

**THE EFFECTS OF DEREGULATING RETAIL TRADING
HOURS IN QUEENSLAND**

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Executive Summary

- Under the current system of laws and exceptions, IGA retailers operate with extended trading hours while national chains are subject to regulated trading hours. This difference is of key importance in terms of IGA retailers' ability to remain competitive in the grocery market. The purpose of this study is to understand how deregulation would impact on IGA's market presence and how this change in market presence would then affect the economy of local communities in Queensland.
- Two methodologies of analysis are adopted. First, an on-line questionnaire and follow up interviews are used to collect quantitative and qualitative information on the operational model of IGA retailers, their competitive environment, and the typology of their customers. This information is then used to assess the likely response of retailers to a deregulation in trading hours. This response is characterised in terms of changes in IGA's market presence (i.e. change in number of IGA shops operating in the community or change in the volume of sales of IGA shops). Second, a partial equilibrium model is estimated and simulated to determine a set of "multipliers". These multipliers measure the impact of changes in IGA's market presence on employment and value added in the retail sector and in the economy.
- IGA retailers face a highly competitive environment. Approximately two-third of all IGA stores in Queensland is located within 5km from a national chain store (Woolworths, Aldi, or Coles). In this context, the possibility to trade when national chains are closed is of key importance for IGA stores. Accordingly, most stores are already opened from 6am to 9pm, with closures on 25 December, Good Friday, and possibly half day on ANZAC day.
- Respondents to the questionnaire indicate that a deregulation of trading hours would affect their business. The few exceptions are represented by IGA stores located in relatively remote areas where there are no national chains in the proximity. Several IGA storeowners indicate that their profit margins are already quite small and that they would have to consider selling their business if hours were deregulated. Most respondents indicate that their first action following a deregulation would be to cut on labour costs. Conversely, the option to increase trading hours further is rejected by 71% of the respondents.
- Loyal customers could provide IGA stores with a buffer against increased competition from national chains. 59% of IGA storeowners report that loyal customers generally visit their store between 3pm and 6pm; that is, at a time when national chains are already open. There is however a proportion of approximately 30% IGA stores indicating that they receive visits from their loyal customers before 9am or after 6pm. Moreover, while the convenience of shop location is the primary factor driving loyalty, flexible trading hours are important in determining the behaviour of customers. Hence, part of the loyal customers might be lost once the trading hours of national chains are deregulated.
- For the purpose of the multiplier analysis, Queensland is divided in 80 statistical areas (i.e. local communities). On average, a community consists of 40,000 individuals and includes four IGA stores and seven national chain stores. Taking this average

community as a reference, a 10% reduction in IGA market presence corresponds to a decrease in weekly sales of approximately \$16,000. This reduction in market presence would then result in:

- A loss of 8.2 jobs in the retail sector of that community. The total loss of employment in the community would be equivalent to 10.7 jobs
 - A decrease in the value added generated by the retail sector of the community of almost \$1.7m. The total value added loss for the economy of the community would be in excess of \$2.3m.
 - At aggregate level, the Queensland economy would lose approximately \$185m in value added.
- The table below compares the economic impact of a 10% decrease in the market presence of IGA and national chains

	National chains	IGA network
Jobs lost		
- Retail sector	5.4	8.2
- Total economy	7.0	10.7
Value added lost		
- Retail sector	890,055	1,698,131
- Total economy	1,516,450	2,314,582

1. Introduction

Three different trading hours regimes exist under the current legislation of Queensland. Exempt shops may trade 24 hours a day, 7 days a week, 365 days of the year, including all public holidays. Independent retail shops can open any time, including most public holidays; however, they must remain closed on Good Friday and 25 December each year and until 1pm on 25 April (Anzac Day). Non-exempt shops may open from 8:00am to 9:00pm Monday to Friday and from 8:00am to 5:00pm on Saturday, with extended hours on Sundays and public holidays in certain areas.¹

This legislation implies that in the grocery sector, IGA retailers operate with extended trading hours while national chain shops (e.g. Aldi, Coles, and Woolworths) are subject to regulated trading hours. In fact, the specific provisions concerning extended trading hours for non-exempt shops have resulted in a multitude of zones where different rules apply. The complexity of these arrangements has then prompted a debate on the opportunity to deregulate trading hours.

In September 2014, the Chamber of Commerce and Industry Queensland (CCIQ) noted that “The highly prescriptive and inconsistent nature of the current framework unfairly disadvantages those small businesses that the regulation seeks to protect. It is adding to the compliance and operational costs of small retail businesses at a time when competitive pressures are more acute. Accordingly, there is opportunity to improve the current regulation of trading hours to better accommodate the interests of small businesses” .²

To inform the review process, CCIQ undertook a survey to ask Queensland businesses for their views on the trading hour issues. The survey showed that while 57% of respondents statewide generally support deregulation of trading hours, only 42% of small businesses (i.e. businesses employing less than 20 people) directly involved in the retail sector are in favour of it. The argument for deregulation builds on increased opportunities for sales and greater flexibility to respond to consumer needs. Conversely, the opposing view is based on the concern that deregulation would lead to market dominance of the major chain retailers at the expense of the independent retailers.

In October 2015, the National Retail Association (NRA) submitted an application to the Queensland Industrial Relations Commission to harmonise retail hours in South-East Queensland. This application required stores to be allowed to open from 7:00am to 9:00pm from Monday to Saturday across South-East Queensland with the exception of Brisbane City, the Gold Coast entertainment precinct and the Fortitude Valley and Hamilton north shore. This application was opposed by Master Grocers Australia (MGA) on behalf of independent retailers. In fact, already in November 2014, as part of its response to the Harper Competition

¹ The relevant legislation draws on the Trading (Allowable Hours) Act 1990, supported by the Trading (Allowable Hours) Regulation 2004. Exempt shops are listed in the Act and are not required to limit the number of staff they employ. Independent retail shops are (i) run by an individual, partnership or a proprietary company (but not a public company or related corporation) and (ii) have limited number of employees (no more than 20 including the owner at any point in time). Non-exempt shops are all the shops other than exempt and independent retail shops.

² The report is available at <https://www.cciq.com.au/assets/Documents/Advocacy/Blueprints/Shop-trading-hours-print-final120914.pdf> and the quote is taken from page 2.

Policy Review Draft Report³, IGA had noted that the proliferation of areas with different trading zones is the consequence of the many applications submitted by NRA.

In this debate, the identification of suitable options is complicated by the lack of evidence of the potential effects of deregulation. In fact, while the academic and policy literature on the costs and benefits of deregulation is quite voluminous, there is little understanding of how a change in Queensland legislation might affect the local economy. The purpose of this report is to contribute to filling in the gap. More specifically, the report addresses two questions:

1. What is the competitive environment of IGA retailers in Queensland and how are IGA retailers likely to respond to the deregulation of trading hours?
2. How do changes in IGA's market presence affect local economies?

