

## Evaluating offshore and domestic production in the apparel industry: The small firm's perspective

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**Abstract** This paper extends the existing literature on the potential advantages and drawbacks of domestic and offshore manufacturing strategies to a small firm perspective. The advantages of offshore production to the large corporation have received much attention in recent years, particularly with regards to the apparel industry. The key advantages of offshore production are obvious for the large firm: cost reductions and increased productivity through labour market differentials. Little is known however about the viability and attractiveness of this strategy for the small apparel firm. The high number of small apparel firms who continue to produce in their domestic market, despite labour market differentials, suggests that the cost advantages of producing offshore may not be as critical for the competitive advantage of many of these small firms. Four case studies of small New Zealand apparel firms are used to substantiate and expand on themes developed from the literature.

**Keywords** Offshore production · Domestic production · Apparel industry · Manufacturing strategy · Cost · Quality · Delivery · Flexibility

### Introduction

This paper extends the existing literature on the potential advantages and disadvantages of domestic and offshore manufacturing strategies to a small-firm perspective. It seeks to explain why some small firms in high-labour-cost countries continue with domestic production despite growing competition from offshore manufacturers. Four case studies of small New Zealand apparel firms will then be used to substantiate inferences derived from the literature. The advantages of offshore production to the large corporation have received much attention in recent years, particularly with regards to the apparel industry. The past two decades have witnessed many multinational apparel corporations such as Nike, Levi's and The

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Gap moving all of their garment production offshore (Christerson and Appelbaum 1995; Klein 2000; Firoz and Ammatturo 2002). For large companies, offshore production brings significant reductions in direct wages and increased productivity which leads to higher returns, at least to shareholders (Farrell 2005; Levy 2005).

In the deregulated and globalised marketplace, however, participation in the international economy is 'no longer the preserve of large corporations' (Porter 1990; Oviatt and McDougall 1994, p. 46; Dana and Wright 2000). Due to advances in communication and transportation, many small apparel firms now have the option of an offshore manufacturing strategy. Although existing literature and case studies suggest that offshore production is a successful strategy, little is known about the viability and attractiveness of this strategy for the small apparel firm. The high number of small apparel firms who continue to produce in their domestic market, despite labour market differentials (Christerson and Appelbaum 1995), suggests that the advantages of 'offshoring' gained by large apparel firms may not be as critical for the competitive advantage of the small firm.

The paper begins with a review of the apparel industry, both globally and within New Zealand, and introduces the elements of an optimal manufacturing strategy for apparel. This is followed by an interrogation of the literature on offshore production from the perspective of the smaller firm intended to develop some understanding of why some small apparel firms persist with a domestic manufacturing strategy. We then test and refine this understanding drawing on the experiences of four small apparel manufacturers based in New Zealand. Our findings are then reported and the ensuing discussion culminates in three research propositions. The paper ends with some general conclusions.

## The apparel industry

### Globalisation

In recent years, the apparel industry has provided many opportunities and challenges to its members. Experiencing rapid growth and dispersion, the apparel industry has been deemed 'an exemplifier of globalisation' (Kalantaridis 1996, p.12). The phasing out of the multi-fibre arrangement (MFA), which was established in 1974 to provide the apparel industries of industrialised countries with a temporary 'breathing space' from the competition of developing countries, has meant apparel firms have increasing access to the deregulated global market (Dicken 1992; Dickerson 1991). At the same time, they face growing competition in their home market with Abernathy et al. (1995) and Mize (1992) noting the extent to which traditional industry players have been challenged in recent times by global competition, market volatility and changing technology. A further challenge has been the highly labour-intensive nature of the industry (Taplin 1994; Waldinger 1986; Gereffi 1994), which has caused many apparel firms (both large and small) to outsource the manufacturing process, either locally or globally. These types of apparel firms have been labelled 'manufacturers without factories' (Gereffi 1994).

With labour accounting for 30–50% of the final garment cost (Lin et al. 2002), substantial savings can be made by taking advantage of labour market differentials.

It does have to be borne in mind, however, that unit labour cost savings do tend to overstate the true differential (Warburton and Stratton 2002, 2005). Nevertheless, the majority of the world's apparel production is now concentrated in less-developed countries (LDCs) or newly industrialised countries (NICs) such as East Asia and Latin America (Christerson and Appelbaum 1995)<sup>1</sup>. This shift reflects the industry's search for the optimal manufacturing strategy and has been made possible through technological advances in communication and transportation, and increased trade liberalisation. The existence of these low-wage manufacturing areas does, however, represent a significant strategic challenge to smaller firms who continue to pursue a domestic manufacturing strategy (Abecassis-Moedas 2007).

