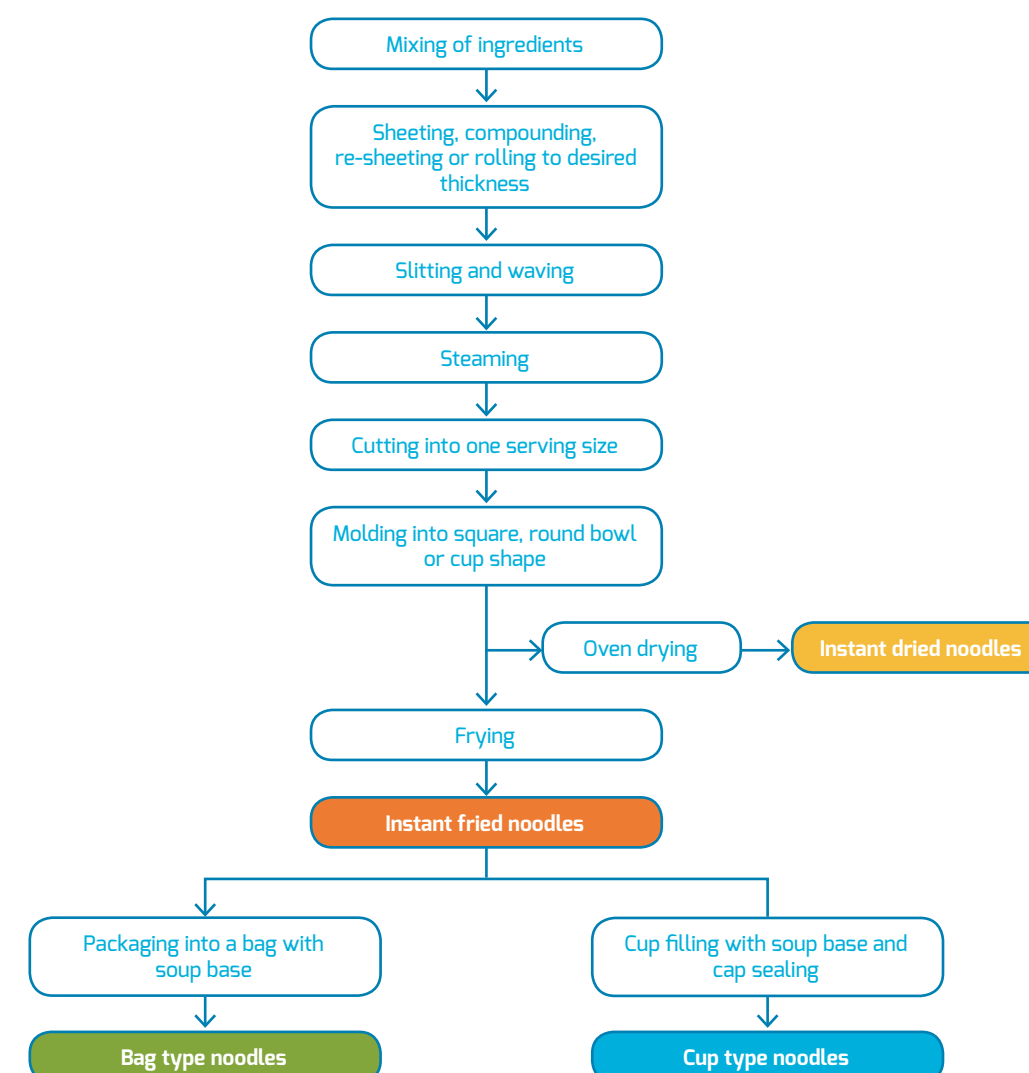


Figure 4  
Product differentiation within the instant noodle production process

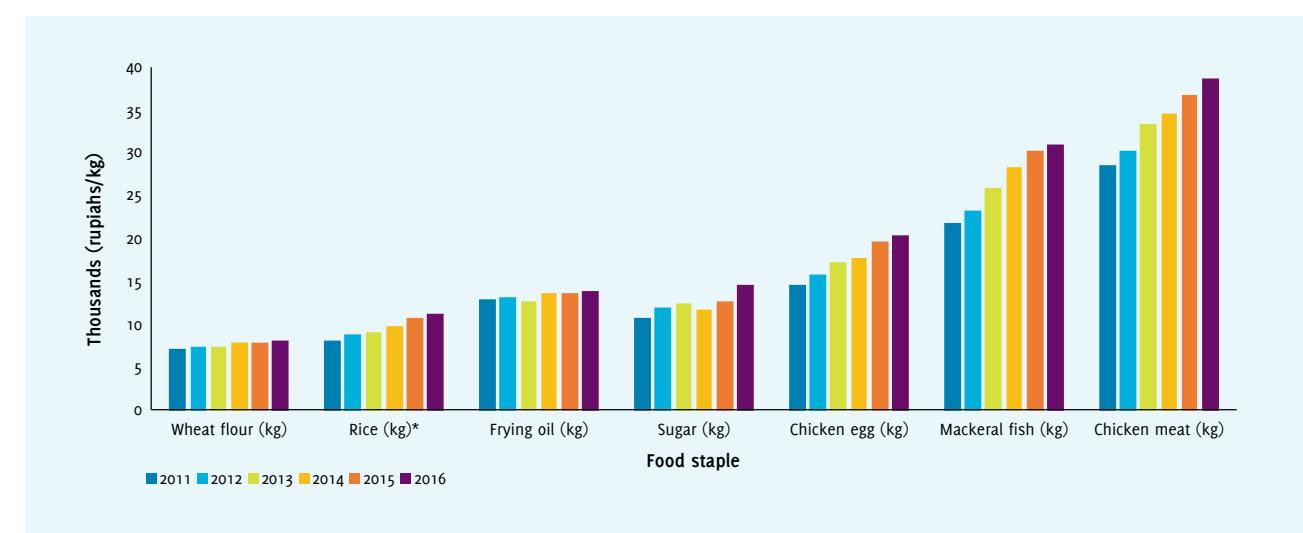


Figure 5  
The unit cost of a range of food items in Indonesia, 2011–16

Source: Consumer Price Survey, BPS, data cited from *Statistical Yearbook of Indonesia* 'Average retail prices of rice at traditional markets in 33 cities'





# Instant noodles

Indonesia’s present-day consumption of instant noodles reflects what is perhaps one of the world’s largest staple dietary shifts of the past 45 years. Indofood only introduced instant noodles to Indonesian consumers in the 1970s. Since then, Indonesia has gone from being an insignificant consumer of instant noodles (and, noodles more generally) to today, where it is the second largest instant noodle market globally (behind China).

Indonesians consume 12 to 13 billion individual servings each year, accounting for almost 15% of global consumption (Table 1).

Indonesia’s prominent place in global demand for instant noodles is further illustrated by per capita consumption rankings, where Indonesia has the fourth largest per capita instant noodle consumption — about 48 packets per person per year. By comparison, Australians consume around 16 packet per annum (around one packet every 3.5 weeks). The world’s largest per capita consumer of instant noodles is South Korea (73 packets per year — or around 1.5 packets per week).

Although Table 1 indicates a slight decline in sales of instant noodles in Indonesia since 2013, this was preceded by significant growth prior to 2010. This earlier period of strong, sustained growth was underpinned by a number of factors such as:

- food aid in the form of foreign wheat provided by the US and Australia in the post-war era
- the role played by imported wheat in Indonesia’s food security objectives
- a rapidly urbanising population and changing dietary habits (especially among urbanised youth)

- a population emerging from poverty (and hunger), seeking the maximum number of calories for the lowest price
- lower electricity (or gas) requirements for cooking instant noodles compared to rice
- the geographical challenges inherent in delivering perishable foodstuffs to a population spread across the world’s largest archipelago
- strong brand marketing — particularly by the two dominant instant noodle companies.

The rise of instant noodles in Indonesia plays a key role in helping the Indonesian government achieve national self-sufficiency in rice production. Rice is by far the main source of calories for most Indonesians (Figure 6 and Appendix A). About half the daily calorific intake of the average Indonesian comes from rice. By contrast, calories from wheat-based foods constitute less than 8% (although in the 1960s wheat-based foods were virtually absent in Indonesian diets). Hence, wheat-based foods like noodles have become an important — although still minor — component of the Indonesian diet relative to rice.

The increase in consumption of instant noodles since the 1970s helps provide base calories to Indonesia’s poor and limits malnutrition (see Appendix A). Instant noodles’ increased importance in Indonesian diets between the 1970s until the early 2010s (Figure 7 and Figure 8) has been supported by brand advertising from the two dominant instant noodle manufacturers.

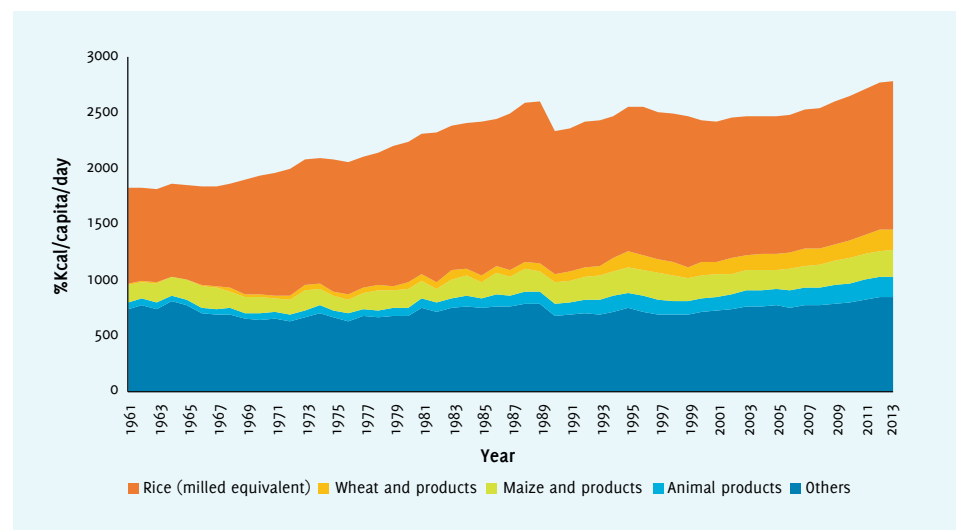
Table 1  
Demand for instant noodles (billions of packets of noodles sold)

	Country	2013	2014	2015	2016	2017	Packets per head (2017)
1	China/Hong Kong	46.2	44.4	40.4	38.5	39.0	28.1
2	Indonesia	14.9	13.4	13.2	13.0	12.6	47.8
3	Japan	5.5	5.5	5.5	5.7	5.7	45.2
4	India	5.0	5.3	3.3	4.3	5.4	4.0
5	Vietnam	5.2	5.0	4.8	4.9	5.1	53.5
6	USA	4.3	4.3	4.1	4.1	4.1	12.6
7	Philippines	3.2	3.3	3.5	3.4	3.7	35.6
8	Republic of Korea	3.6	3.6	3.6	3.8	3.7	73.0
9	Thailand	3.0	3.1	3.1	3.4	3.4	49.8

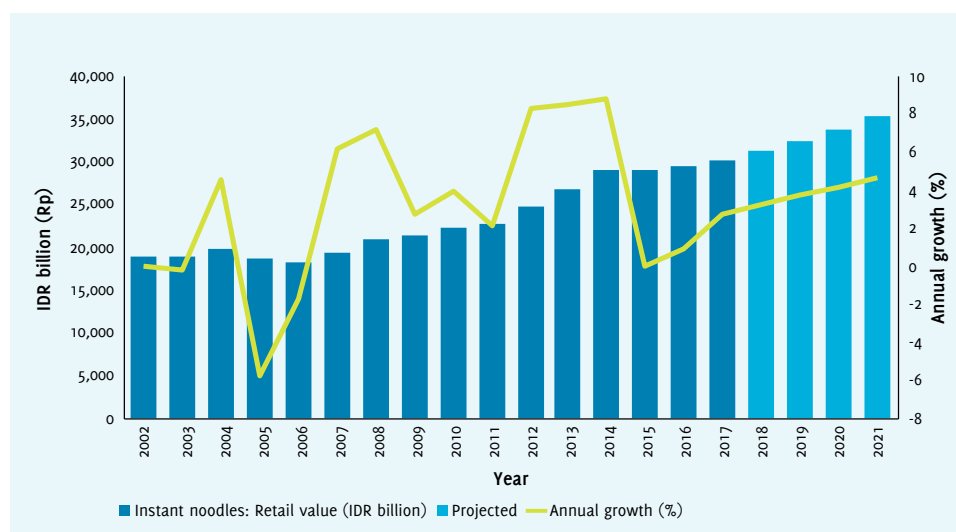
Source: World Instant Noodle Association



**Figure 6**  
The main components of Indonesian diets since 1961  
Source: UN\_FAO Food Balance Sheets\_2014 Update



**Figure 7**  
Annual growth and retail value of instant noodles sales (constant 2016 IDR – billions)  
Source: Euromonitor



**Figure 8**  
Per capita consumption of packets of instant noodles in Indonesia and Australia  
Source: AEGIC calculations based on data from the World Instant Noodle Association



Since the mid-2010s however, a slight decline in per capita consumption has emerged (Figure 8), although as mentioned later in this report, some other data sources suggest per capita consumption is unchanged. Underlying the trend in consumption is some complexity in the demand story for instant noodles.