The evidence collected from a survey of IGA storeowners and follow up interviews suggest that deregulation is expected to result in a reduced volume of business for IGA stores, which in turn would trigger cuts to labour costs and, possibly, the decision to terminate store operations. A quantitative analysis of multiplier effects across the various sectors of the economy then shows that a decrease in IGA's market presence (as measured by reduced number of shops and/or sales) would have significantly negative effects on employment and value added in the retail sector and in the economy overall. In fact, these negative effects are quantitatively larger than the corresponding effects resulting from a decrease in the market presence of national chains.

The rest of this report is organised as follows. Section 2 provides a brief survey of the literature on the effects of deregulating trading hours. Section 3 addresses the first of the two questions. After discussing the design and implementation of the survey and interviews, the section summarises the key findings around three key areas: (i) IGA store's operational model, (ii) competitive environment and deregulation of trading hours, and (iii) characterization of loyal customers. The second question is considered in Section 4. The methodology for the estimation of multipliers is first introduced and then results are presented. Section 5 concludes.

³ Available at http://competitionpolicyreview.gov.au/files/2014/11/IGA_Queensland.pdf

2. An overview of previous work on the deregulation of retail trading hours

Deregulation and the impact on small/independent retailers

The economic impact of deregulation of retail trading hours is the object of a voluminous body of analytical work. Early contributions by Nooteboom (1983) and Morrison and Newman (1983) suggest that lifting trading hour restrictions favours larger shops at the expense of smaller shops. Two mechanisms appear to be most relevant in this regard. First, the cost of a good to a consumer consists of two parts: one is the price at which the good is sold, the other is the opportunity cost of time spent to purchase the good (so-called, accessing cost). Smaller shops tend to have higher prices and lower accessing costs. When hours are deregulated, accessing costs decline for all shops and become a smaller part of the total cost of a good. As a result, smaller shops lose their critical comparative advantage to bigger shops. This then translates into a loss of customers and trade for small shops.

Second, when opening hours increase, then the break-even size of a store (i.e. the size where the profit of the store turns positive) also increases. The number of smaller shops present on the market therefore declines and sales are appropriated by bigger shops. Wenzel (2010 and 2011) generalizes this argument by suggesting that the impact of deregulation depends on the difference in the level of operating costs between large shops (or retail chains) and small shops (or independent retailers). If this difference is large, because retail chains have greater buyer power, better organizational efficiency, and exploit economies of scale, then independent retailers cannot match longer trading hours. The deregulation of trading hours then leads to a loss in demand and decrease in profits of independent retailers. But if instead, the difference in operating costs is not large, then deregulation does not necessarily disadvantage independent retailers.

Deregulation and prices

At the community level, the effects of deregulation would depend on the response of prices and employment. Tanguy et al. (1995) stress that if deregulation causes a reduction in the number of smaller shops and/or in their market share, then the increased market power of larger shops would result in a monopolistic or oligopolistic equilibrium characterised by higher prices. Kay and Morris (1987) and Inderst and Irmen (2005) also note that trading hours deregulation in a competitive market would induce operation at time when costs are high (e.g. night, holidays). To some extent, this increase in costs would be passed on to consumer and thus cause consumer prices to increase relative to a situation where hours are regulated. This inflationary effect of deregulation would be strengthened if shoppers decided to purchase more goods just because they now have more time to shop (see, for instance, Flores and Wenzel, 2016 and Jacobsen and Kooreman, 2005). Shy and Stenbacka (2008) provide a theoretical formalization of how deregulation increases prices in an economy where shops compete on both prices and hours.

The empirical evidence, however, is not unanimous (see Reddy, 2012). In fact, under some circumstances, deregulation could reduce prices. For instance Clemenz (1990) suggests that with deregulation, shoppers have better opportunities to search for the cheapest shop. This in turn pushes all shops to become more efficient (and inefficient shops are driven out of the market), resulting in lower prices overall. Similarly, deregulation can reduce the travel costs of shoppers (De Meza, 1984) and/or the opportunity cost of shopping (Bode et al. 1987 and Gradus 1996). In both cases, the net effect would be a decrease in prices.

Deregulation and employment

At the most basic level, one would be tempted to argue that longer trading hours require shops to hire more labour. Therefore, deregulation should lead to an increase in employment. But the argument is complicated by the fact that, as just discussed, deregulation also affects the structure of the retail market. On the one hand, the shops that benefit from deregulation would effectively need more hours of labour. On the other hand, the shops that lose business would most likely cut labour costs. The net impact on employment then depends on which of these two effects prevail. This cannot be really established theoretically, but only empirically. Analysis based on US data seems to suggest that Sunday trading restrictions reduce employment in the trading sector (Good, 2004; Burda and Weil, 2005). Conversely, Canadian data indicate that Sunday shopping deregulation has had only modest employment effects (Skuterud, 2005). Price (2005) notices that shops respond to longer opening hours by re-arranging the shifts of their existing pool of employees (eventually increasing their hours) rather than by recruiting new workers. This ultimately explains why extended trading hours do not lead to a significant increase in employment

In fact, other dynamics might also come into play. The retail sector, where employment is initially going to change (one way or another), is linked to the other sectors of the economy. Hence, a variation in the pace of activity in the retail sector (i.e. increase or decrease in total sales, increase or decrease in employment) is transmitted to the rest of the economy. The sign and size of this “multiplier” effect is what in the end determines the overall response of employment to deregulation. The estimation of multipliers is the objective of Section 4 of this paper.

Deregulation in Australia

Australia has attracted some attention as a case-study in trading hours deregulation. An early study by Marketshare (1984) reports that the number of small businesses increased quite noticeably between 1948 and 1991-92 despite the progressive increase in retail trading hours. This would suggest that deregulation does not harm small business; in fact, the report was often used to support pro-deregulation campaigns in various States in the early 1990s. Baker (1994) highlights two main limitations of the Marketshare’s report. First, the association between increase in the number of small shops and increase in retail trading hours does not prove causality and, more importantly, is not necessarily indicative of what would happen if a deregulation policy were introduced. Second, the period of observation used in the analysis includes the recessionary years of the late 1980s, when adverse economic conditions forced people to become self-employed or to start home-based businesses that are statistically classified as small shops. This in turn makes it more difficult to extract a meaningful trend from the data.

Subsequent work by Baker and Marshall (1998) and Baker (2002) looks at the issue of how deregulation in Australia could affect market structure and competition. In the specific case of the grocery sector, the risk is that deregulation could hand greater market power to an increasingly strong oligopoly and hence lead to further distortions of the anti-competitive nature of the market structure. This argument implies that in a highly concentrated sector like grocery retail, the principles of the Hilmer Report are likely to have very limited applicability. Moreover, the emergence of large suburban shopping centres has modified shopper’s behavioural patterns. Combined with deregulated trading hours, this significantly

reduces the attractiveness of strip centres and corner shops. Baker and Wood (2010) extend this argument noting that the deregulation of shopping hours would adversely affect the viability and vitality of smaller communities. They cite the disappearance of shopfronts in the main streets of regional New South Wales as an example of how retail deregulation policies could endanger the geography and social constructs of main street localities.

The case of Queensland has been specifically considered in relation to the question of whether deregulation leads to greater employment. Price (2005) suggest that extended trading hours in Queensland has not resulted in higher employment, but in a reduction of full-time and casual employees and an increase in the number of permanent part-time employees.