### New Zealand's apparel industry

In the mid-1980s, under a policy of deregulation, the New Zealand economy began the transition from being one of the most highly regulated countries in the world to being one of the most open OECD countries (Chetty and Campbell-Hunt 2003). Without trade barriers, many of New Zealand's protected industries were no longer competitive with respect to price. The apparel industry was no exception, and in 2007 all tariffs were finally removed from imports. This phasing out of non-preferential tariffs (previously as high as 40%) and the abolition of quotas led to an influx of cheap apparel imports (Chetty 1999), primarily from South East Asia, and more specifically, China. As a result, the nature of the New Zealand apparel industry changed dramatically over the following decade. No longer able to compete at the lower end of the market on price, the number of small- and medium-sized apparel firms almost halved during 1986–1993.

Despite this reduction in size, the New Zealand apparel industry refused to accept defeat, and took on a strategy of 'adaptation and survival' (NZTE 2002). The industry shifted its focus from being volume-oriented at the lower end of the domestic market to the creation of upmarket niche apparel to be sold both domestically and internationally (Chetty 1999). The success of this strategy is reflected in the number of local retailers selling New Zealand garments and the apparel export figures, which have grown from NZ\$71.9 million in 1990 to NZ\$275 million in 2006. Currently, 80% of these exports go to Australia, the UK and the USA, but the Asian and Middle Eastern markets are of growing importance. To put this in perspective however—and highlight the pressure on domestic manufactures—in 2006, when apparel exports reached NZ\$275, imports were worth NZ\$1,175 million.

### Optimal manufacturing strategy

In such a highly competitive industry as apparel, Schroeder and Lahr (1990) stress that an effective manufacturing strategy is vital to coping with the ever-changing business environment, implying that an effective strategy may help to create or sustain competitive advantage. These authors define manufacturing strategy as 'an

<sup>1</sup>Over the past 35 years, the percentage of world garment exports accounted for by LDCs and NICs has increased from around 25% in 1972 to 70% by 2005 (United Nations 1976–2006/07).

effective plan of manufacturing capability for the achievement of business goals in a future environment' (Lin et al. 2002).

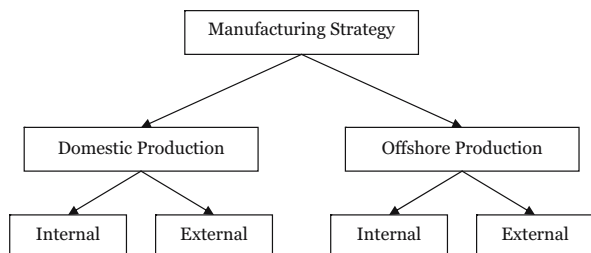
Ettlie and Penner-Hahn (1994) and Kim and Lee (1993) have identified the four key elements of manufacturing strategy as cost, quality, delivery, and flexibility. Some commonly accepted definitions of each element within the apparel industry will now be presented. Cost refers to the production price or price efficiency of the garment. Quality involves 'conformance of product performance to consumer preferences in the decision to adopt products'. Delivery refers to how quickly and at what degree of service the garment is made available to the customer. Flexibility is defined as 'the variety and quantity of products available to meet customer requirements' (Lin et al. 2002, p.47). Firms can also choose to manufacture goods domestically (in their home market) or offshore (internationally), and internally (within the business) or externally (outside of the business)—see Fig. 1.

Due to the seasonal and volatile nature of apparel demand (Bowers and Agarwal 1993), the majority of firms choose to manufacture externally regardless of whether they produce domestically or offshore. There are some businesses however that will be successful only when they are domestically focused to be close to their main customers. It is the case that firms may take advantage of low costs but, depending on their product and other characteristics, they will weigh this advantage with those from other sources in deciding on their manufacturing strategy. Where sources conflict, they will be bound to choose the set of attributes that gives the greatest advantage relative to competitors, e.g., it may be that the short deadline for delivery coupled with a shorter product life cycle causes some firms to opt for domestic production.

