PART II

Chapter 1

Apparel Manufacturing

1. Summary

The apparel industry has experienced profound transformation over the past few decades. On the demand side, consumers are looking for greater range of clothing products more customised to their individual tastes and sizes at the lowest prices. At the same time, consumers are spending a smaller portion of their income on apparel, opting instead for consumer electronics, entertainment, etc. On the supply side, apparel retail outlets are faced with increasing competition, not only from the emergence of mass retailers, but also from increased internationalisation of the most successful apparel retail chains.

This industry transformation is forcing apparel retail outlets to become more lean and efficient by cutting costs, reducing inventory and reducing fashion cycle times. For the apparel manufacturing sector, such changes have serious implications. Above all, they require apparel manufacturers to improve time to market by shortening the time between an order being placed by the retailer and its arrival in the store ready for display. The international competitive climate further requires apparel manufacturers to provide more services to retailers and other buyers, moving from being assembly operators to being suppliers of "full-package" services, including material input sourcing and the provision of floor-ready merchandise. Manufacturers are also creating their own domestic and international brands, and even contracting out the assembly of some apparel products. By providing full-package services and creating their own unique brands, apparel manufacturers can capture a larger share of the value chain but they must also share a larger portion of the risk.

The Western Balkans has demonstrated that it can be competitive in the traditional apparel manufacturing sector. Apparel products are one of the largest manufacturing export categories in the region, representing over 7% of total exports in 2006. The region combines cost competitiveness with relatively high productivity and is increasingly seen as a key supplier of Western European markets and an effective way to diversify risk by spreading suppliers across many different geographic areas. The region has also responded well to the opportunities presented by the changes in the apparel sector and the implications these changes have for apparel manufacturers. It has gone a long way towards implementing more efficient systems to ensure apparel products can be shipped in the shortest amount of time. Many regional manufacturers have facilitated data communication with their buyers by implementing electronic data interchange, especially in Croatia and Serbia, and some have bought and implemented advanced automated technology, particularly in The former Yugoslav Republic of Macedonia.

However, the Western Balkans still must undertake a number of changes to ensure its long term sustainability in the new apparel manufacturing industry. On the operational side, firms need to reduce the time it takes many regional manufacturers to complete an order, and they should improve inventory control systems especially by better forecasting order demand. Furthermore, apparel manufacturers in the region have been slow to move up the value chain from providing full-packaged services to designing and marketing their

own brands. Of the firms surveyed by the OECD Regional Capability Survey (RCS) 42% still provided only basic assembly services.

Western Balkan governments can also improve policy and increase the competitiveness of the apparel manufacturing sector. The main policy barrier to overcome that was identified in the study is access to finance. Firms need better and cheaper financing to help them make the necessary capital investments that will help them deliver orders more quickly and move up the value chain. In Kosovo under UNSCR 1244, for example, 91% of firms surveyed by the RCS considered accessing finance to be a major to minor obstacle to the growth of their business. The approximate value of the collateral required as a percentage of the loan value for manufacturing firms in the Western Balkans was 177% compared with 133% in a sampling of OECD countries (BEEPS, 2005). Furthermore, the average interest paid throughout the region by a manufacturing firm was 11%, significantly higher than the 6% paid on average by manufacturing firms in higher income OECD countries.

Other policy barriers to investment in apparel manufacturing include slow VAT reimbursements, infrastructure and skills gaps. Slow and bureaucratic systems of value-added tax reimbursement, which reduce companies' cash flow, are particularly important in a sector with narrow profit margins. In Albania and Kosovo under UNSCR 1244, the biggest problem is the electricity infrastructure which causes daily power outages. Skills are also an issue. For example, 63% of firms in the Former Yugoslav Republic of Macedonia identified skills as a major to minor barrier limiting the operation and growth of their businesses. In Croatia, management capability was identified as the most serious shortage.
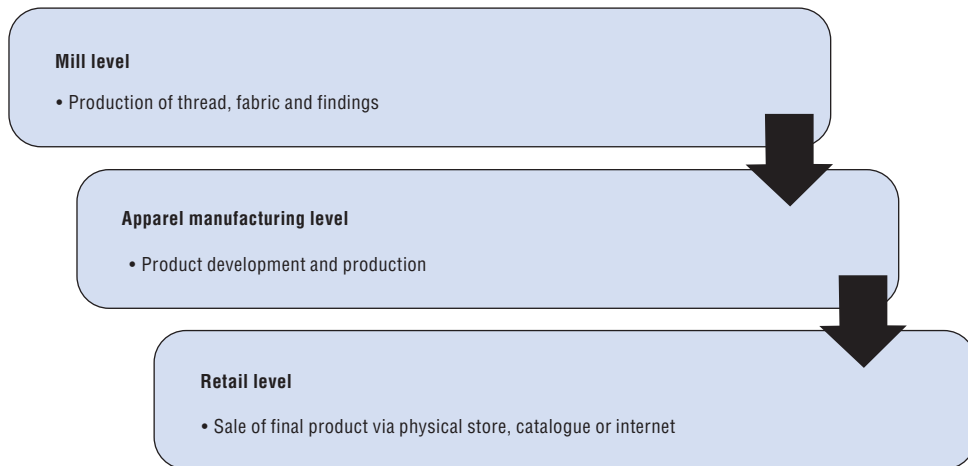
To address these policy barriers, the OECD recommends focusing first on making firms aware of all existing sources of finance both locally and internationally. Training should also be developed for apparel firm managers both in applying for financing and in managing more efficient production systems. Particularly in the Former Yugoslav Republic of Macedonia and Croatia, staff training in new technology should be introduced. Finally, Albania, Kosovo under UNSCR 1244 and the Former Yugoslav Republic of Macedonia should actively promote the apparel sector as a target for foreign and local investment.

2. Sector definition and segmentation

2.1. Sector definition

The apparel industry involves many different activities. From spinning raw material into thread and weaving it into fabric to assembling clothing and selling it to the final consumer, many steps and actors are involved. However, the industry's structure can largely be defined by breaking it down into three distinct levels: *i)* mill; *ii)* apparel manufacturing; and *iii)* retail (Figure 1.1).

1. The *mill level* includes manufacturers of thread, fabric and findings.[1] This is generally the most capital intensive part of the entire value chain. It is not unusual for hundreds of thousands of euros in capital investment to be made for each worker, and almost all of the tasks that can be automated have been. This area of the apparel industry has seen the greatest productivity gains in the past hundred years, mainly owing to technological advances;

2. The *apparel manufacturing level* encompasses two types of activity: product development and production. Firms participating in product development are responsible for marketing and merchandising products. Essentially, they design and develop each apparel product. Firms active in the production of apparel provide sewing and other services to product developers;

Figure 1.1. **Apparel sector breakdown**

Mill level

• Production of thread, fabric and findings

Apparel manufacturing level

• Product development and production

Retail level

• Sale of final product via physical store, catalogue or internet

Source: Based on Glock and Kunz (2005).

3. At the *retail level* the finished goods produced at the apparel manufacturing level are sold to the final consumer. There are many different types of retailers, ranging from mail order catalogues and their modern internet equivalents to specialty retailers to department stores and mass retailers (*e.g.* hypermarkets).

Throughout the three levels there are clear instances of forward and backward integration. Many large retail chains such as H&M carry out their own product development. Many product developers, such as Levi's, provide some or all of their own apparel production capabilities. Not only do mills produce their own fabric, but they may also develop and manufacture products and sell them in their own retail outlets like the Italian clothing giant Calzedonia.

2.2. Segmentation

This sectoral analysis focuses on the manufacturing level of the apparel industry in the Western Balkans. As mentioned above, apparel manufacturing refers to product development and production. It can involve a number of different actors, including contractors, developers and third-party brokers, or wholesalers. For simplicity, the term "apparel manufacturing" is used in this report to refer to all apparel assembly activities.

As described in more detail in the previous section, it is clear that the apparel manufacturing sector in the Western Balkans is very competitive. Apparel products are one of the region's largest manufacturing export categories, representing over 7% of total merchandise exports in 2006. It was the largest merchandise export category in 2005 and in 2006 it was second only to trade in iron and steel.[2] The revealed comparative advantage (RCA) is relatively high at 2.6, indicating that apparel manufacturing exports from this region already have a strong presence on the EU market relative to other world competitors (Figure 1.2).[3]

In contrast, production at the mill level has largely stagnated. Western Balkan textile exports only represented 1% of total exports in 2006. The Western Balkans has a negative and growing deficit in the trade in textiles: in 2006 this was EUR –1 billion, 12% higher than the previous year.[4] Furthermore, the RCA for textiles compared with the EU is only 0.7,[5] meaning the region has a small competitive disadvantage. It is possible that in the future

Figure 1.2. **Western Balkan RCA values (2007)**
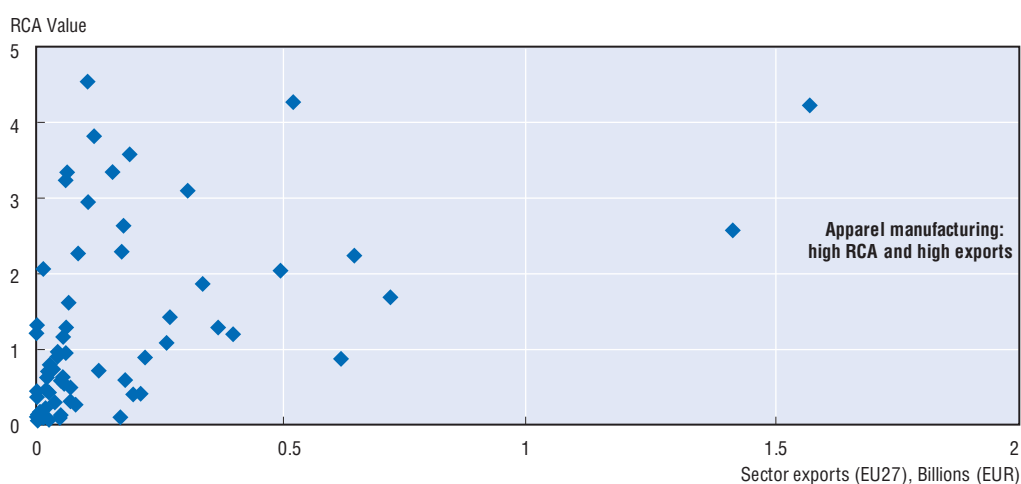
Source: OECD analysis based on data from Eurostat.

this competitive disadvantage could be turned into an advantage. Foreign direct investment (FDI) in the textile industry has increased in the past few years, fuelled by some large Italian investors looking to locate closer to that country's competitive apparel manufacturing industry. Between 2004 and 2006 the annual average growth rate of textile FDI inflows into Croatia, The former Yugoslav Republic of Macedonia and Serbia was 55%. Total inflows into those countries in the textile industry were EUR 35.5 million in 2006.[6]

The findings segment tells a similar story. Exports of findings from the Western Balkans only totalled about EUR 2.5 million in 2006 and the trade deficit was EUR – 38 million.[7] The RCA was only 0.7, indicating a competitive disadvantage.[8] However, anecdotal evidence collected through OECD interviews with apparel manufacturers in the Western Balkans points to a relatively vibrant small findings industry in the region, although it is largely oriented towards domestic consumption.

The presence of both findings and textile segments is good news for apparel manufactures in the region, as these segments can therefore be fast and efficient suppliers. But it is clear that these segments are currently much less competitive than apparel manufacturing with respect to exports. Furthermore, given that the findings and textile segments involve vastly different technologies, investments, skilled labour and inputs than apparel manufacturing, they would require very different types of analysis – which is beyond the scope of this report. For that reason, the current study excludes these segments from the analysis.

The apparel retailing segment in the region is also competitive and growing. The Western Balkans' regional consumer market is estimated at 21 million people.[9] GDP per capita was EUR 4 400 in 2007, but it has been growing by 11% per year on average since 2000.[10] FDI continues to be strong throughout the region, with inflows in 2006 totalling EUR 151 million.[11] Both foreign and regional retailers have expanded in the region, including chains such as the Slovenian Mercator and the Serbian Delta. However, the apparel retail industry by definition is focused on the domestic market and is beyond the scope of this report.

In conclusion, apparel manufacturing is clearly the most competitive export segment within the apparel industry in the Western Balkans. The sectoral analysis focuses on this segment. However, domestic and foreign investors should not ignore the regional market

potential of the apparel retailing segment. Moreover, the mill level can only be expected to increase production, possibly one day becoming a net exporter. Three factors support this: the increasing competitiveness of the apparel manufacturing industry and the competitive advantage of its proximity to European markets; the winding down of privatisations of formerly state-owned enterprises; and increasing plant productivity and efficiency.

3. Sector trends

Global changes occurring in the entire apparel industry, especially within the retail segment, have had profound implications for Western Balkan apparel manufacturing firms. The general retail landscape was traditionally defined by national borders and SMEs. The retail clothing segment started to change in the 1970s and that change accelerated throughout the 1990s. In the US between 1992 and 1997, employment per establishment increased by 12% while establishments per capita fell by 18%. Sales per establishment jumped by 31%. This trend continued in the period 1997-2002: employment per establishment increased by an additional 16%, establishments per capita fell by 10% and sales per establishment grew by 29%.[12] Retail outlets are no longer dominated by SMEs but are becoming larger, with higher sales, more employment and fewer stores. The story is the same throughout much of Western Europe. Employment per retail clothing establishment in the UK increased by 17%, the number of establishments fell by 9% and sales per establishment grew by 58% between 1998 and 2006.[13]

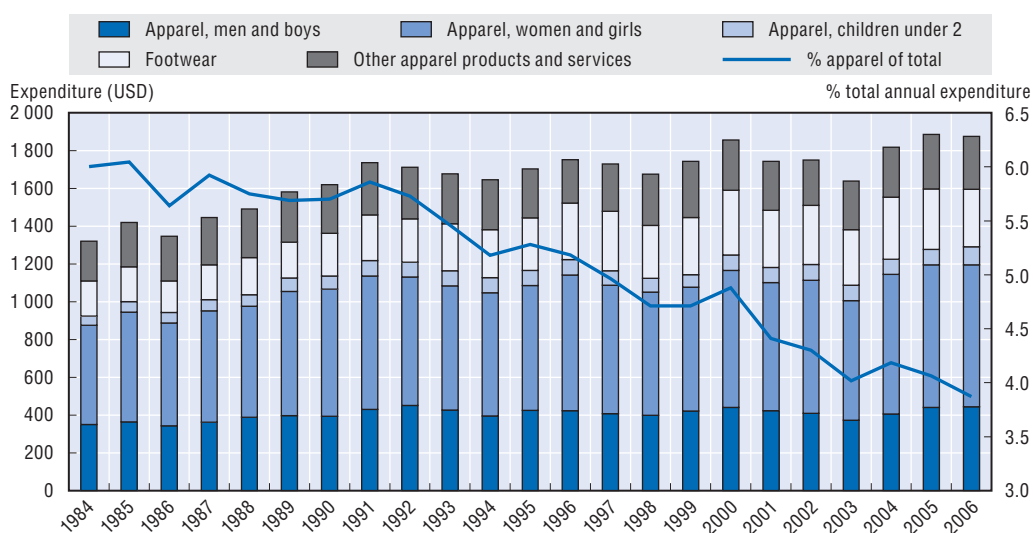### 3.1. Increasing competition

The evolution of the retailing environment from SMEs to larger, more productive stores can be attributed to two key trends: i) increasing competition among clothing retailers due to the emergence of more efficient hypermarkets and superstores and to the internationalisation of retail outlets; and ii) increasing competition from retailers of other consumer goods.

Hypermarket and superstore operators have emerged over the past few decades. These retail outlets cover large floor spaces to provide a low-cost, "one-stop-shop" experience: in one location shoppers can purchase both food and non-food products, including clothing. Over the past decade, hypermarkets and superstore operators have increased their market share in almost all G8 countries. Between 1999 and 2003 alone, the market share of hypermarket and superstore operators rose by 2% in Italy and France, 3% in Canada and 13% in Russia (Ahlert et al., 2006).

Furthermore, the internationalisation of many apparel retail stores really took off in the 1990s. The annual growth rate of FDI into retail trade in the US was over 9% between 1980-2007; in 2007 FDI into the clothing retail trade sub-sector alone was USD 4.1 billion (EUR 3 billion).[14] In Germany between 1996 and 2005 FDI into retail trade grew at an annual average of 10%, and in the UK it grew on average by 11% between 2002 and 2006.[15] The Spanish retailer Zara opened its first store outside that country in 1989, quickly expanding into European, American, Asian and Middle Eastern markets (Inditex, 2007). H&M, which began in Sweden, was largely confined to the Northern European market until the 1990s but is now present throughout Europe and North America (H&M, 2007). North American firms such as Gap have experienced the same trend. Gap first moved into the UK in 1989. By 2008 it had 283 stores in the UK, France, Ireland and Japan and another 68 franchise stores in 17 countries throughout Europe, the Middle East and Asia (Gap, Inc., 2007).

At the same time, clothing retailers are facing increasing competition from retailers of other consumer goods. Consumers are increasingly devoting a greater share of their expenditure to non-apparel goods and activities. In 1984, US household expenditure on apparel constituted 6% of total expenditure. By 2006, that figure had fallen to 3.9% (Figure 1.3).[16] In the EU-15 in 1996, households spent 6.9% of total expenditure on clothing and footwear. By 2006 that had fallen to 5.8%.[17] This means that consumers are devoting a greater share of their disposable income to items besides clothing. In fact, consumer expenditure on entertainment goods and services such as audio and visual equipment have particularly increased – in the US the yearly average growth rate between 1996 and 2006 was almost 5%.[18]

Figure 1.3. **US household expenditure on apparel**

Source: US Bureau of Labour Statistics Consumer Expenditure Survey.

The emergence of hypermarket and superstore operators, increasing internationalisation and more competition from other consumer goods have huge implications for clothing retailers. They now must compete for customers not only with very successful international clothing retailers and low-cost retailers, but also with retailers of other consumer goods. This places clothing retailers in an unprecedented competitive environment. Hence the recent emergence of larger and fewer establishments in the UK and the US, as well as in many other European countries. Indeed, stores are becoming more efficient and productivity is increasing: in the US between 1997 and 2002 sales per employee jumped by 10.5%.[19] In France between 1996 and 2005 sales per employee rose by 20%. Clothing retail stores in France increased their gross margin as a percentage of sales by almost 1.9% between 1996 and 2005;[20] in the US these stores' gross margin as a percentage of sales increased by 6.3% in the same period.[21]

In simplified terms, increasing competition in the clothing retail sector is forcing firms to respond better to customer demand. In general, the ways firms are responding can be filtered down to two key tendencies: *i)* product proliferation and *ii)* lower prices.

3.2. *Product proliferation*

The number and range of clothing products on the market has been soaring. This trend actually began in the food retailing industry. Between 1964 and 1990, the number of items per store in grocery stores increased from 6 900 to over 30 000, an increase of over 330% (Messinger and Narasimhan, 1995). This trend in the grocery industry continued to the clothing retailing industry. According to a survey conducted by the Harvard Center for Textile and Apparel Research (HCTAR), apparel manufacturers increased their average number of individual products, or stock keeping units (SKUs),[22] by 63% between 1988 and 1992 (Abernathy et al., 1999). It is not uncommon to have up to 2 million SKUs in a flagship department store.

Increasing product proliferation is driven by both shorter fashion cycles and products more specific to customer tastes. Retail marketing and merchandising directors, in the face of increasing competition, must convince their customer base to return to their store instead of another clothing store or, say, a consumer electronics store. This means higher product turnaround and development cycles for retailers. Only a few decades ago, product cycle time was six to nine months and most clothing retailers had two to four clothing "seasons" per year. Now many clothing retailers have up to 20 seasons per year, meaning new product ranges can be introduced as often as every three to four weeks. For Zara the time from concept development to production and placement on the shop floor can be as little as 22-30 days.

At the same time, styles, sizes, colour options, etc. have been increasing substantially to ensure that more customised products are available to consumers. Whereas a simple men's dress shirt previously might have involved one collar style and only basic colour options and limited sizes, shirts have become more customised to respond to consumer tastes. The range of colours available, and the options of different patterns and various

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Box 1.1. Zara: reducing product cycle time

Zara, which is the largest apparel retailing chain of the global giant Inditex, demonstrates the move towards demand driven production. It has put in place a retailing concept that provides customers with a constantly rotating choice of fashions. To achieve this, it has dramatically reduced the time between the initial design concept and placement on the shop floor.

The entire fashion cycle time has been reduced to as little as 22-30 days (Harle, Pich and Van der Heyden, 2002). One day is required to finalise style, idea, price and quantity and select the appropriate fabric from stock. Three days are then needed to formulate the design, and one more day for management approval. After management approval, three days are needed to create a sample and have it approved, after which ten days are needed to produce the clothing article in the amount needed. Finally, the product is shipped, arriving five days later on the shop floor ready for display and sale. The total time required is therefore 23 days.

To achieve such rapid production cycle turnaround times, Zara sources over 80% of its production within Europe, mostly from Spain and Portugal. As emphasised by the company, "time is the main factor to be considered, above and beyond production costs" (Inditex, 2005). It therefore chooses to produce apparel in continental Europe with higher costs than other, lower-wage locations to reduce production times as much as possible.

*Source:* Dawson, Larke and Mukoyama (2006), Harle, Pich and Van der Heyden (2002), Inditex (2005).

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fabric blends and cuts, have increased tremendously. To use the example of Zara again, according to the company's 1998 annual report over 11 000 designs were produced in one year, based on 40 000 design ideas (Dawson, Larke and Mukoyama, 2006).

3.3. Lower prices

Another way clothing retailers are keeping abreast of increasing competition from international retailers and hypermarket and superstore operators is by dropping prices. Between 1996 and 2007, apparel prices in the US declined by 13% (Figure 1.4).[23] Prices in the EU fell by 2% in the same period; in many EU countries apparel prices declined by much more – in the UK apparel prices fell by over 74% between 1996 and 2007.[24] It is clear that there has been substantial downward price pressure in the clothing industry. In essence, certain clothing and consumer goods retailers have improved productivity and efficiency throughout their supply chains, from capitalising on economies of scale and sourcing goods from lower-wage countries to using information technology to better predict demand and reduce inventory.

