Upgrading and restructuring in the global apparel value chain: why China and Asia are outperforming Mexico and Central America

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Abstract: This article uses the global value chain approach to analyse the upgrading trajectories of leading apparel exporters adapting to the end of textile and apparel quotas and the economic recession. These events have been coupled by the consolidation and reconfiguration of global supply chains. China has been the big winner while other Asian suppliers are expanding their roles, largely at the expense of regional suppliers. One key to Asia's competitive success vis-à-vis Mexico and Central America has been end market diversification. Regional trade agreements (NAFTA; DR-CAFTA) have provided the latter with preferential access to the US market and ties to brand manufacturers, but they also created a reliance on US exports and have hindered suppliers from developing regional linkages into textile production, apparel design and branding. Growing apparel demand in emerging Asian economies and a regionally integrated production network has allowed Chinese apparel suppliers to upgrade and expand global market share.

Keywords: economic crisis; apparel quotas; Multi-Fibre Arrangement; MFA; NAFTA; CAFTA; export diversification; production network; China; Mexico; USA.

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1 Introduction

The apparel industry has been one of the pillars of export-oriented industrialisation throughout the world since the 1970s. In recent years, the industry has experienced two shocks that have intensified international competition in this sector. The first shock is regulatory: the Multi-Fibre Arrangement (MFA), which established quotas and preferential tariffs on apparel and textile items imported by the USA, Canada, and many European nations since the early 1970s, was phased out by the World Trade Organization (WTO) between 1995 and 2005 via its Agreement on Textiles and Clothing (ATC). The second crisis is economic: the global recession that began in 2008 has dampened demand in the USA and other advanced industrial economies, leading to production slowdowns and plant closures in most apparel-exporting economies.

Trade restrictions have contributed to the international fragmentation of the apparel supply chain. The MFA/ATC system was designed to protect the domestic industries of the USA and the European Union (EU) by limiting imports from highly competitive suppliers. When the most competitive apparel exporters, Hong Kong, South Korea, Taiwan, and later China, reached their maximum levels under the quota system, they set up factories in less restricted nearby countries. The clothing assembly processes were sub-contracted to low-wage developing countries throughout the Asian Pacific region and elsewhere that had unused export quotas, such as Bangladesh, Sri Lanka, and Vietnam (Gereffi, 1999).

As a result, during the MFA the main end markets (USA and EU-15) tended to remain fixed, but which LDCs supplied these high-income economies varied with MFA quota rules. Apparel exporters' maintained ties with key US and European markets based on the quotas they were allocated. The key issue was entry into the apparel GVC through access to quotas; once a country was in the chain, the main upgrading strategy involved shifting from assembly to full-package production. There was also some product upgrading (shift to higher end products) and process upgrading comprised of machinery and logistics investments to increase productivity and speed to market.

This system was upended by the demise of MFA and the global economic recession. The elimination of quotas and safeguards coincided with the economic crisis (2008–2009) resulting in a consolidation among a limited number of large apparel exporters, while many smaller exporters were cut out of the chain. There was also significant downgrading or backsliding among Mexico and the Central American Free Trade Agreement (CAFTA) countries, due to their inability to meet Asian competition. The last two years have reinforced many of the trends occurring after the phase-out of

quotas. China, Bangladesh, Vietnam, and Indonesia are increasing their market shares in North America and the EU, primarily at the expense of near-sourcing options such as Mexico and the Central American and Caribbean suppliers to the USA.

To highlight dynamics of the structure of global apparel production in the post-quota and crisis era, we will zero in on a comparison of China versus Mexico – two large exporters that are engaged in head-to-head competition for the US apparel market and have experienced contrasting developments over the last 15 years/post-quota. While the next section of this article will show that consolidation at the level of leading apparel suppliers has indeed increased, the key to the different competitive dynamics of China and Mexico lies with distinct national strategies of development and very different patterns of regional integration, which will be the focus of the latter part of the article.

2 Leading exporters and shifting global geography in the apparel value chain

This section will highlight the country export picture over the 1995–2009 timeframe to identify the most and least successful apparel exporters in the post-MFA market. Overall, there has been consolidation on the supply side, as seen by the increasing concentration of the top 15 apparel exporters' share of total export trade. In 1995, the top 15 exporters accounted for 79% of all trade, and by 2009 this increased to nearly 87%; among the top five exporters for each year, concentration increased even more sharply from 59.5% in 1995 to 71.8% in 2009 (see Table 1). Table 2 shows the main export market destinations for the top ten apparel exporting countries in 2009. For all top countries, the EU-15 and the USA were two of the top three export destinations.

The main apparel exporting countries can be placed into the following categories:

1 Increasing or steady global market share
   - *China* – The clear winner in the global apparel export race during the past 15 years. Between 1995 and 2009, China's share of global apparel exports increased from 22% to 41%, representing an increase in value from $32.9 billion to $122.4 billion.
   - *Growth suppliers* – Overall, these countries have increased global market share since the early 1990s *and* through the economic crisis: Bangladesh, India, Vietnam, Indonesia, Sri Lanka, Pakistan, and to a lesser extent, Cambodia.
   - *Steady suppliers* – EU-15, Turkey, Tunisia, and Morocco. These countries increased export values until the effects of the economic crisis were felt in 2009, but managed to maintain relatively stable global market shares through the quota phase-out and recession.

2 Decreasing global market share
   - *Decline with quota phase-out* – These countries experienced declines during the MFA/ATC quota phase-out (1995–2005) that have continued during the crisis: USA, Canada, Mexico, DR-CAFTA, Thailand, Romania, and Poland.
   - *Past-prime suppliers* – These countries were once leading apparel exporters, but their global market shares have been decreasing since the early 1990s: Hong Kong, South Korea, Taiwan, and the Philippines.

Table 1 Top 15 global apparel exporters by year (see online version for colours)

Country/region	*Value (mil)*					*Global share (%)*				
	'95	*'00*	*'05*	*'08*	*'09*	*'95*	*'00*	*'05*	*'08*	*'09*
World	*152,532*	*193,728*	*268,416*	*335,831*	*296,901*					
China	32,868	48,017	89,829	130,382	122,389	21.5	24.8	33.5	38.8	41.2
EU-15	37,857	33,984	47,757	60,065	51,614	24.8	17.5	17.8	17.9	17.4
Extra EU-15	12,006	11,486	14,405	19,513	15,436	7.9	5.9	5.4	5.8	5.2
Bangladesh	2,544	4,862	8,026	13,463	14,185	1.7	2.5	3.0	4.0	4.8
Turkey	5,261	6,710	12,922	15,765	13,079	3.4	3.5	4.8	4.7	4.4
India	4,233	5,131	9,468	12,215	11,876	2.8	2.6	3.5	3.6	4.0
Vietnam	--	--	4,737	9,541	9,393	--	--	1.8	2.8	3.2
Indonesia	3,255	4,675	5,673	7,630	7,134	2.1	2.4	2.1	2.3	2.4
Mexico	2,871	8,924	6,683	4,634	3,923	1.9	4.6	2.5	1.4	1.3
Tunisia	2,400	2,645	3,476	4,489	3,787	1.6	1.4	1.3	1.3	1.3
Morocco	2,250	--	3,326	4,462	3,597	1.5	--	1.2	1.3	1.2
Sri Lanka	--	--	3,082	3,809	3,531	--	--	1.1	1.1	1.2
Cambodia	--	--	--	4,042	3,472	--	--	--	1.2	1.2
Thailand	2,706	3,672	3,860	4,201	3,469	1.8	1.9	1.4	1.3	1.2
Romania	--	2,737	5,172	4,216	3,223	--	1.4	1.9	1.3	1.1
Pakistan	--	--	--	--	3,193	--	--	--	--	1.1
Hong Kong	10,463	10,144	8,495	5,110	--	6.9	5.2	3.2	1.5	--
USA	4,402	5,157	3,681	--	--	2.9	2.7	1.4	--	--
South Korea	4,423	4,692	--	--	--	2.9	2.4	--	--	--
Other Asia	2,998	3,059	--	--	--	2.0	1.6	--	--	--
Philippines	--	2,599	--	--	--	--	1.3	--	--	--
Poland	2,306	--	--	--	--	1.5	--	--	--	--
Top 15 total						*79.2*	*75.9*	*80.5*	*84.6*	*86.9*

Notes: Apparel represented by HS 61 and 62 (HS1992); (--): indicates country not in top 15 in given year; retrieved 1/23/2011. Extra EU-15 is included to show that EU-15 would still be the #2 exporter without intra EU-15 trade; however total EU-15 trade value and market share are used in the top 15 percentages.