### Offshore production: The small firm's perspective

Many economists and authors of internationalisation research have noted that firms may experience significant advantages from moving some aspects of their business offshore (Dunning 1988; Oviatt and McDougall 1994; Frobel and Kreye 1980; Dicken 1992; Barff and Austen 1993; Schoenberger 1988). This is certainly true for firms in the apparel industry, many of whom have repositioned their manufacturing strategy from a domestic to offshore orientation. Labour and production costs and the degree of trade liberalisation are among the key factors considered when selecting a country for offshore production. Ownership of foreign production facilities, however, is not a necessary component of an international production strategy, and empirical studies have found that this is not the preferred entry mode for small firms. The vast majority of apparel firms that produce offshore do so by

**Fig. 1** Possible manufacturing strategies of apparel firms



subcontracting production to offshore contract manufacturers, allowing them to focus on their competitive advantage, core competencies, and/or that in which they choose to specialise (Dana and Wright 2000, p.7). This concept or process is termed offshore sourcing, and given its dominance, will be the focus of all further discussions regarding offshore production.

### Cost differentials

The rationale behind offshore sourcing in the apparel industry is explained by New International Division of Labour (NIDL) argument (Frobel and Kreye 1980; Dicken 1992; Barff and Austen 1993; Schoenberger 1988). This argument suggests that improvements in communication and transportation technologies have allowed firms to move labour intensive aspects of the business to low wage areas (such as LDCs and NICs), whilst maintaining capital intensive activities in heavily capitalised industrialised nations. Using this fusion of resources and locations, the strategy allows the firm to maximise its profit.

As suggested in the NIDL argument, the advantages of offshore sourcing are primarily derived from cost reductions. Labour market imperfections and the highly labour-intensive nature of apparel production mean that significant reductions in labour costs are available through offshore sourcing. These labour market imperfections or differentials between countries are explained by Ohlin (1933) factor endowment theory.

Although countries with higher labour costs may be more productive in some instances, when productivity is measured relative to cost, low-wage countries with reasonable levels of productivity tend to provide the optimal strategy. In 2003, a worker in the US apparel industry (excluding footwear) was earning \$US 13.06 per hour (International Labour Office 2005). Around the same time, a sewing machine operator in the garment industries of the Australia, New Zealand and the UK would have been paid between \$US 9.00 and \$US 11.50 per hour. These rates can be compared with around \$US 3.00 per hour in both Hong Kong and Taiwan, and considerably lower rates of less than \$1.00 per hour in India and China. These direct cost advantages are furthered by the existence of economic processing zones (EPZs). Established by governments of developing countries to encourage foreign investment, EPZs provide foreign companies with low minimum wage levels (or waivers) and exemptions from customs duties (Journal of Commerce 1999). Finally, we would add one caveat: the extent to which these cost savings are realised by small firms may differ to that of large firms (Christerson and Appelbaum 1995; Warburton et al. 1999). Smaller firms are reportedly charged two to three times as much for small orders as large firms are for high-volume orders (Hsu 1993). Thus, although manufacturing costs may still be below that of producing domestically, the cost savings achieved by the small firm through offshore production may be small relative to those of the large firm.

Despite the potential cost savings from offshore sourcing, many small firms in the apparel industry still choose to produce in their domestic market, indicating that the apparel industry cannot be characterised exclusively according to the NIDL argument (Christerson and Appelbaum 1995). Offshore sourcing can also have cost-related disadvantages. By producing offshore, a firm becomes increasingly vertically disintegrated. Vertical disintegration causes an increase in 'the volume and rapidity

of inter-firm capital, commodity and information transactions'. In turn, the costs of 'transportation, communication, information exchange, searching and scanning' also increase (Christerson and Appelbaum 1995, p. 1364; Coase 1937; Williamson 1975, 1979, 1984, 1985; Scott 1985, 1986, 1988; Storper and Scott 1990).

### Quality considerations

Decisions on manufacturing strategy must be driven by competitive advantage, including product quality, and offshore sourcing may bring quality-based disadvantages for the small firm. Overseas factories (in particular, the high-quality ones) often have minimum order quantities in place to ensure minimal factory down time (Birnbaum 1993; Hsu 1993). Thus, it is usually the large firms who gain access to the high quality factories, because they can guarantee sufficient order quantities. Dealing with high quality factories results in a superior quality garment that is delivered on time. Furthermore, larger firms can afford to employ quality control staff or agents, whose role is to ensure that quality standards and delivery requirements are met. This risk involved in offshore sourcing is thus greatly reduced for the large firm (Cunningham 1993; Chan 1993). In contrast, the smaller firms, compared to large firms, have fewer opportunities to find higher quality factories (Chan 1993; Lee 1993; Birnbaum 1993). Their quality requirements and delivery dates are not given priority, making the risks associated with offshore sourcing far greater for the small firm (Lee 1993).