Figure 1.4. **Clothing prices in the EU and US (1996-2006)**
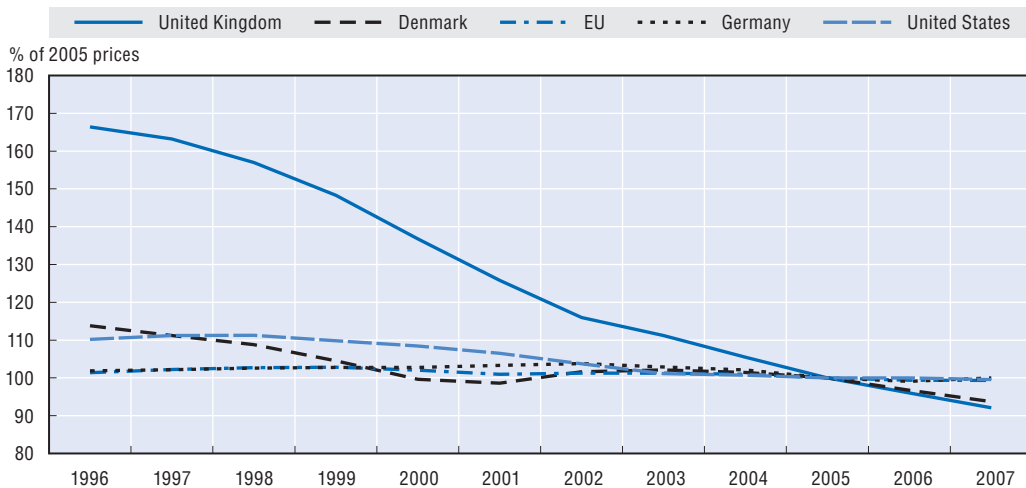
Base period: 2005 (= 100). EU data for EU-15 until 2004, EU-25 until 2006 and EU-27 in 2007.

Source: OECD analysis based on data from US Department of Labor Consumer Price Index; Eurostat Harmonised Index of Consumer Prices.

The resulting cost reductions have largely been passed on to consumers in the form of lower prices. Faced with a competitor offering similar or even identical products at lower prices, all other retailers must imitate the same productivity and efficiency innovations to reduce costs and thus lower prices if they are to remain competitive (McKinsey Global Institute, 2001). To quote an article in the *Washington Post,* "Wal-Mart's mania for selling goods at rock-bottom prices has trained consumers to expect deep discounts everywhere they shop, forcing competing retailers to follow suit or fall behind" (Schneider and El Boghdady, 2003).

4. Sector implications and key success factors

The changes occurring in the retail clothing sector have serious implications for upstream suppliers of the goods they place on their shelves. First, these changes require

apparel manufacturers to improve time to market by shortening the time between an order being placed by the retailer and its arrival in the store ready for display. The international competitive climate requires apparel manufacturers to provide more services to their retailers and other buyers, which are increasingly only interested in the design and marketing end of the fashion industry and have little interest in manufacturing. This means apparel manufacturers are now expected to provide more value-added services for their clients. Finally, apparel manufacturing firms are encouraged to promote all excess capacity, products and expertise via internet tools like e-sourcing, as well as by attending fairs.

4.1. Accelerated time to market

One large implication of product proliferation, increased competition and the drive to reduce prices is the disruption it has caused in the supply chain. In the traditional supply chain, apparel manufacturers received orders many months in advance, which allowed them to carefully plan production cycles and shipments. Now, with retailers filling shop space with only the latest styles, the vast increase in the number of SKUs sold, and the attempt to cut all excess costs, the supply chain has been radically changed. Instead of designing a product and selling it six months later, retailers want the finished goods in their shops in weeks or even days. To deal with the enormous increase in the number of apparel products they sell, they refuse to maintain a high inventory, instead expecting delivery of the order to correspond with the date they plan to place the goods on sale in their stores. To reduce the costs of having to mark down over-ordered products, or the indirect costs of losing sales to a competitor because not enough of a particular product was ordered, retailers insist on determining what products they will offer tomorrow based on sales data from today.

Box 1.2. **Inventory policy decision-making**

In the traditional supply chain, apparel manufacturers received orders many months in advance, allowing them to carefully plan production cycles and shipments. The onus of holding inventory was on the buyer or retailer. Now, as retailers try to reduce costs associated with markdowns or stockouts and insist on just-in-time delivery of products, the inventory burden has shifted to the apparel manufacturer. This has two big implications for the manufacturer: it can either improve the efficiency of the production facility to decrease lead times, or hold higher levels of inventory itself.

The second option is only a short-term solution. To illustrate this, consider a supplier producing men's shirts in only one SKU for a retailer that requires rapid replenishment (*i.e.* it reorders shirts every week). The longer it takes the manufacturer to produce the shirt, the more inventory it must hold to ensure that it can respond to 95-98% of the retailer's orders, a typical order fulfilling rate required by most retailers. When the hundreds and sometimes thousands of SKUs produced by many apparel manufacturers are added to the equation, as well as a high level of demand variation, the amount of inventory the apparel manufacturer must hold to respond to retailers' orders quickly spirals out of control.

A much more competitive firm (one that has improved the efficiency of its production facility and thus reduced lead times) will not have to hold nearly so much inventory. Instead, it will be able to respond to retailers' orders as they are made. Naturally, a small level of inventory will still be required, but the large costs of spoilage, warehouse space, discounts on overstocked items and security costs associated with holding inventory will be reduced.

The result is a highly condensed supply chain compared with only a decade ago. Apparel manufacturers must now respond in real time to retailers' orders. Many of them are therefore reducing their lead times by introducing internal process changes that are more conducive to quick delivery. Quick response (QR) systems, for example, can ensure that they provide apparel goods in the shortest time possible.[25]

Implementing QR systems is not particularly easy. It requires a degree of organisation both within the firm and with the firm's clients that was not necessary in the case of traditional supply chains. There is a vast amount of literature on how firms should best put QR systems into place (*e.g.* Lowson, King and Hunter, 1999). For the apparel manufacturing sector, however, there are four key elements which should be addressed, usually simultaneously, to ensure that lead times are at a minimum (Abernathy et al., 1999): i) reduction of plant throughput time; ii) implementation of electronic data interchange (EDI); iii) improvements to inventory control systems; and iv) ensuring minimum transport times.

4.1.1. Reduced plant throughput time

One of the first steps in improving plant lead times is to improve plant throughput time.[26] This should be achieved through a combination of implementing modular production systems (MPS) and automating certain production activities. MPS is an apparel assembly method that combines a team of sewing operators to assemble apparel, rather than relying on an assembly line approach as in more traditional methods (Box 1.3). MPS can reduce throughput time by reducing work in progress. The average throughput time for a plant using MPS is 1.7 days, compared with 9.2 days for the progressive bundle system (Abernathy et al., 1999). It has also been shown that implementing MPS for 36% of production, in conjunction with other IT investments, can reduce lead times by up to 25 days (Dunlap and Weil, 1996). That study showed that, beyond simply improving lead times, implementation of MPS increased customer response time and reduced work in progress.

Implementing automated technology such as marker making and spreading can also substantially reduce lead times. To take the example of marker making, once a design is finalised, patterns are determined and the fabric is in hand, a cutting guide (marker) needs to be made to guide the cutting knife through the many layers of fabric in order to cut out the individual pattern pieces. Experienced marker makers used to trace the pattern pieces on the marker by hand, but computer programmes now exist that can do this, with the added benefit of drastically reducing the time required to make the marker (as well as minimising the amount of fabric wasted) by efficiently laying out the different sizes of the garment and ensuring that the weave of the cloth will match up once the pieces are cut and sewn.

4.1.2. Implementation of electronic data interchange

Another important method for reducing lead time is to streamline the processing of payments and contractual agreements between the supplier and retailer. This means the apparel manufacturer must implement electronic data interchange (EDI). EDI can automate many processes, including orders, payments, contracts, etc. Using EDI, the time it takes to handle these processes can be reduced to hours or even minutes. Before the advent of such technology, production requests by the retailer were negotiated by phone, contracts were faxed or even mailed, and payment requests were sent days or perhaps weeks later. Automating the process reduces costs in human resources and results in fewer errors, often due to human mistakes. This is especially important for retailers and suppliers of different nationalities, where language is often a barrier and orders can be easily misinterpreted.

Box 1.3. **Methods of apparel assembly**

There are generally three methods of assembling apparel: *i)* the progressive bundle system (PBS); *ii)* the modular production system (MPS); and *iii)* the unit production system (UPS):

● The *progressive bundle system* is the most common method. It breaks assembly steps down into a series of discrete operations; each sewing operator is trained in the correct approach to a specific task. The advantage of this system is that it maximises the productivity of both specialised machines and individual workers. However, the PBS system can easily result in bottlenecks due to absenteeism or differing productivity between workers. Furthermore, for the system to flow efficiently, a large amount of work in progress must be kept at each work station so that sewing operators are never idle. This results in higher costs associated with keeping inventory and longer throughput times. For example, even though a typical men's dress shirt requires only 12 minutes of actual sewing time to complete, it may actually take 20 days because the shirt spends a significant amount of time as work in progress;

● Many apparel manufacturers use the *modular production system*. Tasks are grouped and a team of sewing operators assemble either the entire garment or a part of it (*e.g.* the collar). PBS generally compensates employees on a piece rate basis, whereas MPS compensation is determined by the entire team's output. The advantages of MPS are increased flexibility and shorter throughput times, as it allows much lower levels of work in progress than PBS. However, MPS requires higher training costs (sewing operators must be trained in all tasks associated with their group) and overall plant production levels are lower than for PBS;

● The *unit production system* uses an overhead transporter system to move garment components from one sewing operator to the next. Compared with PBS, UPS has a shorter throughput time and lower levels of work in progress. It also results in direct and indirect labour cost savings and can keep reliable data on each sewing operator's productivity and daily pay. However, the initial investment for installing UPS can be significant, and once it is installed the layout of the plant is fixed.

Most apparel assembly plants use PBS, but an increasing number are beginning to implement MPS and UPS or a combination of all three systems to improve throughput times.

Source: Abernathy *et al.* (1999), Dunlap and Weil (1996).

Moreover, numerous studies have shown that implementing EDI can reduce shipment times and improve lead times (Srinivasan, Kekre and Mukhopadhyay, 1994). Beyond simply improving delivery times, other studies have shown that EDI can reduce transaction costs (Clemons and Kimbrough, 1986).

4.1.3. *Improvement of inventory control systems*

A third method of reducing lead times is to maintain an organised and efficient inventory control system. One problem faced by apparel manufacturers is excessive amounts of inventory arising from product proliferation: there are many more styles, colours and fits of the same product, resulting in higher demand variability for each individual product. To reduce inventory levels to a manageable level and still dispatch orders to retailers in a timely fashion with a high order fulfilment rate,[27] apparel manufacturers increasingly need to respond quickly to and even anticipate retailers' demands. Especially in the case of suppliers of replenishable and fashion clothing products, at a very rudimentary level

apparel manufacturers should analyse historical demand at the SKU level. More advanced apparel manufacturers should incorporate point of sale (POS) data from retailers to determine their optimal inventory levels.

4.1.4. Reduced transport time

Implementation of technology and production processes to reduce lead times will be ineffective if poor transport organisation or simply bad roads prolong shipment times. While many transport delays are beyond the control of apparel manufacturers and can include poor roads, bad weather and delays at customs, a firm should undertake actions to ensure that shipments to retailers' distribution centres (or, in some cases, directly to their stores) arrive in the minimum amount of time possible.

One important first step is to employ a transport company with a good record of on-time deliveries. Even if this means paying extra, it can ensure good order fulfilment rates and therefore repeat orders, making the extra investment worthwhile. Apparel manufacturing firms should also have systems in place to deal with customs procedures adequately. Often these procedures are time and process intensive. In addition, ensuring that shipping containers and cartons are appropriately labelled according to agreed standards can help retailers handle the orders they receive, especially in large distribution centres where orders from hundreds of different suppliers can arrive at the same time.

4.2. Gradual introduction of value-added services

The profit margins for apparel manufacturers are very slim. The OECD compiled data on firms and created a financial statement for a hypothetical apparel manufacturing firm that only engages in apparel assembly operations (*i.e.* sewing pieces into a finished apparel product). According to the model, such a firm starting operations in year 0 cannot expect to become profitable until four years later. Even after ten years, profits will only be about 1.1% of total annual sales (Box 1.7).

The limited profitability offered to apparel manufacturing firms that only engage in assembly operations – cut-make-trim (CMT) operators – derives from the fact that they are generally "price takers" on the international market. Global competition in CMT services is resulting in lower and lower prices and thinner profit margins. CMT firms have very little leeway to determine their own prices. Therefore, as wages and other operating costs rise they are largely required to swallow the price increases or risk losing clients to less expensive firms in lower-wage countries. However, apparel manufacturers can actually begin providing more value-added services, allowing themselves more freedom to set higher prices and gain a larger share of the total revenue along the apparel industry value chain. This means moving first into providing more value-added services as an original equipment manufacturer (OEM), and then engaging in further industrial upgrading by moving into original brand manufacturing (OBM).

4.2.1. OEM production

OEMs develop patterns, source materials, and produce and ship samples for approval, in addition to cutting and assembling the clothing articles. OEM production can be considered a form of upgrading because it expands a producer's customer base beyond clients that have traditionally favoured only assembly activities to include retailers and other clients that prefer the apparel manufacturer to provide more services. Many retailers have little interest or little experience in manufacturing apparel, or are interested in devolving some of the risk

Box 1.4. **Labour regulations in the apparel industry**

Another aspect which is increasingly important for retailers and buyers of apparel products is to ensure proper labour standards are respected by the apparel manufacturers which supply them. This is because their clothing brands represent the public image of their firm, and they have invested a lot of money into advertising and marketing those brands. The threat of having their brands devalued by bad publicity can be very expensive, resulting in sometimes substantial lost sales. For example, the clothing retailer Gap's reputation suffered substantially in 2003 when it was sued by workers in Saipan for poor working conditions.

Many retailers insist that their suppliers apply international labour standards. Worldwide Responsible Apparel Production (WRAP) inspects and certifies that apparel manufacturers operate under human conditions and do not exploit labour. Social Accountability International (SAI) applies the SA8000 to companies which have implemented appropriate labour standards.

It is very important that apparel manufacturing firms apply international labour standards, and is a minimum requirement for most larger retailers. If possible, they should also try to obtain certification in these standards. For example, companies certified by WRAP must insure that they implement the following principles:

- **Compliance with laws and workplace regulations**: employers must comply with the laws and regulations in all locations where business is conducted.
- **Prohibition of forced labour**: involuntary labour is strictly prohibited.
- **Prohibition of child labour**: workers under 14, below the age of compulsory schooling or the minimum age as establish by law, whichever is greater, is prohibited.
- **Prohibition of harassment or abuse**: employers must create a work environment free of harassment, abuse or corporal punishment in any form.
- **Compensation and benefits**: employers must pay at least the minimum total compensation as required by local law, including all mandated wages, allowances and benefits.
- **Hours of work**: hours worked each day and week must be within the legal limitations of the countries in all locations where business is conducted, and employees may work more than six days a week only in exceptional circumstances.
- **Prohibition of discrimination**: employees may be hired, paid, promoted and terminated based solely on their ability to complete the job and not on the basis of personal characteristics or beliefs.
- **Health and safety**: employers must ensure the work environment is safe and healthy.
- **Freedom of association and collective bargaining**: employers must respect the right of free association and collective bargaining from their employees.
- **Environment**: employers must comply with all environmental rules, regulations and standards applicable to their operations and observe environmentally conscious practices in all locations where they operate.
- **Customs compliance**: employers must comply with applicable customs law and, in particular, establish and maintain programmes to comply with customs laws regarding illegal trans-shipment of apparel products.
- **Security**: employers must maintain facility security procedures to guard against the introduction of non-manifested cargo into outbound shipments (*e.g.* drugs, explosives, biohazards, and/or other contraband).

Source: www.wrapapparel.org, www.sa-intl.org, www.cleanclothes.org/legal/04-01-08.htm.

associated with increased demand volatility and product proliferation in the apparel industry. Thus, they are looking specifically for apparel manufacturers that can assume the responsibility and risk of the entire assembly process, from sourcing material to overseeing logistics. Many fashion oriented firms such as Gap and The Limited entirely outsource the manufacturing of their apparel and only have control over design and marketing.

By moving into OEM activities, apparel manufacturers gain more autonomy and flexibility in setting their prices. Because they take over many of the activities that other agents previously managed, they assume a much greater financial responsibility for the end product than CMT firms, but they also profit from a greater share of total revenue. Furthermore, a country or region can benefit from the backward linkages created by local apparel manufacturers sourcing textiles and findings from local component suppliers. This has the potential to fully imbed the clothing industry and facilitate technology and knowledge transfer throughout the region. CMT activities can be important drivers of foreign technology and knowledge transfer to developing and transition countries, as well as important generators of employment, but their lack of local linkage does not encourage wider economic growth within the region: "One of the main criticisms levelled at [CMT activities] is that they are islands of assembly production and are essentially unconnected to the domestic economies of the countries that host them" (Bair and Gereffi, 2003).

Figure 1.5. **Types of apparel manufacturers: CMT, OEM, OBM**

CMT • **Cut-make-trim** (CMT) is a form of industrial subcontracting, in which the buyer supplies the manufacturer with imported inputs, and the manufacturer only assembles the final product.

OEM • **Original equipment manufacturing** (OEM) is a form of commercial subcontracting in which the buyer supplies only the design and the manufacturer arranges material inputs, assembles the product and delivers the finished goods to the buyer. The end product is completely sold under the buyer's brand name.

OBM • **Original brand name manufacturing** (OBM) is when an OEM firm has moved beyond production to also designing its own clothing lines and eventually marketing them nationally as well as internationally.

Source: Gereffi and Memedovic (2003).

4.2.2. *OBM production*

The apparel manufacturers that engage in OEM activities gain knowledge of pricing, quality and delivery standards of foreign buyers. Local backward linkages between apparel, textile and findings manufacturers are also stimulated, encouraging the development of reliable local suppliers (Gereffi and Memedovic, 2003). With this development, apparel manufacturing firms can be expected to slowly move up the value chain to provide original brand manufacturing (OBM), including designing and marketing their own brands and developing sophisticated regional supply chains based on triangle manufacturing.

> ### Box 1.5. **Examples of moving up the value chain**
>
> Many countries began operations in the apparel industry by participating in apparel assembly operations. Mexico began widespread assembly in the 1960s through its *maquiladora* programme of export-processing zones. In the *maquiladoras*, operations centred solely on assembly and export to US markets until the early 1980s, when rising costs and changes in the international fashion landscape encouraged the introduction of more value-added and full package services. Many plants moved away from low-wage, labour-intensive assembly operations and started engaging in more areas of the value chain. Productivity increased, and skilled labour was in more demand. Today Mexico hosts many apparel manufacturing plants that have morphed into full-package suppliers to US and other international retailers and buyers. This trend is also driven by the entry of mass and specialist retailers like Walmex.
>
> Hong Kong has taken this move one step further and shifted from OEM production to OBM production. Many apparel manufacturers in Hong Kong take advantage of lower wages in other areas of China and South East Asia and engage in triangle manufacturing. Furthermore, many firms have developed successful domestic and international brands. For example, one popular local retail chain, Episode, is owned by Fang Brothers Group, a long-established apparel manufacturer that supplies international clothing retailers such as Marks and Spencer.
>
> *Source:* Gereffi and Memedovic (2003), Galhardi (1997).

Stepping into OBM production for international markets is most likely currently unattainable for all but the most competitive apparel manufacturing firms already actively engaged in providing OEM production. Especially as design and marketing, key components of the OBM supplier, are the most profitable phases of the value chain, they will be the most difficult to wrest from competitive international brands. However, it is very possible for many firms, even those now engaged in mainly CMT production, to begin small ventures into technical design or employ local designers and produce mostly for the domestic market. With the rapid improvement of technology, many types of designs have become largely technical in nature. Computer aided design programmes such as Snap Fashun contain large libraries of apparel components and the option of creating new libraries which can be combined in myriad ways to develop clothing lines. Training is required in the software, but little skill in drawing is needed. With some investment, a firm can quickly create its own line of clothing marketed towards the domestic or regional market.

Another component of the OBM producer is triangle manufacturing (Gereffi, 1995). Often, in many regions, different firms and different countries are at differing stages of sophistication in their production processes. Many have begun or are fully engaged in OEM production. Others concentrate largely on CMT production. Much of this can be explained by the differing stages of firm and country development, resulting in wide wage and productivity disparities. This presents, however, a unique competitive advantage for the most advanced firms – as buyers place their orders, these more advanced firms can in turn shift some or all of the requested production to facilities in other lower-wage countries within the region. This allows the creation of a regionally integrated apparel manufacturing industry, with value-added intensive production steps undertaken by a firm in one country and assembly outsourced to a lower-wage country.

4.3. *Wider promotion of capabilities*

Finally, one relatively easy way for apparel manufacturing firms to gain a competitive advantage in the increasingly competitive apparel industry is to promote their excess capacity, products and expertise internationally. By promoting themselves, firms can gain access to new international clients and markets, providing them with exposure to different business processes and value chains as well as ensuring that they are able to maximise the production and productivity of their plants. Moreover, as firms move into OBM production, such self-promotion can aid in marketing their own designs and products, facilitating entry into the competitive design field. Before the technology boom, such marketing and advertising was expensive and beyond the reach of many smaller apparel manufacturing firms, which had to rely on a narrow spectrum of clients. However, with the advent of the internet and in the age of cheaper international air travel, firms can take advantage of three key self-promotion tools: *i)* improving their internet presence; *ii)* attending fairs; and *iii)* expanding their network.

4.3.1. *Internet presence*

In order to gain broader exposure to international clients, at the very basic level apparel manufacturing firms should improve their internet presence. This can be as simple as setting up a free business web page with basic information on the manufacturer, the products and skills/services offered, human resources available, production capacity and equipment. Perhaps surprisingly, when looking for a contractor in a particular country or region, many retailers and sourcing agents actually first search the internet (Glock and Kunz, 2005). By setting up a website, apparel manufacturers can inexpensively and easily gain exposure. Especially with the numerous free web hosting sites and ready-made web templates, for little or no cost beyond time, a contractor can create a professional web page with the essential information retailers and sourcing agents are looking for.[28] More ambitious firms could even place minimum amounts of web advertising on search engines and promote products and capacity on business-to-business and e-sourcing websites such as Alibaba (*www.alibaba.com*) and WorldSOURCE (*www.worldwideretailexchange.org*). Other options include placing advertisements on websites frequently visited by potential customers, *e.g.* regional or international apparel association websites. For example, the Moroccan Textile and Clothing Industry Association (AMITH) provides a list of all its members with relevant contact information on its website (*www.textile.ma*).