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3. Operational model, competition and responses to changes in trading hour legislation

To assess the competitive environment faced by IGA retailers and hence their likely responses to a change in trading hour legislation, some qualitative and quantitative information has been collected through (i) an on-line survey distributed to all IGA retailers in Queensland and (ii) a series of follow-up interviews with a selected group of storeowners. The quantitative information thus collected has also been used to inform the multiplier analysis described in the next section.

3.1. Methodology

3.1.1. Questionnaire

The questionnaire used for the on-line survey consists of 17 questions grouped in four sections. The first five questions relate to store details, such as location, area of activity (e.g. supermarket, liquor store, fresh food specialty store) and channel (e.g. IGA, SUPA IGA, X-PRESS IGA).

The second section focuses on the operational model of the shop. Respondents are required to provide the following information:

- weekly hours of operation (question 6)
- days when the shop is closed (e.g. 25 December, ANZAC day, Good Friday) (question 7)
- number of paid working hours employed, number of hours worked by the shop owner, total number of employees, volume of sales (in dollars), and total cost of the labour employed (excluding superannuation) (question 8). All these information have to be provided using the week of 13-19 March 2016 as the reference.⁴
- a list of local service suppliers (e.g. plumber, refrigeration mechanics, cleaners, etc..) that the shop regularly hires and the approximate cost in dollars of the services provided to the shop in the last fiscal year (question 9). The purpose of this question is to gather an idea of the business that IGA stores create for others in the local community. This in turn can help assess the broader implications of a change in IGA's market presence in the community.

The third section is meant to investigate the competitive environment of IGA stores. In these regards, storeowners are asked to:

- indicate if there are other IGA shops, Aldi, Coles, Woolworths sales points within 1, 5, and 10 km from their shops (question 10)
- report how much (in dollars) their shop has reinvested in community activities (such as sponsorships and donations to schools, sporting clubs, charities, etc...) in the last fiscal year (question 11)

⁴ This week was selected as representative of a "normal" week of operation.

- provide information on how they would respond to a change in legislation that allows Aldi, Coles, and Woolworths to increase their trading hours (question 12).
- indicate which area they are most likely to cut back on when reducing cost. A list of six areas is provided (wages, trading hours, order frequency, suppliers, investment in community activities, other) and only one option is allowed (question 13).
- Indicate which food groups contain products that the store sources from a local supplier (i.e. within Queensland). Nine options are provided and respondents can select more than one (question 14).

The fourth and final section of the questionnaire looks at the behaviour of shop's regular customers. The importance of regular customers lies in the fact that as customers become more loyal, the shop becomes less exposed to the effects of changes in trading hour legislation. In this section, storeowners are asked to provide the following information:

- at what time of the day regular customers most frequently visit (question 15)
- the estimated number of items that these customers purchase (question 16)
- the motivation for their continued visitation. Seven options are provided, including the convenience of the location, competitive prices, IGA community chest, etc.. (question 17).

The questionnaire was completely anonymous and respondent could decide not to answer some questions, including those in section 1. However, even if questions in section 1 were answered, shop details are not used to identify specific shops. All respondents were made aware that their responses are anonymous. The questionnaire and the accompanying documentation (recruitment letter and anonymity and confidentiality statements) received ethical clearance from Griffith University

The questionnaire was made available on-line. The link was distributed to all IGA shop owners in Queensland via the IGA network. The survey remained opened for four weeks and reminders were sent at regular intervals to encourage as broad participation as possible. The participation rate in the end was 68.5%.

3.1.2. Interviews

Follow-up, face-to-face interviews were then conducted with 25 shop owners through Queensland. These shops were randomly selected taking into account geographical location and type of activity. The sample hence included Supa IGAs, X-Press, and Cellerbrations liquor stores. The interviews were held at the stores or at an alternate location suggested by the owner. Owners were made aware that they would not be identified and hence that the information they provided would be treated anonymously. The interviews were also ethically cleared by Griffith University.

The interviews used open-ended questions to cover similar areas to those covered in the on-line questionnaire. This gave storeowners the opportunity to qualify their views about regular

customers, business model and trading hour regulation. Interviews also gave the research team the chance to clarify the trends and patterns emerging from the on-line survey.

3.2. Findings

The combined evidence from on-line questionnaires and follow-up interviews is grouped in three areas: (i) operational model, (ii) competitive environment and (iii) loyal customers.

3.2.1. Operational model

The basic operational model of the average IGA stores can be characterised as follows:

<i>Hours of operation</i>	6am – 9pm every day
<i>Closures</i>	25 December and Good Friday
<i>Employment</i>	17 full time equivalent employees
<i>Local service hired</i>	\$77,000 a year
<i>Reinvestment in the community</i>	\$18,000 a year

- When a national chain shop operates within 1 km from the IGA shop, then the IGA shop tends to stay open longer at night and has an average smaller number of employees (15 full time equivalents). There is instead no systematic difference in terms of amount reinvestment in the community through sponsorships or donation.
- When two or more IGA shops are located within 5 km or less from each other, they are most likely to have similar opening hours and they recruit on average more workers than IGA shops located in areas where there are no other IGA shops within 5 km.
- The supply chain generally operates through Metcash. Storeowners buy the majority of their stock from Metcash due to convenience, quality and price. Other suppliers from Queensland are also used and these other suppliers are judged on quality, price, delivery and food safety. In the interviews, some respondents indicated that they do not mind paying more for high quality products, as they know that their customers value quality over price for particular items, e.g. organics. However, if sales were to drop dramatically following a deregulation in trading hours, then storeowners indicated that they would buy less stock or drop a supplier.
- IGA stores typically support the local community (beyond community chest) by offering food free of charge (or at cost price), vouchers raffles facilities (e.g. BBQ out the front of shops) and cash donations. This support is mostly provided to schools, sporting clubs, community clubs, and charities

3.2.2. Competitive environment and deregulation of trading hours

The competitive environment of IGA shops is characterised as follows:

<i>Presence of national chains</i>	<ul style="list-style-type: none"> - 38% of IGA shops are located within 1 km from Aldi, Coles or Woolworths - 67% of IGA shops are located within 5 km from Aldi, Coles or Woolworths
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	<ul style="list-style-type: none"> - 90% if IGA shops are located within 10 km from Aldi, Coles, or Woolworths
<i>Presence of other IGA shops</i>	<ul style="list-style-type: none"> - 25% of IGA shops have at least another IGA shop located within 1 km - 57% of IGA shops have at least another IGA shop located within 5 km - 89% of IGA shops have at least another IGA shop located within 10 km.
<i>Response to changes in legislation</i>	<p>71% of shop owners indicate that they would not increase trading hours in response to a deregulation of trading hours for national chains</p> <p>61% of those who would consider increasing trading hours indicated that they would increase trading hours by 1 hour for each extra hour of trading of the national chains</p>
<i>Cost cutting</i>	<p>81% of respondents indicated that labour cost would be the first area they would be likely to cut back when reducing costs.</p>

- Range is an area that stores use in order to compete with the chains. Most stores include in their range products that are specifically requested by costumers and/or differentiate their supply by stocking products and ranges that are not available at the national chains as a way to encourage visitation and attract new customers. Freedom to customise the range to customer’s preferences is important to build consumer loyalty and establish a point of difference with the chains.
- Labour cost (i.e. wages) is the item that storeowners are more likely to change in response to a marginal drop in sales. In the interviews, most respondents said that they would change the roster and cut the hours of casual workers. However, some storeowners pointed out that it would be difficult to cut employment as they have a strong relationship with their employees and know that some of their workers support their families or support themselves through university. A number of respondents also highlighted the potentially negative effect that cutting staff would have on customer service, which in turn is a key driver in their operation. In addition to labour cost, the only other expense that is seen as flexible is stock; that is, storeowners are prepared to discontinue slow selling stock in response to a drop in sales. All other expenses such as, electricity and rent are seen as fixed. Some of the stores indicate that they are already working on tight margins and even a marginal drop in sales would make them question the feasibility of their business.