Literature suggests that establishing strong relationships is one way in which small firms may be able to reduce the risk or uncertainty associated with producing offshore (Leung 1993; Grannovetter 1985; Walker 1988; Smart and Smart 1991). Hankansson (1982) and Willis and Huston (1990) support this view, suggesting that personal networks are of particular importance for international transactions because of the higher levels of quality and delivery risk associated with such transactions.

It seems logical that, due to relative proximity, domestic production may also enhance the degree and ease of quality control; however, this idea is not given much attention in existing literature. The ability to control and monitor quality, as well as deal with problems is much easier for those operating domestically. The apparel firms are more able to monitor the quality of their garments and thus have more certainty about the quality of the end product which they will receive. Whether domestic production actually creates a superior quality garment will depend on the nature of that particular country's apparel industry.

A domestic manufacturing strategy may also result in quality-based advantages derived from positive country-of-origin effects. Country of origin effects can be defined as 'the picture, reputation or stereotype that businessmen and consumers attach to products of a specific country' (Nagashima 1970, p.68). Roth and Romeo (1992) suggest positive country-of-origin effects, and thus, an increased perception of quality will result if there is a positive association between the country-of-origin and a particular product category (e.g., merino wool from New Zealand). These positive country-of-origin effects may differentiate a product, giving it added value and easier to sell. Lampert and Jaffe (1998) suggest that country-of-origin effects are amongst their highest for apparel because it is classed as a high-differentiation good. Chetty (2000) found purchasing agents' perceptions of product quality do vary

between countries and that this perception may be based on actual differences or preconceived ideas. It is important to remember however that country-of-origin effects are only one of many cues which guide a consumer's purchase decision (Agrawal and Kamakura 1999). A consumer's or purchasing agent's perception of the garment's quality may also be adversely affected by negative country-of-origin effects when shifting production offshore. Although no actual difference in product quality may exist, Chetty (2000) suggests that people have preconceived perceptions of countries which have definite effects on purchase decisions.

### Delivery issues

Long lead times are a problem associated with offshore sourcing (Bowers and Agarwal 1993; Warburton et al. 1999). An example of typical lead times for Chinese factories is exhibited in Fig. 2.

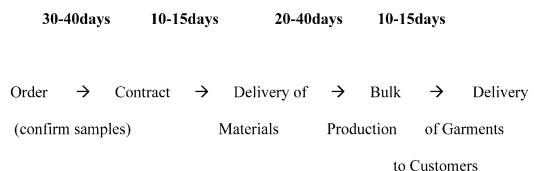
Hsu (1993) suggests that these lead times are not as much of a problem for large apparel firms because they generally shape the fashion trends, whereas the smaller firm tends to react to these trends. According to this argument, large firms do not have to change their product lines as often or as quickly as smaller firms, and thus, lead times are not so crucial.

Regardless however of whether a firm produces internally or externally, a domestic manufacturing strategy provides the advantage of short lead times, due to the relative reduction in communication and transportation time requirements. Literature suggests this may be the key reason apparel firms continue to pursue a domestic manufacturing strategy. Short lead times are increasingly being demanded by retailers (Warburton et al. 1999), and are of particular importance to style shops that face volatile demand. These short lead times allow domestic producers to trial and then reorder or cancel designs before they are produced in bulk. This process allows apparel firms to reduce their risks, maximise their profits on successful garments and minimise their losses on unsuccessful garments (Bowers and Agarwal 1995; Lin et al. 2002). Furthermore, the delivery risks and uncertainty associated with domestic production are substantially reduced due to proximity and ease of communication.

### Flexibility

There are two key types of apparel firms: style shops and basic apparel manufacturers. Style shops cater primarily for the fashion market and thus change their production lines on a frequent (usually seasonal) basis, making long term planning and demand forecasting difficult (Kotabe 1992; Scahill 1985). Because of this uncertainty in

**Fig. 2** An example of offshore sourcing lead times



(Source: China Textile University and the Harvard Centre for Apparel and Textile Research)

demand, short lead times are necessary. The ability to trial and then reorder or cancel designs is necessary so that the style shop can maximise profits (or minimise losses). Although the labour intensive nature of style shop garments makes the low wages available through offshore production very attractive (Cunningham 1993), the shorter lead times available through domestic production are often a strong influencing factor in the manufacturing strategy selected. In contrast, basic apparel companies produce quite standardised products such as dress shirts, and change their product lines less frequently. Long-term planning and demand forecasting is therefore easier for these firms, making offshore production a more viable option (Bowers and Agarwal 1993).