4.3.2. *Fairs*

Besides improving their internet presence, apparel manufacturing firms should actively participate in international sourcing fairs. Many sourcing managers in retailer firms look for potential partnerships at these fairs, especially when they are unfamiliar with a particular country (Glock and Kunz, 2005). Fairs for apparel products and designs are held worldwide throughout the year. For example, the annual India International Apparel Fair is in its 42nd year and Madrid holds an annual International Fashion Fair. While attending some of the larger fairs might be too expensive for many apparel manufacturing firms, many smaller, regional fairs are held throughout the world.

4.3.3. *Networking*

Successful apparel manufacturers from other emerging markets like Turkey or India have either proactively set up international offices (collaborative marketing) or actively

developed a network of agents in key demand areas like Italy or Germany. Many apparel manufacturers could also collaborate with the economic and commercial sections of their embassies to facilitate such networks.

5. Sector attractiveness in the Western Balkans

As mentioned in section 1.2, the apparel manufacturing sector is undeniably attractive in the Western Balkans. This region is increasingly becoming a key location for the production of fast fashion and replenishable[29] products for European markets and is of interest retailers and buyers looking to spread their sourcing activities across several geographic areas to reduce political and economic risk. For these reasons, the region can be expected to have a strong industry for quite a few years into the future. An advantage for this sector in the Western Balkans is its strong regional presence, including high export values, respectable levels of FDI and a large percentage of output, as well as competitive labour costs and close proximity to EU markets.

5.1. *Strong regional presence*

When one looks at international trade statistics, the apparel manufacturing sector in the Western Balkans is very large. Exports of apparel manufacturing products were EUR 1.4 billion in 2006; this was the second largest manufacturing export category in the region in 2006 and the largest in 2005. In 2006 it represented over 7% of total exports. The trade balance in the apparel manufacturing sector is positive at EUR 480 million in 2006, and it was the SITC two-digit sector with the largest regional trade surplus. Since the regional trade deficit in 2006 was over EUR 20 billion and there was a surplus in only nine sectors, it is clear that the apparel manufacturing sector in this region is a strong export industry.[30]

The top ten destinations of apparel products from the Western Balkans are almost all in the EU and are also largely Western European countries. Italy and Germany are by far the largest importers of apparel products: in 2006 they each imported about EUR 500 million in apparel goods from the Western Balkans, or 70% of total Western Balkan apparel trade.

Figure 1.6. **Western Balkan clothing exports:
total (%) and absolute value (2006) (right)**
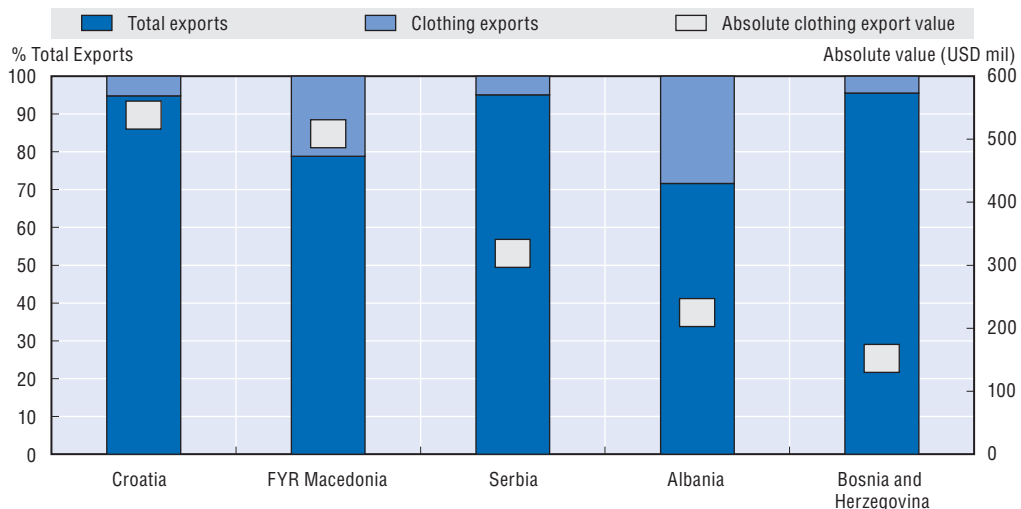
Source: Comtrade. Data converted from USD to EUS using US Federal Reserve official annual exchange rate for 2006.

Table 1.1. **Top destinations for Western Balkan apparel exports, 2000-06 (EUR million)**

	2000	2001	2002	2003	2004	2005	2006	CAGR
Italy	213	271	323	363	395	458	515	15.9%
Germany	428	438	382	396	385	436	490	2.3%
Greece	57	70	85	101	121	118	111	11.7%
Netherlands	48	56	53	44	40	48	45	−0.8%
Slovenia	15	15	14	16	17	24	29	11.8%
Austria	15	14	17	22	18	23	26	9.0%
United Kingdom	29	29	32	28	28	28	25	−2.1%
Bosnia Herzegovina	7	7	7	9	9	27	22	22.3%
France	24	19	16	18	15	21	22	−1.4%
Croatia	1	1	2	6	7	13	15	65.1%

Source: Comtrade. Data converted from USD to EUS using US Federal Reserve official annual exchange rate for 2000-06.

Greece, in third place, imported EUR 110 million.[31] In 2007 total Western Balkan apparel trade with the EU-27 was EUR 1.4 billion, 97% of which was with the EU-15 countries. Apparel products have been the largest import to EU-15 countries since 1995, representing roughly 20% of total Western Balkan trade during that period.[32]

The EU is the Western Balkans' most important trading partner for apparel products. The RCA between the EU-27 and the Western Balkans is 2.6, indicating that the region has a strong presence on the Western European apparel market. Between the EU-15 countries and the Western Balkans, the RCA increases to 3.4, indicating an even stronger presence: this is the fifth highest RCA calculation in 74 SITC two-digit traded goods categories. It also appears that the Western Balkans is improving its comparative advantage relative to the EU market: in the past three years the RCA has gradually increased, indicating that apparel manufacturing firms in the Western Balkans are taking increasing advantage of their geographic location relative to European markets.[33]

Table 1.2. **RCA values between the Western Balkans and the EU-15 in the apparel manufacturing industry**

	2005	2006	2007
Albania	5.63	5.66	6.05
Bosnia and Herzegovina	2.63	2.36	2.33
Croatia	2.84	2.38	2.61
Kosovo under UNSCR 1244	6.64	6.96	6.95
The Former Yugoslav Republic of Macedonia	0.06	0.01	0.04
Serbia	2.01	2.17	2.48

Source: OECD analysis based on data from Eurostat.

Despite the size of the apparel manufacturing industry, as shown by exports, it does not appear to attract very much FDI: FDI stocks in the region are relatively small. In 2004 total FDI stocks in Albania, Croatia and The former Yugoslav Republic of Macedonia in the textile and textile products category only amounted to about EUR 60 million, or 1.78% of total manufacturing FDI (and only 0.66% of total FDI). Compared with investments in other manufacturing industries, *e.g.* chemical production, which represented 21% of total manufacturing FDI, this figure seems quite low.[34] However, in an international context FDI stocks in textile and textile products are roughly in line with those in other countries.

Investments in textiles and wearing apparel in the CEE countries in 2005 represented only 1.4% of total manufacturing investment and only 0.5% of total FDI.[35] It also appears that FDI stocks are growing in the Western Balkans. Between 2001 and 2004 the annual average growth rate was 36%, indicating increasing investment into the industry.[36]

Inflows of FDI into the region were almost EUR 42 million in 2006, and the yearly average growth rate between 2004 and 2006 was over 53%. FDI inflows into the textile and apparel sector were only 0.6% of total FDI inflows in 2006,[37] but that figure is significant in comparison with CEE countries where FDI into the textile and wearing apparel industries was actually negative in 2006.[38] Relatively low levels of FDI into the apparel manufacturing industry can largely be attributed to the fact that most textile manufacturing firms are domestically owned, and that they service international companies through contracts and licensing arrangements.

Figure 1.7. **FDI inflows into the textile and wearing apparel industry**
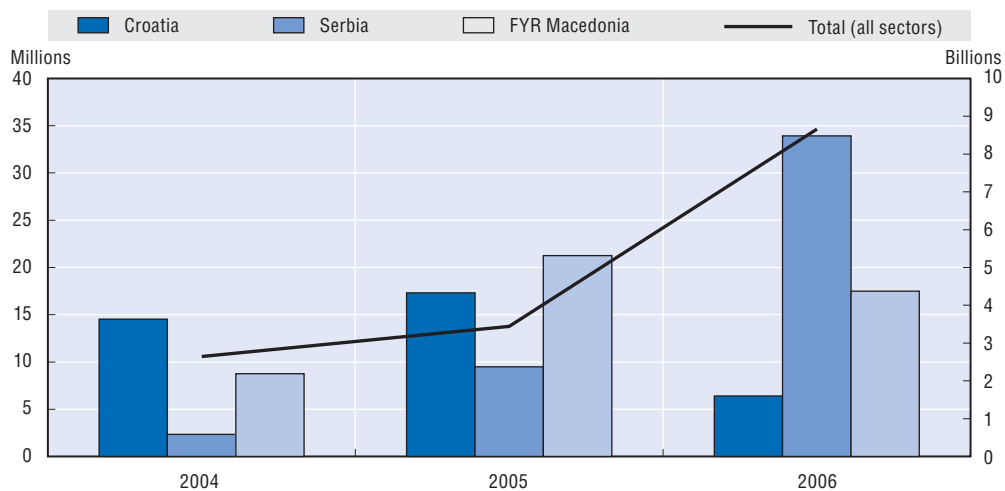
2007 data not available for the Former Yugoslav Republic of Macedonia.
Source: UNIDO, Croatian National Bank, National, National Bank of Serbia.

Value-added statistics (obtained by subtracting intermediate consumption from gross output) allow a good estimate of net sectoral output. In 2005 total value-added was EUR 541 million, 6.25% of total value-added in the region.[39] This is slightly above the national accounts data for the CEE countries and much higher than the percentage of total value-added represented by the textile and apparel manufacturing industry in Western Europe.[40] It is clear that the textile and apparel manufacturing sectors represent a much bigger share of the economy in the Western Balkans than they do in the CEE and especially in Western Europe.

In conclusion, with high levels of exports, a clear revealed comparative advantage, and value-added and FDI figures in line with or above those in the apparel manufacturing industry in other countries, it is apparent that this industry is indeed competitive in the Western Balkans. The region has been able to capitalise on its advantages to supply the European and world apparel market. Specifically, its key advantages are cost competitiveness and proximity to EU markets.

5.2. Cost competitiveness and productivity

As mentioned earlier, increasing competition, largely within the retail sector, is pushing apparel manufactures to reduce their costs. One way retailers have looked to reduce costs is by searching for lower-cost suppliers, especially internationally. In the retail clothing industry, international sourcing of apparel products from lower-wage economies has become the norm. Employment in the apparel manufacturing industry has been decreasing substantially. Between 1997 and 2007 in the US, employment in this industry fell by 66%[41] while imports of apparel items increased by over 50%.[42]

In this respect, the Western Balkans is well-placed to compete with other apparel manufacturing locations. Wages in manufacturing in 2006 were on average EUR 380, and wages specifically in the apparel manufacturing industry were much lower at EUR 210. As a comparison with two CEE countries: average wages in Slovak Republic in 2005 were EUR 500 per month in manufacturing and almost EUR 300 in apparel manufacturing; in Poland, wages were even higher at EUR 590 per month in manufacturing and EUR 320 in textile and textile products manufacturing (Figure 1.8).[43]

Figure 1.8. **Average monthly wages (2006)**
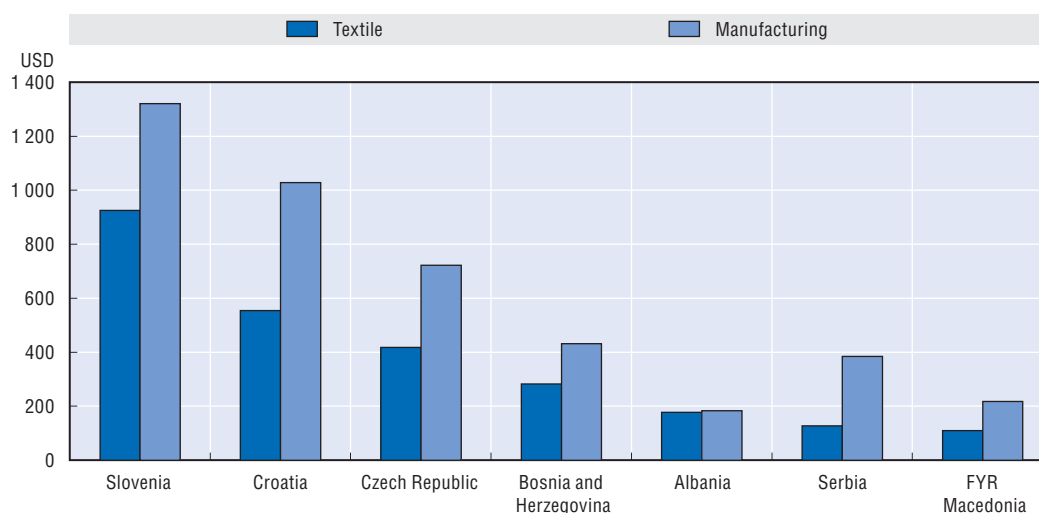
Source: LABORSTA (ILO).

Furthermore, productivity in the Western Balkans appears to be relatively robust. Average labour and general costs per standard allowable minute (SAM)[44] were EUR 0.15 per minute.[45] This makes the Western Balkans a cheaper place to assemble clothing than most Western European countries, and is in line with many of the new EU Member States including Bulgaria, Latvia and Poland. According to Kurt Salmon Associates (KSA) calculations, productivity is in line with that in many other competitive apparel manufacturing countries, including Egypt and Morocco. Also, according to OECD calculations, apparent productivity in the textile and textile products industry is about 79% of the productivity found in Hungary (Figure 1.9).[46]

5.3. Proximity to EU markets

One of the biggest competitive advantages that the Western Balkan apparel manufacturing industry possesses is its close proximity to Western Europe, a large end-consumer market. The Western Balkans is perfectly placed to quickly supply the Western

Figure 1.9. **Apparent productivity in the textile and apparel industry (2006)**
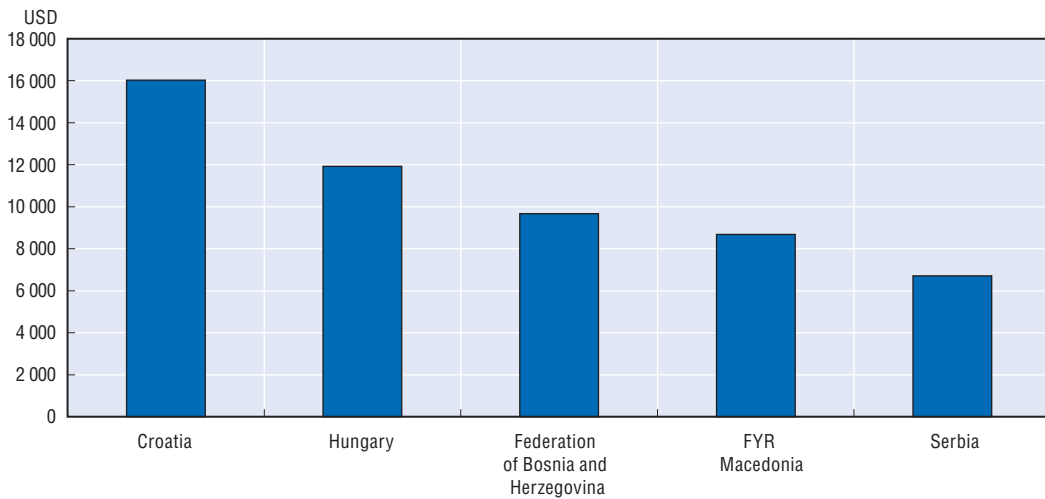
Source: OECD analysis based on data from Eurostat, Federation of Bosnia and Herzegovina Federal Office of Statistics, Republic of Croatia Central Bureau of Statistics, Republic of Macedonia State Statistical Office, Statistical Office of the Republic of Serbia.

European clothing market. Distances from the various capitals to Rome are on average 1 700 km, and under optimal transport conditions travel time is only 22 hours. Distances to Frankfurt, Germany, are on average 1 800 km and travel time can be as little as 20 hours.[47] Apparel manufacturing exporters in the Western Balkans have taken advantage of efficient road networks and shipping ports in the region. Apparel goods exported to the EU are mostly shipped using road transport: – in 2007, 91% were sent by truck and the remainder was sent by sea.[48]

Concerning costs related to shipping apparel products to the EU, in many cases it is probably much less expensive to produce clothing in the Western Balkans than in more remote countries with lower labour costs. OECD analysis included a time factor of 0.5% per day (Hummels, 2000),[49] freight cost and the applied customs duties determined by the prevailing preferential trade agreements in place (OECD, 2004). Table 1.3 shows the cost advantage of the Western Balkan economies relative to China. The Western Balkans can produce goods for the EU market 22.3% cheaper on average than Chinese firms when these costs are taken into consideration. For example, the total costs for a supplier from Tirana to ship apparel products to Rome amounts to 1.43% of the shipment's import value. If the same clothing articles were instead sourced from China for final delivery to Rome, the total cost of a shipment would be 23.8% of the import value. This means that Albanian apparel manufacturing firms enjoy a cost advantage of 22.37% over similar articles originating from China. This significant price difference is mostly attributable to Albania's preferential access to the EU market. Shorter transit periods and reduced freight costs are other factors. Therefore, Western Balkan apparel manufacturers can be price competitive in comparison to China, despite higher labour costs, especially in the case of time sensitive goods where the time factor per day is expected to be even higher than the 0.5% estimated in the above model.

Table 1.3. **EU clothing imports: transit, freight and duty costs**

	Inbound for Rome (hrs)[1]	Time factor 0.5%/day (%)	Freight cost (%)	Customs duty (%)	Total cost (%)	Relative to China (%)
Tirana[2]	40	0.83	0.60	0.00	1.43	22.37
Sarajevo	46	0.96	0.60	0.00	1.56	22.24
Zagreb	45	0.94	0.60	0.00	1.54	22.26
Skopje	45	0.94	0.60	0.00	1.54	22.26
Podgorica	48	1.00	0.60	0.00	1.60	22.20
Belgrade	34	0.71	0.60	0.00	1.31	22.49
Pristina	39	0.82	0.60	0.00	1.42	22.38
China	288	6.00	5.80	12	23.80	–

1. Outbound periods were calculated according to total kilometres from Rome to the capital city, divided by an average driving speed of 90 km/hour, including consideration of the number of borders crossed (after entry into the Schengen region, no more borders are counted) and the average wait at each border as outlined in World Bank (2004).
2. Time from Tirana to Rome is calculated based on a seaborne vessel from Durrës to Bari and road transport from Bari to Rome.

Source: OECD calculation of freight costs based on data from Eurostat. Hummels (2000) for the time factor per day. exporthelp.europa.eu for customs duties. Original methodology developed in OECD (2004).

6. Recommendations

With the Western Balkan region's low wages, knowledgeable local workforce, close proximity to EU markets and relatively high levels of productivity, it is clear why retailers and apparel buyers are increasingly sourcing apparel products from the region's manufacturers. However, there are both operational improvements and policy barriers which need to be addressed in order to ensure that the region remains competitive in the longer term.

6.1. *Operational improvements*

There are activities that Western Balkan apparel manufacturing firms can carry out or, in many cases, have already carried out to improve the products and serves they offer to retailers and other buyers. First and foremost, distance to market is not the only determinant of how quickly an apparel manufacturing firm can supply a retailer. Often more important are the internal processes and systems of a firm: how quickly a firm is able to receive an order, manufacture it and clear regulatory hurdles for it to be shipped. Second, Western Balkan firms should engage in industrial upgrading to improve the value-added services they offer and carry more responsibility in the overall production of apparel. Finally, they should actively seek potential clients in Western European markets, and showcase the quality and services they are able to provide.

6.1.1. *Improve further time to market*

As described in section 1.5, it is clear that for time sensitive goods the Western Balkans is a competitive location to source apparel products. But many firms in other apparel exporting locations are reducing their lead times by introducing internal process changes that are more conducive to quick delivery. If the Western Balkans wants to retain its geographic advantage with respect to Western European markets, firms in the region need to implement QR systems to ensure that they provide apparel goods in the shortest time, *i.e.* they will have to: *i)* reduce plant throughput time; *ii)* implement electronic data interchange; *iii)* improve inventory control systems; and *iv)* ensure minimum transport times.

Reduce plant throughput time. One of the first steps in improving plant lead times is to improve plant throughput time. As described in section 1.4, this should be achieved through a combination of implementing modular production systems (MPS) and automating certain production activities. No data was specifically collected during the Regional Capability Survey on the implementation of MPS; however, 33% of firms surveyed considered reducing apparel throughput times and lead times to be one of the three most important success factors for their business (Figure 1.10). It appears from OECD site visits of apparel manufacturing firms in the Western Balkans that the PBS method of apparel assembly is the one primarily used. None of the firms visited by the OECD had yet implemented MPS or UPS assembly methods. Modest implementation of MPS in the Western Balkans, despite the apparent benefits, is probably due to the initial investment such systems require. Workers must be trained in more than one activity, and implementation often requires reorganisation of the production floor. Furthermore, as members of a team are paid based on the output of the entire team and not the individual output of a sewing operator, as under the PBS system, some employees, especially the most productive ones, may be reluctant to participate in MPS as pay, particularly initially, may be reduced.

Figure 1.10. **Most important key success factors**
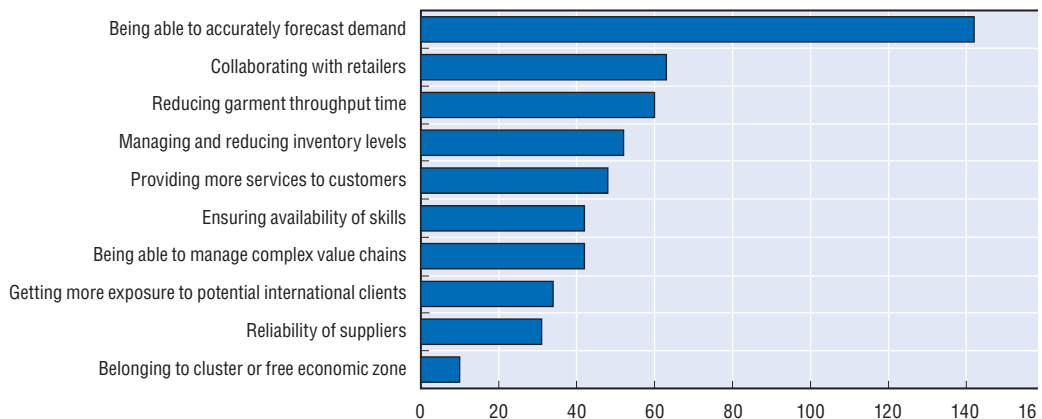
Note: Firms were asked to select their three most important success factors. The figure reflects aggregated responses.
Source: OECD RCS (2008).