On the one hand, population growth is sustaining the aggregate demand for instant noodles, as is the general preference for ‘convenience’ foods such as instant noodles. On the other hand, a rise in per capita income typically sees consumers eventually reduce their consumption of carbohydrate staples like rice and noodles (see Table 2 in Kingwell *et al.* (2018)) while increasing their consumption of milk, fruit, vegetables and red meat. Additionally, with increasing incomes and the advent of cheap home delivery services, such as the ubiquitous ‘UberEats’ model (note: ‘Grab’ is the dominant food delivery service in Indonesia), the urban population has a broadened range of ‘instant’ or ‘stay-at-home’ meal options that can substitute for an easy instant noodle meal. While meals ordered through these services may use instant noodles as the substrate, the service also makes it equally convenient to consume other styles of food not containing noodles. In response to these consumer trends, some noodle manufacturers in Indonesia are already positioning their noodle products to feature the complementary inclusion of meat or other garnishes.

Another factor that potentially encourages a decline in per capita consumption of noodles is that, unlike rice, the consumption of noodles is not supported by government subsidies. The percentage growth rate in the real prices of whole rice has only been 2.6% per year whilst the percentage annual growth in the real price of instant noodles has been 4.8% per year. The greater price increase for instant noodles has occurred despite the real price of wheat flour, a main ingredient of noodles, declining at an annual rate of 2.3% per year (Figure 9). Moreover, even though the depreciation of the Indonesian rupiah against the US dollar has

increased the rupiah cost of imported wheat, nonetheless the real price of wheat flour has declined, limiting the rate of increase in the real price of instant noodles.

The price trend for instant noodles is due to a few factors. It could reflect price leadership by the two dominant suppliers of instant noodles in Indonesia (Figure 10). Cost components that underpin the supply of instant noodles (e.g. processing, logistics and advertising) have experienced cost escalation greater than that of the main raw ingredient for noodles, wheat flour. In addition, as stated earlier, noodle manufacturers are now positioning some of their instant noodle products to include a complementary meat or other garnishes that widen the market appeal of noodles; but this raises the price of these forms of instant noodles. A broader range of noodle products is widening the price gap between the minimum and maximum prices of instant noodles in Indonesia (Figure 10), with the real minimum price declining whilst the overall real average price is increasing.

New noodle products to emerge include *Indomie* Real Meat Instant Fried Noodles and *Bakmi* Mewah Rasa Instant Noodles (Photo 1). These product lines unabashedly target young, middle-to-upper-class consumers. Celebrity endorsements are used to promote these products and create brand awareness. This population segment of young, richer Indonesians is rapidly increasing, hence targeting them to ensure they maintain or increase their consumption of instant noodles and complementary ingredients is a sensible commercial strategy. Such targeted marketing of instant noodles complements a raft of other marketing activities not tailored to a specific population demographic but rather employed to maintain the broad appeal of instant noodles in Indonesia.

**Figure 9**  
Average retail price of rice, wheat and instant noodles, 2007–17

Source: Asosiasi Produsen Tepung Terigu Indonesia (APTINDO), 2018 plus CPI and exchange rate data for Indonesia

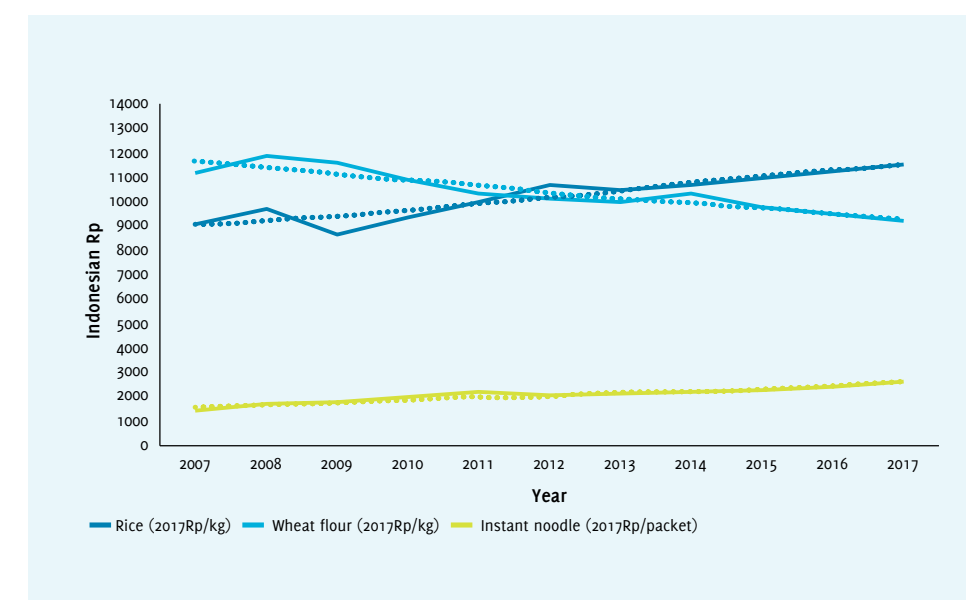




Figure 10  
Noodle product price spreads of leading manufacturers: difference between the maximum and minimum prices for products within a similar category, as a percentage of the minimum priced product

Source: AEGIC

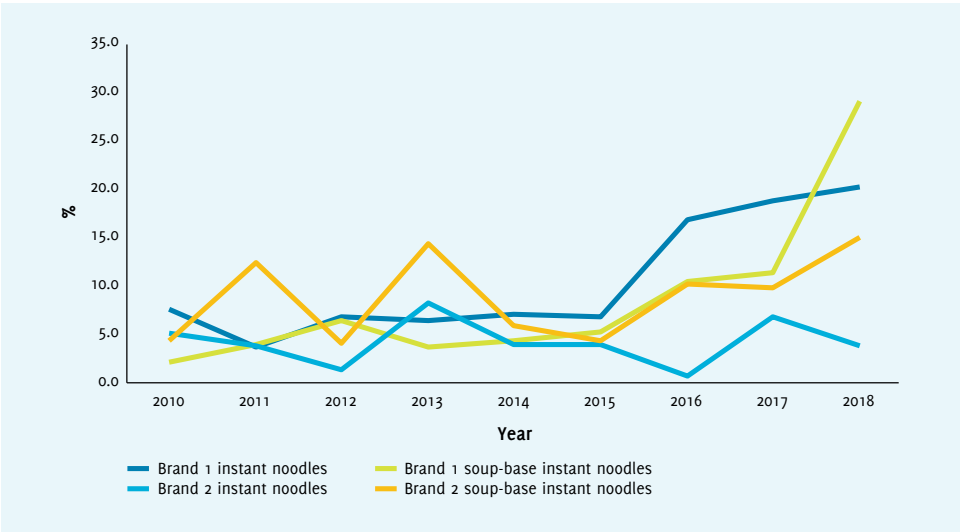


Photo 1 New, premium instant noodle lines with added meat

Although annual growth in the price of instant noodles<sup>2</sup> has exceeded that of wheat flour and whole rice (Figure 9), thereby tempering per capita consumption of instant noodles, nonetheless, Indonesia’s sales value of instant noodles has continued to grow. The almost 190% increase in the average price of instant noodles since 2007, shown in Figure 9, however, overstates the true price increase, due to the wider range of instant noodle products that has become available in recent years. The average type of instant noodles sold in 2007 is not identical to the type sold in 2017. The trend of ‘premiumisation’ of instant noodles (an emphasis on superior quality and exclusivity) has lifted the unit price of the product and thereby helped increase sales revenues by catering to more diverse dietary preferences among consumers, especially younger, richer consumers.

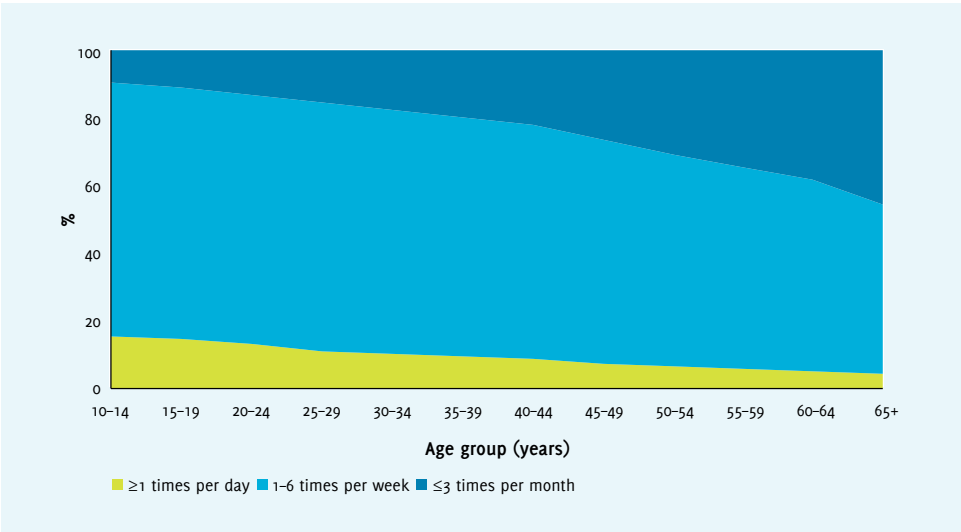
The impact of demographics on the consumption of instant noodles is shown in an Indonesian *Riskesdas* survey<sup>3</sup> that reveals two main factors influencing consumption. The first is the age of the consumer (Figure 11). Older consumers consume fewer instant noodles than younger people do. As people age their calorific needs diminish and so their consumption of staple foods like rice and instant noodles diminishes. Older people are less active and, unlike children and adolescents, they need food mostly for maintenance rather than growth. Generational food histories also overlay age differences. In many cases, the tendency of the elderly to favour rice over noodles is the habitual continuation of their long term diet established at a time when rice was the sole staple. By contrast, Indonesia’s younger generation has grown up in an environment of greater variety and access to convenience foods, such as instant noodles. The rise of online marketing and social media also provides noodle makers with additional ways to reach an increasingly internet-savvy younger demographic.

<sup>2</sup> On a percentage basis.

<sup>3</sup> Basic Health survey — conducted by BPS every 5–6 years. The latest survey was conducted in 2013, and the data presented in this section is drawn from that survey. See <http://labmandat.litbang.depkes.go.id/riset-badan-litbangkes/menu-risikesnas/menu-risikesdas/374-rkd-2013>

Figure 11  
Incidence of instant noodle consumption by age

Source: Based on data abstracted from household survey data available at <http://labmandat.litbang.depkes.go.id/riset-badan-litbangkes/menu-risikesnas/menu-risikesdas/374-rkd-2013>



The importance of astute marketing in creating and maintaining consumer allegiance to instant noodle brands should not be understated. Marketing and promotion have played vital roles in helping lift instant noodle consumption in Indonesia from an insignificant source of dietary calories to a frequently consumed food item.