This problem is compounded by apparel retailers increasingly demanding instant responses to their orders (Warburton et al. 1999) and ever-changing fashions resulting in volatile demand and the need for quick response (Cunningham 1993; Klopp 1993). Because this quick supply response is so crucial, the advantages gained from offshore sourcing are often nullified by ineffective supply response (Schoenberger 1988). Furthermore, offshore sourcing requires extensive logistics and production planning, thus increasing the level of skill and resources required to produce (Warburton et al. 1999).

Another point which may favour a domestic manufacturing strategy is the recent shift in consumer demand away from mass produced fashion toward more individualised garments that express or mean something to the consumer (Lardner 1988; Gereffi 1994). According to this line of thought, the perceived individuality, and thus, value and desirability of a garment made in say, New Zealand, would be greater than one made in China.

### Summing up

Evaluation of domestic manufacturing strategies is limited as the extant literature has focused primarily on the advantages to be gained from offshore sourcing. The existing literature does, however, infer advantages and disadvantages of domestic production, as evaluations of offshore sourcing are usually profiled relative to a domestic manufacturing strategy. While cost differentials are significant, these alone need not cause small apparel firms to adopt offshore sourcing. These differentials may be more than outweighed by product quality considerations, both actual and perceived, and delivery risk. The flexibility of a domestic manufacturing strategy could also be vitally important to a fashion-oriented business but much less critical for a basic apparel manufacturer. In other words, the ability to maximise profits, minimise risks and adapt to new trends through short lead times, coupled with enhanced perceptions of quality, ability to do small runs and the increased degree of quality control, may mean that domestic manufacturing is in fact the most profitable strategy for the small apparel firm. Four case studies of small New Zealand apparel firms are now presented and used to substantiate these inferences from the literature.

### Methodology

To investigate why small firms choose domestic or offshore manufacturing strategies, a case study design, as described by Yin (1989, 1993), was employed.

This method was deemed relevant given the contextual and 'why' nature of the question. A multiple case study approach using four firms was chosen given Eisenhardt's (1989) suggestion that this number of case studies would allow the researcher to identify patterns without being overwhelmed by vast quantities of data.

The New Zealand apparel industry is dominated by high-quality fashion, woollen goods, and outerwear producers (NZTE 2002). To ensure that our cases reflected this diversity, companies within each segment were randomly selected, contacted, and invited to participate, provided that they met our criterion of being a small business, viz., employing less than 20 staff. As a result, two high-fashion, one woollen goods, and one outerwear companies were interviewed. Background research on each of these companies was conducted before each interview and the knowledge so gained ensured that the interviews themselves were focused on the key issues. All of the semi-structured interviews were conducted by telephone, and lasted for approximately 20 min. Each firm was asked to indicate what they perceived to be the advantages and disadvantages of a domestic and offshore manufacturing strategy, why they chose their strategy and what factors would influence their strategy choice in the future. A brief profile on each of the case study companies is presented in Table 1. Given the small size of the New Zealand apparel industry, the degree of detail provided is limited to preserve the anonymity of those involved.

It should be noted that the four case studies do cover each of the industry segments and provide a wide spread of experiences in terms of the percentages of domestic production (0 to 100%), offshore sourcing (0 to 85%) and export sales (10 to 50%).

### Company A

This is the smallest and youngest company that participated in this research. Situated in the fashion segment of the market, exports account for approximately 10% of the company's sales. Company A chooses to outsource all of its production domestically, and has no experience of offshore sourcing. Company A has always produced domestically, and have never really considered offshore sourcing, probably as a product of its age and size. The company suggests that currently, size does not make offshore sourcing a viable option, and they would anticipate a possible negative reaction by their customers. For company A, the reduction in costs would

**Table 1** Manufacturing strategies of the case companies

Company Location, ownership	Manufacturing strategies <sup>a</sup>			Exports Percent of sales	Segment
	Domestic, internal	Domestic, external	Offshore, external		
A	–	100	–	10	Fashion
B	15	–	85	20	Outerwear
C	–	90	10	15	Fashion
D	100	–	–	50	Wool

<sup>a</sup> As discussed, no firm adopted the Offshore (internal) strategy

have to be substantial to outweigh the positive country-of-origin effects and the ability to capitalise on its designs from having a domestic manufacturing strategy.