Source: UN COMTRADE (2011)

Table 2 Top apparel exporters, shifts in end market destinations: 2000, 2005, 2008–2009

			Export statistics to partner country/region											
Export country		*Partner*	*Value (mil)*				*Export share (%)*			*Share change*	*Rank*			
			'00	*'05*	*'08*	*'09*	*'00*	*'05*	*'09*	*'00–09*	*'00*	*'05*	*'09*
1	China	World	48,017	89,829	130,382	122,389							
		EU-15	7,444	23,162	41,750	39,728	16	26	32	17	2	1	1
		USA	6,514	17,802	25,178	25,367	14	20	21	7	3	2	2
		Japan	14,195	17,447	20,382	20,262	30	19	17	–13	1	3	3
2	EU–15	World	33,984	47,757	60,065	51,614							
		Extra EU15	11,486	14,405	19,513	15,436	34	30	30	–4			
		EU-15	22,498	33,352	40,551	36,178	66	70	70	4	1	1	1
		Switzerland	2,110	3,056	4,000	3,570	6	6	7	1	3	2	2
		USA	2,317	2,236	2,129	1,443	7	5	3	–4	2	3	3
3	Bangladesh	World	4,862	8,026	13,463	14,185							
		EU-15	2,481	4,801	7,823	8,108	51	60	57	6	1	1	1
		USA	2,088	2,422	3,562	3,510	43	30	25	–18	2	2	2
		Canada	101	360	530	619	2	4	4	2	3	3	3
4	Turkey	World	6,710	12,922	15,765	13,079							
		EU-15	5,209	10,462	12,720	10,750	78	81	82	5	1	1	1
		Poland	17	102	311	280	0	1	2	2		5	2
		USA	1,108	992	422	269	17	8	2	–14	2	2	3
5	India	World	5,131	9,468	12,215	11,876							
		EU-15	2,019	4,531	6,484	6,443	39	48	54	15	1	1	1
		USA	1,998	3,284	3,316	3,054	39	35	26	–13	2	2	2
		UAE	180	229	361	358	4	2	3	–1	4	4	3

Notes: Apparel represented by HS 61 and 62 (HS1992); exports represented by partner country imports. Retrieved 1/23/2011.
n/a: indicates data is not available for given year.

Source: UN COMTRADE (2011)

Table 2 Top apparel exporters, shifts in end market destinations: 2000, 2005, 2008–2009 (continued)

Export country	Partner	Export statistics to partner country/region										
		Value (mil)				Export share (%)			Share change	Rank		
		'00	'05	'08	'09	'00	'05	'09	'00–09	'00	'05	'09
6 Vietnam	World	1,595	4,737	9,541	9,393							
	USA	53	2,832	5,417	5,225	3	60	56	52	3	1	1
	EU-15	749	947	2,190	1,989	47	20	21	–26	1	2	2
	Japan	580	587	836	1,007	36	12	11	–26	2	3	3
7 Indonesia	World	4,675	5,673	7,630	7,134							
	USA	2,194	3,052	4,229	4,031	47	54	57	10	1	1	1
	EU-15	1,816	1,746	2,079	1,862	39	31	26	–13	2	2	2
	Singapore	n/a	213	243	196	n/a	4	3	n/a	n/a	3	3
8 Mexico	World	8,924	6,683	4,634	3,923							
	USA	8,695	6,282	4,164	3,508	97	94	89	–8	1	1	1
	Canada	135	280	282	238	2	4	6	5	2	2	2
	EU-15	27	57	99	92	0	1	2	2	3	3	3
9 Tunisia	World	2,645	3,476	4,489	3,787							
	EU-15	2,573	3,264	4,135	3,428	97	94	91	–7	1	1	1
	USA	28	55	72	61	1	2	2	1	2	2	2
	Japan	7	22	38	41	0	1	1	1	3	3	3
10 Morocco	World	2,444	3,326	4,462	3,597							
	EU-15	2,300	3,085	3,952	3,127	94	93	87	–7	1	1	1
	USA	100	59	96	61	4	2	2	–2	2	2	2
	Mexico	1	24	61	53	0	1	1	1	17	4	3

Notes: Apparel represented by HS 61 and 62 (HS1992); exports represented by partner country imports. Retrieved 1/23/2011.
n/a: indicates data is not available for given year.

Source: UN COMTRADE (2011)

3 Upgrading in the apparel value chain

There are several strategies countries can pursue to upgrade in the apparel value chain. Many of these are 'steps along the way' to achieve functional upgrading (Table 3).

Table 3 Upgrading in the apparel value chain

Upgrading type	*Description*
Functional in value chain	'Apparel manufacturers' acquire responsibility for more value-adding activities; a switch from manufacturer to service provider may occur: CMT→OEM→ODM→OBM→Lead firm
Integration in supply chain	Establish backward manufacturing linkages within the supply chain: Apparel→Textiles→Fibres→Machinery
Channel	Market diversification: acquire new skills by serving new buyers or markets often in emerging domestic or regional markets.
Product	Shift to more complex products or expand capabilities (diversify): Basic→Fashion (design) or Basic→Functional (R&D)
Process	Reduce cost, increase productivity and improve flexibility by investing in new or better machinery or logistics technology.

To help explain the dynamics in the post-MFA scenario of consolidating apparel exporters, three upgrading strategies will be outlined in this section: increasing functional capabilities and establishing backward linkages; export market diversification; and shifting from export markets to emerging domestic markets. These strategies are related in several ways, and are often combined with product and process upgrading. This section will present the factors that have affected the upgrading and downgrading experiences of leading apparel exporters since the MFA-phase out by linking countries to these upgrading strategies.

3.1 Increasing functional capabilities and backward linkages

The most important upgrading strategy deals with growing supplier capabilities among the most rapidly growing emerging economies. Apparel producing countries are typically categorised by the functional capabilities of the majority of apparel manufacturing firms within the country. The main categories of apparel manufacturers and apparel exporting countries are listed below and shown in Table 4:

- *Assembly/CMT (cut, make, trim):* the apparel manufacturer is responsible for sewing the garment and may be responsible for cutting the fabric and providing simple trim (buttons, zippers, etc.). The buyer provides product specifications and the fabric. The apparel factory is paid a processing fee rather than a price for the garment.
- *Original equipment manufacturing (OEM)/FOB:* the apparel manufacturer purchases (or produces) the textile inputs and provides all production services, finishing, and packaging for delivery to the retail outlet. The customer provides the design and often specifies textile suppliers. Free on board (FOB)[1] is a term used in industry to describe this type of contract manufacturer as well as full package.

a *OEM with domestic textile capabilities:* the shift from CMT to OEM is often associated with the development of a domestic textile industry. The addition of textile mills is an important step in supply chain upgrading. An industry for knitted textiles often develops before woven fabrics due to required capital-investment.

- *Original design manufacturing (ODM):* the apparel supplier is involved in the design and product development process, including the approval of samples and the selection, purchase and production of required materials. The apparel supplier is also responsible for coordinating OEM activities.
- *Original brand manufacturing (OBM):* the apparel supplier is responsible for branding and marketing of the final products. The apparel firm may do these activities on a contract basis on behalf of another lead firm, or it can mark the transition from apparel supplier to a lead firm typically in domestic or regional markets.

Table 4 Types and responsibilities of apparel manufacturers

Types	*Product development*	*Design*	*Textile sourcing*	*Apparel manufacturing*	*Distribution and packaging*	*Branding*	*Retail*
CMT	No	No	No	Yes	No	No	No
OEM	No	No	Yes	Y/N	Yes	No	No
ODM	Yes	Yes	Y/N	Y/N	Y/N	No	No
OBM	Yes	Yes	Y/N	Y/N	Y/N	Yes	Y/N

Notes: Y/N represents 'yes or no'; the main apparel manufacturer may or may not be responsible for the value-adding activity. Regardless the activity is not the focus of the apparel firm.

The desire of buyers to reduce the complexity of their own operations, keep costs down and increase flexibility to enable responsiveness to consumer demand has spurred the shift from CMT to OEM. Establishing and maintaining captive, buyer-supplier dependent relationships is costly for the lead firm and leads to inflexibility because of transaction-specific investments. Modular production networks provide the lowest costs to lead firms.[2] Therefore, logistics coordination and sourcing are frequently the first functional activities lead firms are willing to give up, and shift the responsibility to their first tier suppliers. Countries without sourcing capabilities are at a disadvantage moving forward.

CMT manufacturers usually focus on low-cost volume products. The Caribbean and CAFTA countries, Sub-Saharan Africa, and Cambodia are typically characterised as countries limited to CMT capabilities.