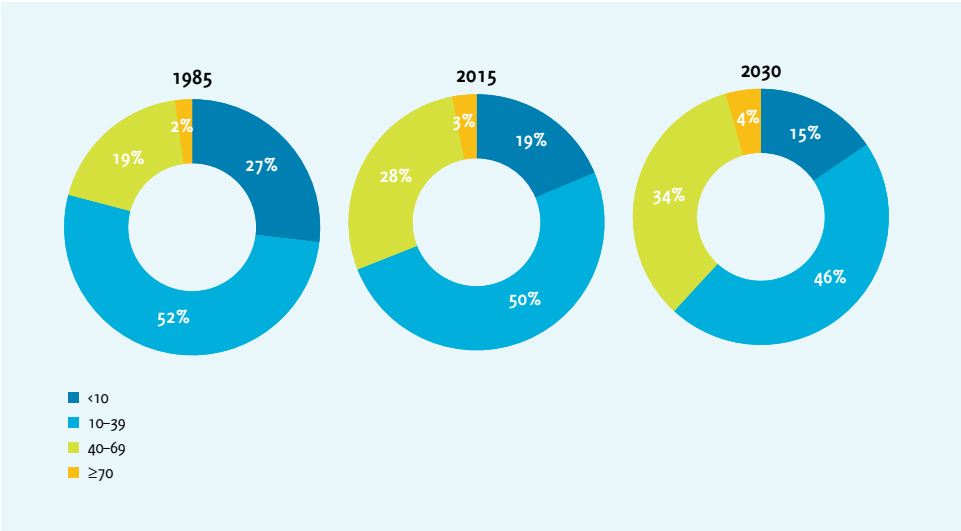
Since Indofood originally introduced instant noodles to Indonesian consumers in the 1970s, they have become a core component of the diet favoured by most of today’s young and middle-aged consumers. Now, nearly 20% of the demographic between 10 and 19 years of age consume more than one serve of instant noodles a day. This is likely to remain a persistent feature of their diet as they age (Figure 11). Furthermore, towards 2035, the segment of the population over 40 will form an increasing proportion of Indonesia’s population (Figure 12). These are people whose dietary habits in their adolescent and young adult years would have been patterned on eating noodles.

Active marketing campaigns by noodle manufacturers over the last two decades have supported growth in instant noodle consumption and encouraged instant noodles to be positioned as a preferred habit food, especially among younger people.

The second factor linked to instant noodle consumption is the consumer’s level of education. Current school attendance ranges from 73% to 85%, and Figure 13 shows that the cohort that did not attend school (who are more likely to be older and rural-based consumers) were less likely to consume instant noodles on a regular basis. The daily instant noodle consumption for those who attend school increases as the educational achievement increases — until to junior high school. However, among those who achieved the highest levels of education, the intake of instant noodles was slightly *reduced*, due to a more sophisticated and complex diet made possible by higher disposable income and greater awareness of healthy eating habits.

Figure 12  
Change in Indonesian population age profile, 1985, 2015 and 2030

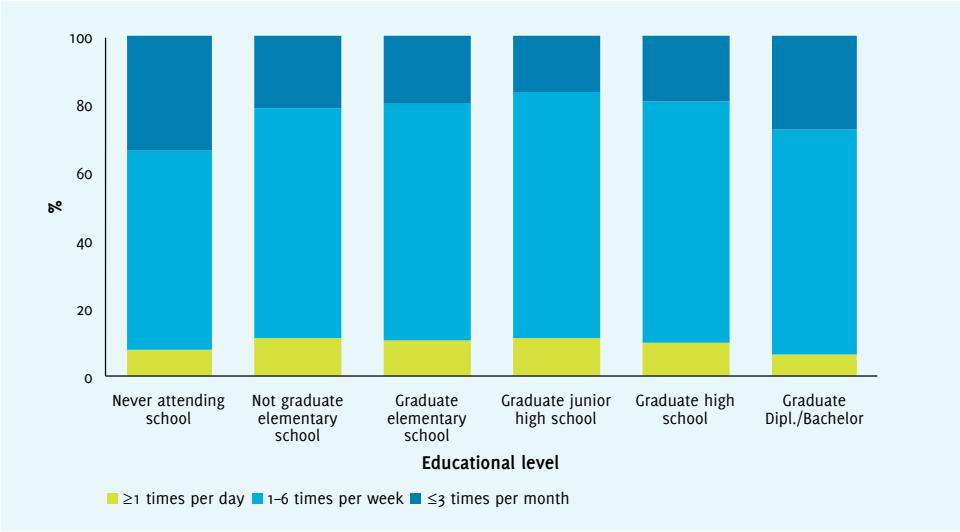
Source: United Nations



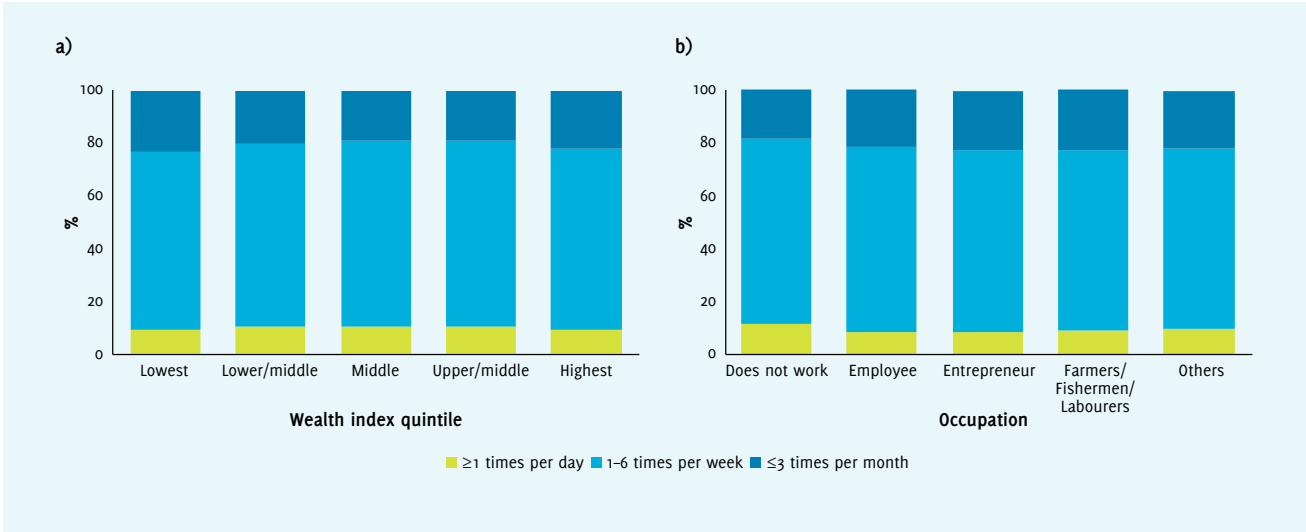


**Figure 13**  
Frequency of instant noodle consumption by age and educational level

Source: Based on data abstracted from household survey data available at <http://labmandat.litbang.depkes.go.id/riset-badan-litbangkes/menu-risikesnas/menu-risikesdas/374-rkd-2013>



While the various cohorts, each with different educational achievements, do display varying levels of consumption of instant noodles, differences in disposable income do not appear to affect instant noodle consumption to any great degree. When consumers are categorised by wealth quintile (Figure 14), there are no clear differences in instant noodle consumption levels. This further supports the view that the dominant noodle makers use a diversified suite of marketing activities to ensure their products are enjoyed by Indonesians of every income demographic.



**Figure 14**  
Incidence of instant noodle consumption by (a) wealth quintile and (b) occupation

Source: Based on data abstracted from household survey data available at <http://labmandat.litbang.depkes.go.id/riset-badan-litbangkes/menu-risikesnas/menu-risikesdas/374-rkd-2013>





INDONESIAN NOODLE CONSUMPTION OPTIONS

The noodle price line in Indonesia shows the cheapest entry of a single branded packet of instant noodles through to expensive high-end restaurants specialising in Japanese-style fresh noodles with condiments.



Although Figure 14 displays the frequency of instant noodle consumption by wealth class, it does not reveal the quality of instant noodles purchased. It is likely that via the premiumisation of instant noodles, wealthier consumers spend more on each purchase of instant noodles through purchasing the complementary meat or garnish or superior quality of noodle.

As with income, the occupation of the consumer has little effect on the consumption of instant noodles (Figure 14), with one exception. There is slightly higher consumption of noodles among the unemployed compared to the various occupational groupings. This may reflect the role of instant noodles as a cheap source of calories with a low cost of preparation. Among the four other groupings (employees, entrepreneurs, farmers/fishers/labourers and others), there is little difference in noodle intake.

Both gender and residence also seemingly have little effect on the intake of instant noodles (Figure 15). This may reflect the success of saturation marketing by major noodle manufacturers such that even in rural regions, consumers have ready access to affordable instant noodles. However, some caution is needed in interpreting the data in Figure 15. The data suggests a consumer's location (i.e. urban versus rural) does not have a major effect on the consumption of instant noodles (Figure 16). Further regional disaggregation of this data confirms no consistent difference in instant noodle consumption between high population density regions versus low population density regions. However, it is important to note that the chart is based on broad classes of instant noodle consumption (e.g. one or more serves per day, 1–6 times per week). By their very nature, these broad categories do not capture potentially important differences in consumption.

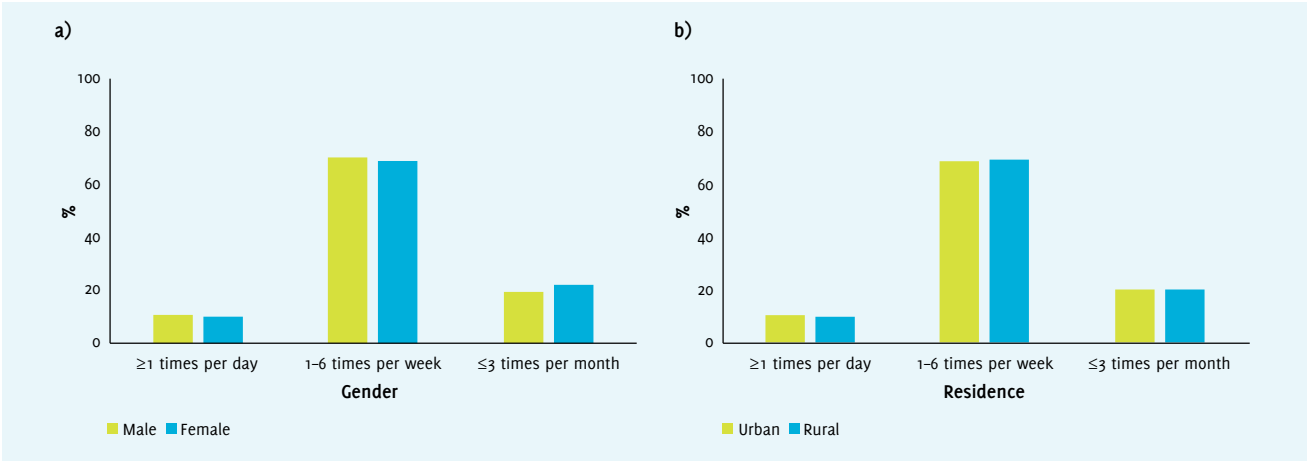


Figure 15 Incidence of instant noodle consumption by (a) gender and (b) residence

Source: Based on data abstracted from household survey data available at <http://labmandat.litbang.depkes.go.id/riset-badan-litbangkes/menu-risikesnas/menu-risikesdas/374-rkd-2013>



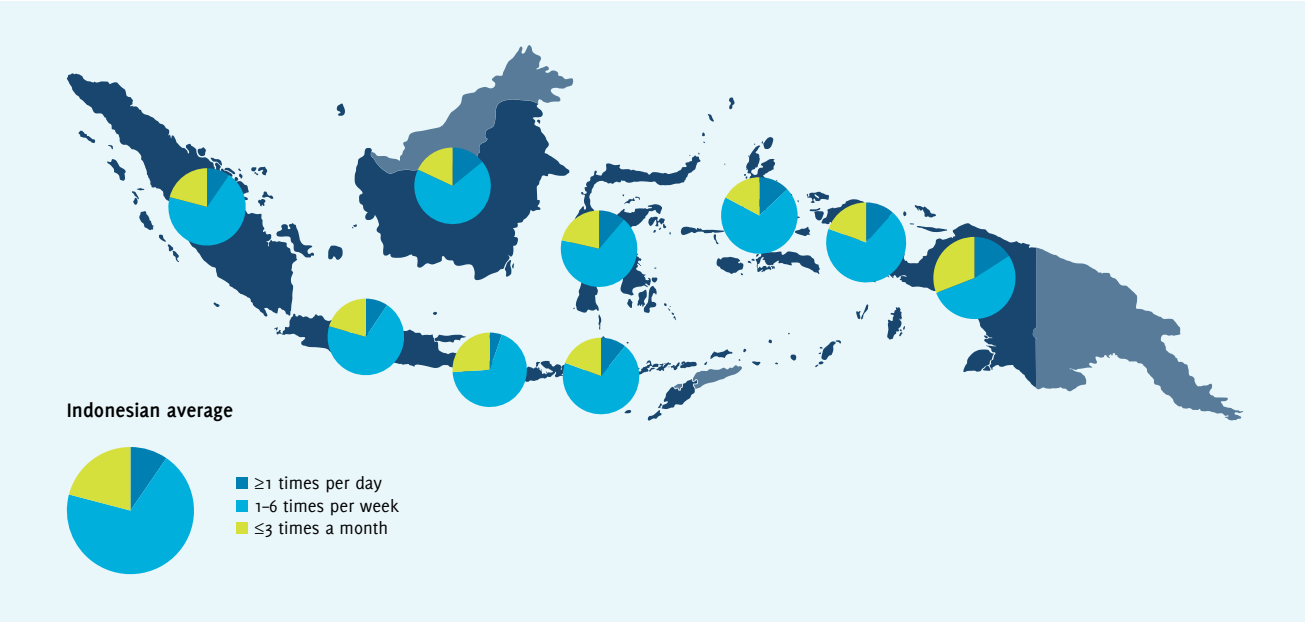


Figure 16  
Incidence of instant noodle consumption by location in Indonesia  
Source: BPS (2014)

For example, an urban consumer who has 1.5 serves per day, on average, would be placed in the same category of consumption as a rural consumer who has only one serve per day; yet the urban consumer’s consumption is 50% higher than that of the rural consumer. Hence, until finer scale consumption data become available, it is not possible to unequivocally state that there is no difference in per capita noodle consumption between urban and rural consumers.