Despite little implementation of MPS, it appears that many firms have begun implementing automated technology. Many of those interviewed by the OECD either had their own computer aided design (CAD) software to aid in marker making or outsourced this activity to a third party with the equipment.[50] Firms have also implemented other types of automated technology, including spreading. In a survey conducted by the Institute of Economics of Skopje, 27% of Macedonian apparel manufacturing firms had implemented automated technology (Insitute of Economics of Skopje, 2007). Nonetheless, Western Balkan apparel manufacturing firms should do more to improve their automated technology. According to the RCS, 38% of firms considered lack of investment in technology to be one of the three most important business challenges they faced in expanding their operations. Again, modest implementation of automated technology seems to stem from inadequate access to finance, as highlighted by the Croatian Textile Association ("There has been some investment in automated technology in the last ten years, but not enough largely because costs are still too high for most firms") (Loborec, 2007).

Implement electronic data interchange.   Another method important for reducing lead time is streamlining the processing of payments and contractual agreements between the supplier and retailer by implementing EDI. EDI was used by 43% of the firms surveyed by the RCS (Figure 1.11). According to follow-up interviews by the OECD, the majority of firms which had undertaken implementation of EDI had done so at the request of the retailers and firms they supplied. Many key retailers require all their suppliers to adopt EDI standards.

Figure 1.11. **Firms Implementing EDI**
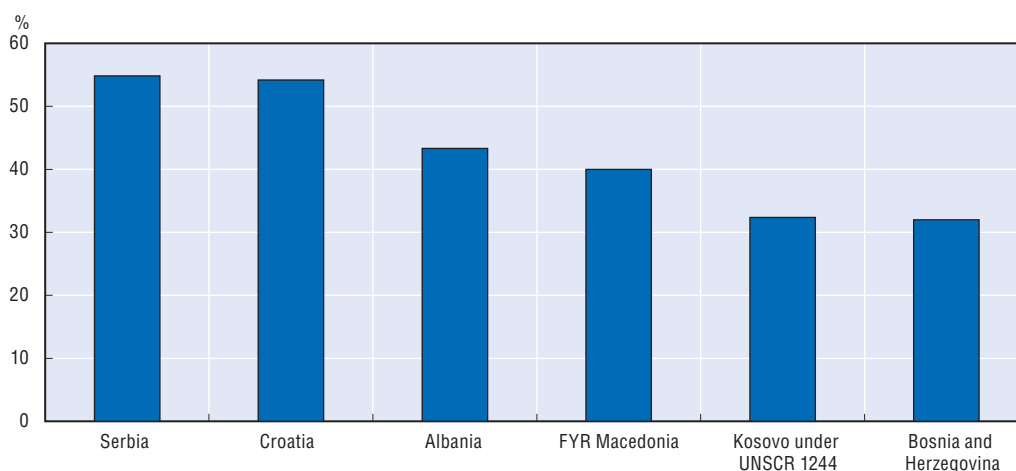
Source: OECD RCS (2008).

As highlighted in many interviews, when an apparel manufacturer supplies many different retailers it is often required to implement different forms of EDI, increasing the firm's administrative burden. Therefore, EDI can be very expensive for smaller firms to implement in terms of both personnel training and equipment resources. According to the RCS, only 33% of firms with fewer than 50 employees had implemented RCS, compared to 60% of those with more than 150 employees. Many firms continued to rely on more traditional modes of communication: 42% of those which did not use EDI used email as their primary mode of communicating production orders, etc. The remainder continued to rely on telephone and fax.

Improve inventory control systems.   A third method of reducing lead time is to maintain an organised and efficient inventory control system. As mentioned in section 1.4, the first step to an efficient inventory control system is keeping track of and maintaining individual stocking policies using stock keeping units (SKUs). The uniform product code (UPC) has begun to be applied at the SKU level in the Western Balkans; 56% of apparel manufacturing firms in the region identify products at the SKU level (Figure 1.12). During OECD interviews, many Western Balkan apparel manufacturers indicated that while they had initially begun to use the UPC at the request of the retailers they supplied, they were personally benefiting by being able to keep better track of inventory and dispatch it more quickly when an order was placed. However, it again seems that UPC adoption is much higher in larger firms: over 70% of firms with more than 100 employees had implemented UPC symbols, compared to only 52% of those with fewer employees.

Figure 1.12. **Firms Implementing UPC symbol standards (%)**
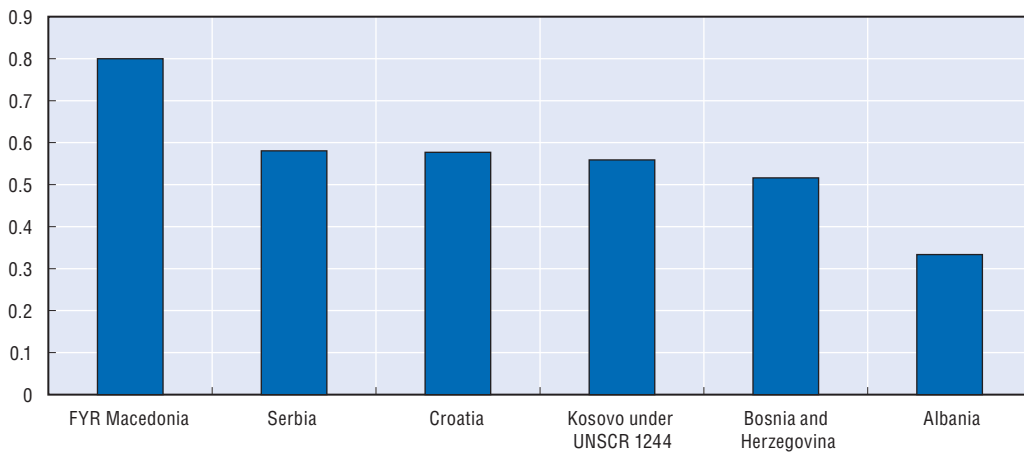
Source: OECD RCS (2008).

It also appears that many firms are beginning to incorporate basic forecasting methods to determine their inventory stocking levels. While OECD interviews indicated that few firms had incorporated sophisticated modelling based on point of sale (POS) data, many (especially the larger firms) had created individual stocking policies at the SKU level instead of relying on the same inventory policy for all products.[51] Basic planning tools were often in place to determine stocking policies based on demand variation, production costs, inventory carrying costs, throughput times, etc. Firms identified "accurately forecasting demand" as the most important factor in responding quickly to retailers' orders; 68% considered it among the three most important success factors for their business, and 64% considered it the most important.

One reason for only partial implementation of the use of UPC symbols and demand forecasting techniques in firms is most likely the limited management capacity to do so. As highlighted in OECD interviews, in cases where retailers did not require UPC symbols many managers have not realised the added value to their businesses of implementing them. They have often accepted the increased inventory carrying costs and reduced order fulfilment rates due to insufficient stock, with potential harmful effects on business and quality.

Ensure minimum transport time and protection of goods. Implementing the technology and production processes needed to reduce lead times (mentioned in the previous sections) will be useless if shipment times are increased by poor transport organisation or simply bad roads. One important first step is therefore to employ a reputable transport company with a good record in respect to time delivery. Almost all the firms interviewed indicated that they were satisfied with the companies they had been using to ship goods to retailers. According to the BEEPS survey, spoilage of goods in transport for the entire manufacturing industry in the Western Balkans is relatively low when compared internationally; 0.8% of total consignment value was lost in transit due to breakage, theft or spoilage, compared to 1% for manufacturing firms across 40 countries throughout the world (Figure 1.13). That figure is even lower for apparel manufacturing firms surveyed by the RCA: 0.68% of their cargo consignments had been lost in transit due to breakage, theft or spoilage.

Figure 1.13. **Value of average cargo consignment lost in transit (2005)**
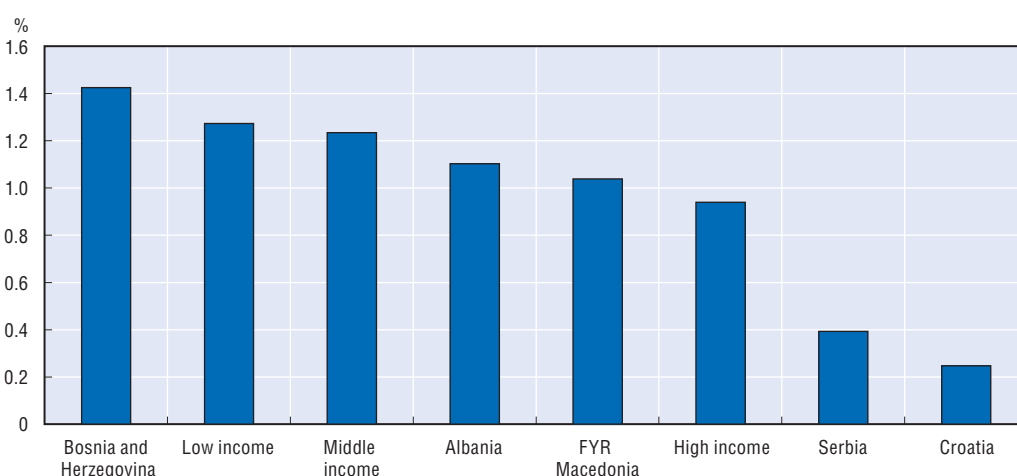
Notes:

1. High income countries: Germany, Greece, Ireland, Korea, Portugal, Slovenia, Spain.
2. Middle income countries: Albania, Armenia, Bulgaria, Bosnia and Herzegovina, Belarus, Brazil, China, Algeria, Ecuador, Egypt, Guatemala, Guyana, Honduras, Indonesia, Kazakhstan, Sri Lanka, Morocco, The former Yugoslav Republic of Macedonia, Peru, Philippines, Romania, Russia, Slovak Republic, Syria, Thailand, Turkey, Ukraine, Serbia, South Africa, Chile, Costa Rica, Czech Republic, Estonia, Croatia, Honduras, Lithuania, Latvia, Mauritius, Oman, Poland, El Salvador, Turkey.
3. Low income countries: Azerbaijan, Benin, Bangladesh, Eritrea, Ethiopia, Georgia, India, Kenya, Kyrgyzstan, Cambodia, Moldova, Madagascar, Mali, Malawi, Nicaragua, Pakistan, Senegal, Tajikistan, Tanzania, Uganda, Uzbekistan, Vietnam, Zambia.

Source: BEEPS (2005).

Furthermore, apparel manufacturing firms in the Western Balkans should have systems in place to deal adequately with customs procedures. Often these procedures are time and process intensive. It appears that clearing customs in the Western Balkans requires less time for apparel manufacturers than in many other countries. According to the RCS, it takes an apparel manufacturing firm 2.5 days on average for its imports to clear customs and about 2.1 days for it exports to clear. This is in sharp contrast to apparel manufacturing firms in the rest of the world, where the average time to clear customs is five and four days, respectively, for imports and exports. Three-quarters of the firms interviewed employed either in-house customs experts or external customs brokers to help them deal efficiently and quickly with customs procedures.[52]

Table 1.4. **Time to clear customs for imports and exports**

	Imports	Exports
Albania	4.12	4.12
Bosnia and Herzegovina	2.17	2.42
Croatia	1.88	2.24
Kosovo under UNSCR 1244	2.79	0.47
The Former Yugoslav Republic of Macedonia	1.15	0.93
Serbia	2.30	2.96
31 countries[1]	4.97	3.99

1. Average time to clear import and export customs for the 31 countries responding to the World Bank Enterprise Survey.

Source: BEEPS (2005) and OECD RCS (2008).

Finally, ensuring that shipping containers and cartons are appropriately labelled according to agreed standards can aid retailers to handle received orders, especially in large distribution centres where orders from hundreds of different suppliers can arrive at the same time. Again, such labelling requirements are normally met by apparel manufacturers at the request of the retailers they supply (as in the case of UPC symbols). Only 28% of apparel manufacturing firms in the Western Balkans ship orders in cartons or containers marked with bar codes.

Figure 1.14. **Firms marking shipments with bar codes (%)**
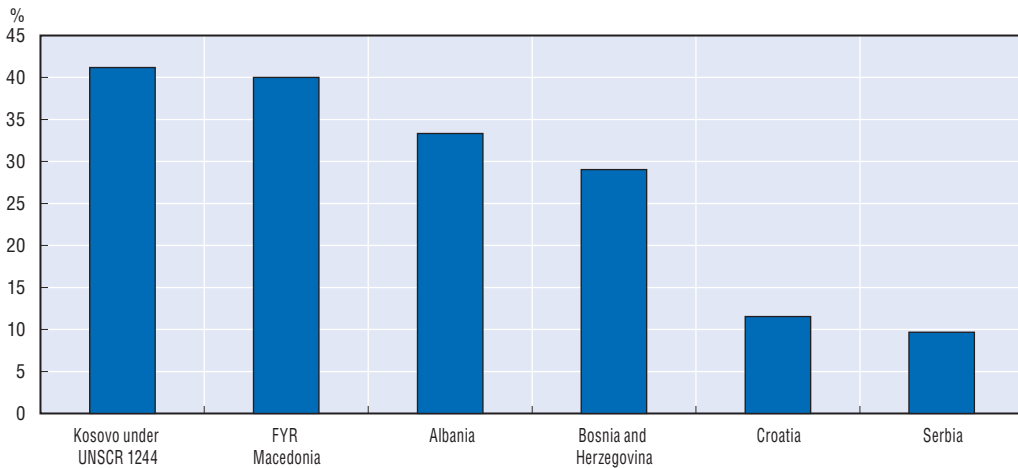
Source: OECD RCS (2008).

Firms have made progress in reducing as much as possible the actual transport time for delivery of manufactured items. However, more efforts could be made to label shipping containers with bar codes, which would make processing easier once they arrive. As with other actions needed to improve time to market, limited financing options are available to many apparel manufacturing firms for implementing these often quite expensive investments.

6.1.2. *Introduce value-added services*

As mentioned in section 1.4, the profit margins of apparel manufacturing firms are very slim. An important way to improve profitability and have more control over price setting is to introduce more value-added services. Furthermore, with many retailers and other buyers increasingly concentrating on the design and marketing phase of the fashion industry, they are not interested in the manufacturing of the products and increasingly rely on fully contracting these services out. To address both of these factors, Western Balkan firms are encouraged to become OEM producers and gradually move into OBM production.

Move to OEM production.   According to the RCS, apparel manufacturing firms in the Western Balkans appear to be starting to provide more OEM services to their clients. While 42% continued to provide only cutting, sewing and pressing services, the rest provided other services beyond CMT activities; 43% provided knitting, and quite a few also provided specific services including special finishing, embroidery and printing; 16% provided six or more services to their clients.

Figure 1.15. **Main services provided by Western Balkan apparel manufacturing firms**

% firms providing the service
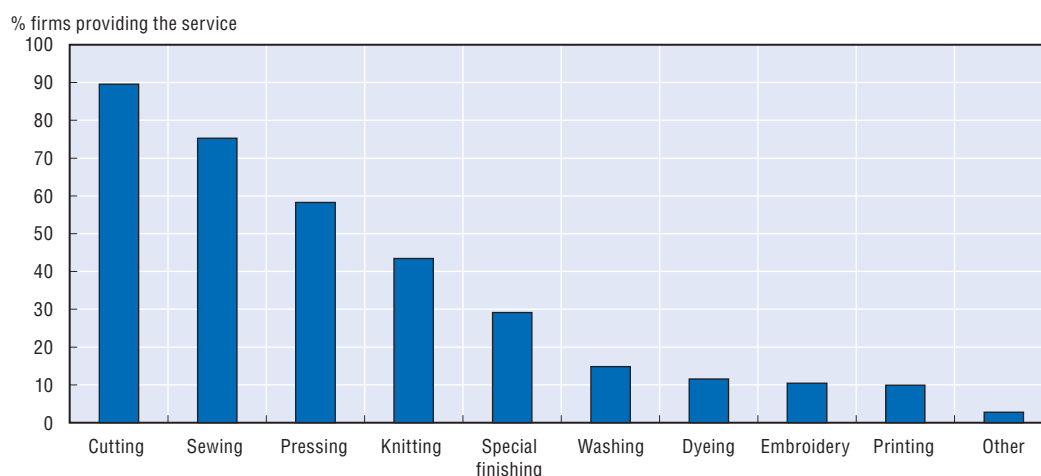
Source: OECD RCS (2008).

Western Balkan apparel manufacturing firms are also sourcing their own material inputs and supplies. Only 8% of firms had their establishment's materials supplied from a third party; 68% imported directly either a portion or the entirety of their material inputs and supplies; and 59% purchased some or all of their materials from domestic sources. When considering the value of the material inputs and supplies, 22% was imported by a third party, 51% was imported directly by the surveyed apparel manufacturer and 26% was purchased from domestic sources.

Figure 1.16. **Sources of material inputs and supplies**
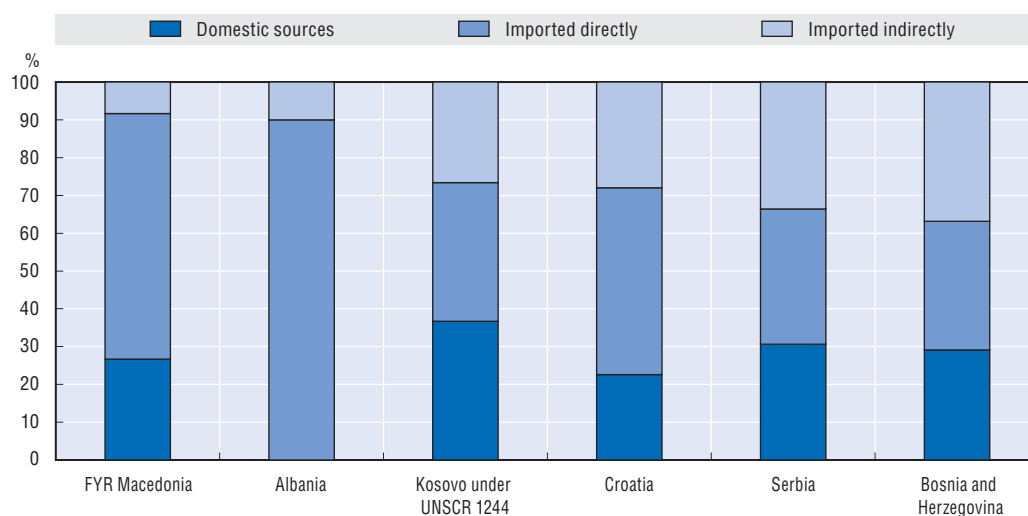
Source: OECD RCS (2008).

It also appears that Western Balkan apparel manufacturing firms can rely on a relatively stable set of suppliers. Only 3.3% of sales were lost in 2007 due to delays in deliveries from suppliers. Firms that imported 100% of their material inputs only lost 1% in sales, and those that only sourced material inputs locally lost only 0.2% of total sales due to delivery delays from suppliers. Highlighting the relative reliability of suppliers, only 17% of firms considered the reliability of suppliers an issue when asked about key success factors (Figure 1.12).

Figure 1.17. **Sales lost due to delivery delays from suppliers (%)**
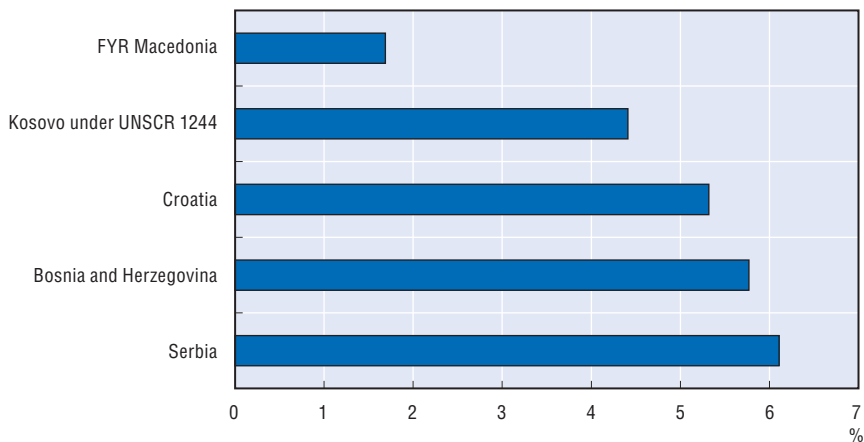
Source: OECD RCS (2008).

Move to OBM production. Apparel manufacturing firms in the Western Balkans appear to have recognised the need to slowly move into the design and marketing of their own brands: 21% indicated that design was one of the main services they provided to their clients. Among all firms, including those that did not consider design one of their main services, 48% had developed a major new product line or service and 44% had upgraded an existing product line since 2004.

Figure 1.18. **Major new product line development**
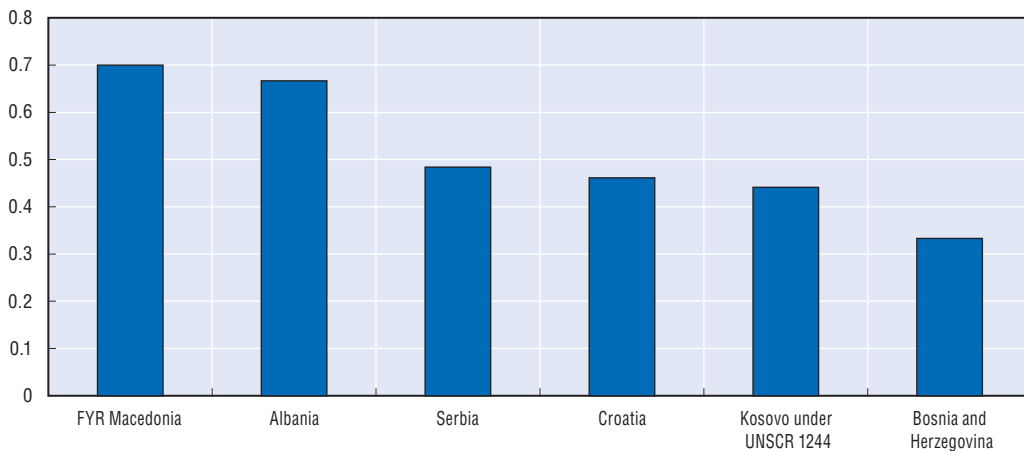
Source: OECD RCS (2008).