Most of the storeowners that were interviewed felt that their ability to trade whilst the national chains are closed significantly helps keep them compete. Some suggested that without national chains being regulated, their business wouldn’t be viable. Because IGA stores are not opened much longer than chains during the week, the impact of deregulation would be felt primarily in weekend and public holiday sales. In fact, all storeowners felt that having the ability to open on public holidays when the chains are closed significantly improves their profitability and allows them to generate cash flow that can then be spent on

other areas of their business. The majority of stores report a boost in sales after five on Saturdays and six on Sundays (i.e. after the chains close). Due to weekend penalty rates, if there were a drop in sales because of deregulation, then IGA stores would have no choice but to reduce weekend staff. This was stressed in the interviews by two rural stores that had a Woolworths in close proximity. One of those storeowners said that the government granted Woolworths to open on Sundays a fortnight before Christmas. This store suffered a drop in sales by a third on the second Sunday before Christmas and a drop of half on the Sunday before Christmas.

The main benefit that long trading hours have for IGA stores is that they offer customers with the flexibility to shop at times that fit in with their lifestyles. At the same time, long trading hours also have some organizational advantages. For instance, some storeowners indicated that long hours make it easier to spread staff across sectors, e.g. staff serve customers while preparing the salads for the deli. In the interviews, one storeowner said that his/her operation works on mainly young staff with 3-4hour shifts and that having long hours means that he/she can employ more workers and give them short shifts that fit in with university and school times. These organizational advantages are not equally experienced by all storeowners; in fact some of those who were interviewed reported that long hours make organising staffing harder and more expensive. However, even for these respondents, the benefit of longer trading hours in terms of attracting new and loyal customers more than offset their potential organizational costs.

When asked what part of their operation would change if national chains trading hours were deregulated, many respondents suggested they would instantly cut wages and then assess the full impact and cut back accordingly. Some storeowners suggested that if the deregulation caused a dramatic drop in sales, then they would have to seriously consider the viability of the business and may be forced to close. This is because they already operate on tight margins and with high fixed costs. Concerns about the impact of deregulation become less strong when IGA stores have no national chains in a close radius

Storeowners were also invited to consider a further increase in their trading hours as a possible alternative response to deregulation. However, most respondents rejected this alternative. Three main reasons were provided for this: safety concerns, previously unsuccessful trials, and feasibility.

3.2.3. Loyal customers

The profile of the typical IGA's loyal customer is as follows:

<i>Demographics</i>	Elderly, tradesmen, shift workers, mothers
<i>Time of visit</i>	Mostly between 3pm and 6pm
<i>Items purchased</i>	Typically no more than 10
<i>Reason for loyalty</i>	Convenience of shop location

- 59.1% of all respondents indicate that regular customers generally visit between 3pm and 6pm. Another 15.5% of respondents reported that regular customer visit their shops after 6 pm, while 12.6% indicate that visits tend to occur before 9am.
- 53% of the respondents also estimate that regular customers purchase less than ten items per visit (25.3% indicate that they purchase less than 5 items per visit).

However, another 20% of respondents report that regular customers purchase more than 20 items each time.

- The most frequently reported reason for loyalty is the convenient location of the shop (56.3% of respondents), followed by flexible trading hours (11.3%) and customer's support for independent businesses (11.3%). High quality customer service is also mentioned as a reason for loyalty by 10% of the shop owners.
- Some loyal customers (especially the elderly and smokers) visit the store every day. Loyal customer visitation typically occurs during the week with weekend trade commonly dominated by new customers. The majority of storeowners claims that loyal customer visitation coincide with their peak hours of trade. Some owners suggest that loyal customers keep sales consistent through the day with: early mornings and nights peak times for shift workers, mid-mornings and afternoons dominated by mothers (around school times), and mid-day dominated by tradesmen (mainly if there is a takeaway section in the store or in the same complex). The elderly would try to avoid peak times.
- Most of the products that loyal customers purchase are also available at national chains. However, the owners admit that loyal customers also purchase locally sourced products (within Queensland). During the interviews, some storeowners remarked that their loyal customers like to support local business and also enjoy the exclusiveness of local products.

Respondents identify four key determinants of loyalty: convenience customer service, convenience, product selection, and support to local business.

Convenience is offered to the customer through location, parking and flexible trading hours. Some storeowners claim that the store location attract loyal customers. Either customers live close or they are attracted to the store due to surrounding shops such as a butcher or newsagent. However, storeowners say that most customers drive to the store despite it being in a close vicinity to their home. The store's car park offers convenience, as customers can park right out the front of the store. This is not as common for chain supermarkets that usually reside in large shopping centres. Long trading hours offer customers the convenience to shop when it suits them. This is an important offering to attract sales and establish loyalty under the consumer perception that "IGA is always open", as most of the stores, admitted to being top-up stores.

Customer service is often highlighted by storeowners as a key point of difference from the national chains. Most storeowners are also the manager of the store or at least have an instore presence. This face-to-face relationship with customers facilitates opportunities for feedback, complaints and requests, all of which help establish their current store operations. Many of the storeowners know the names of their loyal customers and the products they usually purchase. In the interviews, some storeowners shared examples of how they go above and beyond the service found at national chains. One storeowner drove an elderly woman home with her groceries to save her catching the bus as she had a sore knee. Another storeowner was phoned by a lady who was interstate and asked whether the store could do up a bunch of flowers and a small care package for her friend in hospital. As the area was rural, the lady who required this service had very limited options. The storeowner was ready to assist and said this is a reflection of the IGA brand.

Product selection is a major point of differentiation offered by many of the IGA. Successful multi-store owners in particular emphasize the importance of offering “exclusive” or “unique” products. These are normally sourced in response to customer requests, word from other owners, sale representatives, supplier catalogues, or the owners identifying a niche market such as international or health foods. Having these products attracts new customers to the store and keeps them coming back, as the products cannot be found elsewhere. Some of these products are “exclusive” due to being locally sourced. One of storeowner suggested that IGA plays a major role in assisting start-ups. This is because IGA stores have the ability to give the product or range a go. Once the product grows in popularity, national chains may choose to stock the product. An example of this is Mungalli Creek Dairy products. IGA allowed the brand to break into the market and now their range is sold in Woolworths and Coles.