OEM full-package providers make up the bulk of apparel manufacturers. An increasing share of apparel manufacturers in Vietnam, Bangladesh, Indonesia, and Mexico fall into this category. These countries are still engaged in volume production, but are developing scale economies. To move into full-package supply, a strong textile connection is needed. Institutional support is often required to facilitate these backward linkages. This can be in the form of liberal foreign investment policies, regional trade agreements, or government investment incentives for capital investments or employment

generation. Mexico and Central America have built a very limited textile base for US market demand only, whereas countries like Turkey, India, China, South Korea and Taiwan all have strong domestic textile sectors. While having a domestic textile industry is not necessary to move into full-package (OEM) production, the ability to move beyond manufacturing to design, branding, and services (ODM or OBM) will be limited if the workforce does not have experience with textile production.

Full-package *service*-providing countries (OEM-ODM) coordinate supply chain and value-adding activities such as design, and invest or contract out manufacturing to other countries. Hong Kong, Korea, Taiwan were among the first countries to create these upgrading stages beginning in the 1980s, followed by other Southeast Asian countries including Malaysia and Singapore in the mid-1990s and most recently Thailand.

Turkey, the EU-15, India and China are OEM or ODM apparel exporters, but also have OBM capabilities in their home markets. These countries are capable of producing higher-value, more complex garments and volume production.

3.2 Export market diversification

Another upgrading option is export market diversification. Most apparel exporters are primarily a supplier to the US and/or the EU market, and to a lesser extent Japan. Diversification increased the prospects for growth because these mature markets are experiencing slowdowns in demand, and it is still unclear where the new normal consumption levels will fall when these economies rebound. Asian exporters have diversified end markets more so than Latin American exporters, which remain dependent on the US market.

Table 5 shows the dependence of the top ten apparel exporters on the leading import markets, the EU-15 and the USA, and the degree of diversification to other markets ('rest of the world') over the 2000–2009 timeframe. During the 2005–2009 timeframe, nine of the top ten countries increased export diversification. China is the only one whose share of exports to the rest of the world decreased, but this is primarily due to the impact of quotas and safeguards through 2008. Regardless, China is still far more diversified than any of the other leading exporters, with just over half (53.2%) of its apparel exports going to EU-15 and US markets.

Apparel manufacturers are not the only ones looking abroad; apparel brands and retailers are also expanding into emerging international markets for growth opportunities given weak domestic demand (S&P, 2010). Global lead firms are diversifying into new retail outlets and introducing their brand names into new end markets, making them a driver of this strategy.

The two North African countries in the top ten, Tunisia and Morocco, are an interesting comparison to Mexico because of their similar positions. All three are largely dependent on one market, the EU-15 in the case of the North African countries, and the USA for Mexico. Over the last ten years, all three have decreased dependence on their main export market from a range of 94%–97% to 87%–91% (see Table 2). However, Tunisia and Morocco's export values increased until 2009, whereas Mexico's export value has steadily declined since 2000. Even during the economic crisis years (2008–2009), both Tunisia and Morocco managed to increase exports to several emerging markets, including Russia, Poland and China for Tunisia, and Poland, China and the UAE for Morocco.

Table 5 Top ten apparel exporters (2009): export diversification

Rank	Exporter	EU15 + USA share (%)				Rest of the world (%)			
		2000	2005	2008	2009	2000	2005	2008	2009
1	China	29.1	45.6	51.3	53.2	70.9	54.4	48.7	46.8
2	EU-15	73.0	74.5	71.1	72.9	27.0	25.5	28.9	27.1
3	Bangladesh	94.0	90.0	84.6	81.9	6.0	10.0	15.4	18.1
4	Turkey	94.1	88.6	83.4	84.2	5.9	11.4	16.6	15.8
5	India	78.3	82.5	80.2	80.0	21.7	17.5	19.8	20.0
6	Vietnam	50.3	79.8	79.7	76.8	49.7	20.2	20.3	23.2
7	Indonesia	85.8	84.6	82.7	82.6	14.2	15.4	17.3	17.4
8	Mexico	97.7	94.9	92.0	91.8	2.3	5.1	8.0	8.2
9	Tunisia	98.3	95.5	93.7	92.1	1.7	4.5	6.3	7.9
10	Morocco	98.2	94.5	90.7	88.6	1.8	5.5	9.3	11.4

Notes: Apparel represented by HS1992 61+62; exports represented by partner country imports. Rank represents 2009 global export value rank (see Table 2).

Source: UN COMTRADE (2011)

3.3 Shift from exports to domestic or regional markets

Some of the larger, more advanced apparel suppliers such as China, India and Turkey are also reorienting production from export markets to large domestic and nearby regional markets (Gereffi and Guler, 2010). These largely untapped local markets often permit more opportunities for functional upgrading into ODM and OBM business models and may also provide easier entry for smaller exporters and can be used as a learning laboratory for more advanced activities.

Many of the strongest growth rates in the global apparel retail industry are coming from East Asian markets. In 2009, the global apparel retail industry reached $1,032 billion, with the Asia-Pacific region increasing global market share to 25.5% from 21.9% in 2008 (Datamonitor, 2010a). The apparel retail industry in the Asia-Pacific region[3] had a compound annual growth rate (CAGR) of 4.0% over the 2005–2009 time span, with strong growth from India (9.9%), China (7.9%), and South Korea (3.9%) offsetting declines in the Japanese market (–0.8%). From 2009 to 2014, the Asia-Pacific region is forecasted to grow at a faster compound growth rate, 3.2%, than Europe (1.7%) or the USA (1.9%) (Datamonitor, 2010b).

Apparel manufacturers in India have been developing brands for the domestic market (OBM) in addition to providing exports to international buyers since the 1990s. Most large apparel exporters have introduced their own brands in the Indian market and many have also established their own retail chains to distribute their apparel labels. These developments have been driven in recent years by a decline in export demand, the emergence of malls as a distribution outlet, and the rise of a younger generation of middle-class consumers working in service centres in India's major cities (Tewari, 2005).

Due to China's increasing standard of living and the current economic downturn, domestic manufacturers and other Asian apparel exporters are looking more realistically at China as a key market. China is particularly attractive for Hong Kong-based firms that enjoy duty-free access to the mainland under the Common Economic Partnership Agreement, provided the goods are manufactured in Hong Kong (Mehta, 2010).

Emerging markets that are not already leading apparel exporters are other diversification targets. In Russia, apparel imports increased from only $146 million in 2000 to $4,225 million in 2008, and back down to $3,674 million in 2009. China is Russia's primary supplier, but many other leading apparel exporters, including Turkey, India, Vietnam, Bangladesh, Indonesia, and Morocco, have increased exports over the last five to ten years. These countries are also increasing exports to other large emerging markets including the UAE and Poland.

4 China and Asia versus Mexico and Central America in the global market

This section will look at two major apparel suppliers and their regional networks, China and Mexico, and how they have taken contrasting paths over the last 15 years. China's apparel exports have been booming over the past decade and Mexico has been losing ground. Mexico has been exporting almost exclusively to the USA with very weak domestic demand in Mexico, while China has a much broader mix of export products and markets including a growing domestic and East Asian regional market for its apparel output.

4.1 China and Asian Partners: increasing market value and share

China has not only increased its share of global exports, but has also diversified its export partners. Between 1992 and 2009, China's top ten apparel export markets decreased from 98.6% to 91.1%. In 1995, Japan and Hong Kong represented 62.7% of China's apparel exports of $32.9 billion, with the USA and the EU-15 accounting for another 29.1%. By 2009, China's apparel exports nearly quintupled to $122.4 billion, and the EU-15 and the USA took the top two export partner positions, accounting for 53.3% of China's apparel exports, while Japan and Hong Kong held 27.3% (see Table 6). Since the end of safeguards and quotas, China has been exporting to new markets, including Russia and Poland. China's apparel exports are increasing to every top ten apparel importing country with the exception of Hong Kong.

China has a large and growing domestic market for apparel, which is supplied to a growing extent by China's own apparel producers. In 2007, the estimated value of sales to the Chinese apparel market totalled $93 billion for the year, indicating that 44% of the overall apparel production activities in China were for local consumers (Clothesource, 2008)[4].

4.1.1 China's extended network: South Asia and Southeast Asia

Due to rising production costs, China is no longer the most cost competitive apparel exporting country. Transnational manufacturers and lead firms are shifting orders to nearby Asian economies, including Vietnam, Bangladesh and Cambodia, for price-sensitive items (Mehta, 2010). South Asian countries have all increased market share to both the EU-15 and the USA. Post-MFA and during the crisis, Bangladesh has performed well in both markets, but India, Sri Lanka, and Pakistan have shifted focus to the EU-15. South Asian countries receive preferential access to the EU under the generalised system of preferences (GSP) scheme, yet they do not receive benefits in the USA (Gereffi and Frederick, 2010).