Nonetheless, it remains true that marketing promotion, availability and easy access to instant noodles across the Indonesian archipelago contributes to their popularity and widespread consumption (Figure 16). From traditional retail outlets, such as pasars and *warungs* (wet markets and street vendors) through to modern outlets such as convenience stores, minimarket and supermarkets, instant noodles are readily available (Figure 17) and tailored to different income

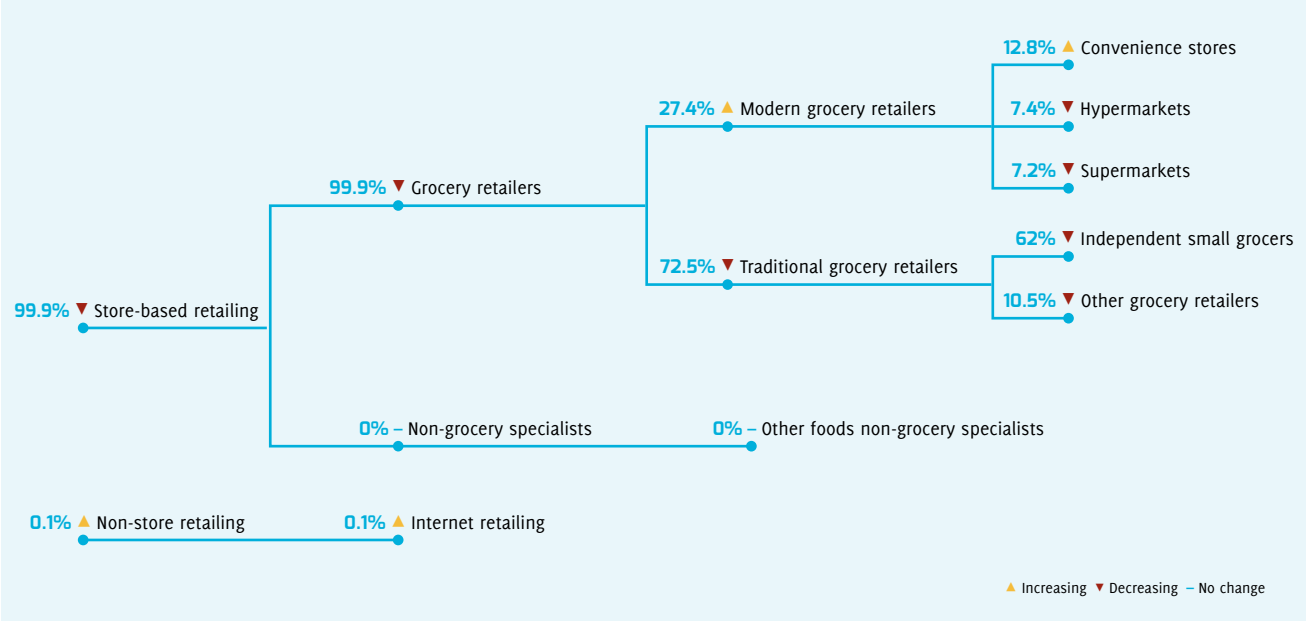


Figure 17  
Sales channels and their shares of sales of instant noodles in Indonesia  
Source: Based on retail sales and growth, 2012–17: Euromonitor, 2018

classes. The growth of sales via convenience stores will continue to support the popularity of instant noodles as a meal or snack. The availability of in-store boiled water stations or microwaves, providing ‘eat now’ options for pot-style instant noodles, only reinforces their popularity as a convenient meal option.

The greatest range of instant noodle varieties and brands is found in supermarkets and hypermarkets (Table 2). By contrast, smaller traditional retail outlets, such as *warungs*, carry fewer brands, but importantly, offer greater ready accessibility than supermarkets for many consumers. A *warung* is usually an independent, smaller store with limited space and thus unable to carry a large variety of brands.

Looking at sales growth for instant noodles in Indonesia, a key point to note is that recent growth has relied on premiumisation and Indonesia’s burgeoning population, rather than continued growth in per-capita consumption. Hence, in the short to

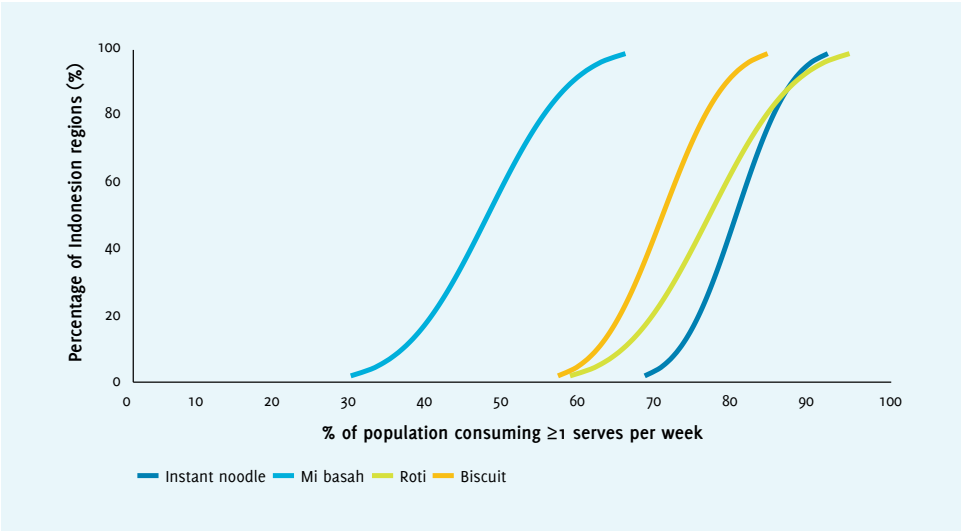
medium term, any potential upside for Australian wheat exports will rely particularly on continued population growth and the growth of premium noodle offerings, such as those with added meat and premium ingredients.

The wide appeal of instant noodles is evident in that more than 60% of sales are via the channel of ‘independent small grocers’ that extends across the vast Indonesian archipelago. The availability of instant noodles in remote parts of Indonesia occurs despite the expense of some of Indonesia’s internal supply chains, with over 70% of the population in nearly all regions consuming instant noodles more than once a week (Figure 18). This is the highest of all the major wheat product segments – including bread. Instant noodles are far more consistently consumed than bread across the archipelago.

Table 2  
Average number of brands stocked for various categories of product sold in different retail outlets

Product category	Product	Pasar (traditional markets)	Warung (small stores)	Minimarket	Supermarket/ Hypermarket
Packaged food	Breakfast cereal	4	3	6	9
	Instant noodles	7	5	10	15
Beverage	Fruit or vegetable juice	8	5	12	18
Confectionery	Chocolate	7	6	13	19
Household cleaning	Dishwashing	2	2	3	6
	Laundry care	10	7	9	14
Personal hygiene	Nappies	3	3	4	9
	Bath and shower	16	11	23	33
	Hair care	9	8	14	25
Tobacco	Cigarettes	3	3	4	6

Figure 18  
Popularity of major wheat products throughout the regions of Indonesia  
Source: Based on data abstracted from household survey data available at <http://labmandat.litbang.depkes.go.id/riset-badan-litbangkes/menu-risikesnas/menu-risikesdas/374-rkd-2013>



Major players in Indonesia’s instant noodle segment

To convey an accurate picture of Indonesia’s noodle manufacturing industry first requires commentary on Indonesia’s flour milling sector. Flour milling and wheat flour use in Indonesia commenced in earnest from the 1950s to the 1970s, when the USA PL-480 food aid program supplied wheat for use in Indonesia. Wheat flour in Bahasa is known as *tepung terigu* – a name derived from the Portuguese and Spanish word for wheat (*trigo*). In Indonesia, different kinds of wheat are milled into flour and are then fortified with certain minerals and vitamins to produce the three main types of flour:

- 1. High protein flour (also known as *bread flour*). This flour has high protein (11–13%) and is used for making bread, noodles and pasta.
- 2. Medium protein flour (or *general purpose flour*). This flour has medium protein (8–10%) and is ideal for making cakes and noodles.
- 3. Low protein flour (*pastry flour*). This flour contains low protein (6–8%) and is used for making biscuits, pastries and extruded chips.

Large Indonesian-owned flour milling businesses emerged during the 1970s, commencing with PT Bogasari. The main flour milling companies are listed in Table 3. Starting from five flour millers, there are now around 27 flour milling companies in Indonesia.

Table 3  
Indonesia’s main wheat flour milling companies

Company name	Milling capacity (mt/hour)
Bogasari	18,200
Interflour Group	3,600
Wilmar Group	3,000
Cerestar Group	3,870
Sriboga	2,050
Wings Group	2,240
Bungasari	1,500
Mananggal perkasa	1,000

Source: Assosiasi Produsen Tepung Terigu Indonesia (APTINDO), August 2018

Table 4  
Indonesian imports of wheat (\$mln and mmt)

Year	Australia		US		Canada		Others	
	Value (mln US\$)	Volume (mt)	Value (mln US\$)	Volume (mt)	Value (mln US\$)	Volume (mt)	Value (mln US\$)	Volume (mt)
2012	1,635	4,877	291	766	410	982	412	799
2013	1,405	3,837	198	539	546	1,372	496	1,305
2014	1,280	4,026	349	1,009	467	1,365	466	1,335
2015	1,212	4,298	131	420	534	1,715	329	1,190
2016	868	3,534	240	964	446	1,659	994	4,654
2017	1,170	5,096	277	1,150	485	1,686	706	3,449

Source: Ministry of Agriculture Republic Indonesia and Global Trade Atlas

These milling companies import wheat from across the globe (Table 4), and principally, from Australia, North America, the Black Sea region and Argentina. The flour produced by these companies is used in a variety of products, including noodles (Figure 2).

Noodle manufacturers

Like the flour milling sector, Indonesia’s instant noodle market is highly concentrated (Table 5). Although there are over 20 instant noodle companies, the segment is dominated by the Salim Group’s *Indofood*. Indofood maintains over 70% market share of instant noodles in Indonesia. The Salim Group also controls the dominant flour millers – *Bogasari* and *Interflour* (in partnership with Western Australia’s CBH Group) – who together account for more than 60% of an increasingly fragmented flour milling sector. A large proportion of Australia’s wheat exports flows through different parts of the Salim Group, emphasising its overall importance for Australian wheat exports.

Milling and instant noodle production in Indonesia is highly concentrated in a small number of dominant players. Not only is each dominated by one player, the same company (Salim Group) effectively controls both flour milling (Bogasari, Interflour) and instant noodle production (Indofood). Compared to instant noodle production, flour milling is becoming a little more fragmented as other players push into this space.

The relative popularity of instant noodles in Indonesia is further reflected at a global level, with Indonesian organisations occupying four of the top five spots (Table 6). However, this data also shows that while Indofood dominates domestically, it is still dwarfed by Japan’s Nisshin Foods. That said, if we compare growth rates and assume that Indofood maintains its current trajectory, Indofood is likely to overtake Nisshin, whose future growth prospects are limited by Japan’s rapidly ageing population. It is this same Japanese demographic challenge that has prompted Japanese companies to look towards South-East Asia as a potential source of growth, so it should come as little surprise to see that Nisshin Foods is currently trying to claim a slice of the Indonesian market.