Finally, consumer loyalty has a lot to do with IGA’s connection to the community. Customers are drawn to IGA stores because they support local business and like local products. They also recognise the support IGA provides for local charities, schools and sporting clubs. This is an important element in rural and urban areas that have a tightknit community. Conversely, in suburbs in the Brisbane area, the “local” factor is less relevant and IGA stores choose to compete on price and customer service instead.

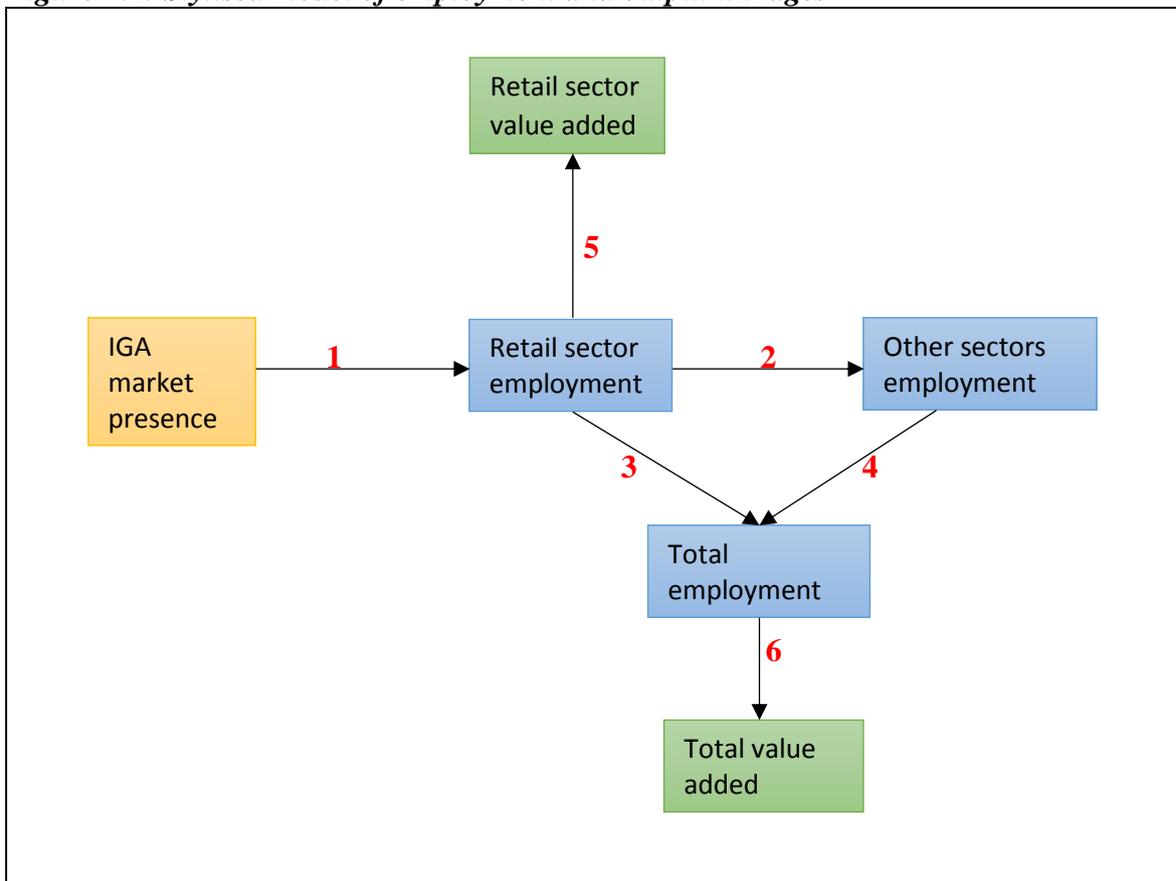
4. Multiplier analysis

The purpose of the multiplier analysis is to estimate the local economic impact of changes in the market presence of the IGA network (e.g. a change in the number of shops or in their volume of sales).

4.1. Methodology

The analysis draws on a partial equilibrium representation of the economic system (see Figure 4.1). In this representation, the retail sector is described in terms of number of employed workers and number of retailers. The retail sector is then linked to the other sectors of the economy and hence to the aggregate employment and output levels of the economy. The unit of analysis are local communities that coincide with the Statistical Areas Level 3 (SA3s) used by the Australian Bureau of Statistics for the 2011 Census and other regional data collection projects.⁵ IGA's independent retailers are separately identified from other larger operators such as Coles, Woolworths and Aldi.

Figure 4.1: Stylised model of employment and output linkages



The model generates two multipliers:

⁵ There are 80 SAR3 areas in Queensland. These are identified on the basis of demographic and functional criteria (see <http://www.abs.gov.au/ausstats/abs@.nsf/0/E7369D1FCE596315CA257801000C64E5?opendocument>)

- *Retail Employment Multiplier (REM)*: measures the effect of a change in the market presence of IGA on employment in the retailer sector. This multiplier is represented by arrow 1 in Figure 4.1
- *Total Employment Multiplier (TEM)*: measures the effect of a change in the market presence of IGA on total employment in the local community. This multiplier incorporates arrows 2, 3 and 4 in Figure 4.1.

Market presence can be measured in terms of volume of sales and/or number of shops. Therefore, an increase in market presence is represented by an increase in the number of IGA stores in a given community and/or an increase in the volume of sales of the IGA stores in that community. REM measures how this increase affects employment in the retail sector. Two related dynamics contribute to determining REM. First, an increase in IGA's market presence should result in an increase in the amount of labour recruited by IGA (direct effect). Second, in response to the increase in IGA's market presence, other retailers may change their operation and hence their demand for labour (indirect effect).

The nature of the response of other retailers is theoretically ambiguous: depending on a variety of conditions (including the size of the potential market, the presence of economies or diseconomies of scale, and access to supply chains) other retailers might scale down or strengthen their operations. In the first case, the indirect effect is likely to partly offset the direct effect, while in the second case the two effects work in the same direction. Because of this theoretical uncertainty, the partial equilibrium model will be informed by the econometric estimation of the relationship between employment and IGA presence, see Box 4.1 for details.

Box 4.1: Estimating the relationship between IGA presence and employment

By how much is employment in the retail sector of a community going to change when IGA's market presence changes by say 10%?

The answer to this question, the following model is estimated:

$$\ln(e_i) = \alpha + \beta \ln(x_i) + \gamma \ln(z_i) + \mathbf{v}_i' \boldsymbol{\theta} + \varepsilon_i$$

where i denotes a generic local community out of the 80 statistical areas considered in this study, e_i is retail or total employment in community i , x_i is IGA's market presence in community i , z_i is the market presence of national chains in community i , \mathbf{v} is a set of additional determinants of employment in community i (e.g. population size, median age, etc...). The symbol \ln denotes the natural logarithm of a variable and ε_i is an error term that accounts for the fact that this is an empirical relationship and not a mathematical one. The parameters to be estimated are α , β , γ , and $\boldsymbol{\theta}$. Of particular interest is the parameter β , which represents the elasticity of employment to changes in IGA's market presence. In other words, β is the answer to the question above.