OECD interviews with firms indicated that the majority of in-house design undertaken by firms consists, for example, of noting the latest trends in fashion magazines and imitating them using excess capacity and fabric. However, a couple of firms have taken advantage of the regional design talent fostered through the well-regarded design schools that exist in almost all of the Western Balkan economies. Three of the firms interviewed had introduced clothing lines aimed at the domestic market using those designers.

Regional intra-industry trade within the textile, apparel and findings industries indicates that the Western Balkans is beginning to create a regionally integrated apparel

manufacturing industry and is increasingly engaging in triangle manufacturing. The Grubel-Lloyd index (Grubel and Lloyd, 1975) was also calculated to measure regional intra-industry trade for each of the Western Balkan economies in the textile, apparel manufacturing and findings industries (Box 1.6). The average of the index in all countries for 2006 was 0.62, indicating significant intra-industry trade within the sector.[53] Intra-industry trade within the sector appears to be growing: between 2000 and 2006 the year-on-year growth rate was 3.6%.

To the extent that intra-industry trade is characterised by vertical specialisation, one would expect imports and exports to be correlated (OECD, 2002). The correlation in the apparel manufacturing sector in the region was close to 0 in 2000-06. However, changes in intra-regional imports and exports in this sector appear to have become more aligned in almost all the Western Balkan economies, indicating increased vertical specialisation. Over the past two years in particular, intra-regional imports and exports of textile and apparel products have been moving together.

Box 1.6. **Intra-industry trade**

Intra-industry trade is defined as the two-way exchange of goods within the same industry. According to traditional trade theory, countries engage in inter-industry trade specialisation. However, countries increasingly engage in intra-industry trade, whereby they both export and import products from the same industry. For example, in 2007 the EU exported EUR 7.5 billion and imported EUR 6.5 billion in automobiles.[1]

The intra-industry trade phenomenon can be attributed to trade in three different types of products:

● *Horizontal products*: Trade in products of similar price and quality, *e.g.* Germany imports Toyotas and exports Volkswagens. Horizontal intra-industry trade allows countries with similar factor endowments to exploit economies of scale by specialising in niche products;

● *Vertically differentiated products*: Trade in products that differ by price and quality, *e.g.* Germany imports Toyotas and exports Mercedes Benzes. Vertically differentiated intra-industry trade can be a sign of differing factor endowments, such as workforce skills.

● *Vertically specialised products*: Trade in products at different stages of production, *e.g.* Germany imports car parts and exports cars. Vertically specialised intra-industry trade is usually triggered by comparative advantage, *e.g.* low labour costs.

The most widely used method of measuring intra-industry trade is the Grubel-Lloyd index. Using disaggregated trade data, the extent of intra-industry trade in product class *i* in country *j* can be expressed as:

$$GL_i = 1 - \frac{\left| X_{ij} - M_{ij} \right|}{X_{ij} + M_{ij}}$$

where *Xij* represents exports of product class *i* by country *j* and *Mij* represents imports of product class *i* by country *j*. The GL index is zero when trade is entirely inter-industry (*i.e.* either imports or exports of a product equal zero) and is 1 when trade is entirely intra-industry (*i.e.* imports and exports of a product are equal to each other).

1. Eurostat.

Source: Adapted from OECD (2002) and Grubel *et al.* (1975)

Some Western Balkan economies appear to be taking advantage of intra-regional vertical specialisation. There is a positive correlation between textile and apparel intra-regional trade and intra-industry trade in Bosnia and Herzegovina and Croatia (Figure 1.19), indicating that they are more vertically specialised than, in particular, Albania, where there seems to be little intra-regional intra-industry trade and almost no correlation between exports and imports in the textile and apparel sector.

Figure 1.19. **Relationship between intra-industry trade and the correlation of export/import movements**

Correlation between exports and imports
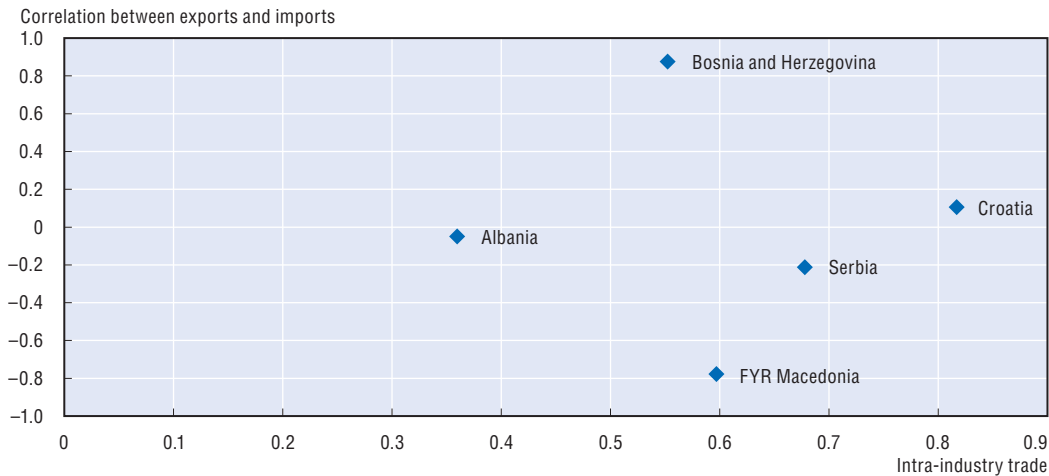
Notes:

1. The horizontal axis measures the average GL index in SITC 65, 84 and 89.983 between 2000 and 2006, The vertical axis measures the correlation coefficient between annual changes in export and import volumes of intra-regional trade in apparel and textile products between 2000 and 2006.
2. For Bosnia and Herzegovina data was only available for 2003 to 2006; for Serbia it was not available for 2003. Data for Serbia reflects Serbia and Montenegro up until 2005.

Source: OECD analysis based on methodology adopted from OECD (2002) and data from Comtrade.

6.1.3. *Promote your business!*

As highlighted in section 1.4, apparel manufacturing firms in the Western Balkans would benefit from promoting themselves to international clients in order to obtain needed exposure and reduce excess capacity. Owing to the recent technology revolution, as well as cheaper international travel, this can be done relatively inexpensively by improving internet presence and attending fairs.

Improve internet presence. Despite the many benefits provided by establishing an internet presence and the limited cost it implies (as outlined in section 1.4), few firms appear to have taken advantage of this opportunity. Only 14% of firms surveyed by the RCS had an internet website associated with their businesses. Furthermore, those companies that had a website provided only minimal information on the types of products they produced. No detailed information was given on human resources, equipment and production capacity, etc. (information that is valuable to retailers and buyers). Based on the OECD interviews, active web advertising appears to be practically non-existent. An examination of the most popular business-to-business websites for the apparel industry showed very few firms from the Western Balkans.

One reason for the weak internet presence of most apparel manufacturing firms appears to be the limited capacity of management. As highlighted in the OECD interviews, many managers did not fully appreciate the potential benefits such small steps as having a website or promoting excess capacity on business-to-business websites could bring, despite the relatively small investment in time and resources required.

Attend fairs.   Despite the benefits of regularly attending international fashion and trade fairs, most of the firms interviewed participated in these events only sporadically. Reasons for not participating were largely related to the high cost of setting up a booth at a fair and the costs associated with travelling. In addition, it can often be very cumbersome for managers to obtain appropriate travel visas.

Only 10% of firms participated in apparel specific industry associations or clusters. Such associations represent the interests of their members at international meetings and export fairs or markets; they can also promote the activities of their members by organising missions abroad. Apparel specific industry associations or clusters existed in all the Western Balkan economies, although their focus and capacity differed considerably.

6.2. Policy barriers

In addition to operational improvements by apparel manufacturing firms, governments can further increase competition in a sector through targeted policy measures which address key policy barriers. A detailed description of country specific policy barriers can be found in section 1.7. However, the section below describes barriers that were identified across the region: i) access to and cost of finance; ii) VAT reimbursement delays; iii) high import duties; iv) energy infrastructure; and v) underdeveloped logistical channels.

6.3. Improve access to and the cost of finance

As demonstrated in the sections above, manufacturers appear to have difficulty obtaining affordable financing for investments in their businesses. Industrial upgrading, in terms of implementing more value-added services and improving time to market, requires significant investment by firms. Firms were asked in the RCS to assess the degree to which 18 policy barriers limit operation and growth. After taxes, availability of skills and electricity, the cost of financing was considered the most important barrier. It was considered a major barrier by 37% of firms and a minor to major one by 71%. These percentages were similar when firms were asked about access to financing: 34% considered it a major barrier and 66% a minor to major barrier.

The two big factors standing in the way of firms financing upgrades to their equipment and processes are the amount of collateral required to obtain a loan and the rate of interest required to finance the loans. The average interest rate paid by manufacturing firms throughout the region was 11%, significantly higher than the average 6% interest rate paid by firms in higher income OECD countries.[54] Furthermore, the duration of those loans was much shorter than in the OECD countries. In the Western Balkans, loans to manufacturing firms were on average for only 37 months, compared to 53 months in OECD countries. In an industry where costs are large and profits are slim, this can represent a large percentage of the total costs incurred by a firm. As shown in Figure 1.20, the PIM shows that a firm that has a loan amount of 36% of an initial investment will pay annual loan repayments and interest charges representing almost 10% of total costs when the duration is only three years and the interest rate is 11%. For that same loan spread over seven years, and with a more manageable interest rate payment of 7%, it represents only about 5% of total costs.

Figure 1.20. **Total loan costs in 2008 (principal and interest payments)**
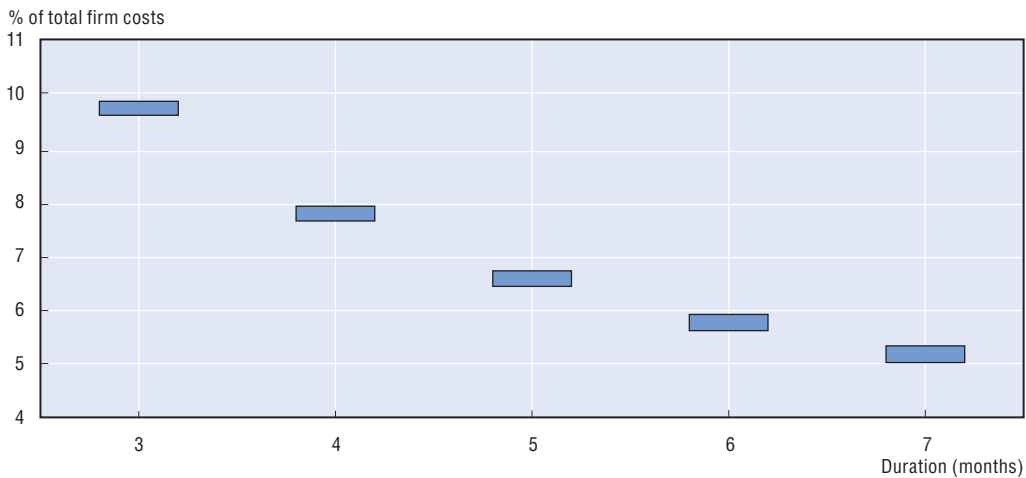
Source: PIM (2008).

Box 1.7. **Policy Impact Model (PIM)**

The OECD Investment Compact created the PIM as a tool to evaluate the financial impact of various policy levers on firms and benchmark the competitiveness of firms against relevant countries. The PIM combines data on an apparel manufacturing firm engaged in make-trim operations to create a financial statement providing a monetary evaluation of a representative firm's return on investment dependent upon changes in key policies.

Currently, the PIM is capable of evaluating the impact that labour, energy, transport and loan costs have on the financial stability of a representative firm. Specifically, the four thematic areas are evaluated according to the following criteria:

● *Labour costs:* this thematic area evaluates the impact of social contributions, the ratio of managers to operators, wages per hour and the productivity level on the representative firm's profitability;

● *Energy costs:* this thematic area models the impact that energy policy has the profitability of the representative firm and includes estimations for electricity cost, the number of hours without electricity per day and the price of fuel;

● *Transport costs:* this thematic area evaluates costs involved in shipping the apparel products to the final market and includes models and variables for distance and time to market, the cost of the lorry driver and the cost of fuel and insurance;

● *Loan costs:* the final thematic area deals with the costs and burden of procuring a loan for new investment using data on the annual interest rate, the average percentage of collateral required and the expected loan duration.

The PIM is based on several assumptions, including details on ownership structure, place of operations, annual production, etc. For a more detailed description of the assumptions made, please go to the Investment Compact website: *www.investmentcompact.org*.

The approximate collateral required as a percentage of the loan value from manufacturing firms in the Western Balkans was 177%, compared to 133% in a sampling of OECD countries. Considering that the only assets that many apparel manufacturing firms have access to are the land the factory stands on and the buildings that house it, these are often insufficient to obtain the appropriate amounts of loan capital.

Table 1.5. **Sources of financing new investment: the Western Balkans and OECD**

	New investment	
	Western Balkans (%)	OECD (%)
Internal funds or retained earnings	64.97	56.98
Local commercial banks (loan, overdraft)	16.92	20.21
Foreign owned commercial banks	8.79	0.89
Leasing arrangement	1.07	9.50
Investment funds, special development financing or other state services	0.61	0.54
Trade credit (supplier or customer credit)	1.99	3.40
Credit cards	0.00	0.52
Equity, sale of stock	2.70	5.78
Family, friends	1.04	1.04
Informal sources (*e.g.* money lender)	0.37	0.10
Other	1.55	1.06

Source: BEEPS 2005; OECD: Germany, Greece, Ireland, Korea, Portugal, Spain.

The financial systems in place in the Western Balkans do not appear fully able to handle the financing needs of firms in the region. For new investments, firms rely much more heavily on internal funds or retained earnings than do firms in a selection of OECD countries (Table 1.5). They also do not use loans or overdrafts from local commercial banks, leasing arrangements or equity as much as do firms in many OECD countries, relying more on foreign owned commercial banks.

Box 1.8. **Improving access to and the cost of financing in the short term**

The SSSC project also encompasses a more practical phase to help reduce identified policy barriers. This phase, which will begin end-2008 and continue until December 2009, will focus on improving access to and cost of financing in the short term, which appears to be a significant barrier to apparel manufacturing business growth throughout the Western Balkans.

The 14-month project will include a comprehensive review of the types of barriers firms face when acquiring financing. This research will be supplemented by a comprehensive company survey to identify the barriers as well as detailed firm interviews and secondary research reviews.

To determine the international instruments available to SMEs and apparel manufacturing firms in particular, a review of best practices throughout OECD and non-OECD countries will be conducted. A survey will also be distributed to relevant policy makers to determine current programmes already available in Western Balkan countries to assist firms in obtaining financing.

The end result will be a policy reform agenda tailored to specific country needs and levels of development as well as educational and promotion materials for apparel manufacturers providing step-by-step guidance on the mechanisms currently available for accessing finance.

6.4. *Reduce delays in VAT reimbursement*

All the Western Balkan economies have a VAT system based on the destination principle: VAT revenue accrues in the market where the good is consumed. All goods exported from the Western Balkans for final consumption elsewhere are charged a zero rate of VAT. In addition, VAT is recoverable on purchases of inputs that were used to produce the exported goods. In

most OECD countries, the VAT that is recoverable is reimbursed shortly after the exporting firm submits the required documentation to the tax administration. However, in many transition economies (including those in the Western Balkans) tax authorities can often take months and sometimes more than a year to process reimbursement claims. In an export oriented sector like apparel manufacturing, such delays can sometimes seriously impact competitiveness (Harrison and Krelove, 2005).

While all the Western Balkan economies have laws explicitly stating that the VAT is to be reimbursed to non-exporters within a maximum of 60 days (and more rapidly for exporters), in practice this sometimes does not occur. As highlighted by the RCS, VAT reimbursement was on average only delayed by three days throughout the Western Balkans for exporters. However, anecdotal evidence from apparel manufacturing firms in the Western Balkans indicates that it can sometimes take many months to receive a refund (Figure 1.21).

Figure 1.21. **VAT reimbursement delays**
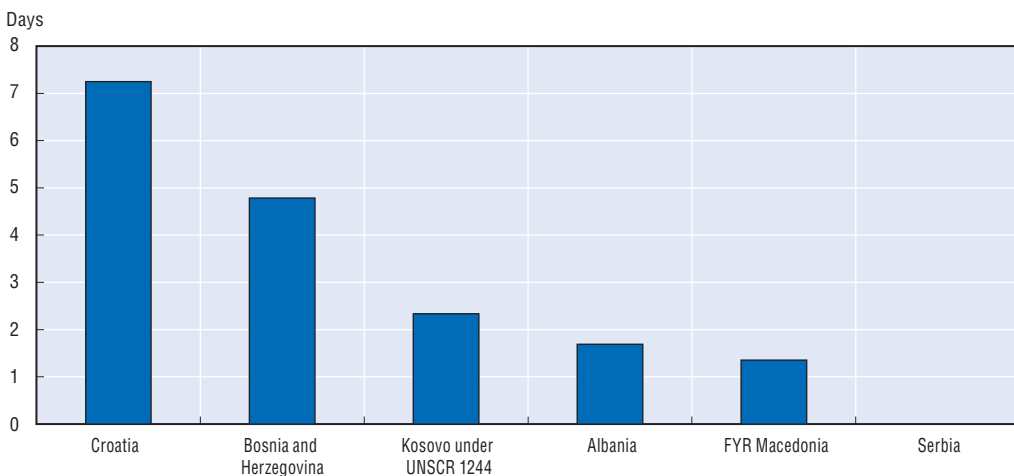
Source: OECD RCS (2008).

The VAT reimbursement to which apparel manufacturing firms are entitled in all Western Balkan economies often represents a large portion of the working capital available to the firm. Therefore, delayed reimbursements can significantly strain company finances. As highlighted by the PIM, a seven-month delay in VAT reimbursement means that after four years of operation only about 75% of VAT paid has been reimbursed. The outstanding amount of VAT to be paid back to the apparel manufacturer represented 10% of annual sales.

6.5. *Reduce import duties*

The Western Balkans has only a small textile and findings industry, and almost no raw material production to speak of. Although both these industries appear to be growing, they struggle to fully supply the very large domestic apparel manufacturing industry. In those economies where gross value-added statistics were broken down into textile production and manufacture of wearing apparel, domestic textile production represented only a fraction of the amount of apparel manufacturing. In Serbia textile production was about 86% of apparel, and in Croatia it was about 43%.

Largely for this reason, the Western Balkans imports the majority of its textiles and findings for input into the apparel manufacturing industry. Imports of textiles and findings in 2006 totalled USD 1.6 billion. The top ten exporting countries are almost entirely in Europe, representing 80% of total imports. China was the only non-European country to break into the top ten textile and findings exporters to the Western Balkans: total Chinese textile and findings imports in 2006 were almost USD 60 million.[55] The reason most of the exporting countries are in Europe is the largely zero or close to zero tariffs on imports of textiles and findings from the EU.

The Western Balkans has the potential to import many textile and findings products from countries outside the EU. Imports of textiles and findings from countries outside the European Economic Area (EEA) were over 10% of total textile and findings imports, and they have been rising substantially since 2000.[56] One of the main reasons imports are not even higher from countries outside the EEA is that tariffs on these imports can often be quite high.

Figure 1.22. **Import tariffs (2008)**
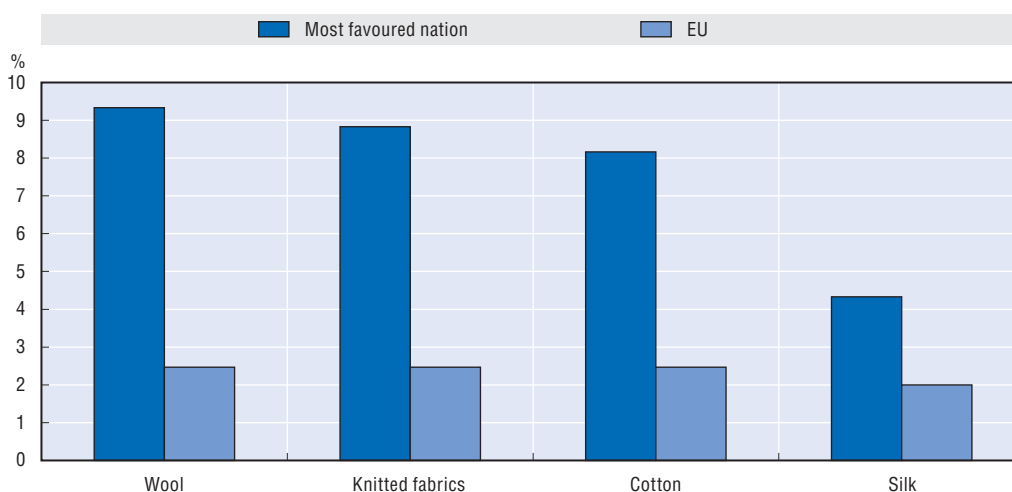
Silk: HS 5007; wool: HS 5111, 5112 and 5113; cotton: HS 5208, 5209, 5210, 5211 and 5212; knitted fabrics: HS 6001 and 6002. Most favoured nation: the tariffs received by all members of the World Trade Organisation.

Source: Market Access Database.

Potentially, the domestic apparel manufacturing industry could be aided by a reduction in import tariffs on textiles and findings. Fabric costs represent the biggest cost to a firm. According to the PIM, input costs represent over 60% of total costs incurred by an average apparel manufacturing firm. Despite the fact that many materials might be substantially cheaper from countries such as Pakistan and China, with high import tariffs – averaging 8% for cotton but running as high as 20% for denim imports into The former Yugoslav Republic of Macedonia – the majority of fabrics and findings are only affordable when they come from European countries with tariffs averaging only 2% for cotton fabrics.

Understandably, the purpose of many import tariffs in the Western Balkans is to protect and foster domestic textile and findings industries. Policy makers are therefore undoubtedly reluctant to reduce these tariffs. However, high tariffs could potentially be making the domestic apparel manufacturing industry less competitive than it otherwise might be by increasing apparel manufacturers' input costs.