Table 6 China's top ten apparel export markets by year: 1992–2009 (see online version for colours)

Country/region	*Value (mil)*					*Market share (%)*				
	1992	*1995*	*2000*	*2005*	*2009*	*1992*	*1995*	*2000*	*2005*	*2009*
World	*14,183*	*32,868*	*48,017*	*89,829*	*122,359*					
EU-15	2,954	4,462	7,444	23,162	39,728	20.8	13.6	15.5	25.8	32.5
USA	4,744	4,913	6,514	17,802	25,367	33.5	14.9	13.6	19.8	20.7
Japan	4,685	10,308	14,195	17,447	20,262	33.0	31.4	29.6	19.4	16.6
Hong Kong	--	10,301	13,875	15,851	13,102	--	31.3	28.9	17.6	10.7
Canada	389	366	703	2,442	3,595	2.7	1.1	1.5	2.7	2.9
Australia	425	640	1,055	2,200	2,963	3.0	1.9	2.2	2.4	2.4
South Korea	74	381	867	2,138	2,202	0.5	1.2	1.8	2.4	1.8
Russia	--	--	--	--	1,923	--	--	--	--	1.6
Poland	--	--	--	--	1,346	--	--	--	--	1.1
UAE	--	--	--	--	1,067	--	--	--	--	0.9
Saudi Arabia	243	193	340	808	--	1.7	0.6	0.7	0.9	--
Singapore	65	--	--	576	--	0.5	--	--	0.6	--
Norway	--	242	337	622	--	--	0.7	0.7	0.7	--
Switzerland	303	309	342	--	--	2.1	0.9	0.7	--	--
Macao	96	--	--	--	--	0.7	--	--	--	--
Top ten total						*98.6*	*97.7*	*95.1*	*92.5*	*91.1*

Notes: HS1992 (61+62); exports reported as country imports; (--): indicates country not in top ten in given year; retrieved 1/23/2011.

Source: UN COMTRADE (2011)

Both Vietnam and Cambodia have been gaining EU-15 and US market share since the early 1990s. During the crisis (2008–2009), however, Vietnam has managed to maintain its value, volume and market share far better than Cambodia (Table 8). Indonesia and Malaysia are increasingly more important suppliers to the US market than the EU and both have started to focus on growing textile exports as well. Thailand has been negatively impacted by the MFA phase-out, and the Philippines' US and EU-15 market share has fallen since the early 1990s.

4.2 US regional suppliers: declining value and market share

The USA and its periphery include NAFTA members (USA, Mexico, Canada), the DR-CAFTA signatories (Central America and the Dominican Republic), and other economies in the Caribbean Basin Initiative (CBI). Nearly all of the US regional suppliers have been negatively impacted by the MFA phase-out. Mexico's apparel industry is almost entirely reliant on the US market. From 1992–2000, 97% of exports were to the USA. With the signing of the NAFTA agreement, exports to Canada increased from 1.5% in 2000 to 4.2% by 2005 and to 6.1% by 2009. In 2000, Mexico and the EU signed a free trade agreement facilitating the boost in exports from Mexico to the EU post-2000. Exports have slightly increased to the EU-15, Japan, and Australia since 2005, but these are still marginal markets for Mexico, accounting for less than 5% of all apparel exports.

Table 7 Mexico's top five apparel markets by year: 1992–2009

Country/region	*Value (mil)*					*Share (%)*				
	1992	*1995*	*2000*	*2005*	*2009*	*1992*	*1995*	*2000*	*2005*	*2009*
World	*1,138*	*2,871*	*8,924*	*6,683*	*3,923*					
USA	1,107	2,805	8,695	6,282	3,508	97.3	97.7	97.4	94.0	89.4
Canada	11	25	135	280	238	1.0	0.9	1.5	4.2	6.1
EU-15	16	19	27	57	92	1.4	0.7	0.3	0.9	2.3
Japan	2	7	27	20	15	0.2	0.2	0.3	0.3	0.4
Australia	1	--	--	--	9	0.0	--	--	--	0.2
South Korea	--	--	--	6	--	--	--	--	0.1	--
Costa Rica	--	4	6	--	--	--	0.2	0.1	--	--
Top five total						*100.0*	*99.6*	*99.6*	*99.4*	*98.4*

Notes: Apparel represented by HS1992 (61+62); exports represented by partner country imports; (--) indicates country not in top five in given year; retrieved: 1/23/2011.

Source: UN COMTRADE (2011)

Similar to Mexico, the CAFTA-DR and CBI region is solely reliant on the US market, and exports have decreased over the last decade. The CAFTA-DR regional trade agreement with the USA offers preferential access to the US market only for those countries that assemble apparel goods under complex rules of origin that favour US-made fabric. Certain exceptions have been made in granting access to the least developed

countries in the Central America and Caribbean region, most notably Nicaragua and Haiti, who are granted preferential access to the US market for apparel that utilises textiles coming from outside the CAFTA-DR region (usually from Asia).[5] In the last several years in certain products like cotton woven trousers, Nicaragua has been the only CAFTA-DR economy whose apparel exports to the USA have increased, largely due to its guaranteed tariff preference levels (TPLs), which are due to expire in 2014 (Gereffi and Bair, 2010). Although regional trade agreements like CAFTA-DR and NAFTA have facilitated access to the US market for signatory countries, they have mixed results in terms of upgrading because they encourage a reliance on US or local inputs, which may not be competitive in terms of the global economy.

4.3 China and Mexico in the US market

In 2009, US consumers spent $188.5 billion on clothing, down by 5.2% from 2008 (S&P, 2010). According to Standard & Poor's, China, Egypt, and Haiti[6] were the only three countries to experience gains in the US apparel market in 2009. Table 8 shows trends for the top 15 countries that supply US apparel imports. Most striking is the dramatic increase in China's import share, which climbed from 10.5% of all US apparel imports in 2000 to 23.7% in 2005 and 37.9% in 2009. Mexico experienced the most dramatic decrease in market share during this period, falling from 14.6% in 2000 to just 5.4% in 2009.

Mexico's main export items to the USA are highlighted in Table 9. They are highly concentrated with the top ten export products accounting for 73% of total apparel exports in 2009. Of the top ten US apparel import categories from Mexico in 2009, nine experienced a decline in value between 2005 and 2009. The two products that increased were t-shirts made from textile materials elsewhere classified and M&B wool suits.

US imports from China are much less concentrated than Mexico's. Whereas the top three products from Mexico accounted for over 50% of all US apparel imports from that country in 2009, China's top ten apparel exports to the USA in 2009 represented less than 40% of its total apparel exports to the US market. Only five of the top products in 1996 were the same as in 2009; in Mexico, eight of the top ten were the same in both years. When looking at data from 1996–2004, the other products in the top ten were all made from 'textile materials NESOI'[7]. By 2009 none of these products were still in the top ten.

Mexico and China compete in the US apparel market in four main categories: men's and boys' (M&B) and women's and girls' (W&G) cotton woven trousers and cotton and man-made fibre (MMF) knitted sweaters and sweatshirts[8]. For Mexico, cotton woven trousers are the main products destined for the US making up 41% of US apparel imports from Mexico in 2009. M&B cotton woven trousers are the only category of the four mentioned in which Mexico remained ahead of China in 2009 in terms of market share, although Mexico's share has been steadily falling. China took over the leading position from Mexico in 2006 for the W&G market. Bangladesh and Vietnam, and to a lesser extent Egypt are all increasing their share of the US market (USITC, 2010). Cotton and MMF sweaters and sweatshirts are China and Mexico's other main products competing for US market share. For both cotton and MMF, Mexico led China in US market share until 2005. Other major country competitors include Vietnam and Indonesia; two countries that have decisively shifted focus to the US market over the 2000–2009 timeframe.

Table 8 US apparel imports: shifts in top 15 countries: 1995, 2000, 2004–2005, and 2008–2009 (see online version for colours)