Table 5  
Companies’ market shares of instant noodles in Indonesia

Company name	2012	2013	2014	2015	2016	2017
Indofood	73.1	73.2	72.8	72.2	71.7	71.1
Wings Corp	15.4	15.5	15.7	16.5	17.8	18.9
Jakarana Tama	3.1	3.1	3.0	3.1	2.9	2.7
ABC President	1.6	1.6	1.6	1.7	1.9	2.0
Medco Group	1.3	1.2	1.2	1.2	1.1	1.0
Nisshin Foods	1.1	1.1	1.0	1.0	1.0	1.0

Source: Euromonitor

Table 6  
Global leaders’ shares in the world market for instant noodles

Company name	2012	2013	2014	2015	2016	2017
Nisshin Foods	12.3	11.0	10.9	10.9	12.0	12.1
Indofood	6.0	6.3	6.5	6.7	6.9	7.1
Wings Corp	1.0	1.0	1.0	1.1	1.3	1.4
Jakarana Tama	0.2	0.2	0.2	0.2	0.2	0.2
ABC President	0.1	0.1	0.1	0.1	0.1	0.1

Source: Euromonitor

Indofood’s brands dominate the Indonesian instant noodle market. Its brands occupy five of the top 10-selling retail brands of instant noodles. *Indomie* is by far Indofood’s main retail brand, with double the sales of the number two brand in Indonesia (*Mie Sedaap*). *Indomie*’s presence is not limited to Indonesia, with the brand gaining a foothold in markets throughout the world, including Australia, where it is available in many major supermarket chains.

According to consumer behaviour research<sup>4</sup> conducted by Kantar Worldpanel, *Indomie* is Indonesia’s most popular brand – not just among instant noodles, but among all brands in Indonesia. They found that an astounding 99.4% of Indonesia’s urban population consumes at least three packets of *Indomie* per month and actively seeks out *Indomie* when purchasing instant noodles.

Consumer research reveals that affordable prices and a wide range of flavours are major reasons for the purchase of instant noodles in Indonesia. Companies such as Indofood regularly engage with consumers via mass media each time a new flavour is launched – thereby maintaining their central position in the minds of consumers. As further evidence of Indonesia’s instant noodle media saturation, Indonesia’s number two noodle brand (*Mie Sedaap*) is also the third most recognised brand, of all products in Indonesia. Companies invest significantly on brand awareness through advertising campaigns (especially using TV).

Most Indonesian consumers have a strong preference for local instant noodles brands, and the main local brands defend and maintain their large share of the instant noodle market. Hence, entry of foreign players into Indonesia’s large domestic market for instant noodles is difficult. Nevertheless, foreign noodle brands are still attempting to gain a foothold. Being the world’s second largest consumer of instant noodles, Indonesia holds obvious attraction for major overseas players such as Japan’s Nisshin Foods<sup>5</sup> and Korea’s Samyang. Entrance and expansion strategies include in-country investment in manufacturing, product development and halal certification. However, companies such as Nisshin Foods have only managed to achieve low single-digit market share in Indonesia, albeit in only a small amount of time. Nisshin’s cup-type noodle brand has become increasingly popular among young consumers in first world countries such as Australia and the UK, so there is the potential to use Indonesia as a production hub for re-export to other markets.

4 See [www.kantarworldpanel.com/id/News/Brand-footprint-2018-indonesia-most-chosen-brands](http://www.kantarworldpanel.com/id/News/Brand-footprint-2018-indonesia-most-chosen-brands)

5 Not to be confused with Nisshin Seifun – Japan’s dominant flour miller.





The very popular Indomie retail brand of instant noodles

## Third country demand

Another emerging factor of potential importance for the export of Australian wheat to Indonesia is Indonesia's growing exports of wheat-based products, including instant noodles. Indonesian exports of wheat-based products have increased from \$US320 million in 2010 to \$US811 million in 2017. Of these exports, instant noodle exports in the first six months of 2017 and 2018 were \$US83 million and \$US93 million, respectively. Hence, the strategic ambition of the Indonesian flour milling and food-processing sector to be a reliable major source of wheat-based products for South-East Asia provides a derived demand for Australian wheat. In the case of instant noodles, it means that Indonesia's manufacture of instant noodles based on Australian wheat is serving not only Indonesia's population but also noodle consumers in adjacent South-East Asian countries.

As testament to the affordability and growing popularity of Indonesian instant noodle brands (particularly Indomie) in other parts of the world besides South-East Asia, Indofood now has six noodle plants in Africa (Morocco, Nigeria, Egypt, Kenya and Ethiopia), enabling it to serve these emerging markets. Considering the likelihood that Africa will firstly follow Asia's population trajectory as well as perhaps eventually mirroring Asia's economic trajectory, companies such as Indofood are well-placed to gain from economic growth in both regions.

If Africa ultimately follows the same general timeline as other emerging (and emerged) economies, the earlier stages are likely to be characterised by less demand for functionality and a greater focus on price alone. Considering the region's proximity to Russian and Ukrainian Black Sea ports (particularly MENA countries), while African consumers prioritise cost to the exclusion of functionality, this market is unlikely to be a major new source of demand for Australian wheat exports. As incomes grow however, and functional benefits relative to price become increasingly important, further market opportunities for functional Australian noodle wheat may arise.

The major source of sales revenue of Indonesian manufactured instant noodles will remain Indonesia's domestic market rather than exports to South-East Asian countries. Exports are likely to be a growing – but still less important – end use of Australian wheat relative to Indonesia's domestic market for instant noodles.

Of some concern, the per capita demand for instant noodles in Indonesia has stagnated, even declining in the most recent years according to some data sources, causing growth in total consumption to rely on population growth.

In future decades, when Indonesia's population begins to plateau, it is likely that Australia will face a gradual decline in demand for its wheat used in noodle manufacture for Indonesian consumers. Indonesia's rate of population growth is projected to taper by 2040 and to peak at 325 million people around 2060. The rate of decline in growth of demand for Australian wheat in noodles may lessen if Indonesian exports of instant noodles increase. Conversely, demand for Australian wheat could diminish if more Australian wheat is switched out of the main flour blends used to manufacture the bulk of instant noodles by cheaper origin wheat.

## 'Premiumisation' of instant noodles in Indonesia

A generic marketing strategy that targets growth opportunities usually involves growing the size of an existing market or securing a slice of some new market. In the context of Australia's wheat exports to satisfy Indonesia's instant noodle demand, this means either securing a larger share of the current demand for instant noodles or targeting other segments, such as premium Chinese noodles or Western-style baked goods and confectionery.

However, capturing a larger slice of the general instant noodle segment has limited upside, as Australia already enjoys a dominant position, with further volume gains more likely at the price-sensitive end of the market in which Australia is less likely to have a comparative advantage. Thus, a more fruitful strategy is likely to be growing Australia's share of Indonesia's emerging premium noodle market, and targeting wheat-based consumer foods (i.e., other than noodles).

Australia's likely preferred strategy of retaining existing market share whilst capturing growth in the premium end of the noodle market may require working with end users to help enlarge the market share of premium noodle products. Evidence of this potential opportunity is emerging with the recent 'premiumisation' of instant noodle products through packaging, new flavours, the inclusion of premium ingredients such as beef or chicken sold as complements to noodles and/or using a superior quality of noodle.

A likely initial scenario is that the Indonesian consumer will be more concerned about the quality of the complementary additives (e.g. flavours and protein source) than the quality of the noodle. Hence, initially 'premiumisation' may have little effect on noodle quality. However, as affluence increases, then eventually the Indonesian consumer will also be discerning about noodle quality as well as the additives. Compared to premium complementary ingredients such as meat, at a per-serving level, the cost difference between typical instant noodles and instant noodles made from higher grades of wheat is relatively small.

As premiumisation grows, an important technical consideration arises:

*If Indonesians consume more instant noodles with novel, premium additives such as beef, what effect will this have on the soup component and will this require noodles with different functional requirements?*

Most macroeconomic studies, including those reported by Kingwell *et al.* (2018), find that generally "... rising living standards lead to significant increases in meat consumption"<sup>6</sup>. However, very recent studies (e.g. Teodoro 2018) reveal that Indonesians are not shifting to greater meat consumption at a rate usually expected. This consumer research indicates that one in four (24%) urban Indonesians planned to follow a mainly vegetarian diet in 2017, thereby limiting the country's switch into greater meat consumption.

This dietary rationale arises from concerns about environmental sustainability and ethics surrounding meat production. Thus, regarding the future of Australian wheat exports to Indonesia, one of the most critical things to monitor is unfolding dietary change in Indonesia. It may be the case that imports of feed grains (including feed wheat) to support meat production in Indonesia may not increase at rates formerly expected as the nation's per capita wealth increases.

Nonetheless, over the next several years, whether diets include more meat or more plant-based protein (or more of both), high levels of consumption of noodles is likely to continue. The versatility, affordability and marketing of noodles is likely to ensure that noodles continue to play a durable role as part of the cereal staples that underpin most Indonesians' diets.



<sup>6</sup> See [http://2015.essa.org.za/fullpaper/essa\\_3072.pdf](http://2015.essa.org.za/fullpaper/essa_3072.pdf)



# Non-instant noodle market

Yellow alkaline noodles, which are commonly consumed in South-East Asia, are made from wheat flour, water, salt and alkaline salt and are usually parboiled. The most common forms of alkaline noodles are fresh, dried, wet/boiled and noodles with egg added as an ingredient. Mie basah (wet noodles) are the most common. Predominantly a small, home-scale industry, these are sold ‘fresh’ mostly by street traders and in wet markets. Due to their high moisture levels, they have a limited shelf life of 1–2 days.

Fresh yellow alkaline noodles are the second largest segment of noodle products in Indonesia (about 8% of total flour use (Figure 4). Mie basah, one of most common fresh yellow alkaline noodle types in Indonesia, typically is fried with vegetables and chicken. It is commonly sold either fresh or pre-cooked by boiling for 30 seconds prior to packaging and usually includes a combination of sodium salts.

Texture and colour preferences for fresh noodles differ between regions. Consumption patterns also differ between regions (Figure 19), with western and northern regions being more likely to consume mie basah more than once a week. Given the manner in which mie basah is consumed, usually as a main meal, it is less likely that a consumer will have more than one serve per day, compared to instant noodles and bread.

Compared with instant noodles, fresh noodle consumption is more strongly influenced by demographic factors. Like instant noodles, the consumption of fresh noodles is more popular with younger Indonesians (Figure 20). As with instant noodles, this is not because consumers are not necessarily choosing to decrease their intake of fresh noodles as they get older. Rather, the dietary patterns of the older generation, brought up on a rice-based diet, tend to remain through adulthood. Once established, dietary patterns do not change significantly (other than a recognised decline in the consumption of sugary foods).

Educational level also has an effect on the consumption of fresh noodles (Figure 20), with consumption lowest among consumers with no formal education, and increasing rates of consumption as educational status increases, up to the level of a graduate degree.

Assuming a positive correlation between education and income, this education effect is consistent with the change in consumption as incomes increase (Figure 21). There is an increasing intake of fresh noodles as wealth increases. This indicates fresh noodles are a what economists call a normal good, insofar as people consume more as their incomes rise. When sold fresh, there is less opportunity for packaging and premium branding. Fresh noodles are often sold with additives

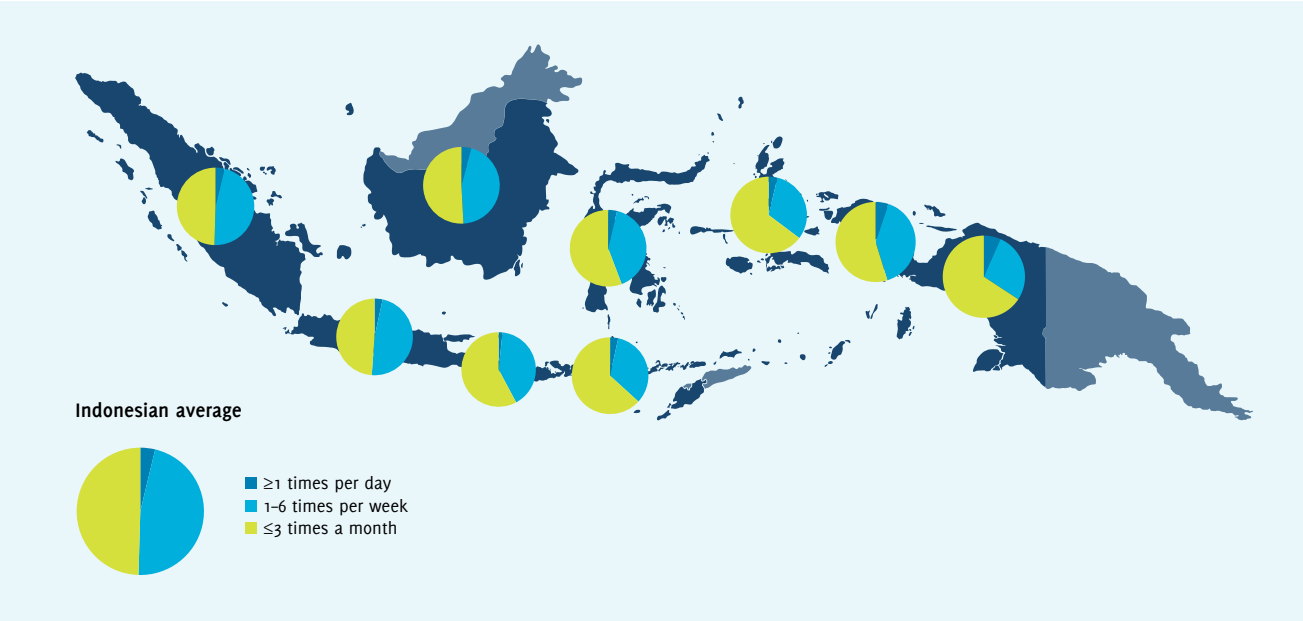


Figure 19  
Incidence of mie basah consumption by location in Indonesia  
Source: BPS (2014).