6.6. *Improve energy infrastructure*

For most of the Western Balkan economies there no longer appears to be a problem with energy infrastructure. There are two notable exceptions: Albania and Kosovo under UNSCR 1244. According to the 2005 BEEPS, 54% of Albanian manufacturing firms considered problems with electricity supply to be a major obstacle for the operation and growth of their business. This was confirmed by the RCS, in which 40% of Albanian apparel manufacturing firms considered electricity to pose a major barrier to the operation and growth of their business. According to both the BEEPS and RCS, this was the issue that posed the biggest problem for enterprises.

According to the BEEPS, on average Albanian manufacturing firms experience power interruptions on 125 days per year. The average duration of each outage is almost five hours, and the estimated lost value due to these outages is 10% of total sales. This results in an added extra cost for almost all apparel manufacturing firms in Albania and in Kosovo under UNSCR 2214. To remain in operation, they must purchase a generator which, for a plant employing 200-250 people, would cost between EUR 35 000 and 55 000. On top of that, the rising cost of fuel for these generators is increasing their operating costs. According to the PIM, fuelling a generator due to power cuts can represent over 55% of a firm's total energy cost.

It is clear that for Albania and for Kosovo under UNSCR 2214, the energy situation is of the greatest importance. This is true not only for the apparel manufacturing industry, but for all business activities in both of these economies.

6.7. *Improve logistical channels*

Although many apparel manufacturers in the Western Balkans have partially or fully implemented QR systems, such improvements will not have a significant impact on time to market unless coupled with an efficient logistical network. As highlighted in a recent World Bank report, "In this highly competitive world, the quality of logistics can have a major bearing on a firm's decisions about which country to locate in, which suppliers to buy from and which consumer markets to enter" (World Bank, 2007).

Throughout the Western Balkans there is scope to improve transport infrastructure and logistical channels. According to the RCS, 62% and 64% of apparel manufacturing firms considered that transport infrastructure and customs and trade, respectively, were a barrier to the efficient operations of their business. In the World Bank Logistics Performance Index (LPI) the Western Balkans ranks on average 89th among 150 countries in terms of logistics performance. The average for the Western Balkan economies scored in the top third of countries in only one category in the LPI: domestic logistics costs. In every other category this average ranked in the bottom two-thirds, and in tracking and tracing it was in the bottom third.

According to the policy simulation model, delays in the delivery of goods to the final market due to poor transport infrastructure result in transport costs increasing by almost a third. Poor transport infrastructure is also likely to cause an increase in spoilage. On average, the Western Balkan economies experienced a spoilage rate of about 1% of all goods shipped to final market, but this figure is higher in Albania and Bosnia and Herzegovina (BEEPS 2005).

7. Country specific recommendations

7.1. Albania

Table 1.6. **The apparel manufacturing industry in Albania**

Value-added (2005)	USD 33 million
FDI inflows	
FDI inward stocks (2004)	EUR 112 million
Exports	
Employment (2005)	10 480
Number of firms (2005)	451

Source: INSTAT Annul Structural Survey (2005); Central Bank of Albania; data is for the entire textile and wearing apparel industry.

7.1.1. Sector overview

Clothing and apparel accessories represent Albania's largest export category. In 2006 they represented over 28% of total exports, totalling USD 450 million. The sector has been growing substantially: between 2000 and 2006 the CAGR was over 15%. It is also one of the few categories in which Albania has had a trade surplus: USD 105 million in 2006.

Albania exports almost exclusively to EU countries. In 2006 the top destinations were almost entirely European, and the majority of Albanian apparel exports go to Western European countries (the top three destinations in 2006 were Italy, Greece and Germany at 78%, 16% and 6%, respectively). Altogether, they represent 99.7% of total Albanian apparel exports. Many Italian retailers and clothing designers and brokers have taken advantage of the geographic proximity and low labour costs of the Albanian apparel manufacturing industry, as well as the fact that many Albanians are fluent in Italian.[57]

The revealed comparative advantage (RCA) of Albania's apparel manufacturing industry in 2007 was 6.8, indicating that the country has a distinct advantage in apparel exports to the EU relative to other countries. The apparel manufacturing sector has the third largest RCA calculation for 2007 at the SITC two-digit level, right after exports of footwear and leather, skins and furs. Albania appears to be improving its comparative advantage relative to the EU market: over the past three years the RCA has gradually increased, indicating that apparel manufacturing firms are taking greater advantage of their geographic proximity to European markets.

FDI stocks in the apparel manufacturing industry in 2004 amounted to EUR 112 million, representing about 11% of total FDI stock in manufacturing.[58] This industry was the third largest recipient of FDI in the manufacturing sector at NACE two-digit level in 2004, and the second largest sector in 2003. Investment in the industry is increasing: the CAGR between 2001 and 2004 was 11%.

According to the annual enterprise survey by the Albanian Office of Statistics, value-added was about USD 33 million in 2005 or about 2% of the industry total. This is significantly above that in most of the other Western Balkan economies, indicating the strong presence of the apparel manufacturing industry.

Albania is one of the least expensive countries in Europe for labour intensive activities. Wages in manufacturing in 2005 were only USD 184 per month, and those in the textile and apparel industries were USD 178 per month. After Kosovo under UNSCR 2214, it has the

lowest wages in the Western Balkans. However, wages have risen relatively rapidly. The CAGR between 1997 and 2005 was 15%.

Labour and general costs per standard allowed minute (SAM) were EUR 0.11. Despite Albania's low labour costs, they are higher per SAM than those in countries such as The former Yugoslav Republic of Macedonia, largely due to lower productivity. According to KSA calculations, productivity was only 42% of that in the United Kingdom, making Albania one of the least productive Western Balkan economies per SAM.

7.1.2. Challenges and policy barriers

According to the RCS, 60% of firms considered that reducing apparel throughput times and lead times was one of the three most important success factors for their business, the highest percentage in the region. However, as with all the other firms interviewed, MPS had not yet been implemented. Implementation of automated technology is also in its infancy; according to the RCS, only 27% of firms considered their lack of investment in technology to be one of the three most important business challenges they face in expanding their operations. Low investment coupled with little interest in investment indicates that Albanian firms are still in the CMT mentality and have yet to realise the potential benefits of improving their equipment and processes.

According to the RCS, 43% of firms had begun to implement EDI, placing Albania in the middle range of Western Balkan economies. Most firms appear to continue to rely on more traditional modes of communication: 29% of firms that did not use EDI used email as their primary mode of communicating production orders, etc. The remainder continued to rely on telephone and fax.

Only one-third of apparel manufacturing firms in Albania identify products at the SKU level with UPC symbols, the lowest percentage in the Western Balkans. As in the other Western Balkan economies, implementation of forecasting techniques to determine inventory stocking levels was relatively rudimentary; however, 80% of apparel manufacturing firms surveyed by the RCS considered this among the three most important success factors for their business and two-thirds considered it the most important.

According to the BEEPS, spoilage of goods in transport for the entire Albanian manufacturing industry is lower than the average of low and middle income countries: 1.10% of total consignment value is lost in transit due to breakage, theft of spoilage. However, Albania has the highest percentage of lost value regionally after Bosnia and Herzegovina. Concerning customs procedures, according to the RCS in an Albanian apparel manufacturing firm it takes four days on average for imports to clear customs and four days for exports to clear. Although Albania is competitive internationally in this area, it lags behind other Western Balkan economies, where it takes only half this time to clear customs. Only one-third of apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards.

The policy barrier most often cited as a major obstacle to the operation and growth of Albanian firms is problems with the reliability of electricity supply. According to the 2005 BEEPS, 54% of Albanian manufacturing firms considered electricity supply problems a major obstacle for the operation and growth of their businesses. This was confirmed by the RCS, in which 40% of Albanian apparel manufacturing firms considered electricity supply problems to represent a major barrier to the operation and growth of their businesses. In both the BEEPS and RCS, this was the issue that posed the biggest problem for enterprises.

According to the BEEPS, Albanian manufacturing firms experience power interruptions on 125 days per year on average. The average duration of each power outage is almost five hours, and the estimated lost value due to these outages is 10% of total sales. This results in an added extra cost for almost all apparel manufacturing firms. To remain in operation, they must purchase a generator which, for a plant employing 200-250 people, would cost EUR 35 000-55 000. Moreover, the rising cost of fuel for these generators increases the expense of operating them. According to the PIM, fuelling a generator due to power cuts can represent over 55% of total energy cost.

Figure 1.23. **Policy areas representing moderate to major business barriers in Albania**
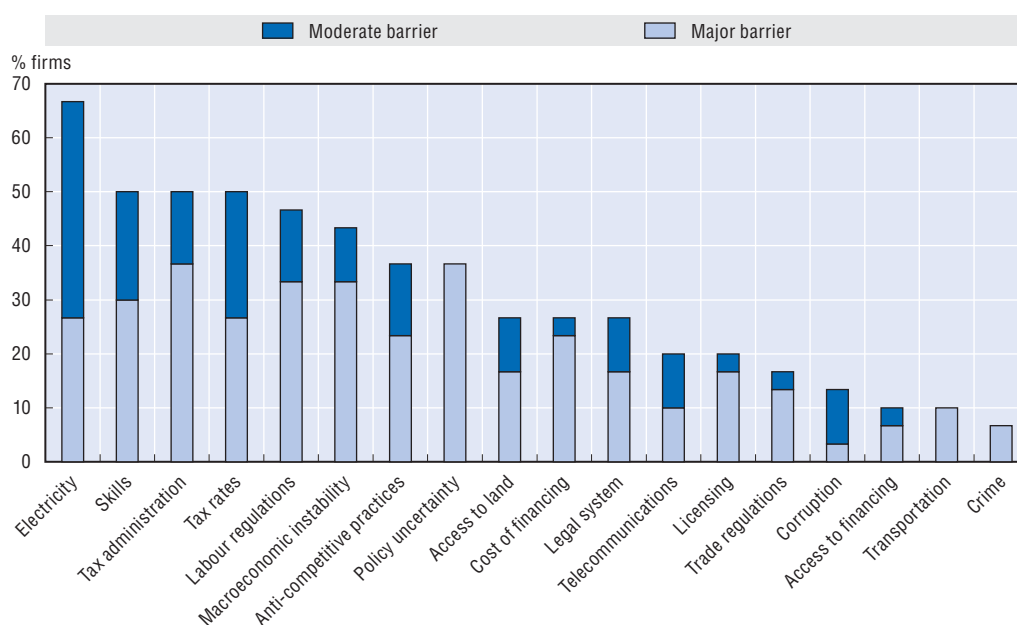
Source: OECD RCS (2008).

Tax rates were the policy barrier to business cited second most often and tax administration was the fourth. Anecdotal evidence collected from site visits, as well as meetings with relevant representatives from business associations, indicates that the VAT reimbursement system is poor. While VAT reimbursements are being made more regularly, and survey data indicates that the average delay is only about two days more than the legally mandated maximum, there is still considerable variation. According to one firm interviewed, it once took 1.5 years for a VAT payment to be reimbursed.

Labour regulations were another problem highlighted by the RCS, as echoed by the 2005 BEEPS (in which about 51% of firms identified this as a major to minor barrier). According to the World Bank Doing Business indicators, it appears that Albania's hiring and firing regulations are relatively liberal. However, firing costs are quite high. The notice period for redundancy dismissal after 20 years of continuous employment is 13 weeks; severance pay for that same employee would be 42.9 weeks of salary. Among the 178 countries covered by the *Doing Business Report*, Albania is among the third most restrictive countries in terms of firing costs, well behind the average for Eastern Europe and Central Asia and the OECD average.

Access to and the cost of financing continues to be a problem for most firms, according to the BEEPS. Access to financing was identified by 60% of Albanian firms as a major barrier, and by 78% as a major to minor one. Loans for working capital or new investments largely came from internal funds or retained earnings (84% for working capital and 77% for new investments), much higher than the OECD average and even the average in the Western Balkans (Table 1.7).

Table 1.7. **Access to financing in Albania**

	Working capital (%)	New investments (%)
Internal funds	84.37	77.32
Local banks	2.54	4.46
Foreign owned banks	3.33	7.20
Leasing arrangement	0.08	0.03
Investment funds, special development financing or other state services	0.10	0.66
Trade credit	3.03	2.37
Credit cards	0.11	0.00
Equity	0.19	0.15
Family and friends	2.79	3.76
Informal sources	0.85	0.46
Other	0.78	1.61

Source: BEEPS (2005).

For all Albanian firms the collateral needed to obtain a loan is relatively high, at 152% of the loan value, and the rate of interest is 11%. Interviews with apparel manufacturing firms indicate that they expect to pay between 12% and 13% interest.

7.1.3. Key policy recommendations

1. Actively promote the apparel sector as a target for foreign and local investment;

2. Improve electricity infrastructure to minimise disruptions to firm activity;

3. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;

4. Develop training for apparel firm managers to leverage opportunities to increase the competitiveness of Albanian firms.

7.2. Bosnia and Herzegovina

Table 1.8. **The apparel manufacturing industry in Bosnia and Herzegovina**

Value-added (2006)	USD 53 million
FDI inflows	
FDI inward stocks	
Exports (2007)	USD 176 million
Employment (2006)	6 971
Number of firms (2008)	86

Source: Data is only for the Federation of Bosnia and Herzegovina (FBiH). Chamber of Economy for the Federation of Bosnia and Herzegovina; Federation of Bosnia and Herzegovina Federal Office of Statistics; exports, employment and number of firms only for the apparel manufacturing industry; value-added for entire textile and apparel manufacturing industry.

7.3. Sector overview

Bosnia and Herzegovina is not a particularly large exporter of clothing and apparel accessories Compared with the other Western Balkan economies. In 2007 this was the ninth largest exporting sector at SITC two-digit level, representing only 4.3% of total exports, and totalled only USD 176 million. Bosnia and Herzegovina currently has a trade deficit in the clothing sector of almost USD 12 million. The CAGR indicates that the industry is picking up. Between 2000 and 2007 the CAGR was 28%, one of the highest in the region.

Bosnia and Herzegovina exports almost exclusively to the EU and to other Western Balkan economies. In 2006 the top ten export destinations for Bosnian apparel manufacturing products were in Europe (the top three destinations were Germany, Italy and Croatia at 50.08%, 18.72% and 8.53%, respectively). Altogether, they represent 77% of total Bosnian apparel exports.

The revealed comparative advantage (RCA) of the apparel manufacturing industry in Bosnia and Herzegovina in 2007 was 2.4, indicating that the country has a comparative advantage in apparel exports to the EU relative to other countries. The apparel manufacturing sector is one of the top ten most competitive sectors, according to the RCA calculation for 2007 at the SITC two-digit level. Bosnia has maintained a steady RCA over the past seven years.

The value-added of the apparel manufacturing industry in Bosnia and Herzegovina[59] in 2006 was approximately USD 53 million, or about 1% of the industry total. This figure is in line with most other countries. The size of the apparel manufacturing industry in Bosnia and Herzegovina appears to be consistent with the situation in many other transition countries.

Wages in the manufacturing industry in 2006 were USD 432 per month, although wages in the apparel manufacturing industries were 34% lower at USD 283 per month in the same year. As in many other countries, wages have risen relatively rapidly. The CAGR between 2997 and 2005 was 7% for wages across all activities.[60]

Labour and general costs per SAM were EUR 0.11 per minute. This measurement takes into account the labour required to produce one minute of sewing, weighted by productivity. Bosnia and Herzegovina is therefore a cheaper place to assemble clothing than about half of all other countries surveyed by KSA and all of the countries in Europe except Albania, The former Yugoslav Republic of Macedonia, Romania and Ukraine. According to KSA, productivity in Bosnia and Herzegovina was only about 52% of that in Germany. Its productivity levels are similar to those in Egypt, Myanmar and India. However, productivity appears to be increasing: according to OECD calculations of productivity in the textile and textile apparel industry, productivity between 2003 and 2006 had a year-on-year average growth rate of 11%,[61] the highest in the region where data was available.

7.3.1. Challenges and policy barriers

Of the Bosnian apparel manufacturing firms surveyed by the RCS, 29% considered that reducing throughput times and lead times was one of the three most important success factors for their business. Two of the four apparel manufacturing firms visited by the OECD had implemented MPS in a portion of their plants; one had tried but then discarded it. The implementation of automated technology was also relatively strong: one of the firms visited had automated spreading technology and two were using CAD systems to improve marker making. Lack of investment in technology was considered by 42% of firms to be among the top three most important business challenges they face in expanding their operations.

Of the Bosnian firms surveyed by the RCS, 26% had begun to implement EDI, the lowest percentage of any Western Balkan economy. It appears that most firms continue to rely on more traditional modes of communication: 61% of firms that did not use EDI used email as their primary mode of communicating production orders, etc. The remainder continued to rely on telephone and fax.
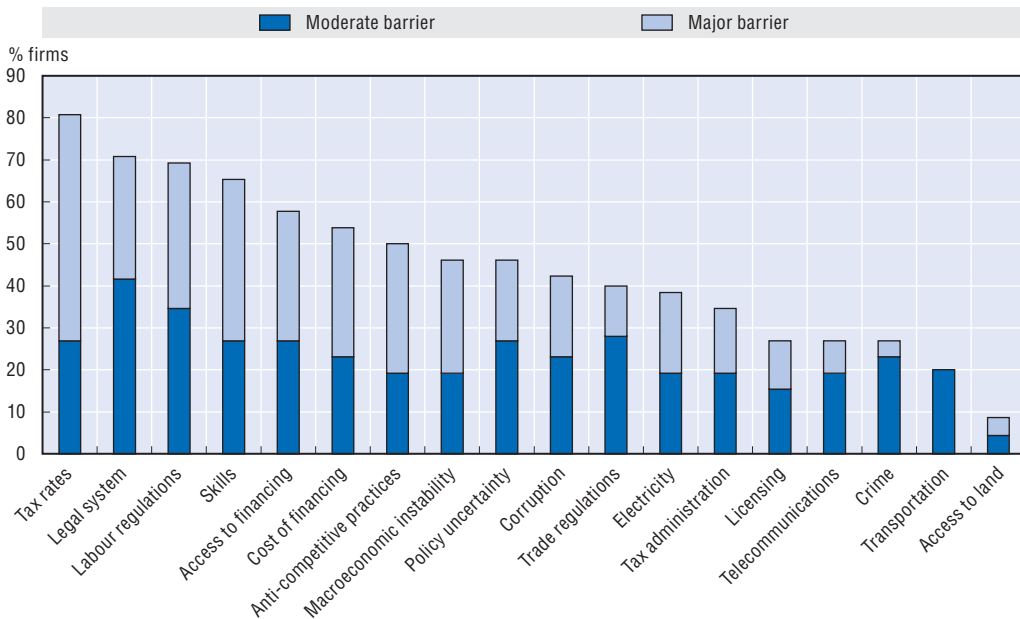
Only 52% of apparel manufacturing firms in Bosnia and Herzegovina identified products at the SKU level with UPC symbols, the second lowest percentage in the Western Balkans. As in the other Western Balkan economies, forecasting techniques were used to determine inventory stocking levels only by the most advanced firms. Only 58% of Bosnian apparel manufacturing firms surveyed by the RCS considered this to be among the top three success factors for their business, the lowest percentage in the region.

Figure 1.24. **Policy areas representing moderate to major business barriers in Bosnia and Herzegovina**
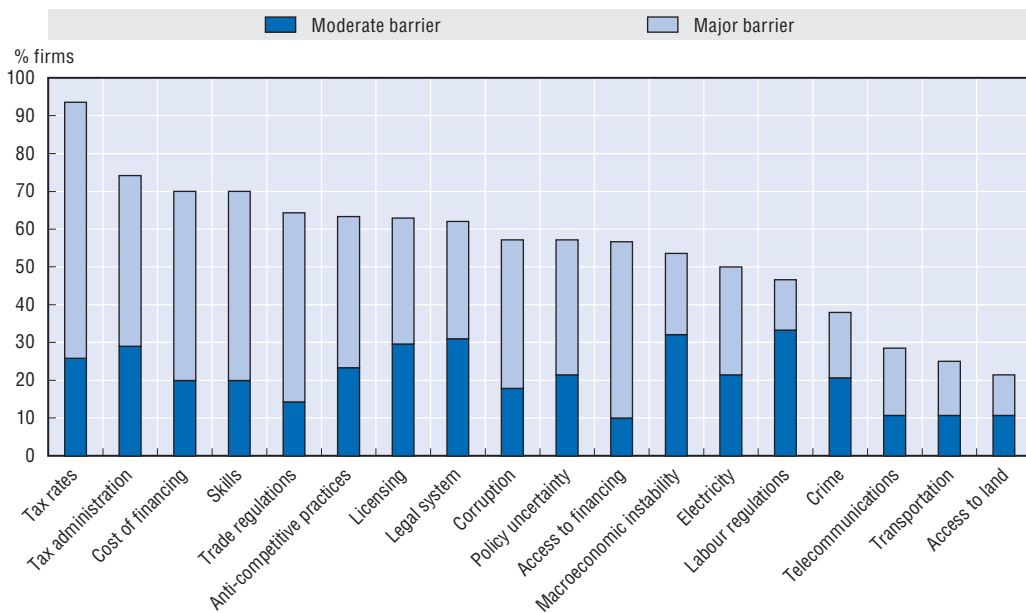
Source: OECD RCS (2008).

According to the BEEPS survey, spoilage of goods in transport in the entire Bosnian manufacturing industry was the highest in the Western Balkans: 1.42% of total consignment value was lost in transit due to breakage, theft or spoilage. Concerning customs procedures, according to the RCS it takes a Bosnian apparel manufacturing firm 2.2 days on average for imports to clear customs and 2.4 days for exports to clear on average, about the same as the Western Balkan averages. Only 29% of apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards.

Tax rates are the main policy barrier for apparel manufacturing firms operating in Bosnia and Herzegovina. While, to some extent, these firms tend to be dissatisfied with their country's tax regime, it appears from interviews that one of the main problems lies in the discrepancies between the tax systems of the Federation of Bosnia and Herzegovina and those of the Republika Srpska and the Br?ko District. The latter have separate taxation systems in place, with their own tax administrations. During OECD site visits and

interviews, many firms complained that the complexity of the political situation often meant that it was unclear which tax jurisdiction they fell under, and that regulations were in many cases ambiguous.

After tax rates, the most important policy barrier appears to be the cost of financing. This was identified by the 2005 BEEPS as the most important barrier impeding the growth of all Bosnian firms. Of the apparel manufacturing firms responding to the RCS, 80% indicated that the cost of financing was a major to minor barrier to general operations. This was echoed by the BEEPS, where 83% of all Bosnian firms indicated that the cost of financing was a major to minor obstacle to the operation and growth of their businesses.