Country/region	*Customs value (millions $USD)*						*Market share (%)*					
	'95	*'00*	*'04*	*'05*	*'08*	*'09*	*'95*	*'00*	*'04*	*'05*	*'08*	*'09*
Total	*36,103*	*59,206*	*66,869*	*70,807*	*73,102*	*64,296*						
China	4,653	6,202	10,721	16,808	24,000	24,362	12.9	10.5	16.0	23.7	32.8	37.9
Vietnam	--	--	2,506	2,665	5,151	5,008	--	--	3.7	3.8	7.0	7.8
Indonesia	1,189	2,060	2,402	2,882	4,035	3,870	3.3	3.5	3.6	4.1	5.5	6.0
Mexico	2,779	8,618	6,845	6,230	4,129	3,482	7.7	14.6	10.2	8.8	5.6	5.4
Bangladesh	997	1,942	1,872	2,268	3,355	3,345	2.8	3.3	2.8	3.2	4.6	5.2
India	1,163	1,852	2,277	3,058	3,122	2,886	3.2	3.1	3.4	4.3	4.3	4.5
Honduras	932	2,416	2,743	2,685	2,675	2,107	2.6	4.1	4.1	3.8	3.7	3.3
Cambodia	--	--	--	1,702	2,371	1,869	--	--	--	2.4	3.2	2.9
EU-15	1,740	2,245	2,289	2,171	2,065	1,400	4.8	3.8	3.4	3.1	2.8	2.2
Pakistan	--	--	--	--	1,508	1,319	--	--	--	--	2.1	2.1
El Salvador	--	1,602	1,720	--	1,533	1,297	--	2.7	2.6	--	2.1	2.0
Thailand	1,042	1,841	1,822	1,833	1,696	1,248	2.9	3.1	2.7	2.6	2.3	1.9
Sri Lanka	919	--	--	1,653	1,490	1,220	2.5	--	--	2.3	2.0	1.9
Guatemala	--	--	1,947	1,817	1,388	1,103	--	--	2.9	2.6	1.9	1.7
Philippines	1,489	1,876	1,765	1,821	--	1,016	4.1	3.2	2.6	2.6	--	1.6
Hong Kong	4,261	4,492	3,879	3,523	1,559	--	11.8	7.6	5.8	5.0	2.1	--
DR	1,698	2,390	2,036	1,831	--	--	4.7	4.0	3.0	2.6	--	--
Korea	1,661	2,263	1,808	--	--	--	4.6	3.8	2.7	--	--	--
Taiwan	1,917	1,951	--	--	--	--	5.3	3.3	--	--	--	--
Canada	774	1,745	--	--	--	--	2.1	2.9	--	--	--	--
Top 15 share							*75.4*	*73.5*	*69.7*	*74.8*	*82.2*	*86.4*
CAFTA+DR	4,725	9,059	9,559	9,150	7,668	6,214	13.1	15.3	14.3	12.9	10.5	9.7

Notes: US imports general customs value; apparel represented by HS61+62. The (--) indicates that a country is not in the top 15 for the given year.

Source: USITC (2010)

Table 9 Top ten US imports from Mexico by year: value

HS code	Customs value (mil)					Product description			
	1996	2000	2005	2008	2009	Product	Gender	Fibre	Fabric
Total	*3,743*	*8,618*	*6,230*	*4,129*	*3,482*				
620342*	745	1,657	1,431	1,177	1,067	Trousers	M&B	COT	WVN
610910	371	963	570	491	403	T-shirts	N/A	COT	KNT
620462*	451	1,462	1,013	435	361	Trousers	W&G	COT	WVN
611030*	216	419	281	225	139	Sweatshirts	N/A	MMF	KNT
620343	79	256	231	151	124	Trousers	M&B	SYN	WVN
610990	124	156	130	69	104	T-shirts	N/A	NESOI	KNT
611020*	112	394	332	170	98	Sweatshirts	N/A	COT	KNT
611595	--	--	--	93	93	Socks	N/A	COT	KNT
621010	188	233	150	109	90	Garments	N/A	N/A	WVN
620311	--	--	--	--	73	Suits	M&B	Wool	WVN
611241	--	--	142	86	--	Swimwear	W&G	SYN	KNT
621143	--	--	114	--	--	Garments	W&G	MMF	WVN
621210	176	262	--	--	--	Bras	N/A	N/A	Either
620463	--	140	--	--	--	Trousers	W&G	SYN	WVN
610463	96	--	--	--	--	Trousers	W&G	SYN	KNT
Product's share of total US imports from Mexico (%)									
620342*	19.9	19.2	23.0	28.5	30.6	Trousers	M&B	COT	WVN
610910	9.9	11.2	9.2	11.9	11.6	T-shirts	N/A	COT	KNT
620462*	12.1	17.0	16.3	10.5	10.4	Trousers	W&G	COT	WVN
611030*	5.8	4.9	4.5	5.4	4.0	Sweatshirts	N/A	MMF	KNT
620343	2.1	3.0	3.7	3.7	3.6	Trousers	M&B	SYN	WVN
610990	3.3	1.8	2.1	1.7	3.0	T-shirts	N/A	NESOI	KNT
611020*	3.0	4.6	5.3	4.1	2.8	Sweatshirts	N/A	COT	KNT
611595	--	--	--	2.3	2.7	Socks	N/A	COT	KNT
621010	5.0	2.7	2.4	2.6	2.6	Garments	N/A	N/A	WVN
620311	--	--	--	--	2.1	Suits	M&B	Wool	WVN
611241	--	--	2.3	2.1	--	Swimwear	W&G	SYN	KNT
621143	--	--	1.8	--	--	Garments	W&G	MMF	WVN
621210	4.7	3.0	--	--	--	Bras	N/A	N/A	Either
620463	--	1.6	--	--	--	Trousers	W&G	SYN	WVN
610463	2.6	--	--	--	--	Trousers	W&G	SYN	KNT
Top ten	*68.3*	*68.9*	*70.5*	*72.8*	*73.3*				

Notes: US general imports customs value; NESOI: textile materials not elsewhere classified. The * indicates product is also in China's top ten products; (--) indicates product is not in the top ten in the given year.

Source: USITC (2010)

Table 10 Top ten US imports from China by year: value: 2005–2009

HS code	*Customs value (mil)*					*Product description*			
	2005	*2006*	*2007*	*2008*	*2009*	*Product*	*Gender*	*Fibre*	*Fabric*
Total	*16,808*	*19,868*	*23,970*	*24,000*	*24,362*				
611020*	534	1,047	1,760	1,993	2,781	Sweatshirts	N/A	COT	KNT
620462*	639	807	1,162	1,271	1,936	Trousers	W&G	COT	WVN
611030*	721	912	1,160	1,020	1,130	Sweatshirts	N/A	MMF	KNT
620342*	391	--	560	591	900	Trousers	M&B	COT	WVN
611120	821	917	1,032	952	860	Garments	Baby	COT	KNT
621210	491	666	689	789	774	Bras	N/A	N/A	Either
620630	--	486	698	669	654	Shirts	W&G	COT	WVN
620520	--	--	--	539	626	Shirts	M&B	COT	WVN
620293	426	527	633	588	513	Jackets	W&G	MMF	WVN
620443	--	--	--	--	460	Dresses	W&G	SYN	WVN
620469	847	903	747	709	--	Trousers	W&G	NESOI	WVN
611090	891	838	623	--	--	Sweatshirts	N/A	NESOI	KNT
620193	423	468	--	--	--	Jackets	M&B	MMF	WVN
Product's share of total US imports from China (%)									
611020*	3.2	5.3	7.3	8.3	11.4	Sweatshirts	N/A	COT	KNT
620462*	3.8	4.1	4.8	5.3	7.9	Trousers	W&G	COT	WVN
611030*	4.3	4.6	4.8	4.3	4.6	Sweatshirts	N/A	MMF	KNT
620342*	2.3	--	2.3	2.5	3.7	Trousers	M&B	COT	WVN
611120	4.9	4.6	4.3	4.0	3.5	Garments	Baby	COT	KNT
621210	2.9	3.4	2.9	3.3	3.2	Bras	N/A	N/A	Either
620630	--	2.4	2.9	2.8	2.7	Shirts	W&G	COT	WVN
620520	--	--	--	2.2	2.6	Shirts	M&B	COT	WVN
620293	2.5	2.7	2.6	2.4	2.1	Jackets	W&G	MMF	WVN
620443	--	--	--	--	1.9	Dresses	W&G	SYN	WVN
620469	5.0	4.5	3.1	3.0	--	Trousers	W&G	NESOI	WVN
611090	5.3	4.2	2.6	--	--	Sweatshirts	N/A	NESOI	KNT
620193	2.5	2.4	--	--	--	Jackets	M&B	MMF	WVN
Top ten	*36.8*	*38.1*	*37.8*	*38.0*	*43.7*				

Notes: US general imports customs value; NESOI: textile materials not elsewhere classified. The * indicates product is also in Mexico's top ten products; (--) indicates product is not in the top ten in the given year.

Source: USITC (2010)

5 Why China is winning and Mexico is losing

The following section seeks to explain what has enabled China to gain US market share over Mexico so rapidly and decisively. A number of key factors are identified below that involve both the upgrading and institutional aspects of these economies (see Table 11 below for a comparison of China and Mexico on a number of factors).

5.1 Process upgrading

The Chinese government started promoting the apparel and textile industries as a key growth sector around 1980 and has helped firms increase productivity by investing in new spinning machinery, shuttleless looms, and quality control technology to decrease defect rates. China has also made significant investments in logistics technology to facilitate supply chain collaboration and reduce lead times. Investing in technological upgrading was a means to increase China's market share in both low-end, high volume as well as high-end products.