### Company B

The second smallest company involved in this research was Company B. Positioned in the outerwear segment of the market, exports account for approximately 20% of the company's sales. Until recently, the company has employed an internal domestic manufacturing strategy. Currently, approximately 85% of the company's garments are produced under an offshore sourcing policy. The remaining 15% of production is still produced internally. Company B shifted the majority of their production offshore recently. This move was a result of high domestic production costs and the inability to find machinists. For this company, the benefits anticipated from offshore sourcing have already been realised. The company intends to continue their offshore sourcing policy; however, they foresee always maintaining some production in New Zealand.

### Company C

The second largest of the companies involved, Company C is situated in the fashion segment of the market. With 15% of sales being exports, Company C sub-contracts approximately 90% of its garments locally. The remaining 10% of garments are produced via an offshore sourcing strategy because they cannot be effectively produced in New Zealand. Supporting local manufacturing is important for company C. They only produce offshore what they have to. This is primarily for moral reasons. They would prefer to have their garments produced in New Zealand where they can ensure that the manufacturing workers receive a fair and liveable wage. Although they realise that they could reduce their costs by offshore sourcing, they realise that size is an issue. Not all pieces within their range could meet the minimum order quantity necessary. The advantage of quick turnaround on stock service lines would be lost. From a cost-benefit analysis viewpoint, maintaining production domestically is worthwhile for the local market, but not as viable or beneficial for the growing international market. The company suggests that regardless of whether they produce locally or internationally, building strong relationships with contract manufacturers is of primary importance to the small firm.

### Company D

The largest company involved in this research was Company D. Situated in the wool segment of the apparel industry, garments are sold domestically and internationally on a 50/50 basis. The company currently manufactures all of its garments in New Zealand. Although company D currently manufactures domestically, after a serious investigation, they have concluded that production will be moved offshore in the near future. This will be a product of increasing firm size, export growth and unfavourable costs (exacerbated by unfavourable exchange rates). The key disincentive in shifting offshore will be the loss of quality control. Although the company says the shift is inevitable, the company says they will always retain some production domestically because of the flexibility it provides.

## Research findings

### Domestic manufacturing

Extant literature that profiled the potential advantages of a domestic manufacturing strategy was validated, with every potential advantage being mentioned by at least one firm. In contrast to the literature, however, short lead (turnaround) times were not the prime advantage of a domestic manufacturing strategy, according to the findings of this research. All four cases mentioned quality control as the key advantage of a domestic manufacturing strategy. For these firms, quality control referred to the ease at which they could monitor the production process, and solve manufacturing problems that arose. The flexibility of the industry to do small runs, and the short lead (turnaround) times were also noted as advantages. These turnaround times allow firms to offer the increased flexibility being demanded by retailers and to maximise their profits by capitalising on successful pieces in their range by increasing production, whilst eliminating the less successful lines. This increased flexibility also reduces their dependence on the accuracy of forecasted demand.

For three of the four firms, positive country-of-origin effects were also an advantage of a domestic manufacturing strategy. These firms believe that having their garments made in New Zealand makes them value-added, offering a unique selling point. Within the domestic market, New Zealand-based apparel companies receive a lot of support, particularly from the youth market. Having products made in New Zealand earned the company respect and support. All firms agree that favourable country-of-origin effects are at their strongest in the domestic market. These companies, however, were quick to indicate that these positive country-of-origin effects do not make their garments easier to sell, and that apparel firms cannot rely on the 'Made in New Zealand' label to sell their products. Product development and design, and strong marketing ideas are the key aspects identified as necessary to sell a garment, particularly on the international market. Having a strong New Zealand theme integrated into the company's marketing and branding efforts could still be achieved without having the garments being made in New Zealand.

The allowance of favourable credit terms was the only advantage of a domestic manufacturing strategy that was not mentioned in the literature. Favourable credit terms (which are usually a period of approximately 30 days) allow the company to receive the manufactured goods, sell them to retailers and receive payment for them before payment is due to the contract manufacturer. This substantially eases the businesses cash flow, often a critical issue for small businesses. This advantage of domestic manufacturing, however, was only mentioned by one of the firms, company C. It is notable, however, that only two of the four firms had any experience in offshore sourcing, and thus may not realise that this is an advantage of domestic manufacturing.