Table 1.9. **Access to financing in Bosnia and Herzegovina**

	Working capital (%)	New investments (%)
Internal funds	63.03	63.99
Local banks	12.90	12.85
Foreign owned banks	3.04	4.17
Leasing arrangement	1.06	1.67
Investment funds, special development financing or other state services	1.27	0.30
Trade credit	4.94	2.85
Credit cards	0.29	0.22
Equity	1.47	0.48
Family and friends	4.89	6.05
Informal sources	0.34	0.31
Other	4.37	3.57

Source: Source: BEEPS (2005).

Internal funds or retained earnings were used 63% and 64% of the time, respectively, to fund loans for working capital and for new investments (Table 1.9). These percentages are much higher than the OECD average. Bosnian firms did not use local commercial banks as firms in OCED countries. The reliance of Bosnian firms on friends and family as source of financing was particularly high. For new investments, 6% of financing came from this source in Bosnia and Herzegovina, compared with 1% in OECD countries.

Based on an interview with one firm, it appears that the finance situation has been improving. It was not unusual to obtain a loan with an interest rate of between 10-11%, although after the war interest rates could reach 15-20%. The collateral required was still high: 171% of the value of the loan, according to the BEEPS (2005).

7.3.2. *Key policy recommendations*

1. Harmonise the tax systems in Bosnia and Herzegovina between the two entities and the Brcko District;

2. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;

3. Develop training for apparel firm managers to leverage opportunities to increase the competitiveness of Bosnian firms.

7.4. Croatia

Table 1.10. **The apparel manufacturing industry in Croatia**

Value-added (2004)	USD 346 million
FDI inflows (2007)	EUR 12 million
FDI inward stocks (2006)	EUR 198 million
Exports (2006)	USD 538 million
Employment (2006)	21 937
Number of firms (2006)	212

Source: Republic of Croatia Central Bureau of Statistics; Croatian National Bank.

7.4.1. Sector overview

Despite the generally held idea that Croatia's apparel manufacturing sector is not competitive due to its relatively high wages, this industry represents one of the largest export categories in Croatia. In 2006 apparel manufacturing was the fourth largest export category among SITC two-digit classifications, totalling USD 538 million or about 5% of total exports. The sector has not grown as much as in some of the other Western Balkan economies: between 2000 and 2006 the CAGR was only 2%. But this most likely reflects the relative maturity of the apparel manufacturing industry in Croatia compared to the situation in many other Western Balkan economies. This sector also continues to maintain a trade surplus (of almost USD 20 million), one of only 15 SITC two-digit categories of which this is true.

Croatia exports entirely to the EU and to other Western Balkan economies. In 2006 the top ten destinations for apparel manufacturing products were in Europe. The majority of Croatian apparel exports go to Western European countries. The top three destinations in 2006 were Italy, Germany and Austria (53.14%, 31.76% and 2.95% of total Croatian apparel exports, respectively). Altogether, they represent 88% of total Croatian apparel exports.

The revealed comparative advantage of Croatia's apparel manufacturing industry in 2007 was 2.9, indicating that the country has an advantage in apparel exports to the EU compared with other Western Balkan economies. However, the RCA calculation has declined steadily since 2007, indicating that other industries are becoming bigger trading partners with the EU.

FDI stocks in the apparel manufacturing industry in 2006 totalled EUR 198 million, representing about 4% of total FDI stocks in manufacturing.[62] Croatia had the largest FDI stocks in this sector in the Western Balkans. FDI inflows into the apparel manufacturing industry in 2007 were almost EUR 12 million, representing about 5% of total FDI inflows. It appears that FDI into this industry is increasing: the CAGR between 2000 and 2006 was 3% for stocks; for FDI inflows, the CAGR between 2000 and 2007 was almost 26%.

The value-added of the apparel manufacturing industry in 2004 was approximately USD 346 million, or about 2% of the industry total. This is significantly above the level in most of the other Western Balkan economies, indicating this industry's strong presence.

Croatia is one of the most expensive countries for labour intensive activities in South East Europe. Wages in manufacturing in 2006 were USD 1 029 per month, although those in the apparel manufacturing industry were about half that amount at USD 554 per month. Wages have arisen relatively rapidly. The year-on-year- growth rate of manufacturing wages between 1997 and 2005 was 6%.

In Croatia labour and general costs per SAM were EUR 0.18 per minute. These costs, which make it cheaper to assemble clothing in Croatia than in most Western European countries, are in line with costs in the majority of new EU Member States. Croatia is the most expensive country for apparel manufacturing in the Western Balkans, but it is also the most productive location. According to KSA, its productivity level is about 68% of Germany's. This level is similar to that in the Czech Republic, Latvia and Romania. Croatia has the highest productivity level in the Western Balkans: according to OECD calculations, productivity in the textile and textile apparel industry is about twice as high as the average for the Federation of Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia and Serbia, the only economies for which appropriate data was available. Productivity appears to be increasing considerably: between 2002 and 2004 there was a year-on-year average productivity growth rate of 5%.

7.4.2. Challenges and policy barriers

Reducing throughput times and lead times was considered by 39% of the Croatian apparel manufacturing firms surveyed by the RCS to be one of the three most important success factors for their business. Of the four apparel manufacturing firms visited by the OECD, two had implemented MPS in a portion of their plants. The implementation of automated technology was also advanced, especially when compared with the situation regionally: two of the firms visited used CAD systems to improve marker making and one had recently invested in sophisticated automated spreading technology. Lack of investment in technology was considered by 35% of firms to be one of the three most important business challenges they face in expanding their operations.

Half the Croatian firms surveyed by the RCS had begun to implement EDI. Croatia is the Western Balkan economy with the highest rate of EDI implementation after Serbia. Of the firms that did not implement EDI, 62% used email as their primary mode of communicating production orders, etc. The remainder continued to rely on telephone and fax.

Products were identified at the SKU level with UPC symbols by 58% of firms. As in the other Western Balkan economies, the use of forecasting techniques to determine inventory stocking levels was relatively rudimentary, except in the most successful firms. However, 85% of firms surveyed by the RCS considered this to be one of the three most important success factors for their business, and almost 60% considered it the most important factor.

According to the BEEPS survey, spoilage of goods in transport for the entire Croatian manufacturing industry is significantly lower than the average for low, middle and even high income countries: 0.25% of total consignment value was lost in transit due to breakage, theft or spoilage. This was the lowest percentage of lost value in the region. According to the RCA, for a Croatian apparel manufacturing firm it takes 1.9 days on average for imports to clear customs and 2.2 days for exports to clear, which is in line with the Western Balkan average. Finally, surprisingly, only 12% of Croatian apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards, the second lowest percentage in the Western Balkans.

7.4.3. Policy barriers and recommendations

Tax rates were the most significant policy barrier identified by the RCS in Croatia. Based on further discussion with apparel manufacturing firms, the greatest burden appears to be labour and wage taxation. According to the World Bank Doing Business indicators, in Croatia labour tax and contributions as a percentage of total profit was 19.4%. While this was

Figure 1.25. **Policy areas representing moderate to major business barriers in Croatia**

Legend: Moderate barrier | Major barrier

% firms

Categories (left to right): Tax rates, Legal system, Labour regulations, Skills, Access to financing, Cost of financing, Anti-competitive practices, Macroeconomic instability, Policy uncertainty, Corruption, Trade regulations, Electricity, Tax administration, Licensing, Telecommunications, Crime, Transportation, Access to land

Source: OECD RCS (2008).

in line with the OECD average of 22.8%, and below the average in all the other Western Balkan economies except Bosnia and Herzegovina, it remains a problem for apparel manufacturing firms, especially since labour taxes are lower in most of the other countries that are considered competitive in this industry.

The second most important barrier was considered to be the skills and education of available workers. According to the RCS, this was identified by 85% of apparel manufacturers as a minor to major barrier for the operation and growth of their business. Most Croatian apparel manufacturers are moving up the value chain, requiring new skills and competencies in technology. However, beyond the gap in technological knowledge, interviews with Croatian firms and textile and apparel associations identified a lack of management skills. As one firm owner reported: "There is a serious generation gap with many managers in the industry." These managers are used to the industry of 20 to 30 years ago and are unable to adapt to changing conditions. Problems include not being able to recognise that outsourcing certain activities, such as marker cutting, would be more cost-effective in many instances than investing in the equipment and know-how themselves.

Another barrier identified concerns the strict labour regulations faced by the apparel manufacturing industry, and indeed by all firms in Croatia. According to the World Bank Doing Business indicators, Croatia had the highest rigidity of employment index in the Western Balkans, ranking 33rd among all countries covered by the indicators. Of particular interest are the restrictions on temporary employment and fixed-term contracts, as well as the rules and regulations for making a worker redundant.

The fourth most important policy barrier for apparel manufacturing firms in Croatia is the cost of financing (Table 1.11). The percentage of firms using local banks to access credit is largely in line with that in the EU for both working capital loans and new investment

Table 1.11. **Access to financing in Croatia**

	Working capital (%)	New investments (%)
Internal funds	57.36	51.07
Local banks	12.42	16.87
Foreign owned banks	4.21	6.12
Leasing arrangement	2.38	5.98
Investment funds, special development financing or other state services	1.04	1.66
Trade credit	6.32	2.39
Credit cards	0.76	0.20
Equity	6.02	4.78
Family and friends	2.37	1.44
Informal sources	0.72	0.62
Other	4.15	4.24

Source: BEEPS (2005)

loans. However, the collateral required for a loan is 150% of the value of the loan. Interest rates average about 9%, not too far above the rates in many OECD countries.

7.4.4. Policy recommendations

1. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;

2. Develop training for apparel firm managers to leverage opportunities to increase the competitiveness of Croatian firms.

7.5. *Kosovo under UNSCR 1244*

7.5.1. *Sector overview*

In Kosovo under UNSCR 1244, textiles and textile articles are not a large export category. Total exports of textile and textile articles in 2007 amounted to only EUR 1.2 million, or 0.7% of total exports. Compared with the increase in exports in other SITC categories, the year-on-year growth rate was relatively low at 14.4% between 2002 and 2007. Exports in this sector are increasing much less than imports: the year-on-year growth rate for imports of textile and textile products in the same period was 26.4%.

As pointed out by the Statistical Office of Kosovo under UNSCR 2214, the trade statistics are not of perfect quality. Perhaps a better indication of actual trade volumes would be recorded imports to the EU of Kosovar articles of apparel and accessories. According to this data, imports into the EU-27 totalled EUR 65 068. While that was only 0.14% of total apparel and accessory imports to the EU, this category shows an impressive year-on-year growth rate; between 2005 and 2007, the compound annual growth rate was 44.7%.

The revealed comparative advantage of the apparel manufacturing industry in 2007 was only 0.04, indicating that Kosovo under UNSCR 1244 has practically no comparative advantage in apparel exports to the EU compared with other countries. Comparative advantages relative to the EU market do not appear to be improving. In the past few years the RCA has gradually decreased. Year-on-year growth between 2005 and 2007 was –0.19.

7.5.2. *Challenges and policy barriers*

According to the RCS, only 12% of Kosovar apparel manufacturing firms considered that reducing apparel throughput times and lead times constituted one of the three most

important success factors for their business. However, 47% of firms considered lack of investment in technology to be one of the three most important business challenges they face in expanding operations. Reducing plant throughput time, although not the most important success factor for Kosovar firms, appears to be a priority.

Only 32% of Kosovar apparel manufacturing firms had begun to implement EDI, the lowest percentage in the Western Balkans after Bosnia and Herzegovina. Of the firms that had not yet implemented EDI, only 23% communicated instead by e-mail.

Products at the SKU level were identified with UPC symbols by 56% of apparel manufacturing firms. As in most of the other Western Balkan economies, the use of forecasting techniques to determine inventory stocking levels was relatively rudimentary. Nonetheless, 79% of firms considered this to be the most important key success factor for their business.

According to the RCS, for a Kosovar apparel manufacturing firm it took 2.8 days on average for imports to clear customs and half a day for exports to clear. This means that Kosovo under UNSCR 1244 has the lowest customs clearance time in the Western Balkans. Finally, 41% of Kosovar apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards, the highest percentage in the region.

Figure 1.26. **Policy areas representing moderate to major business barriers in Kosovo under UNSCR 1244**
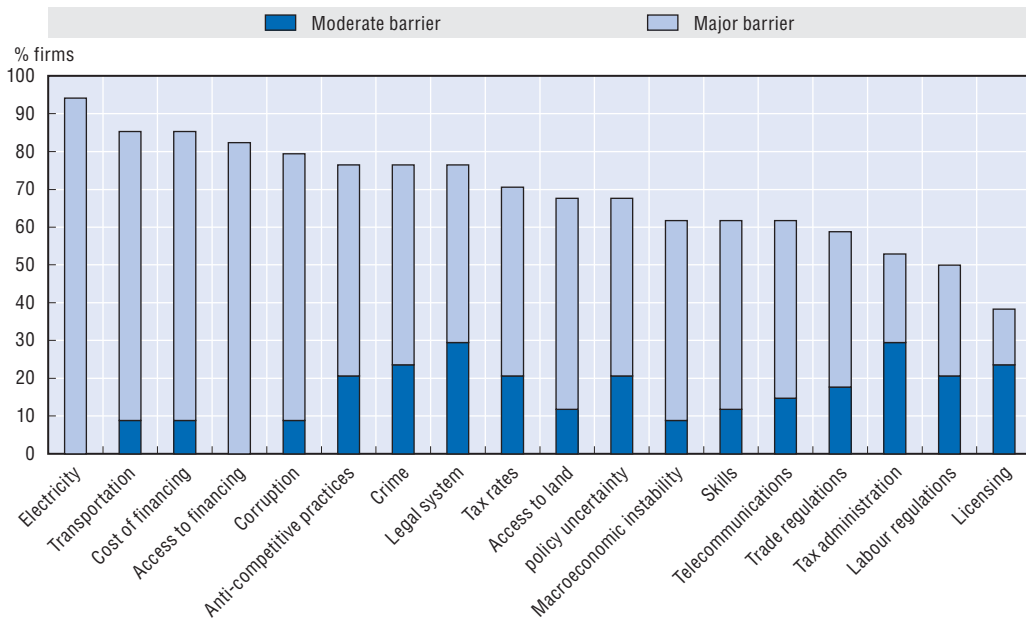
Source: OECD RCS (2008).

The policy barrier most often cited as a major obstacle to the operation and growth of businesses was the reliability of electricity supply. According to the RCS, 94% of apparel manufacturing firms in Kosovo under UNSCR 1244 considered unreliable electricity supply a major barrier to the operation and growth of their business.

The second most often cited policy area was access to and the cost of financing. Access to financing was considered by 91% of the firms surveyed to be a major to minor problem, and the cost of financing was considered by 85% to be a major to minor problem.

7.5.3. Key policy recommendations

1. Actively promote the apparel sector as a target for foreign and local investment;

2. Improve the electricity infrastructure to minimise disruptions to firm activity;

3. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;

4. Develop training for apparel firm managers to leverage opportunities to increase the competitiveness of Kosovar firms.

7.6. The Former Yugoslav Republic of Macedonia

7.6.1. Sector overview

In 2006 the apparel manufacturing sector was the largest export category in the Former Yugoslav Republic of Macedonia. It was also the largest export category prior to 2005. Total apparel exports reached USD 509 million in 2006, or 21% of total exports. This sector has been growing (the CAGR between 2000 and 2006 was 8%) and has the biggest trade surplus among SITC two-digit categories at USD 446 million.

Table 1.12. **The Former Yugoslav Republic of Macedonia**

Value-added (2005)	USD 137 million
FDI inflows (2006)	EUR 3.7 million
FDI inward stocks (2006)	EUR 14 million
Exports (2006)	USD 509 million
Employment (2006)	40 384
Number of firms	

Source: The Former Yugoslav Republic of Macedonia State Statistical Office; National Bank of the Former Yugoslav Republic of Macedonia; data on value-added and exports is only for the apparel manufacturing industry; data on FDI inflows, stocks and employment is for the total textile and apparel manufacturing industry.

The Former Yugoslav Republic of Macedonia exports almost exclusively to EU countries: in 2006 the top ten destinations for apparel exports were almost exclusively in Europe. The majority of Macedonian apparel exports go to Western European countries; the top three destinations in 2006 were Germany, Greece and the Netherlands (54.92%, 19.22% and 6.81% of total exports, respectively). Altogether, they represent 81% of total Macedonian apparel exports.

The revealed comparative advantage of the Macedonian apparel manufacturing industry in 2007 was 7.3, indicating that the country has a definite advantage in apparel exports to the EU compared with the other Western Balkan economies. The 2007 RCA calculation for the Former Yugoslav Republic of Macedonia was the highest in the Western Balkans. The only SITC two-digit level sector in the country with a higher RCA calculation in 2007 was iron and steel. The country appears to have maintained a steady RCA level over the past seven years.

FDI stocks in the entire textile and apparel industry in 2006 totalled EUR 14 million, representing about 8% of total FDI stock in manufacturing. The sector was the fifth largest

recipient of FDI in the manufacturing sector at the NACE two-digit level in 2006, and the second largest in 2003 after the food industry. FDI inflows amounted to EUR 3.7 million in 2006, or about 1% of total FDI inflows and almost 4% of those into manufacturing. Investment in the industry appears to be increasing: the CAGR between 1997 and 2006 was 9% for stocks. Between 2003 and 2006, FDI inflows into the textile and apparel industry had a year-on-year growth rate of over 8%.

Value-added in the Macedonian apparel manufacturing industry in 2005 was USD 137 million, representing about 2.4% of total value-added. The apparel manufacturing industry represents a larger share of total output than in any other Western Balkan country.

The Former Yugoslav Republic of Macedonia is one of the least expensive countries for labour intensive activities in Europe. Wages in manufacturing in 2006 were only higher than those in Albania, at USD 218 per month. Moreover, the country actually had lower wages in the apparel manufacturing industry than any other Western Balkan economy. They were almost 40% lower than those in Albania, at USD 109 per month. Wage growth has been relatively moderate: the CAGR between 2001 and 2006 was only 2%.

Macedonian labour and general costs per SAM were EUR 0.09, the lowest in the region. This makes the country the third cheapest location for producing apparel in Europe after Romania and Ukraine. Productivity is the second highest in the Western Balkans, after Croatia. According to KSA, the productivity level is about 63% of that in Germany. It is similar to the level in Brazil and Romania.

7.6.2. Challenges and policy barriers

Of the Macedonian apparel manufacturing firms surveyed by the RCS, 43% considered that reducing throughput times and lead times was one of the three most important success factors for their business, the second highest percentage in the region. Firms have begun to implement automated technology: in a survey conducted by the Institute of Economics of Skopje, it had been implemented by 27% of Macedonian apparel manufacturing firms (Insitute of Economics, Skopje, 2007). The same survey showed that 21% of Macedonian companies had acquired computer equipment valued at up to EUR 5 000, 10% had such equipment worth up to EUR 50 000 and 5% had purchased such equipment in excess of that amount, indicating the beginnings of implementing CAD systems and other technology. Lack of investment in technology was considered by 45% of Macedonian firms to be one of the three most important business challenges they face in expanding their operations, the highest percentage in the region after Kosovo under UNSCR 1244. However, none of the three firms visited by the OECD had yet implemented CAD systems, despite a USAID programme to increase CAD usage among apparel manufacturers, in conjunction with a local university and the Macedonian Textile Trade Association.

EDI had begun to be implemented by 40% of the Macedonian firms surveyed by the RCS, putting the country in the middle range of Western Balkan economies. Most firms continued to rely on more traditional modes of communication: 22% of firms which did not use EDI used email as their primary mode of communicating production orders, etc. The remainder continued to rely on telephone and fax.

A higher percentage of Macedonian apparel manufacturing firms used UPC symbols to identify products than in any other Western Balkans economy: 80% marked all or some of their goods with UPC symbols. As in other Western Balkan economies, the use of forecasting techniques to determine inventory stocking levels was relatively rudimentary

Figure 1.27. **Policy areas representing moderate to major business barriers in the Former Yugoslav Republic of Macedonia**
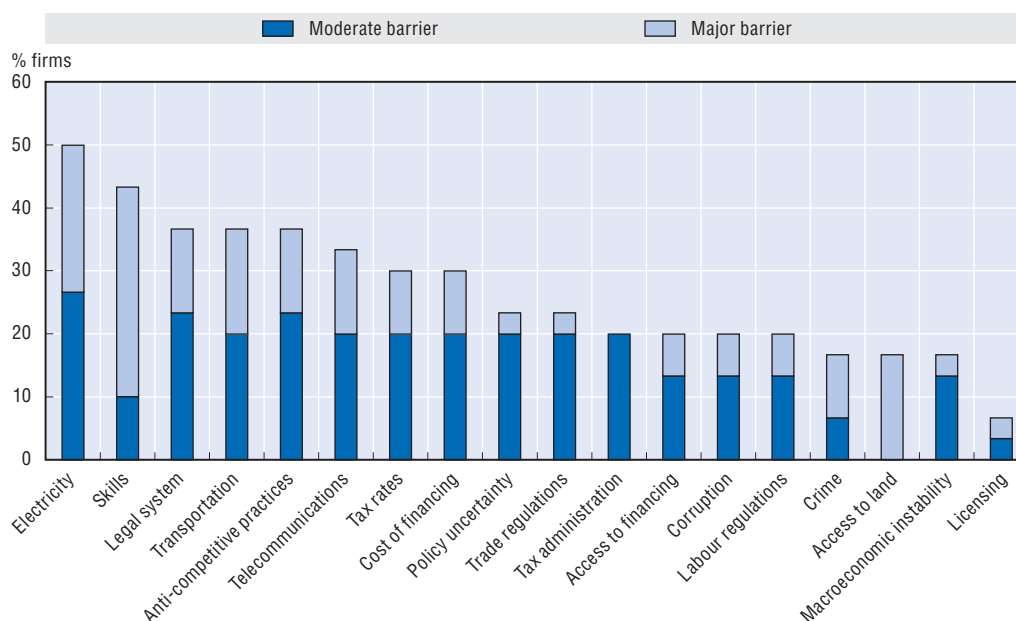
Source: OECD RCS (2008).

for all but the most advanced firms. However, 90% of Macedonian apparel manufacturing firms surveyed by the RCS considered this to be one of the three most important success factors for their business and 77% considered it the most important.

According to the BEEPS survey, spoilage of goods in transport for the entire Macedonian manufacturing industry was lower than the average for low and middle income countries: 1.04% of total consignment value is lost in transit due to breakage, theft or spoilage. This places the country roughly in line with the Western Balkan average. According to the RCS, for Macedonian apparel manufacturing firms it takes 1.15 days on average for imports to clear customs and 0.9 day for exports to clear. These are some of the fastest customs clearance times in the Western Balkans. Finally, 40% of apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards, one of the highest percentages in the region.