In terms of shipments of textile-processing equipment, China is ahead of Mexico in every machinery category. During the 2000–2009 timeframe, China was the leading global recipient of circular knitting machinery (both single and double jersey), electronic flatbed knitting machines, shuttleless looms, open-end rotors, and short-staple spinning machines. On the other hand, Mexico's investment in textile machinery has remained relatively stagnant. Mexico ranked 18th and 19th for single and double jersey knitting machine shipments, 32nd for electronic flatbed, 22nd for shuttleless looms, and 12th for short-staple spinning machines (Anson and Brocklehurst, 2010a, 2010b; Brocklehurst and Anson, 2010). China also has significantly higher installed capacities than Mexico in all textile categories.

5.2 Product quality, capacity, timeliness and diversity

China is considered by industry experts to be the best in making garments at any quality or price point, and can provide a wide assortment of fabrics and finished goods (Anson, 2009; USITC, 2004). China is not just a competitive supplier of one type of clothing, but nearly every type of clothing. In 2008, China was the largest US supplier of clothing of all four fibre types by volume: cotton clothing (27%), MMF clothing (42.8%), wool clothing (58.6%), and silk/vegetable fibre clothing (86.1%) (*Textile Outlook International*, 2009). China has a strong, well-developed domestic textile industry capable of producing a wide variety of quality yarns and fabrics required for the different types of apparel.

China has a reputation for consistency; suppliers continually provide quality products with timely deliveries (just-style.com, 2009; Tewari, 2006). Chinese factories are often cited as having the best skilled workers and productivity, quality, speed, production capacity, product development, technology, storage facilities, and transportation (Robinson, 2010). On the other hand, Mexico's product quality and production reliability are problematic (USITC, 2004). Mexico's apparel production has a heavy concentration in three main product categories (woven cotton trousers, knitted sweatshirts, and t-shirts), with the top ten products accounting for over 73% of the total value of US apparel imports.

5.3 Labour and cost

The average price of US apparel imports has fluctuated over the last ten years due to the cost of quotas and Chinese safeguards. As these restrictions were removed from the most cost competitive producers with the largest market shares, prices started to decline. Over the last two years, the decline in the average price of US clothing imports from China has had a detrimental effect on the average prices of imports from other suppliers as they

have been forced to drop their prices in order to compete with China (just-style.com, 2010).

During the last decade, both China and Mexico have pursued strategies to keep workers' wages low, but China is able to provide lower labour and unit costs than Mexico (Robinson, 2010). China's labour costs are higher than many regional Asian neighbours, but are still lower than Mexico's. Overall costs remain low due to China's high productivity levels. In addition to an ample supply of efficient, skilled labour and management capabilities, China has a positive, proactive business approach backed by established industrial clusters and infrastructure systems that offset rising labour costs (Anson, 2009; Gereffi, 2009; Robinson, 2010; USITC, 2004).

Despite recent increases in labour costs due to labour legislation, currency appreciation and domestic growth, China is still considered a low-cost provider of textiles and apparel. In the short term, rising costs have been exacerbated by labour shortages as orders pick-up and production recovers from the recession. Other factors leading to increasing prices include stricter product safety and compliance requirements and increasing monitoring costs, rising energy, and transportation costs. Furthermore, the undervaluation of the yuan is a widely debated issue, as the USA has claimed it is a major source of the US-China trade imbalance. The yuan has increased in value by about 20% since 2004, but has been held fairly constant during the crisis period of 2007–2009 (Clark and Milberg, 2010). Rising costs in China have spurred firms to expand their sourcing portfolio to include countries with lower costs, but sourcing is shifting to other Asian competitors rather than to US regional suppliers (*Global Apparel Markets*, 2009; Anson, 2010; Tucker, 2009).

Mexico is faced with higher labour costs and lower productivity than Asian competitors. Mexican apparel firms lack strong management capabilities and importers face additional costs related to security and compliance with trade agreements (USITC, 2004).

5.4 Economies of scale, backward linkages, and government support

China's apparel industry takes advantage of scale economies in two ways. Many of China's production networks operate seamlessly through firm-specific and product/cluster-specific supply-chain cities (Appelbaum, 2008; Gereffi, 2009). Firm-specific clusters are large, vertical factories with all supply chain sectors and value-adding activities in one place. These are often owned by Hong Kong and Taiwanese investors, and they are located in the Guangdong area. The Hong Kong Polytechnic Institute estimates that about 50% of all apparel and textile companies in China's coastal cities have some element of vertical integration (INS, 2009). They are designed to reduce lead times, minimise transactions costs, take advantage of economies of scale, and foster more flexible supply chain management. These reflect 'bottom-up' development, resulting from sourcing decisions by private firms, although the government has played a role in providing beneficial policies (tax incentives, lack of red tape, etc.).

Scale economies are also achieved through product-specific clusters in geographic areas, primarily located in coastal cities[9] that specialise in one product and recruit sectors of the value chain to the area. Single-product industrial clusters along China's coastal regions attract related and supporting industries (yarn dealers, sewers, pressers,

packagers, and freight forwarders) and feature large, sprawling factories and dorms for workers. These investments in infrastructure and logistics lower transportation costs and speed time to market. The Chinese Government has also aided in this process by investing in the necessary infrastructure improvements in areas such as ports and roads to facilitate exports (Tewari, 2006).

Product-specific clusters first emerged in the 1970s and 1980s, led by investors from Hong Kong, Taiwan, and Macao and facilitated by the government's attractive foreign direct investment policies and incentives. Many of these export-oriented firms are located in South China (Guangdong, Fujian). The second group emerged in the 1980s and 1990s, led by Chinese investors in the Zhejiang and Jiangsu provinces (Gereffi, 2009). Both are examples of how China's government and entrepreneurs have turned scale-driven specialisation into a competitive advantage.

Alternatively Mexico has had a lack of government support with few major programmes to assist the textile and apparel sector (USITC, 2004). Lead firms desire to work with fewer, larger, and more capable suppliers that have the network to coordinate supply chains in strategic locations around the world. Mexico is not part of a global network, and is not strategically tied into the region. Many of the production operations in Central America and the Caribbean were set up by US firms as a way of preserving US textile factories and maintaining a foothold in apparel manufacturing, but low-cost competition has made these networks increasingly uncompetitive (Anson, 2010). Many of the US brand manufacturers that set-up the apparel assembly base in Mexico have shifted to a sourcing rather than manufacturing business model, and have looked to more capable suppliers in Asia.

5.5 Industrial organisation: regional integration and value chain upgrading

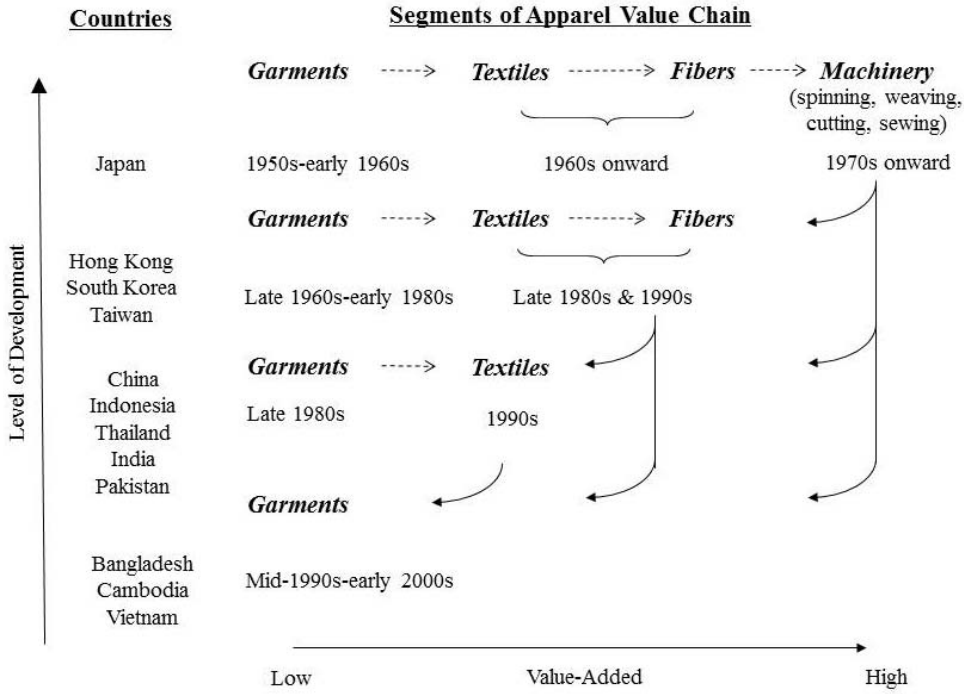
China has experienced regionally integrated development with East Asian neighbours, whereas Mexico and CAFTA have largely emerged as competitors rather than as unified apparel producing network. Regional integration has played out very differently among East Asia apparel producers and those in North America. The USA and its regional suppliers emerged as a regional production-sharing model based on tariff preference schemes (NAFTA, DR-CAFTA, the CBI agreements and the HOPE Act). Networks were created and held together by large US brand manufacturers and textile firms with a desire to keep domestic textile manufacturing in business by moving the most labour intensive parts of the apparel supply chain to nearby, low-wage countries. The East Asian division of labour is a much stronger integrated manufacturing model. The China model allows it to take much fuller advantage of strategies for moving up the value chain, and ultimately upgrading through tapping its own domestic and nearby regional markets using ODM and OBM.