The variables are log-transformed because in this way the estimated parameters can be readily interpreted in terms of percentage changes. In fact, it is preferable to work with percentage changes as opposed to absolute levels so that the effects estimated from the equation are comparable across retailers and communities of different size. However, the logarithmic transformation cannot be applied when a variable is equal to zero. This means

that the communities where there are no IGA shops have to be dropped out of the sample of analysis. While this is only a small number (four), it is still important to make use of all the statistical information available. Therefore, as a sensitivity check, the model will also be estimated with variables expressed in absolute levels rather than logs.

The changes that occur in the retail sector affect other sectors of the economy through a potentially complex set of interconnectivities that operate via supply chains and sectoral employment shifts. By modelling these interconnectivities it is possible to determine how changes in the retail sector impact on the employment of other sectors, and hence how a change in IGA's market presence affects total employment in the economy. This total employment effect is measured by TEM. Similarly to REM, TEM is estimated econometrically (see Box 4.1).

From REM and TEM it is then possible to determine two corresponding output multipliers:

- *Retail Output Multiplier (ROM)* measures the effect that a change in the market presence of IGA in a given community has on the gross value added produced by the retail sector of that community. This multiplier is represented by arrow 5 in Figure 3.1.
- *Total Output Multiplier (TOM)*: measures the effect that a change in the market presence of IGA in a given community has on the gross value added produced by the economy of that community. This is the multiplier represented by arrow 6 in Figure 3.1.

ROM and TOM are determined from estimates of the productivity of labour; that is, the increase in output (of the sector or the economy) associated with a given change in the input of labour. The estimation process is described in Box 4.2.

Box 4.2: Estimating the productivity of labour

The productivity of labour measures the increase in value added generated by a given increase in the input of labour.

The estimation of labour productivity starts from the production function. Following a well-established tradition in the economic literature, production is assumed to be generated from a combination of capital input, labour input, and technology:

$$Y = AK^{\alpha}L^{\beta}$$

where Y denotes the total production of the economy (or of a sector), A is the technology parameter, K is the stock of physical capital (e.g. infrastructure, machineries, other equipment), and L is the input of labour. The particular functional form assumed here is known as Cobb-Douglas and the parameters α and β are both assumed to be positive.

The log-transformation of the production function yields the following relationship:

$$\ln(Y) = \ln(A) + \alpha \ln(K) + \beta \ln(L)$$

The parameter β measures the percentage change in output associated with a 1% change in the labour input and it is therefore the notion of productivity that is relevant for this study. This parameter can then be estimated with a regression approach similar to the one presented in Box 1. More specifically, setting $\Omega \equiv \ln(A) + \alpha \ln(K)$ (note that this does not involve any loss of generality since the focus is on the identification of β and not the other parameters of the function), the production function reduces to:

$$\ln(Y) = \Omega + \beta \ln(L)$$

with the addition of the error term:

$$\ln(Y) = \Omega + \beta \ln(L) + \varepsilon$$

this becomes a linear regression where β can be directly estimated. To this purpose, data on gross value added by sector and employment by sector for the entire Queensland economy are used. In fact, the Queensland Government Regional Database does not provide disaggregated gross value added data for the 80 statistical regions that constitute the unit of observation of this study. Hence, the assumption here is that in each of these communities, labour productivity is approximately equal to the average of labour productivity in Queensland.

The employment data required to implement the modelling approach are sourced from the Queensland Government Regional Database.⁶ For each of the 80 statistical areas of interest, the database provides a comprehensive profile that includes various demographic and economic data. In particular, employment data are available for 19 different sectors (including retail) over different years. Additional statistical information on average household income for each area is obtained from the Australian Bureau of Statistics (ABS).⁷ The ABS also supplies information on value added by sector which is used to compute the productivity of labour.⁸ Data on the market presence of IGA (number of shops) have been provided by IGA, while sales volume data have been collected through the questionnaire described in Section 3.1. Data on the presence of national chains have been constructed using the information publicly available through shop locators. This required matching the post code of each shop with the post codes of the 80 statistical areas of interest.

4.2. Results

The multipliers determined from the model are expressed as percentage change in employment or output for a 1% change in the market presence of IGA:

<i>Retail Employment Multiplier (REM)</i>	0.029
<i>Total Employment Multiplier (TEM)</i>	0.004
<i>Retail Output Multiplier (ROM)</i>	0.149
<i>Total Output Multiplier (TOM)</i>	0.020

⁶ This resource is publicly accessible at <http://statistics.qgso.qld.gov.au/qld-regional-profiles>.

⁷ Accessible at <http://stat.abs.gov.au/itt/r.jsp?databyregion>

⁸ <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5206.0Mar%202016?OpenDocument>

For instance, a REM equal to 0.029 means that a 1% increase in the presence of IGA increases retail employment in the community by almost 0.03%. It is important to note that these multipliers also apply in reverse; that is, a 1% decrease in the market presence of IGA would reduce employment in the community by 0.03%

All the estimated coefficients from which the multipliers are determined are statistically highly significant (see Box 4.3 for a technical discussion). Table 4.1 below summarises the implied effects associated with a 10% increase in IGA presence; this is equivalent to an increase in the average number of IGA stores per community from 3.8 to 4.2 or an average increase in sales by approximately \$16,000 per shop per week.

Table 4.1: Economic Impact of increasing IGA presence by 10%

	Additional jobs	Value added (\$) – annual
Retail sector	8.2	1,698,131
Total economy	10.7	2,314,582

These figures imply that an increase in IGA presence equivalent to one extra shop will generate a total of 32 extra jobs in the community. Conversely, if IGA presence were reduced by one shop, then the economy would lose 32 jobs. At aggregate level, IGA contributes \$1.3bn to the value added of Queensland’s retail sector and \$1.8bn to the value added of the Queensland economy.

IGA as a network has a positive direct effect on the retail sector of the local community and of Queensland overall. However, it also has a positive indirect effect on other sectors, as shown by the fact that the both additional jobs and contribution to value added for the total economy are higher than the corresponding figures for the retail sector. (10.7 v. 8.2 additional jobs and \$2.3m v. \$1.7m in value added). In other words, IGA presence generates positive externalities for other sectors in the economy, and for the wholesale sector in particular.

Box 4.3. Regression results

1. Employment effects of IGA presence

The REM and TEM are determined from estimates of the regression model introduced in Box 4.1. The table below reports the estimated coefficients of the two key parameters of interest: β is the elasticity of employment to changes in IGA’s market presence and γ is the elasticity of employment to changes in the market presence of the national chains. It should be noted that the model also includes a set of control variables \mathbf{z} whose estimated coefficients are not reported to avoid making the presentation cumbersome.