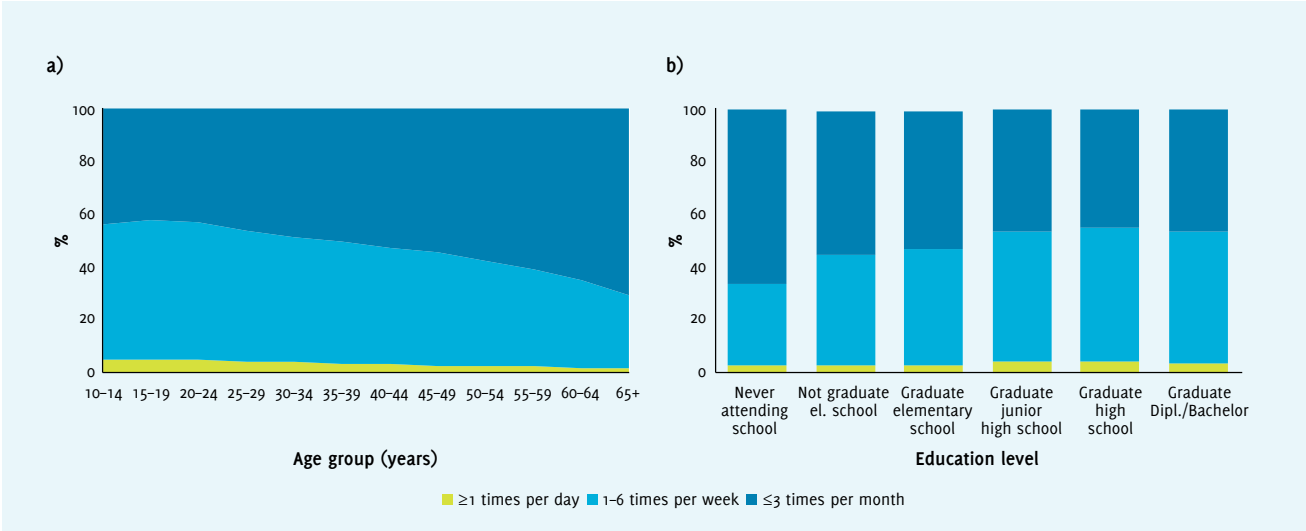


Figure 20  
Incidence of mie basah consumption by (a) age group (years) and (b) education level  
Source: BPS (2014).

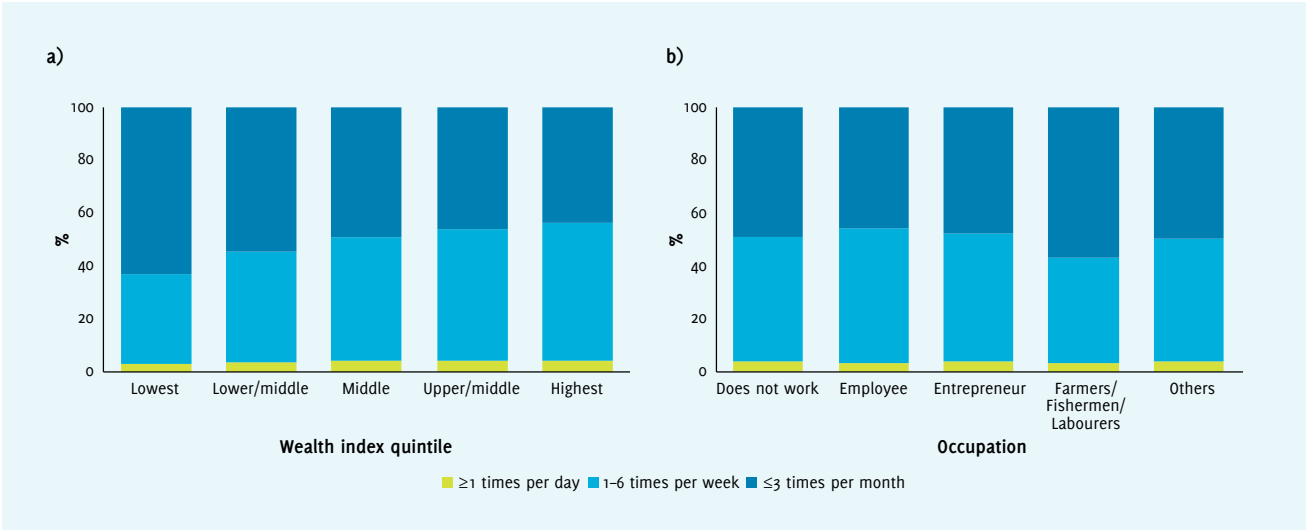


Figure 21  
Incidence of mie basah consumption by (a) wealth quintile and (b) occupation  
Source: BPS (2014)



such as hot broth and garnishes and are consumed where they are purchased. By contrast, instant noodles, especially when sold as pot noodles, are sold as brands, in a snack form, with associated flavour sachets and with or without additional ingredients. Packaged instant noodles are consumed where and when the consumer pleases.

Lower income occupations of farmer, fishers and labourers and those who do not work, show the lowest levels of consumption of fresh noodles. By contrast, consumers who identify themselves as employees have the highest consumption of fresh noodles.

While there is some difference in consumption between genders (with men consuming slightly more), of greater salience is the real difference between urban and rural-based consumers (Figure 22). About 54% of urban consumers report eating fresh noodles more than once a week compared to 45% of rural consumers. The trend towards increased urbanisation, higher per capita incomes and a younger population in Indonesia favours the additional consumption of fresh noodles.

Fresh noodles and instant noodles have different characteristics that will affect their future popularity. Instant noodles offer comparatively more robust commercial opportunities for food manufacturers, through branding and premiumisation. In addition, instant noodles are easier to store, affordable, easy to prepare, easy to transport and have a long shelf life. These attributes are especially attractive to time-pressed mothers and young people seeking convenience snacks. Whereas fresh noodles are perceived as being ‘less processed’, healthier and fresh, and are therefore more likely to be desired by more health-conscious, less time-pressed consumers. The relative magnitude of these groups of consumers and the ability of food manufacturers to innovate and creatively market their brands will ultimately determine the market size of instant noodles versus fresh noodles. Over at least the next decade – and probably for much longer – the instant noodle market is likely to dominate.

# Noodle-driven demand for wheat

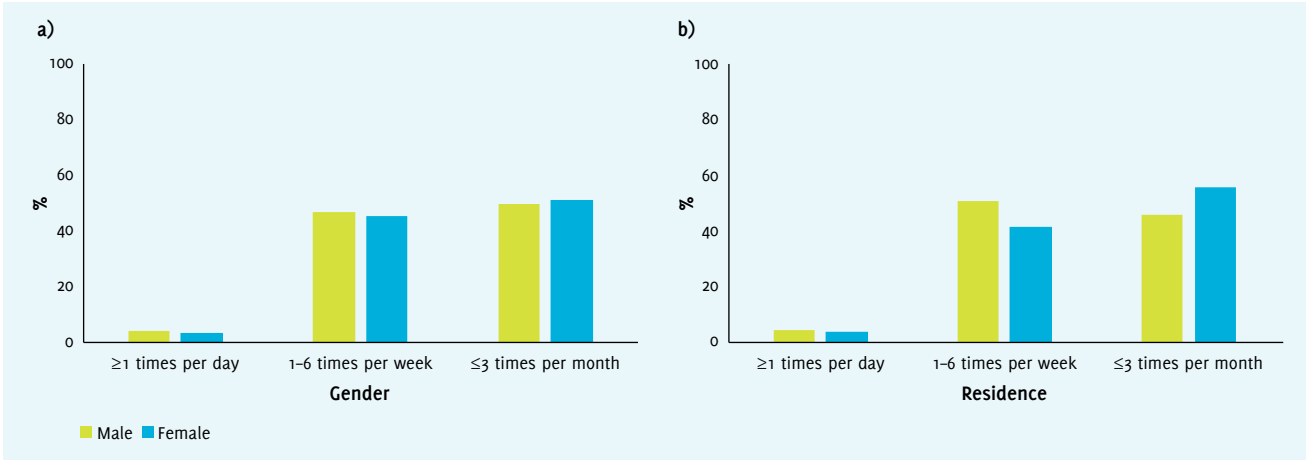


Figure 22  
Incidence of mie basah consumption by (a) gender and (b) residence  
Source: BPS (2014)

Using four methods to forecast annual demand for wheat for human consumption, Figure 23 shows agreement on an upward trend, despite a significant difference in the consumption forecast for 2030, depending on the method applied.

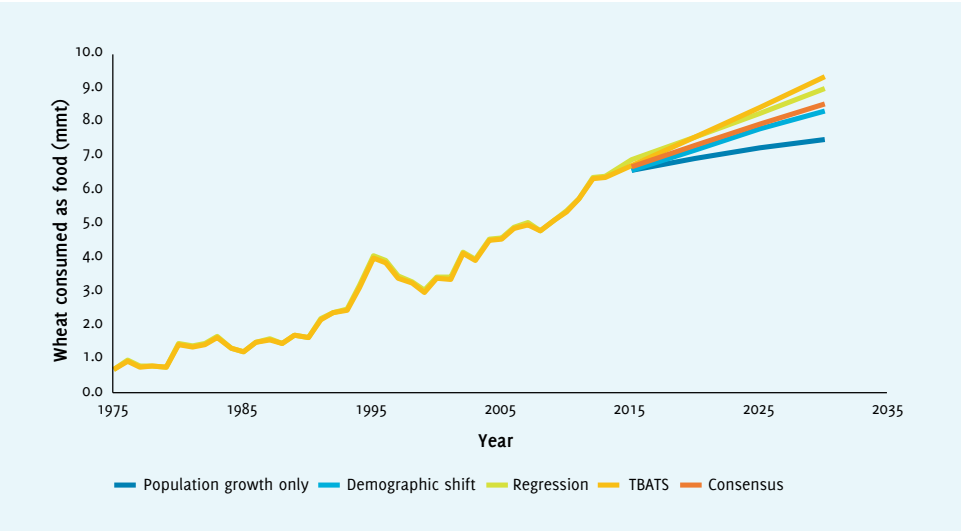
The four methods used for forecasting in Figure 23 are:

- **Population growth** — assumes that the current per capita consumption of wheat will stabilise, although total consumption will change as a function of OECD estimates of future populations.
- **Demographic shift** — using Riskesdas data, this method assumes a shift in consumption due to ageing of the population, and persistence of consumption habits among the younger demographic who consume more wheat-based products.

- **Regression** — here, a model was fit to a set of four demographic variables to estimate the effect of annual changes in those variables (GDP, GNI, Urban/rural population ratio, household consumption, all with second order functions (i.e. non-linear influences)) on the share of daily calories consumed as wheat products. This was then converted into a total consumption figure. Demographic data was sourced from the World Bank and consumption data from FAO.
- **TBATS** — this is a statistical forecasting method that considers trigonometric terms for seasonality, Box-Cox transformations for heterogeneity, ARMA errors for short-term dynamics, damped or undamped trends and seasonality (including multiple and non-integer periods),

Figure 23  
Forecasting Indonesian wheat demand for use in food consumption, four ways

Source Data: FAO 2018, World Bank 2018, R Code for TBATS forecast compiled by R Hydeman 2018)





then uses the best fit function to provide a forecast distribution based on FAO data. The information presented here is the median of that distribution.

The forecasts made by each of these methods are presented in Table 7.

While these forecasts give an indication of the upward trend in total consumption of wheat products, the trends for individual products are less reliable. For instant noodles, there is conflicting data, with some sources indicating a five-year decline in the volume of total consumption (WINA 2017), while others indicate an increase in consumption (BPS 2018). Some sources suggest an increase in the retail value of instant noodles in coming years (Euromonitor 2018) but such an increase does not unambiguously indicate an increase in the volume of instant noodle consumption.