5.5.1 Coordinated upgrading in Asia's regional apparel value chain

Figure 1 illustrates how the division of labour between countries at different levels of development shaped the pattern of industrial upgrading in the Asian apparel value chain. The main segments of the apparel chain – garments, textiles, fibres, and machinery – are arranged along the horizontal axis, and they reflect low to high levels of relative value-added as capital intensity increases. Countries are grouped on the vertical axis by

their relative level of development, with Japan at the top, China and India in the middle tier, and the least-developed exporters like Bangladesh, Cambodia, and Vietnam at the bottom.

Figure 1 Apparel value chain upgrading in Asia



Notes: Dotted arrows refer to the sequence of production and export capabilities within economies. Solid arrows refer to the direction of trade flows between economies. Dates refer to countries' entry years for exports of specific products.

Source: Gereffi and Frederick (2010), adapted from Gereffi (2005, p.172)

This reveals several key dynamics about the apparel value chain in Asia. First, individual countries tend to progress from low to high value-added segments of the chain in a sequential fashion over time. This shows the importance of looking at the entire constellation of value-added steps in the production process (raw materials, components, finished goods, related services, and machinery), rather than just the end product. Second, there is a regional division of labour in the apparel value chain, whereby countries at very different levels of development form a multi-tiered production hierarchy with a variety of export roles (e.g., the USA generates the product designs and large orders, Japan provides sewing machines, East Asian newly industrialising economies supply fabric, and low-wage Asian economies like China, Indonesia or Vietnam sew the apparel). Industrial upgrading occurs when countries change their roles in these export hierarchies. Finally, as economies advance, they have not exited the supply chain, but have capitalised on their knowledge of production and distribution networks and thus move to higher-value-added stages in the apparel chain (Gereffi, 2005).

5.5.2 Truncated upgrading and stagnation in the North American apparel value chain

Mexico's second largest export category to the USA, cotton knit t-shirts, provides an example of how US trade preferences have led to competition among regional suppliers rather than collaboration. Mexico's main competitors in this category were primarily other Caribbean countries from 1995 to 2005. During this time, leading export positions shifted among Jamaica, Honduras, El Salvador, Guatemala, the Dominican Republic, Haiti and most recently Peru and Nicaragua. However after the quota phase-out in 2005, Vietnam and China both emerged as rapidly growing competitors. While regional suppliers were busy taking market share from each other, Asian competitors moved into the picture, and are slowly pushing out all of the regional suppliers. Regional suppliers have mostly taken market share from each other rather than focusing on growing one country's capabilities.

In East Asia, where one country may be weak in the supply chain, a nearby country is likely to have the necessary capabilities. In Latin America, Mexico and the other Central American producers have deficiencies in many of the same areas. Production is primarily limited to basic, commodity products with low values. The region lacks full-package capabilities and workers have limited knowledge of product development, branding or marketing. Furthermore, the region lacks technical education and training institutions to develop a skilled workforce. Central American manufacturing firms are mostly involved in CMT production. Similar to Mexico, products are destined for the USA, and are primarily made of cotton. The main competitive advantages include duty-free access to the US with compliance with CAFTA-DR rules of origin, access to competitively priced cotton textiles from the USA due to cotton subsidies, and proximity.

Mexico also suffers from the decline in competitiveness across the US apparel supply chain. As a majority of Mexico's top ten US apparel products are made from cotton (58% by value in 2009), producers have benefited from low raw material cotton costs due to extensive subsidies provided to US cotton farmers. However the USA is also suffering from an institutional strategy focused on insulating producers from competition in the short-term rather than investing in long-term competitive capabilities. A recent USDA report stated that India has surpassed the USA as China's leading cotton supplier, citing India's improvements in ginning and logistics practices as enhancements that are increasing the long-term competitiveness of India's industry (Adendorff et al., 2010). Both subsidies and free trade agreements are examples of strategies that protect US firms in the short-term, but alone, do not provide long-term benefits to remain competitive.

5.6 US brand manufacturers and the development of niche capabilities by suppliers

Mexico has remained stronger in the men's apparel market than the women's market. One explanation is the shift in the main type of lead firms in the women's and to a lesser extent men's trousers market. Apparel can be divided into two main categories, national brands available at a variety of different department store retail outlets and private labels, sold exclusively through one specialty or mass merchant retailer. Mexico's trouser industry was built on national brands owned by brand manufacturers such as VF (Wrangler and Lee) and Levi's (Levi's and Dockers). However, the size of the consumer market for national brands has decreased significantly in the last decade. During

Mexico's growth stage in the 1990s, national brands made up the majority of US apparel sales. In 1993, only 25% of US apparel sales were from private label goods (Gereffi, 1997). Yet by 2009, the position of private labels and national brands switched positions. In 2009, only 16% of all wholesale apparel sales were from national brands, and 84% of apparel was distributed by small brands and private label goods with specialty retail stores as the leading apparel distribution channel (31% of sales) (S&P, 2010).

Working to Mexico's advantage, men's trousers are one of the few categories in which brand manufacturers still exist and national brands maintain a sizeable consumer base, although it is decreasing. In 2008, VF's brands accounted for 19% of the US jeans market and Levi Strauss 16%, together representing 35% of total market share (Newberry, 2009). In the early 1990s, Levi's market share alone was 31% (Gereffi, 2000). Over the last decade, Levi's has closed all of its owned manufacturing plants and has shifted to a brand marketer model, and VF is slowly shifting production to Asian countries such as Bangladesh that can produce comparable products at lower prices. Most private label brands that have emerged established souring networks in Asia rather than with regional suppliers because they did not have pre-existing relationships with US textile or apparel manufacturers.

Mexico's relationship with these US brand manufacturers is both a curse and a blessing. On one hand, it has permitted Mexico to establish long-term relationships with prominent US brands in one of the leading US apparel import categories. On the other hand, it has locked Mexico into the production of basic, mid- to low-price jeans, predominately for the men's market rather than the larger women's market whose products often sell at higher price points. In 2008, half of the US jeanswear market was for women, 27% men, and 23% children (Newberry, 2009). Furthermore, most jeans brands carry products for men, women, and children, so buyers would prefer to purchase jeans from a country capable of supplying all three.

Developing the capabilities to sell to the large and growing market for women's jeans is necessary to remain competitive. On the surface, it seems that the transition from men's to women's jeans would be relatively simple, yet the skills required to make these products are actually quite different. Two of the main differences are size and style. In most cases, regardless of the brand, the size of men's trousers is based on actual dimensions; a size 31 × 32 indicates the waist is 31 inches and the length is 32 inches. This makes it easier to standardise orders, and allows a manufacturer to make basic trousers for multiple buyers without having to change machinery settings. More so than women's jeans, men's jeans are designed to be functional rather than fashionable. The relatively basic nature of men's jeans has allowed the market to remain dominated by a handful of brands. The manufacturing process for basic jeans benefits from a high level of automation, however the lack of complexity also correlates to lower prices.

The market for trousers that are parts of uniforms (workwear or imagewear[10]) has performed better in Mexico because of the turn-around time and small orders desired by the buyers. Manufacturers in Mexico and the CAFTA region are in a good position to produce school uniforms, public safety uniforms, and military apparel due to the proximity to the USA allowing manufacturers to turn and replenish goods quickly (BMI, 2009; USITC, 2004).

Furthermore, workwear is a relatively standardised product, and is not considered by most to be 'fashion-forward'. Functionality surpasses aesthetics and design and brand names are either of little importance to cost-conscious corporate buyers or are

overshadowed by the licensed logos. VF, the parent company of leading jeans brands Lee and Wrangler, is also one of the leading manufacturers of uniforms. Uniforms are sold through VF's imagewear division and the manufacturing facilities and production networks in Mexico and Central America can be used to produce trousers for both the jeanswear and imagewear divisions.

5.7 Domestic markets and functional capabilities

China has a much larger and faster-growing domestic apparel market than Mexico. In 2003, 12,725 million units of apparel were sold in China compared to 688 million units in Mexico. By 2008, the volume nearly doubled in China to 24,003 million units with Mexico increasing to 968 million. China's total growth rate and CAGR for the 2003–2008 period were 88.6% and 13.5%, respectively, compared to Mexico's 40.7% total growth rate and 7.1% CAGR (Euromonitor, 2009a, 2009b).