A typical problem in econometrics is that estimation involves a margin of error. This means that estimated coefficients which are numerically different from zero could be in fact statistically too close to zero and hence not significant. To assess whether or not this is the case, the table reports the probability value of each estimated coefficient (shown in brackets under the coefficient). This value ranges between 0 and 1, with 0 meaning that the estimated coefficient is certainly not equal to zero and 1 meaning that the estimated coefficient (whichever its numerical value is) is in fact equal to zero. Low probability values are taken as evidence that the estimated coefficients are statistically significant. In practice, any

probability value above 0.1 is considered to be too high and the associated estimated coefficient is treated as being equal to zero.

At the bottom of the table, two additional statistical diagnostics are reported. The R^2 is an indicator of goodness of fit of the model. It measures how much of the observed variation in the data is explained by the estimated model. Theoretically, this indicator ranges from 0 (i.e. extremely poor fit) to 1 (i.e. perfect fit). The F statistic is a test of whether the estimated coefficients are jointly statistically different from zero. Its probability value is reported in bracket and it can be interpreted in a similar way as the individual probability values of the estimated coefficients.

Column I of the table reports the baseline estimates on which REM and TEM are based. As can be seen, the p-values are quite low (particularly the one associated with the estimate β), the R^2 is very large and the probability value of the F statistics is in practice equal to 0. All this suggests that the model is precisely estimated and estimated coefficients can therefore be used with a high degree of confidence.

As a way to check the robustness of the baseline results, columns II and III reports estimates of one coefficient when the other is restricted to be equal to zero. Numerically, the coefficients are very similar to those reported in column I. Statistically, models in Columns II and III are less strong than the model in Columns (as indicated by lower R^2 and higher probability values). This confirms that none of the two coefficients should be restricted to be zero.

	I	II	III
β	0.029 (0.007)	0.022 (0.057)	..
γ	0.019 (0.062)	..	0.017 (0.092)
R^2	0.84	0.66	0.59
F	115.89 (0.000)	201.70 (0.000)	234.35 (0.000)

2. Estimation of labour productivity

The second bit of econometric estimation that informs the multiplier analysis is described in Box 4.2. The estimated log-linear relationship between output and employment is represented in Figure 4.2 (retail sector) and Figure 4.3 (aggregate Queensland economy).

The regressions are estimated using sectoral and aggregate data for the Queensland Economy (sectoral output data for the individual communities are not available). The estimation period is 1990 to 2015. Hence each point in the figure represents the observed combination of employment and output in a given year. The line shows the fitted values from the regression of log output on log employment. In practice, the slope of the line measures the percentage change in output associated with the percentage change in employment, which is the measure of productivity needed to simulate the values of ROM and TOM. The estimated line provides a very good approximation of the scatter plots, suggesting that the relationship is effectively log-linear.

Figure 4.2 *Employment and output in the retail sector (1990-2015)*

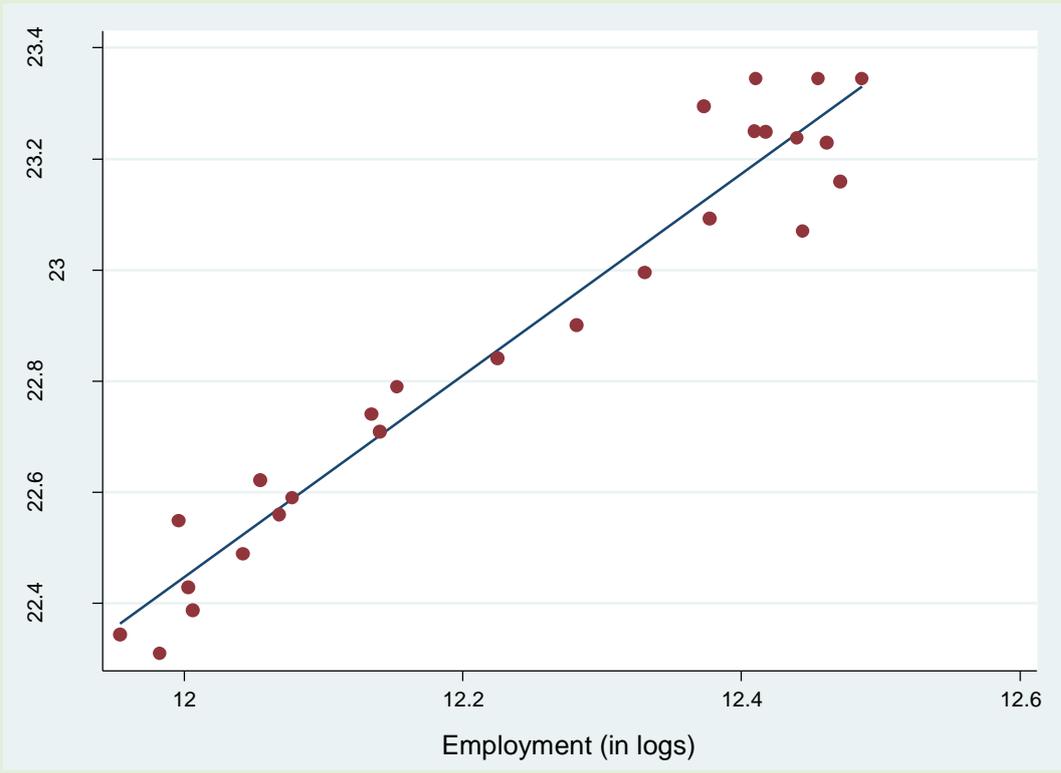
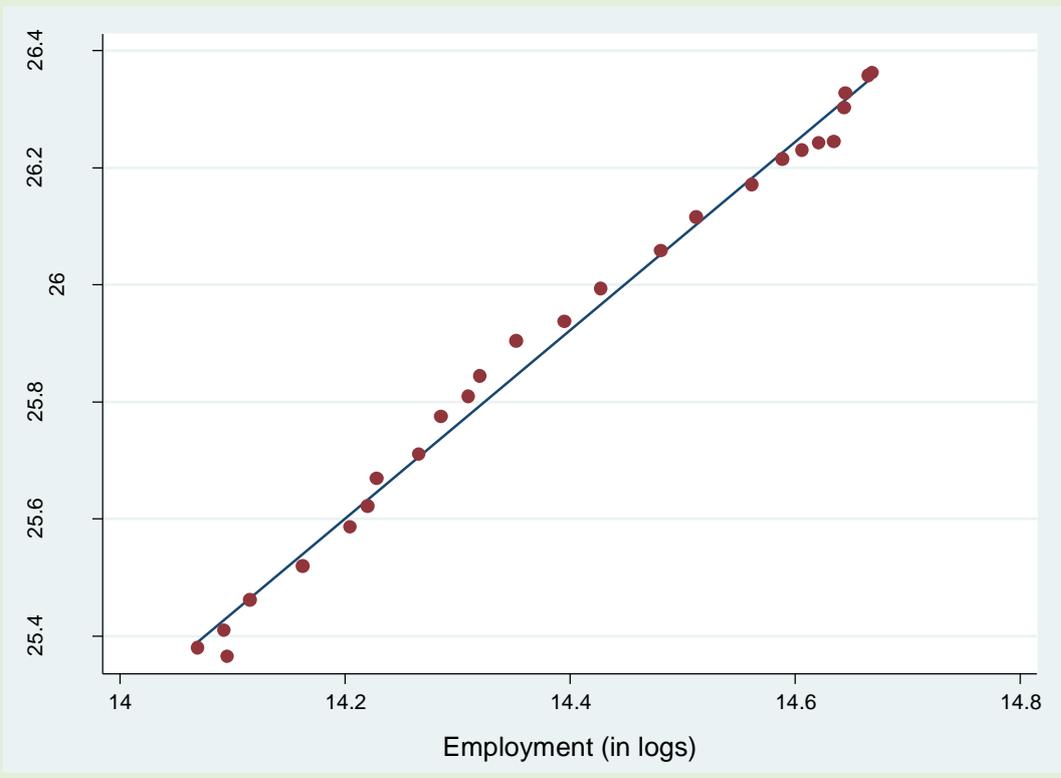