Table 7  
Forecasts of Indonesian annual wheat consumption (mmt) as food products, using multiple methods

	Population growth only	Demographic shift	Regression	TBATS	Average
2020	6.9	7.2	7.6	7.5	7.3
2025	7.2	7.8	8.3	8.4	7.9
2030	7.5	8.3	9.0	9.3	8.5

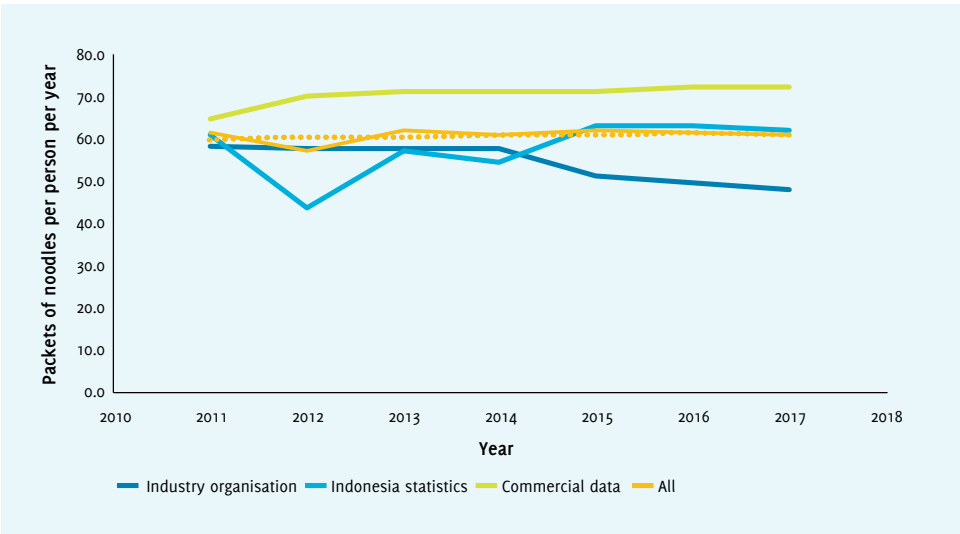
Source: AEGIC estimates

Views regarding consumption of instant noodles are displayed in Figure 24, along with the fitted growth regression (the dotted line) that shows almost stagnant per capita consumption. If this trend of near constant per capita consumption were to continue, the actual volume of wheat used by the instant noodle market would continue to increase at a rate of 1.68% per annum, increasing to 2.05mmt of wheat in 2030 from 1.7mmt in 2017. This represents about 170 million additional servings of instant noodles a year.

Figure 24  
Instant noodle consumption trends

Note: Based on a serving size of 85 grams of dried noodles.

Source: WINA, the Indonesian Statistics agency (BPS) and Euromonitor.



# The Indonesian noodle market – implications for Australian wheat



Due to its stability and magnitude, Indonesia’s noodle market, especially its instant noodle market, will remain a major source of Indonesia’s demand for imported wheat. Fortunately for Australia, flour made from Australian wheat is used in both instant and fresh noodles.

Australian wheat is preferred in noodle making, due to the flour based on Australian wheat having superior colour and colour stability. In a recent survey by AEGIC (2016), the wheat classes of APH, AH and APW were preferred to all other classes of wheat, from four other origins. Australia’s ASW wheat was also rated in the top five wheat classes for making Indonesian fresh noodles. Due to its climate and soil characteristics, especially in Western Australia, Australia can reliably produce exportable surpluses of low to mid-protein wheat that is ideally suited to noodle production. Hence, from Indonesia’s perspective, Australia represents a nearby, reliable source of wheat required by its growing, and increasingly affluent, population. From Australia’s perspective, Indonesia also represents a buyer worthy of further strategic engagement.

Factors that determine the potential attractiveness of Indonesia as a market for Australian wheat include Indonesia’s:

- Comparatively high and growing disposable incomes
- Young, urban and growing population for whom ‘luxury foods’ are purchased for experience, and not just satiety
- Demand for end products that require:
  - specific functionality
  - discernment and differentiation between well-suited and ill-suited wheat
  - elasticity or balanced dough properties
  - quality assurance credentials, extending back to the grain’s point of origin
- Policy that allows imported wheat to be bought privately – without the need for a government tender where the winning offer is decided by price alone (above a minimum hurdle level for quality)



- Close proximity to Australia, which provides freight cost advantages to both parties
- Mutually beneficial trade in many goods and services other than wheat.

If we examine the Indonesian noodle market in the context of these factors, market prospects are mixed. There are some obvious pluses in terms of market size, proximity and demographics. However, there are also some issues for Australian wheat. For example, instant noodles are required as a cheap snack in Indonesia. They are among the cheapest available food and in many cases are bought opportunistically for satiety and convenience. Moreover, instant noodles are typically served with a variety of intensely flavoured ingredients that may obscure certain deficiencies of more cheaply sourced wheat.

While the magnitude and proximity of the Indonesian instant noodle market represents an immense source of demand pull for wheat, including wheat of a quality easily produced by Australia, the need to make instant noodles affordable for most Indonesians means that Australia's historical market share will continue to be vulnerable to low-cost alternatives. Although Australian wheat is preferred for noodle manufacture, the relative expense of Australian wheat is encouraging a lesser proportion of Australian wheat in noodle flour blends — with a portion of Australian wheat being substituted with wheat of low-cost origins such as Ukraine, Russia or Argentina. AEGIC has reported on the grains industry in the Ukraine, Russia and Argentina showing their potential to remain as major low-cost sources of wheat exports (Kingwell *et al.* 2016a, 2016b; Kingwell and White, 2018). Mills are finding they can replace some of the more expensive wheat in certain blends with lower cost (and lower quality), without alienating consumers. This proportion is growing with each passing year as flour mills and noodle makers gain a better understanding of how to incorporate cheaper wheat into their grists.

An important finding from the current situation in Indonesia is that growth in per capita demand for instant noodles has slowed, with some datasets even pointing to a decline in very recent years, after a long period of sustained growth. However, Indonesia's growing population is offsetting this tapering of demand, or at the very least, providing a soft landing. In the coming years however, as per capita disposable incomes rise and Indonesia's population begins to plateau and age, demand for instant noodle wheat is likely to eventually decrease. Indonesia's rate of population growth is projected to taper by 2040 and to peak around 2060 at 325 million people.

Softening this eventual tapering of Indonesian demand for noodles could be an enlarged role for Indonesia as a supplier of noodles, especially instant noodles, to other South-East Asian countries. In short, Indonesia's importation of wheat will increasingly be not just for its domestic consumption, but also to serve consumers in neighbouring countries.

Australian wheat is more likely to be retained in flour blends used to make premium noodles. As Indonesians' wealth increases, the premium end of the noodle market will grow as a proportion of total demand, lessening any overall erosion of Australia's market.

While it remains in Australia's strategic interest to maintain an affordable supply of wheat suited to noodle manufacture, Australia should simultaneously investigate whether Indonesia's growing demand for wheat flour for cakes and cookies could help diversify market risk and potentially provide a new source of demand for high-quality, functionally differentiated Australian wheat.

An additional strategically important factor could be Indonesians' growing level of dietary health consciousness. As Indonesians become wealthier, their attention eventually will turn to the healthiness of their diets. Accordingly, market opportunities will emerge for grains with perceived health properties such as fibre, non-digestible starch, protein levels and vitamin content. Positioning some Australian grains (e.g. food oats, barley and pulses) to be part of the provision of healthy grains for health-conscious Indonesians is likely to be an emerging market opportunity.

## Conclusion

Primarily due to its increasing population size, Indonesia's demand for imported wheat used for noodle manufacture will be sustained for years to come. Australian wheat has properties that suit its use in noodle manufacture and is well regarded by millers and noodle manufacturers in Indonesia. Unfortunately, the emergence of low-cost competitors means that Australian wheat (and North American wheat, for that matter) faces growing competition in the lower half of the market. Flour grists for noodle manufacture are increasingly a blend of wheats from various origins, with Australian wheat being replaced by low-cost alternatives in price-sensitive noodle market segments.

The annual 3–3.5mmt of imported wheat required for noodle manufacture in Indonesia represents an important market for Australian wheat. The challenge for Australia's grains industry is not simply to rest on its laurels, knowing its wheat is a preferred ingredient in flour blends for noodles. Rather, Australia needs to continue investing in improvements to its entire wheat industry, so that Australian wheat used in noodle manufacture is both fit-for-purpose and competitively priced, while still returning reasonable profits to Australian wheat producers.

Indonesia is already the fourth largest per capita consumer of instant noodles — about 48 packets per person per year — so the potential for further growth is limited for a few reasons. First, Indonesian rice remains the core component of Indonesian diets, with per capita rice consumption only declining slightly over the past several years. Because a range of government policies subsidise rice production and consumption, and because rice-based diets are part of the cultural fabric of Indonesia, the likelihood of instant noodles further displacing large volumes of rice in the Indonesian diet is unlikely.

Second, the combination of rice and instant noodles in the Indonesian diet results in that diet being dominated by carbohydrate-heavy cereal staples. As per capita wealth grows, the Indonesian diet is likely to diversify, with a greater inclusion of meat, dairy and vegetables. Hence, the increasing wealth of Indonesia is not a likely launching pad for increasing volumes of wheat being sold to Indonesia for noodle manufacture. Rising incomes are likely to result in the provision of sufficient calories in most Indonesians' diets, and these diets will gradually be less centred on the cereal staples of rice and wheat-based noodles. There will be a greater focus on the taste, novelty and healthiness of the foods consumed each day at home or in the office.

Yet, as Indonesians become wealthier, more urbanised, better educated and more travelled, and as they diversify their diet, new wheat-based product markets will emerge. Breads, cakes, pastries and cookies will likely experience a lift in per capita consumption. Indonesian demand for these products is the subject of the third report in this series.

Available evidence points to further growth in Indonesia's demand for imported wheat for human consumption, with demand for instant noodles continuing to make up a large proportion of this demand. Due to the strong position of Australian wheat in this segment, coupled with a much weaker position in the baked goods sector, noodles, and more specifically instant noodles, will continue to account for a large proportion of Australian wheat exports to South-East Asia.

Indonesia has the potential to add around 2mmt per annum in wheat imports for use in food products in coming decades. Over half of the additional tonnes imported will be for noodle production. Australia will potentially benefit from the increased demand for noodle wheat as Australian wheat is already acknowledged to be highly suited to noodle manufacture.

The premiumisation trend in the noodle market favours continued use of Australian wheat, as increasingly affluent consumers seek higher quality noodles and higher quality ingredients, such as plant or animal protein additives. Lastly, in the medium term, as wealthier and more health-conscious Indonesians assess their dietary needs, the importation of grains like oats, barley and pulses, with their acknowledged health properties, will gradually grow in relative importance.



# Appendix A: The role of wheat and rice in Indonesia

So crucial is rice to the diet and culture of Indonesia that to understand the role and importance of noodle wheat in Indonesia requires first noting the role and importance of rice in Indonesia. Although Indonesia is the main destination for Australian wheat exports and is thus a strategically important market for Australia’s wheat industry, rice remains by far the major staple of the Indonesian diet.

Indonesia is the world’s third-largest producer of rice and is one of the world’s largest consumers of rice. Australia prides itself on wheat production, sowing about 12 million hectares to wheat each year. Yet Indonesia also regularly sows around 13 million hectares to rice each year. Indonesia’s rice area represents about a quarter of its total agricultural area and Indonesia’s rice yield is around 5t/ha.

Rice is Indonesia’s most important food crop. Almost half the daily caloric intake in an Indonesian’s diet comes from rice – around 1,260 kcal per day. Rice also provides over a third of the daily protein intake of the average Indonesian. Annual per capita rice consumption is more than 100kg/year and over the past several years is only slightly trending downward (Figure A1). Despite the small per capita reduction in rice consumption, when the projected population increase is factored in, the International Rice Research Institute estimates that Indonesia will require one-third more rice in 25 years, which means that rice yields must exceed 6t/ha to fill the gap. To avoid burgeoning imports, Indonesian rice policies have promoted rice self-sufficiency by encouraging additional local production.

The government provides fertiliser subsidies to rice farmers and the FAO records that about 52% of all fertiliser use in Indonesia is for rice.