China is a primary supplier to global buyers with a strong domestic market as well. Whereas the majority of Chinese apparel manufacturers still operate under the OEM export business model, an increasing number of Chinese textile and apparel manufacturers are striving to move to ODM and OBM to enhance competitiveness and seek higher profit margins in export and domestic markets (Li & Fung Research Centre, 2007). China's domestic backward linkages into the fibre, yarn, and textile segments of the chain, in addition to trim, packaging, and most components required to produce apparel, provide a solid foundation for firms to make this transition.

Chinese fashion brands started to emerge in the 1990s ranging from mid-priced fashion and casual wear brands such as Episode and Giordano through fashion-forward mid to upper range women's wear (Giordano and Exception de Mixmind), to luxury, global brands such as Shanghai Tang. Most of these Chinese brands have headquarters in Hong Kong, manufacturing in mainland China, and retail outlets in both and in other nearby Asian countries (Clark and Milberg, 2010).

Developing domestic Chinese brands has been difficult. Global brands were introduced into the Chinese market prior to local brands, and Chinese consumers have become attracted to the style and status of Western brands and fashion trends. Emerging domestic brands do not have the panache associated with Italian designers or the global marketing appeal of US brands. To overcome this, firms often pick labels with foreign rather than Chinese names to minimise local association (Clark and Milberg, 2010).

Local brands for the Chinese market have a great deal of potential as China graduates more students from its fashion design programmes, and the curriculum in those programmes becomes more similar to that of design schools in western countries. Currently there are around 300 fashion design programmes in China, producing an estimated 6,000 graduates annually. International recognition of Chinese brands will take more time, as international consumers have been trained to look to US and European countries for fashion and creative innovations (Clark and Milberg, 2010).

The domestic market is also providing an outlet for upgrading China's textile industry to serve the needs of non-apparel end-use markets. In preparation for the Olympics and in light of the recent economic crisis, China's government has been instrumental in driving this growth through significant investments in large infrastructure and construction projects that require advanced textile products, such as geotextiles or non-woven fabrics. Developing domestic capabilities in these higher-value products fulfil the need for

domestic growth, but perhaps more importantly, represent an area for export growth to emerging economies lacking a domestic textile sector.

Mexico has yet to develop a strong local market for domestic brands. One of the major weaknesses in the domestic market is a very high level of contraband and counterfeit clothing. A 2005 study suggested that 58% of all clothes sold in Mexico entered the country as contraband, largely originating in China (BMI, 2009).

Table 11 Comparison of upgrading factors in China and Mexico

Upgrading	*China*	*Mexico*
Process upgrading: investment in textile machinery: global 2000–2009 shipment ranks		
Yarn machinery: short-staple	#1	#12
Yarn machinery: open-end (2009 only)	#1	#9
Woven fabric machinery: shuttleless looms	#1	#22
Knit fabric machinery: single jersey	#1	#18
Knit fabric machinery: double jersey	#1	#19
Knit fabric machinery: hand knit	#2	#<35
Knit fabric machinery: electronic flatbed	#1	#32
Product unit costs: US imports: M&B cotton woven trousers (customs value/dozen)	\$74.5 (2009)	\$88.5 (2009)
	\$59.7 (2005)	\$92.8 (2005)
	\$98.3 (2000)	\$93.8 (2000)
	\$78.1 (1996)	\$89.8 (1996)
Product diversity: share of top ten US product exports	43.7% (2009)	73.3% (2009)
	36.8% (2005)	70.5% (2005)
	42.9% (2000)	68.9% (2000)
	45.0% (1996)	68.3% (1996)
Market diversity: concentration of top five export markets	83.6% (2009)	98.4% (2009)
	85.4% (2005)	99.4% (2005)
	89.7% (2000)	99.6% (2000)
	93.2% (1995)	99.6% (1995)
	93.1% (1992)	99.9% (1992)
Labour costs (2008)	\$1.44–\$1.88	\$2.17
Dependence on apparel exports: clothing share of total merchandise export value	8.9% (2009)	5.2% (2009)
	14.5% (2000)	1.8% (2000)
Firm capabilities	OEM and ODM	Assembly and OEM
Domestic textile production	Yes: all types	Yes: limited to basic textiles
Regionally integrated	Yes	No
Institutional/government support	Yes	Trade agreement
Domestic market		
Domestic clothing market volume (2008)	24,003 million units	968 million units
Domestic clothing market vol. growth (2003–2008)	Total: 88.6%; CAGR: 13.5%	Total: 40.7%; CAGR: 7.1%

Source: Anson and Brocklehurst (2010a, 2010b), USITC (2010), UN COMTRADE (2011), Jassin-O'Rourke Group (2008), WTO (2010), Euromonitor (2009a, 2009b)

6 Conclusions

The last five years have been filled with many new challenges in the global apparel value chain. The elimination of quotas and safeguards coincided with the economic crisis (2008–2009) resulting in a consolidation among a relatively small number of large apparel exporters, while smaller exporters were cut out of the chain. The last two years have reinforced many of the trends occurring after the phase-out of quotas. China, Bangladesh, Vietnam, and Indonesia are increasing their market shares in North America and the EU, primarily at the expense of near-sourcing options such as Mexico and the Central American and Caribbean suppliers to the USA. To highlight dynamics of the structure of global apparel production in the post-quota and crisis era, a comparison was drawn between the upgrading strategies of two large apparel exporters, China and Mexico, and their regional networks.

Mexico and the Central America region have two main competitive advantages in the apparel industry: proximity and preferential access to the US market. However, Latin American exporters have not been able to turn their geographic proximity to the US market into a lasting source of competitive advantage. This can be attributed to a lack of supplier upgrading because of lock in to assembly versus more advanced full-package capabilities; and a lack of diversification beyond the US market. Production-sharing trade arrangements with strict rules of origin often lock developing countries into low value-added activities that provide minimal opportunities for upgrading, few linkages or reasons to develop domestic input suppliers, and strong incentives to keep labour costs low.

China's government has provided an ongoing growth platform through high levels of public investment in infrastructure and workforce development. Similar to China, Mexico's policies have kept wages low, but without the level of public investment in infrastructure seen in China (Robinson, 2010). China and its East Asian neighbours have pursued a regionally integrated development strategy that has relied on China's unmatched economies of scale and scope in textile and apparel production, as well as the opportunities provided by China's large domestic market to climb the value into the higher value activities associated with ODM and OBM production.

China's advantages in terms of a more complete pattern of regional integration based on the complementary capabilities of various Asian economies has enabled it to pursue a diversified end market export strategy as well. China relies far less heavily on the US and EU15 end markets than any major other global apparel exporter, and it is now diversifying its ties with a broader range of export markets.

Mexico and Central America have some advantages of their own in terms of products and connections with lead firms in US market. Even if Mexico is losing relative market share to China, close ties to the US market are not insignificant, and these have sustained Mexico's position among the leaders for US apparel imports. However, if Mexico and the CAFTA-DR economies hope to reverse the recent decline in their shares of the US apparel import market, they may need to revamp their US-centric model of North American regional integration and diversify both input supplies and end markets to stimulate the competitiveness of local suppliers.

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Notes

1 FOB is technically an international trade term in which, for the quoted price, goods are delivered on-board a ship or to another carrier at no cost to the buyer.

2 Captive and modular production networks are part of a broader typology of governance structures in global value chains that includes five categories of governance: hierarchy (or vertical integration), captive, relational, modular, and market (see Gereffi et al., 2005). Within any particular industry, multiple forms of governance typically co-exist, and each type of governance offers different opportunities and constraints for upgrading. Within the global apparel industry, the coordination of OEM and ODM activities in buyer-driven chains is an overarching pattern that has been characterised as relational governance (Gereffi, 1999).

3 The Asia-Pacific region includes, in order from largest to smallest apparel retail markets in 2009: China, Japan, India, South Korea, Australia, Taiwan, and Singapore.

4 China's export value for 2007 was $117.3 billion (UN COMTRADE, 2011).

5 The trade policy-driven access of the CAFTA-DR and NAFTA countries to the US market for apparel is quite similar to the dynamics found in sub-Saharan Africa's apparel-exporting economies that are covered by the African Growth and Recovery Act (AGOA), such as Lesotho and Swaziland (see Morris et al., 2011).

6 Egypt and Haiti are both eligible for duty-free access subject to rule of origins provisions under the US Qualifying Industrial Zone (QIZ) Initiative (2004) and the HOPE Act (2006): Haitian Hemispheric Opportunity through Partnership for Encouragement Act.

7 NESOI indicates not elsewhere classified.

8 The two countries also competed in bras, but US imports from Mexico have steadily declined since 2000.

9 China's apparel industry has long concentrated in the coastal regions. In 2006, five provinces (Guangdong, Zhejiang, Jiangsu, Shangdong and Fujian) represented 83% of China's total apparel output (Li & Fung Research Centre, 2007).

10 Examples of imagewear buyers include the government, airlines, and major league sports teams.