Figure 4.3 *Output and employment in the Queensland economy (1990-2015)*



The estimated effects are comparable in size with those obtained from other studies. The study that is probably most directly comparable to this one is a 2014 KPMG analysis of the economic contribution of small to medium sized grocery retailers to the Tasmanian economy. The relevant measures of economic impact derived from that study are reported in Table 4.2 together with the corresponding measures generated from the multipliers above. As can be seen, the value added generated by the average retailer is very similar in the two cases. The total value added generated by the IGA network is larger in Queensland, due to the larger number of retailers present on the territory. The proportional contribution to Gross State Product (GSP) is larger in Tasmania. This is because while the Tasmanian economy is approximately 10 times smaller than the Queensland economy in terms of GSP, the IGA network in Tasmania is only three times smaller than the IGA network in Queensland in terms of number of retailers.

Table 4.2: Comparison with 2014 KPMG Study of Independent Retailers in Tasmania

	KPMG study of Tasmania	This study
Average value added generated by one IGA retailer	\$6.011m	\$6.942m
Total value added generated by IGA network		
- Level	\$511.01m	\$1,851.66m
- % of Gross State Product	3%	0.7%

The multipliers represent average effects. Depending on factors like economic conditions in the community and intensity of competition, the actual impact of increasing IGA by 10% varies around the average values reported above. Moreover, because multipliers are estimated from real data, it is necessary to allow for a small margin of error. In practice this is done by constructing a “confidence interval”, which is essentially a range of values within which the actual value of the multipliers will fall with reasonable certainty. Table 4.3 provides 95% confidence intervals for the multipliers and the associated figures shown in Table 4.2. In practical terms, there is a 95% probability that the “true” value of the multipliers falls within the interval. The confidence intervals are relatively small, which suggests that estimated coefficients are precisely estimated (see also Box 4.3)

Table 4.3: Confidence interval for impact effect

	Lower end of the interval	Upper end of the interval
REM	0.020	0.038
TEM	0.003	0.005
ROM	0.134	0.164
TON	0.018	0.022
Additional jobs		
- Retail sector	6.8	9.9
- Total economy	9.9	11.7
Value added		
- Retail sector	\$1,426,914	\$1,969,348
- Total economy	\$2,097,365	\$2,531,799

The model also generates multipliers and economic impacts associated with changes in the market presence of national chains. These are reported in Table 4.4, which also reproduces the IGA's figures for reference. The jobs and value added effect are computed for a 10% change in the number of national chain shops in the community: this is equivalent to an increase in the average number of national chain shops from 7.2 to 8.0. The REM multiplier is significantly lower, this is due to the fact that national chains tend to have a significantly lower employment to sales ratio than IGA shops. This lower REM triggers lower effects on employment and hence, for given productivity (which is indeed assumed to be identical across all shops), lower value added.

Table 4.4: Comparison of multipliers for IGA and national chain shops

	National chains	IGA network
REM	0.019	0.029
TEM	0.003	0.004
ROM	0.098	0.149
TOM	0.012	0.020
Additional jobs		
- Retail sector	5.4	8.2
- Total economy	7.0	10.7
Value added		
- Retail sector	890,055	1,698,131
- Total economy	1,516,450	2,314,582

5. Conclusions

The IGA network has a significant impact on local economies in terms of both employment and value added. This economic contribution, however, is a function of IGA stores' ability to compete with national chains, which in turn is critically dependent on trading hours. The deregulation of trading hours, resulting in the possibility for national chains to trade longer and over public holidays, would most likely lead to a decrease in IGA's market presence as measured by number of shops and/or volume of sales. This decrease would then result in reduced employment and lower value added to the economy. In quantitative terms, the loss of one IGA store would cost the Queensland economy approximately \$7m in value added and up to 32 jobs. These figures account for the direct and indirect effects that IGA market presence has on the retailer sector and other sectors across the economy.

IGA stores face a highly competitive environment, with at least one national chain shop (and often at least another IGA shop) within 5 km if not 1 km from their location. The main way in which IGA retailers remain competitive is extended trading hours; that is, by remaining open when national chains are closed. Already today, the typical IGA store today is open from 6am to 9pm every day (with very few days of closure in a year). Most IGA storeowners indicate that they would not consider extending these hours any further even if the trading hours of national chains were deregulated.

A deregulation of trading hours would therefore force IGA storeowners to cut costs to remain competitive. The area that is most likely to be cut, at least in the first instance, is labour costs. However, the personal relationship that often arises between employer and employees could make this particularly difficult. Alternative responses (e.g. trying to rationalise supply chains, discontinuing slow selling stocks) appear to be less favoured by IGA storeowners and possibly less effective or practical, at least in the short term. Some storeowners explicitly indicated that they might be forced to close their business as a result of the deregulation of trading hours.

Part of the effect that deregulation will have also depends on whether customers stay loyal to IGA shop owners. In the perception of IGA storeowners, regular customers are loyal primarily because of logistical convenience (e.g. shop location, easy parking, access to other shops like newsagent or butcher etc...). This means that they would remain loyal even if hours were deregulated. Nevertheless some storeowners remark how extended trading hours do play a role and help consolidate loyalty. The moment national chains were able to trade over the same extended hours as IGA shops, this dimension of loyalty would be lost.

All in all, the evidence collected from the analysis of operational model and competitive environment of IGA stores indicates that the deregulation of trading hours would reduce IGA's market presence in terms of number of shops and/or volume of sales. The quantitative economic effects of this reduced presence are summarised below.

Given an average community of 40,000 individuals where four IGA stores operate together with seven national chain stores⁹, a 10% reduction in IGA market presence (corresponding to a decrease in weekly sales of approximately \$16,000) would result in:

⁹ These are the average characteristics of the 80 statistical areas in which Queensland has been subdivided for the purpose of this analysis.

- A loss of 8.2 jobs in the retail sector of that community. The total loss of employment in the community would be equivalent to 10.7 jobs
- A decrease in the value added generated by the retail sector of the community of almost \$1.7m. The total value added loss for the economy of the community would be in excess of \$2.3m.
- At aggregate level, the Queensland economy would lose approximately \$185m in value added.

Quantitatively, these effects are larger than corresponding effects associated with a 10% decline in the market presence of national chains.