Since domestic and offshore manufacturing strategies are evaluated relative to one another, the advantages of one strategy tend to be the disadvantages of another. Just as low costs were cited as the key advantage of an offshore sourcing strategy, all firms mentioned the high cost of production, due to relatively high labour costs, as the primary drawback of such a strategy. Another shortfall of a domestic manufacturing strategy not

mentioned in the literature was the level of professionalism in the New Zealand apparel manufacturing industry. Because of the relatively high labour costs and the pressure to decrease costs, the industry is not very profitable. As a result, the industry is not very competitive and therefore not very professional. Poor management, inadequate documentation, inability to innovate, and the lack of a 'can-do' attitude were mentioned by half the firms interviewed as a disadvantage of domestic manufacturing. One firm also experienced a skilled labour shortage in New Zealand, despite the relatively high labour cost.

### Offshore sourcing

As the literature suggested, relatively low costs (resulting from labour market differentials) were cited as the primary advantage of offshore sourcing by all firms, despite Hsu's (1993) claim that small firms are charged two to three times as much for small orders. The resulting productivity to cost ratio and level of productivity makes this strategy attractive. The loss of control associated with offshore sourcing was the primary drawback of offshore sourcing mentioned by all firms. Increased lead times were also seen as a major disadvantage. These increased lead times, coupled with a loss of control, results in great uncertainty as to the quality of the garment received and when it will be received. Furthermore, the inability to do short runs not only makes offshore sourcing unappealing, but also unviable to the small firm who cannot support minimum order quantities required. Other disadvantages associated with offshore sourcing were the necessity to plan production very carefully, the increased number of faulty goods (or rate of returns), upfront payment, and the cost of travelling overseas to establish relationships. It is notable that the firms who mentioned these disadvantages were those who had experience in offshore sourcing.

### Discussion of results

The findings of this research support and expand on the ideas presented in extant literature. As expected, relatively low production costs were perceived as the key advantage of offshore sourcing both by those with and without offshore manufacturing experience. It is notable, however, that firms with no offshore sourcing experience may overestimate the potential cost savings achieved by producing offshore, as they are unaware of the hidden costs associated with this strategy (Warburton et al. 1999; Lowson 2003). Also proposed in the literature, the relatively high costs of domestic manufacturing were perceived as the strategy's main drawback, particularly for export sales in times of unfavourable currency situations. Taplin (1994) and Mize (1992) suggest that domestic manufacturers may be able to address these high production costs by combining the optimal manufacturing strategy with new technologies (such as laser and ultrasonic costing); however, given the high cost and long payback period of such technologies, this is unlikely to occur. The one cost-related advantage that domestic manufacturing does have is its favourable credit terms, which ease the cash flow of a small business. Without these terms, some small businesses may not be able to operate successfully (Table 2).

**Table 2** Advantages and disadvantages of domestic manufacture and offshore sourcing

	Domestic manufacture	Offshore sourcing
Advantages	Quality Control Flexibility (short runs) Country of Origin effect Favourable credit terms	Low cost (labour)
Disadvantages	High cost (labour) Shortages of skilled labour Uncompetitive local industry	Quality control Increased lead times Reduced flexibility

Despite its relatively high production costs, a domestic manufacturing strategy does have some appeal, as it allows small apparel firms to maximise profit by capitalising on their successful designs because of short lead times. Firms who are considering shifting production need to determine at what point the cost savings achieved offset the ability to capitalise on successful designs. Flexibility achieved through short lead times is also becoming increasingly important, as retailers have begun to demand immediate response to their orders. These factors entice firms to produce domestically because of the short lead times which can be achieved. Firms who manufacture offshore are prevented from capitalising on their successful designs and are often inflexible due to long lead times and their inability to accurately forecast demand. This issue may be addressed in the future as retailers increasingly use electronic data interchanges (EDIs), allowing firms to more accurately predict and plan production for future demand, and thus plan in advance for long lead times.

When evaluating manufacturing strategies, the loss of positive country-of-origin effects is also a consideration for the small apparel firm. Although mentioned as an advantage of a domestic manufacturing strategy, country-of-origin effects were not as important as anticipated by the literature. This is due to a number of reasons. Firstly, by integrating a strong New Zealand theme into their marketing and branding, the benefits of these effects may still be achieved without producing garments domestically. Secondly, as the growth in export markets continue, the domestic market becomes relatively less important. Because positive country-of-origin effects are only perceived to be of real value in the domestic market, the continued growth of international sales mean that country-of-origin effects are less of an incentive for maintaining domestic production.