The food supply in Indonesia is 2,583 kcal/person/day while the recommended minimum requirements by the FAO is 1,820 kcal/person/day. Using the FAO nutritional benchmark, about 10% of Indonesia’s population does not receive the minimum number of required calories for an average person. The undernourished in Indonesia consume, on average, 220 kcal/day below the FAO’s minimum food needs. Hence, provision of rice as part of a social welfare policy in Indonesia is very important.

The Indonesian government is strongly committed to ensuring that Indonesia becomes self-sufficient in rice production and imposes at various times a ban on rice imports in order to protect local rice producers. Indonesia’s national logistics agency (BULOG) is required to maintain a minimum year-end stock of rice at 2mmt. Indonesian regulations restrict rice imports one month prior to, during, and two months after the main harvest period. Only BULOG is permitted to import medium quality rice. Private companies can import specialty rice (jasmine, basmati, sushi rice, rice for diabetics and rice seed). BULOG sells its stored rice when rice prices are high and buys from farmers when prices fall below trigger levels. BULOG also distributes subsidised rice to Indonesia’s poor while retaining and managing the nation’s rice reserve stock. BULOG procures about 7% of rice production and sells this at a subsidised rate.

Per capita rice consumption in Indonesia increased greatly in the 1960s, 1970s and 1980s as Indonesia lifted out of poverty into accelerated economic development. At the start of each of the above decades, per capita consumption of rice in Indonesia was 92, 121 and 144kg respectively. However, since the 1980s, per capita rice consumption plateaued and now over the past several years, a slight downward trend in per capita consumption of rice is evident (Figure A1).

## Production constraints

As with wheat production in eastern Australia, Indonesian rice production is vulnerable to the vagaries of the El Niño Southern Oscillation. In years when surface water temperatures rise substantially in the western Pacific Ocean, signalling an El Niño event, rice production suffers from reduced rainfall, triggering reductions in the area planted to rice. The reduction in area occurs in irrigated and rainfed systems.

In upland rice areas, erosion is a serious problem because on steep slopes the fields are neither bunded nor terraced. This can cause serious sedimentation problems in irrigation systems. Alley cropping as well as terracing has been introduced in some areas to reduce these problems. Upland soils are also more weathered and leached, leading to problems of aluminium toxicity and phosphorus deficiency that combine to reduce yields. Soil acidity is serious in tidal swamps because of acid-sulfate soils. These are accompanied by iron toxicity as well as some deficiencies of phosphorus and micronutrients.

Annual loss of paddy land due to land conversion to non-agricultural use (commercial, industrial, urban) – estimated at about 100,000 hectares per year – increasingly constrains rice production. Moreover, traditional inheritance practices are causing a decrease in average farm size, which means technologies and practices that deliver economies of size advantages cannot be widely adopted.

A challenge for Indonesia is the persistence of its traditional rice-centric diet. Unlike other Asian countries, such as China or Thailand, Indonesia has experienced little diversification of its diet away from staples, especially rice (Figure A2) as its per capita income has grown.

## Indonesian rice production

Rice is grown by 77% of Indonesia’s farmers, under predominantly subsistence conditions. The average farm size is less than one hectare, with most farmers cultivating landholdings of 0.1–0.5 hectares. Rice production is concentrated on the islands of Java and Sumatra, with Java supplying almost 60% of total production.

Rice is cultivated on lowlands and uplands, with the upland crop typically being rainfed and receiving only low amounts of fertiliser. Irrigated lowland rice is both well-watered and heavily fertilised. Over 80% of the total rice area in Indonesia is irrigated, with the remainder being rainfed. Rice is grown year-round, with some farmers able to grow three crops a year although two is more common.

The growth rate in rice yield has slowed over the past two decades, as has the growth in the area planted to rice. The growth in area was 2% per year between 1960 and 1998 and since then it has declined to 0.1% per year. These trends point to low growth or stagnation in production and question the capability of local producers to satisfy the Indonesian government’s desire for rice self-sufficiency.

Figure A1  
Per capita rice consumption  
in Indonesia: 1990 to 2016  
Source: Arifin et al. (2018).

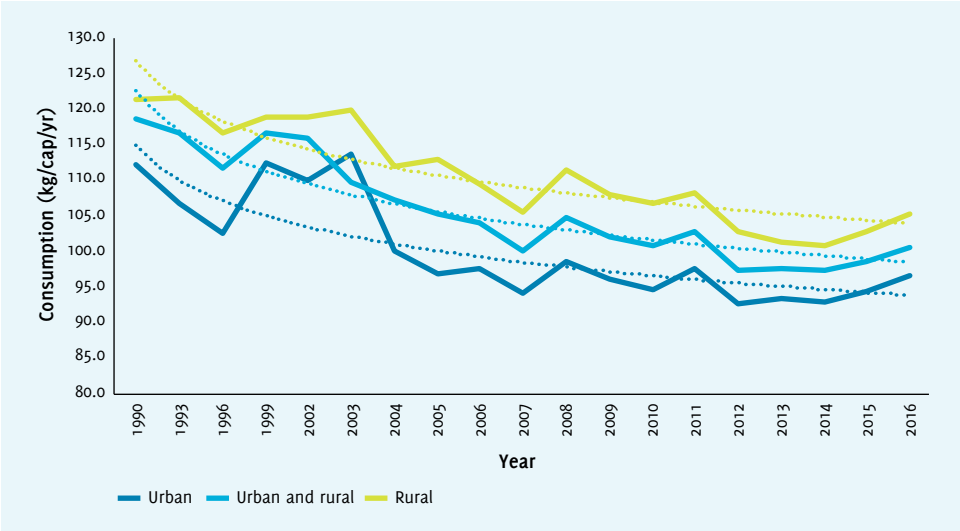
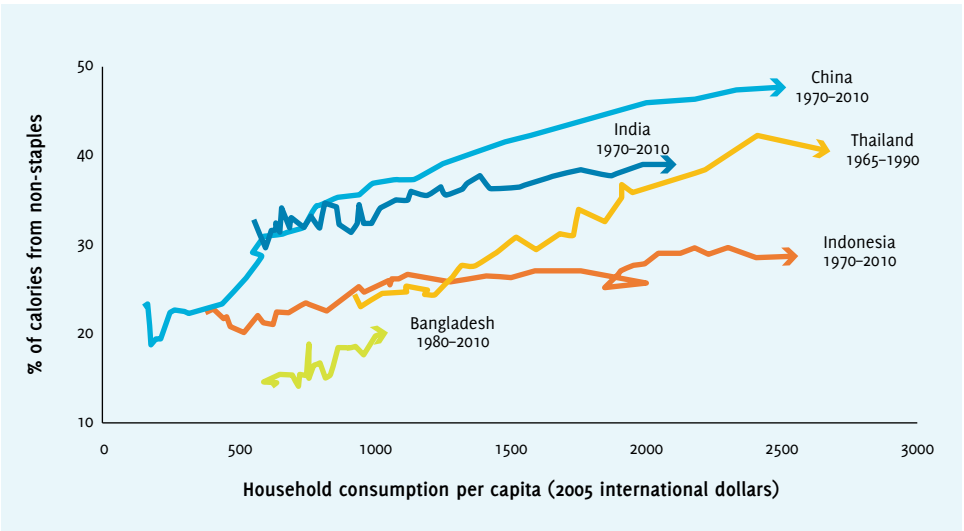


Figure A2  
Indonesia’s dependence on  
staples (especially rice)  
Note : Non-staples are foods  
other than cereals, roots, tubers  
and plantains  
Source: Choudhury and Headey  
(2017)





Like China and Thailand, Indonesia had a similar dependence on rice and other staples in the 1960s and 1970s, but Indonesia's food basket appears to have diversified slowly, with non-staples accounting for just 30% of the total supply of calories by 2010. This slower diversification is only partly explained by lower rates of economic growth, as Indonesia's food supply in 2010 was still much less diversified than Thailand's food supply was in 1990, when their income levels were comparable.

Indonesia is somewhat atypical in not strongly following Bennett's law in economics (Bennett 1941). This law states that as a nation's per capita income increases then the proportion of dietary income spent on starchy staples decreases. For Indonesia, starchy staples, especially rice, persist as key ingredients in people's diets. There are various explanations for this. First, government policies (e.g. fertiliser subsidies, price subsidies to poor consumers) ensure that rice remains available and affordable. Second, Indonesia is agro-ecologically suited to rice production, which gives it a comparative advantage in rice production and a comparative disadvantage in the production of many non-cereal foods –hence, its emphasis on rice production and consumption. Third, the ability to cheaply import wheat and use it to make calorie-rich foods like instant noodles helps maintain the role of starchy staples in the Indonesian diet.

Moreover, the Indonesian government's policy of allowing the importation of wheat allows it to more easily attain its goal of self-sufficiency in rice for a few reasons:

- Indonesia does not, and cannot, viably produce wheat. Instead, Indonesian farmers focus on crops with the biggest potential yield and the largest traditional demand – most notably rice.
- Allowing the importation of wheat provides a separate source of dietary energy, carbohydrate and protein, other than rice. It dilutes Indonesia's sole dependence on rice and thus allows the Indonesian government to more easily ensure its self-sufficiency in rice.
- Because Indonesia does not produce its own wheat, competition with imports does not adversely impact domestic farmers who mostly concentrate on rice production.

- As the Indonesian government has no domestic wheat crop to protect, it is a consistent and reliable importer of large quantities of wheat. This makes Indonesia an attractive market for wheat exporters, which naturally helps ensure that Indonesia has access to the largest possible pool of supply at competitive prices due to competition among many suppliers.
- Wheat is used to produce flour, which is a relatively durable product to transport across long distances where it can be made into food for those located far from sources of food production. Wheat produces a diverse range of calorie-dense foods such as bread, noodles, cakes and cookies.

Indonesia is located directly adjacent to one of the world's biggest wheat exporters – Australia. While Australian production can be affected by adverse seasonal conditions in some years, its relatively small population means that domestic Australian consumption usually has relatively little impact on wheat exports. Hence, Australian supply of wheat assists the Indonesian government to achieve self-sufficiency in rice production.

There is however one situation where Indonesian import of wheat has the potential to adversely impact its food security. By creating large trade flows between Indonesia and the exporting countries who supply the wheat, there is the likelihood that other agricultural commodities – namely, soybeans and corn – will also start flowing along the same channel. Soybeans and corn are both produced in Indonesia. This can lead to a difficult balancing act – importing just enough to cover any shortfall in domestic production but not so much that it displaces the local crop. One country that does not export soybeans or corn is Australia and so this assists wheat trade flows between the two countries as neither need consider any spill over issues surrounding these other feed grains.

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# Glossary

<b>AEGIC</b> — Australian Export Grains Innovation Centre	<b>OECD</b> — Organisation for Economic Co-operation and Development
<b>AH</b> — Australian Hard (a class wheat)	<b>Pasar</b> — A traditional (wet) market. A collection of numerous food vendors under one roof or in one location, usually renting space in the building
<b>APH</b> — Australian Prime Hard (a class wheat)	<b>Premiumisation</b> — creation of new products with characteristics of superior quality and exclusivity
<b>APW</b> — Australian Premium White (a class wheat)	<b>Riskesdas survey</b> — Basic Health survey conducted by the BPS every 5 to 6 years
<b>APTINDO</b> — Assosiasi Produsen Tepung Terigu Indonesia (Indonesian Flour Mills Association)	<b>Supermarket</b> — Medium or large modern stores with three to nine cash registers.
<b>ASW</b> — Australian Standard White (a class wheat)	<b>t</b> — tonne
<b>BPS</b> — Badan Pusat Statistik (Statistics Indonesia)	<b>TBATS</b> — A statistical forecasting function in the R modelling language
<b>BULOG</b> — Badan Urusan Logistik (Indonesia Logistics Bureau — a Indonesian government-owned company)	<b>USA</b> — United States of America
<b>FAO</b> — Food and Agriculture Organization of the United Nations	<b>USDA</b> — United States Department of Agriculture
<b>Food security</b> — state of having reliable access to a sufficient quantity of affordable food	<b>Warung</b> — Small store selling food products in a building or part of a house, often located in a residential area.
<b>Food sovereignty</b> — control over how food security is achieved	<b>WINA</b> — World Instant Noodle Association
<b>GDP</b> — Gross Domestic Product	<b>YoY</b> — Year on Year
<b>GNI</b> — Gross National Income	
<b>ha</b> — hectare	
<b>Hypermarket</b> — Very large modern stores with 10 or more cash registers.	
<b>IDR</b> — Indonesia Rupiah	
<b>kcal</b> — kilocalorie	
<b>kg</b> — kilogram	
<b>MENA</b> — Middle East and North Africa	
<b>Minimarket</b> — Small modern stores with one to two cash registers	
<b>Mmt</b> — million metric tonnes	





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