The most important policy barrier for Macedonian firms was lack of skills. According to the RCS, 63% of firms identified this as a minor to major barrier limiting the operation and growth of their business. As in Croatia, most Macedonian apparel manufacturers are moving up the value chain, which requires new skills and competencies in technology. Moreover, as in Croatia, management capability was identified as contributing to the skills shortage by the firms interviewed as well as by relevant representatives of the textile and apparel manufacturing associations. Some steps have been taken to improve the skills of workers in the apparel manufacturing industry: the Faculty of Technology and Metallurgy at the University Sveti Kiril I Metodij provides training in CAD/CAM systems, although a recent survey revealed that this service was not being used by many apparel manufacturers (Insitute of Economics of Skopje, 2007). The same study emphasised that there is a significant shortage of workers with a relevant university degree, as well as relevant secondary education. This

research showed that there is a need for up to 800 semi-qualified workers in the whole textile and apparel manufacturing industry (Insitute of Economics of Skopje, 2007).

High tax rates are another obstacle for the Macedonian apparel manufacturing industry. They were identified by 67% of firms as a minor to major barrier for the operation of their firms. When firms were interviewed, social security and other payroll taxes were identified as particularly burdensome. According to the World Bank Doing Business indicators, labour tax and other contributions as a percentage of profit amounted to 33.2%, the highest rate in the Western Balkans and much higher than the OECD average of 22.8%.

Table 1.13. **Access to financing in the Former Yugoslav Republic of Macedonia**

	Working capital (%)	New investments (%)
Internal funds	64.36	67.04
Local banks	3.62	8.51
Foreign owned banks	0.60	1.35
Leasing arrangement	0.64	0.65
Investment funds, special development financing or other state services	0.00	0.43
Trade credit	4.06	1.46
Credit cards	0.94	0.87
Equity	5.78	4.84
Family and friends	11.62	7.11
Informal sources	1.40	1.15
Other	4.52	6.29

Source: BEEPS (2005).

As in most of the other Western Balkan economies, the cost of financing was considered a significant burden with respect to the growth and operation of most apparel manufacturing firms: 63% considered it a minor to major obstacle. As can be seen in Table 1.13, internal funds or retained earnings were used 64% and 67% of the time, respectively, to fund loans for working capital and new investments. This is much higher than the OECD average. Macedonian firms did not use local commercial banks as much as did firms in OECD countries. There is particularly high reliance by Macedonian firms on friends and family as a source of financing: for new investments 12% of financing comes from this source, compared with only 1% in OECD countries. This is most likely due to the fact that interest rates continue to hover around 11% for all Macedonian firms, according to the BEEPS (2005).

7.6.3. *Key policy recommendations*

1. Actively promote the apparel sector as a target for foreign and local investment;

2. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;

3. Develop training for apparel firm managers to leverage opportunities to increase competitiveness of Macedonian firms.

7.7. *Serbia*

7.7.1. *Sector overview*

Clothing and apparel accessories in Serbia are the fourth largest SITC two-digit category, representing 5% of total exports in 2007 and reaching USD 445 million. Growth in this industry is increasing rapidly: between 2000 and 2007 the CAGR was over 19%, the second highest year-

Table 1.14. **The apparel manufacturing industry in Serbia**

Value-added (2004)	USD 145 million
FDI inflows (2007)	EUR 4.8 million
FDI inward stocks	
Exports (2007)	USD 445 million
Employment (2006)	24 047
Number of firms	

Source: Republic Statistical Office of Serbia; National Bank of Serbia; data is for the apparel manufacturing industry.

on-year growth rate in the Western Balkans. The country had a trade surplus in clothing and apparel accessories of almost USD 94 million in 2007.

Serbia's exports are almost exclusively to European countries. In 2007 the top destinations were in Europe and most were EU Member States. In 2007 the top destinations for Serbian apparel experts were Italy, Germany and Montenegro (46.83%, 23.33% and 4.78% of total apparel exports, respectively). Altogether, these three countries represented 75% of total Croatian apparel exports.

The revealed comparative advantage of the apparel manufacturing industry in Serbia in 2007 was 2.6, indicating that the country has an advantage in apparel exports to the EU compared with the other Western Balkan economies. Serbia also appears to be improving its comparative advantage relative to the EU market: in the past few years the RCA has gradually increased, indicating that apparel manufacturing firms are taking advantage of their advantages to supply European markets.

FDI inflows into the apparel industry in 2007 were EUR 4.8 million, or about 3% of total FDI inflows into Serbia, down from a peak of almost EUR 8 million in 2006. The year-on-year growth rate indicates that FDI inflows into the apparel manufacturing industry are increasing: the CAGR between 2004 and 2007 was 53%.

The value-added of the Serbian apparel manufacturing industry in 2004 was approximately USD 145 million, or about 1% of the industry total. This figure is in line with most other countries. The size of the apparel manufacturing industry in Serbia is consistent with that in many other transition countries.

Serbia is a relatively inexpensive country for labour intensive activities in Europe. Wages in manufacturing in 2006 were only USD 385 per month, and wages in the apparel manufacturing industry were only a third of that at USD 127 per month

However, wages are rising more rapidly in Serbia than in the other Western Balkan economies. The CAGR between 1997 and 2005 was 54%.

Labour and general costs per SAM are EUR 0.18, in line with Croatia. This makes Serbia a cheaper place to assemble clothing than most Western European countries, and in line with the majority of new EU Member States. However, Serbia does not necessarily have the productivity levels to justify higher prices. Its productivity level was only 42% of Germany's, according to KSA. This can largely be attributed to political instability and its effects on plant operations. OECD calculations of apparent productivity showed productivity levels in 2005 to be only slightly below those in the Federation of Bosnia and Herzegovina and The former Yugoslav Republic of Macedonia. The industry has also been shedding a considerable amount of labour and undergoing restructuring, including many privatisations. Employment

fell by 26% between 2004 and 2006. Assuming that output remains the same, Serbia can expect brisk productivity increases in the future in the textile and apparel industries.

7.7.2. Challenges and policy barriers

Only 19% of Serbian apparel manufacturing firms surveyed by the RCS considered that reducing apparel throughput times and lead times was one of the three most important success factors for their business. Only 29% of firms considered lack of investment in technology as one of the top three most important business challenges they face in expanding their operations. Reducing plant throughput time appears not to be a high priority for Serbian firms.[63]

EDI had begun to be implemented by 55% of Serbian firms surveyed by the RCS, the highest percentage in the Western Balkans. Many (71%) of the firms that had not yet implemented EDI used email as their primary mode of communicating; only a small remainder continued to rely on telephone and fax.

Products were identified by UPC symbols at the SKU level by 58% of apparel manufacturing firms, one of the highest percentages in the Western Balkans. As in most of the other Western Balkan economies, the use of forecasting techniques to determine inventory stocking levels was relatively rudimentary, although 77% of Serbian apparel manufacturing firms surveyed by the RCS considered this to be one of the three most important success factors for their business and 65% considered it the most important.

According to the BEEPS survey, spoilage of goods in transport in the Serbian manufacturing industry overall is lower than the average in low, middle and even high income countries: 0.39% of total consignment value is lost in transit due to breakage, theft or spoilage. This was the second lowest percentage in the Western Balkans after Croatia. According to the RCA, for Serbian apparel manufacturing firms it takes 2.3 days on average for imports to clear customs and three days for exports to clear. Although Serbia is competitive internationally in this area, it still lags behind other Western Balkan economies, which take about one-fifth less time to clear customs. Only 10% of Serbian apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards – the lowest percentage in the region.

One important problem identified by the RCS and echoed by most of the firms interviewed in Serbia was the negative impact that macroeconomic instability was having on the apparel manufacturing sector. This was identified by 97% of the firms surveyed as a major to minor obstacle to the operation and growth of their business. The Serbian dinar is one of the currencies in the region not pegged to the euro. Although there are numerous economic benefits for having a floating currency, this can also make monetary policy relatively unstable for many Serbian apparel manufacturers. In the case of firms that have moved beyond technical design into fashion design, as well as more traditional manufacturing firms, orders are still placed in the first quarter of the year in euros but payment is not made until the orders are delivered (as late as the third quarter). Even if exchange rates drop steeply between those two time periods, local firms must swallow this decrease and usually have little or no room to negotiate a higher price.

Another major policy barrier was the availability of skills. According to the RCS, 81% of firms identified this as a minor to major barrier limiting the operation and growth of their business. As in Croatia and The former Yugoslav Republic of Macedonia, this is largely due

Figure 1.28. **Policy areas representing moderate to major business barriers in Serbia**

Legend: ■ Moderate barrier   ▢ Major barrier

% firms

Categories: Macroeconomic instability, Tax rates, Anti-competitive practices, Cost of financing, Skills, Policy uncertainty, Tax administration, Trade regulations, Corruption, Labour regulations, Legal system, Electricity, Access to financing, Crime, Transportation, Licensing, Telecommunications, Access to land
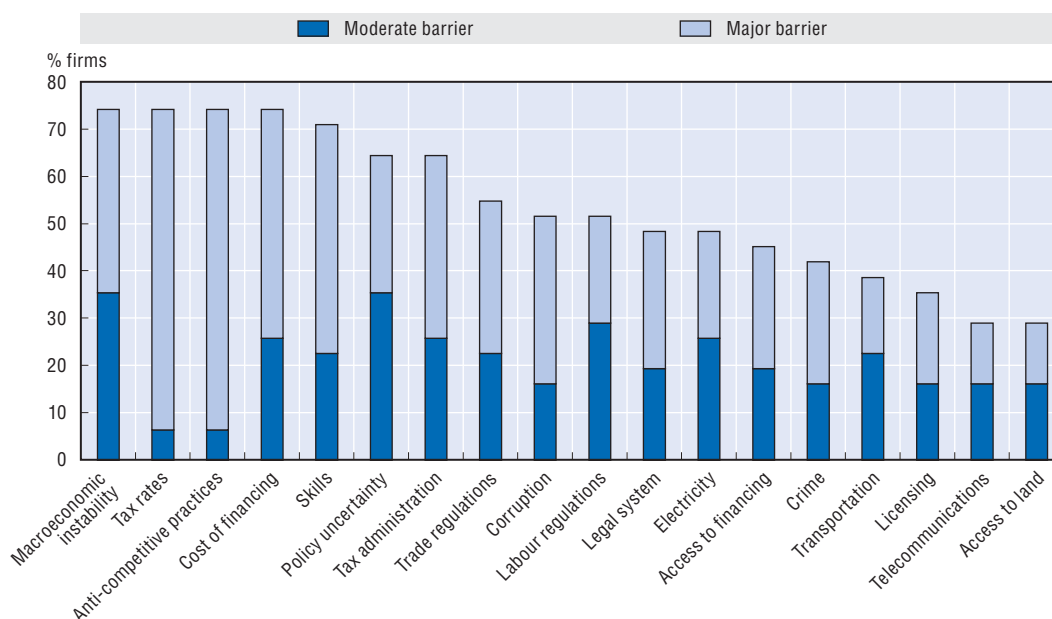
Source: OECD RCS (2008).

to many Serbian apparel manufacturers moving up the value chain, which requires new skills and competencies in technology.

As in all the other Western Balkan economies, access to and the cost of financing are a significant problem for many apparel manufacturers. According to OECD interviews with Serbian apparel manufacturers, the loan amount is essentially determined by the book value of firms' land, buildings and equipment. As many firms must take out working capital loans to purchase raw materials, this means production is limited by the requirement for this amount of collateral. According to the BEEPS (2005), the average interest rate paid by firms in Serbia was an astounding 16% and the average collateral required to obtain a loan was 167%.

Table 1.15. **Access to financing in Serbia**

	Working capital (%)	New investments (%)
Internal funds	77.32	81.88
Local banks	6.39	6.26
Foreign owned banks	0.55	1.04
Leasing arrangement	0.54	0.86
Investment funds, special development financing or other state services	0.58	0.49
Trade credit	5.61	2.08
Credit cards	0.07	0.00
Equity	0.96	1.39
Family and friends	3.99	2.89
Informal sources	0.49	0.36
Other	1.59	1.09

Source: BEEPS (2005).

As in the other Western Balkan economies, internal funds or retained earnings are used 77% and 85% of the time, respectively, to fund loans for working capital and new investments. This is significantly higher than the OECD average. Serbian firms do not use local commercial banks as much as firms in OECD countries (Table 1.15).

7.7.3. Policy barriers

1. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;

2. Develop training for apparel firm managers to leverage opportunities to increase competitiveness of Serbian firms.

Notes

1. Findings are small items such as zippers and buttons.

2. Comtrade. Data refers to Standard International Trade Classification Revision 3 (SITC Rev. 3) two-digit categories. Data on the clothing manufacturing industry is classified under SITC Rev. 3 84: clothing and accessories and data on the iron and steel industry is classified under SITC Rev. 3 67.

3. Eurostat. The RCA measures the relative export performance of an industry within a country. For a full description of the RCA methodology used, see Chapter 2 on the automotive components industry. The RCA is calculated on 2007 trade data between the EU-27 and Albania, Bosnia and Herzegovina, Croatia, Kosovo under UNSCR 1244, the Former Yugoslav Republic of Macedonia and Serbia.

4. Comtrade. Data on the textile industry is classified under SITC Rev. 3 65: textile, yarn and fabric; data is for Albania, Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia and Serbia. Data converted from USD into EUR using US Federal Reserve annual foreign exchange rate official release.

5. See note 3.

6. Data provided by the Croatian National Bank, the National Bank of Serbia, and the United Nations Industrial Development Organization (UNIDO) in the case of the Former Yugoslav Republic of Macedonia.

7. Comtrade. Data on the findings industry is classified under SITC Rev. 3 899.83: press-fasteners, snap-fasteners and press-studs, and parts thereof, buttons; 899.84: button moulds and other parts of buttons, button blanks; 899.85: slide fasteners; and 899.86: parts of slide fasteners. Data converted from USD into EUR using US Federal Reserve annual foreign exchange rate official release.

8. See note 3.

9. World Bank World Development Indicators (WDI). Total population data for 2007 in Albania, Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia.

10. WDI. GDP at current USD in 2000 and 2007 for Albania, Bosnia and Herzegovina, Croatia, Montenegro, the Former Yugoslav Republic of Macedonia and Serbia. Data converted from USD into EUR using US Federal Reserve annual foreign exchange rate official release.

11. Data provided by the Central Bank of Bosnia and Herzegovina, the Croatian National Bank, the National Bank of Serbia, and UNIDO in the case of the Former Yugoslav Republic of Macedonia.

12. US Census Bureau: Economic Census 1992, 1997 and 2002 for apparel and accessory stores. WDI for population estimates.

13. UK Statistics Authority: Annual Business Inquiry 1998-2006 for retail sales of clothing.

14. US Bureau of Economic Analysis: foreign direct investment position on a historical cost basis in the US, 1980-2007. Data converted from USD into EUR using US Federal Reserve annual foreign exchange rate official release.

15. OECD Foreign Direct Investment Statistics: FDI positions by industry 1996-2006 for the retail trade sector.

16. US Bureau of Labor Statistics: Consumer Expenditure Survey 1984-2006 for apparel and services and total average annual expenditures.

17. Eurostat: Consumption expenditure of private households 1996-2006 for clothing and footwear.

18. US Bureau of Labor Statistics: Consumer Expenditure Survey 1996-2006 for audio and visual equipment and services.

19. US Census Bureau: Economic Census 1997, 2002 for clothing and clothing accessories stores.

20. National Institute for Statistics and Economic Studies (INSEE) (France): Annual Enterprise Survey 1996-2005 for retail sales of clothing.

21. US Census Bureau Annual Retail Trade Survey 1996-2005 for clothing stores.

22. SKUs indicate the exact specification of a particular item. For example, two shirts of the same style in different sizes would be classified under different SKUs.

23. US Department of Labor: Consumer Price Index 1996-2007 for apparel. Base period: three-year average of 1982-1984.

24. Eurostat Harmonised Index of Consumer Prices 1996-2007 for clothing. Base period: 2005; EU data for EU-15 until 2004, EU-25 until 2006 and EU-27 in 2007.

25. There are many different forms of and names for QR systems, including "just-in-time" and "lean" manufacturing, but they broadly incorporate the same systems outlined in this chapter. More specific programmes, such as collaborative planning, forecasting and replenishment systems (CPFR), go much further in detailing the standards, software and processes required to share information between retailers and suppliers and minimise inventory and production time. They combine retailer and supplier information (including production statistics and point-of-sale or POS information) to forecast demand, coordinate shipments and production, and improve supply chain performance.

26. Throughput time is the time required to physically assemble an apparel order and place it in a finished goods inventory or ship it to the client.

27. An order fulfilment rate is the percentage of time an apparel manufacturer can promptly and accurately deliver an order to the retailer. It is common for retailers to now require their apparel manufacturers to have a very high order fulfilment rate, often 95% or above.

28. There is little academic research on the impact simple website creation could have on SMEs' profits or trading activity, but considering the low costs of setting one up it is considered an effective marketing tool for many exporters (see Hornby, Goulding and Poon, 2002).

29. Replenishable products are those that generally contain basic fashion elements and are ordered on a continual basis to reduce stocking levels.

30. Comtrade. Data for Albania, Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia and Serbia is for 2006. Data converted from USD into EUR using US Federal Reserve annual foreign exchange rate official release.

31. Comtrade. Data represents German, Italian and Greek imports of apparel products from Albania, Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia and Serbia. Converted to USD into EUR using US Federal Reserve annual foreign exchange rate official release.

32. Eurostat. Data for Albania, Bosnia and Herzegovina, Croatia, Kosovo under UNSCR 1244, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia. Average of apparel products in total Western Balkan imports to the EU-15 is a simple average of the period 1995-2007.

33. Eurostat. Data for Albania, Bosnia and Herzegovina, Croatia, Kosovo under UNSCR 1244, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia for 2007. Ranking of RCA 84 between the Western Balkans and the EU-15 is actually sixth, but "confidential trade of group 39 and/or estimations" has been excluded.

34. UNIDO. Data on inward stocks for 2004 in the textiles and textile products category and chemicals, chemical products and man-made fibres categories.

35. Eurostat. Direct investment positions data for the Czech Republic, Hungary, Poland, Slovak Republic and Slovenia for 2005 in the textile and wearing apparel sector.

36. UNIDO. Data on inward stocks for 2001-04 for Albania, Croatia and the Former Yugoslav Republic of Macedonia in the textile and textile products category.

37. UNIDO, Croatian National Bank and National Bank of Serbia. FDI inward flows for Croatia, the Former Yugoslav Republic of Macedonia and Serbia for 2004-06.

38. Eurostat. Data on direct investment flows for the Czech Republic, Hungary, Poland and Slovak Republic for 2005 in the textile and wearing apparel sector.

39. Institute of Statistics of the Republic of Albania, Federation of Bosnia and Herzegovina Federal Office of Statistics, Republic of Croatia Central Bureau of Statistics, Republic of Macedonia State Statistical Office, Statistical Office of Montenegro, Statistical Office of the Republic of Serbia. Data for Albania, the Federation of Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia. All data for 2005 except for Croatia and Montenegro (2004 data). Converted from local currency using WDI average annual exchange rate at current prices and into EUR using US Federal Reserve annual foreign exchange rate official release.

40. Eurostat. Gross value added at basic prices in 2005 for the manufacture of textiles and textile products in EU-15, the Czech Republic, Hungary, Slovak Republic and Slovenia.

41. US Bureau of Labor Statistics. Data for the apparel manufacturing industry in 1998-2007.

42. Comtrade. Data for apparel product imports in 1998-2007.

43. Laborsta. Monthly wage data for men and women for Albania, the Federation of Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia, Poland, Serbia and Slovak Republic. Western Balkan average of apparel manufacturing wags excludes Albania. Converted from local currency using WDI average annual exchange rate at current prices and into EUR using US Federal Reserve annual foreign exchange rate official release.

44. The standard allowed minute (SAM) measures the amount of time required to produce a particular apparel item, taking into account hand movements, handling of equipment and average sewing cycles. For example, a particular style of blouse may take 25 SAMs to produce.

45. KSA. Data for Albania, Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia and Serbia for 2005. Average weighted by WDI population data for 2005.

46. Eurostat, Federation of Bosnia and Herzegovina Federal Office of Statistics, Republic of Croatia Central Bureau of Statistics, Republic of Macedonia State Statistical Office, Statistical Office of the Republic of Serbia. Apparent labour productivity is a simple indicator of productivity calculated as value-added, divided by persons employed. Converted to USD using WDI PPP exchange rates and then indexed according to Hungary's productivity level.

47. Google maps.

48. Eurostat. 2007 data for Albania, Bosnia and Herzegovina, Croatia, Kosovo under UNSCR 1244, the Former Yugoslav Republic of Macedonia and Serbia. 9.12% is sent by sea. A remaining 0.14% and 0.02% are sent by air and unknown means, respectively.

49. The time factor of 0.5% per day is based on general spoilage and lost sales, resulting in increased time to market.

50. The OECD interviewed16 representative apparel manufacturers.

51. It has been shown that such a stocking policy results in a much lower order fulfilment rate, especially for products with high demand variability (see Diehl, Abernathy and Hammond, 1996).

52. Of the 16 firms interviewed, 12 indicated that they had an in-house or external customs expert.

53. SITC codes 65, 84 and 89.983 were aggregated for these calculations. The average was weighted by GDP at purchasing power parity.

54. BEEPS 2005 data, average weighted by GDP. Bosnia and Herzegovina not included. High income OECD countries include Germany, Greece, Ireland, Korea, Portugal and Spain.

55. Represents SITC codes 652-657 and 89.983.

56. Represents SITC codes 652-657 and 89.983.

57. Many Albanians speak Italian due to Italy's geographic proximity to Albania.

58. UNIDO, data for NACE 18.

59. Value-added statistics disaggregated to this level were only available for the Federation of Bosnia and Herzegovina (FBiH).

60. ILO and Federation of Bosnia and Herzegovina. Data for apparel manufacturing industry only for FBiH.

61. Office of Statistics, ILO Statistical Yearbooks, WDI. Apparent productivity calculated at PPP, KSA 2007.

62. Central Bank.

63. Only firms that operated with a more traditional time scale and with a longer cycle were visited by the OECD in Serbia. Reliable information on implementation of MPS and automated technology in this country is therefore lacking.

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