Contrary to what the literature proposed, quality control was both the key advantage of a domestic manufacturing strategy and the key disadvantage of an offshore sourcing strategy. One company summarised this by saying that “having the ability to drive across town to monitor or sort out a problem is highly valuable as mistakes can equate to large losses of time and damaged reputations with retailers. By producing locally, problems can be solved before they become too big.” Until small firms have the financial resources to hire agents who can monitor such production and problems, the inability to control quality will continue to be a major disincentive of offshore production. Domestic producers, however, cannot depend on this advantage and must attempt to provide the levels of professionalism and service that the industry demands (Abecassis-Moedas 2007; Fernie and Azumo 2004).

For some firms, size makes offshore sourcing prohibitive. Minimum order quantities demanded by offshore manufacturers contrasted with the ability of domestic manufacturers to produce short runs means that a domestic strategy is the only viable option. It is however worth noting that what is considered a small firm within this sample varies significantly from what would be a small firm in other countries such as the USA. Therefore, although many small New Zealand apparel firms may not be able to meet minimum order quantities demanded by offshore producers, this may be less of an issue for small American apparel firms, although there is evidence to suggest that size does indeed influence the sourcing strategies of American apparel manufacturers (Kim and Rucker 2005).

Given the exploratory nature of this research, we offer three propositions based on our findings. First, while size is clearly a factor in the choice of a sourcing strategy, another possible influence on this may be the age of the firm. In general, a firm's size tends to increase with age, but this relationship may not always hold where size is restricted by a small domestic market, such as in New Zealand. In an industry as fickle as apparel, with age comes experience and with this the network of relationships that makes offshore sourcing a viable choice. The findings of this research reinforce the proposition that age may be an explanatory factor in strategy choice, with the two oldest firms being the only ones who produce offshore. This is no more than a proposition at this stage but one that could be tested on a sample of firms of similar size but varying age. Second, the more fashion-based the production, the more likely it is that at least some of the production can be retained in the domestic setting to provide the advantage of quick response to local designers and buyers. It has been suggested that the resort to 'mass fashion' in the USA has not helped its domestic industry to survive (Doeringer and Carson 2006). Third, as the response times provided by the offshore sources become quicker, domestic production will become more difficult to justify, even among the fashion-based producers. Fernie and Azumo (2004) develop this proposition in the special circumstances of the Japanese industry, but we suggest that as a proposition, it has a more general relevance.

## Conclusions

All of the New Zealand firms interviewed started off manufacturing domestically, but their manufacturing strategies have evolved over time and will continue to do so. They each indicated that they would continue to evaluate their manufacturing strategy relative to their size, export growth, and production costs. Those firms who produce offshore, or where this is seen as inevitable, indicated that they would maintain some domestic production because of the flexibility it provides. Other non-economic considerations such as ethics and support for the local industry will continue to factor into some firm's decisions. As well as confirming and expanding on ideas presented in extant literature, this paper has provided insight into the viability and attractiveness domestic and offshore manufacturing strategies for the small apparel firm. Significantly lower production cost was cited consistently as the key advantage of an offshore manufacturing strategy, with poor control of quality being the main disadvantage. The importance of other factors such as country-of-

origin effects, payment terms, and the ability to do small runs vary substantially between firms.

This research discovered that although at least partial offshore sourcing may be a viable option for many small apparel firms, it is not necessarily the most attractive or profitable strategy. This is due to the strategy's inability to capitalise on successful designs, unfavourable credit terms, and unfavourable country-of-origin effects. Thus, Warburton et al.'s (1999 p.3) statement that there is "a conflict between low cost, offshore manufacturing and the desire to create an agile, responsive corporation" was supported. The findings also confirm that small apparel firms recognise the need to continuously monitor their manufacturing strategies; as regulatory, technological and industrial changes are frequent. They also recognise that appropriateness of a firm's manufacturing strategy may change according to their age, size, and international market focus.

While it is important to bear in mind that our findings are based on the New Zealand apparel industry, we have cited works on similar issues from the USA, UK, and Japan. This research provides smaller firms who are reviewing their manufacturing strategy with a discussion of important considerations that have to be weighed up. The results validate and extend extant literature, providing insights into what small apparel firms perceive as the advantages and disadvantages of domestic and offshore manufacturing strategies.

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