Human Development and Clothing Manufacturing in Cambodia: Challenges and Strategies for the Garment Industry

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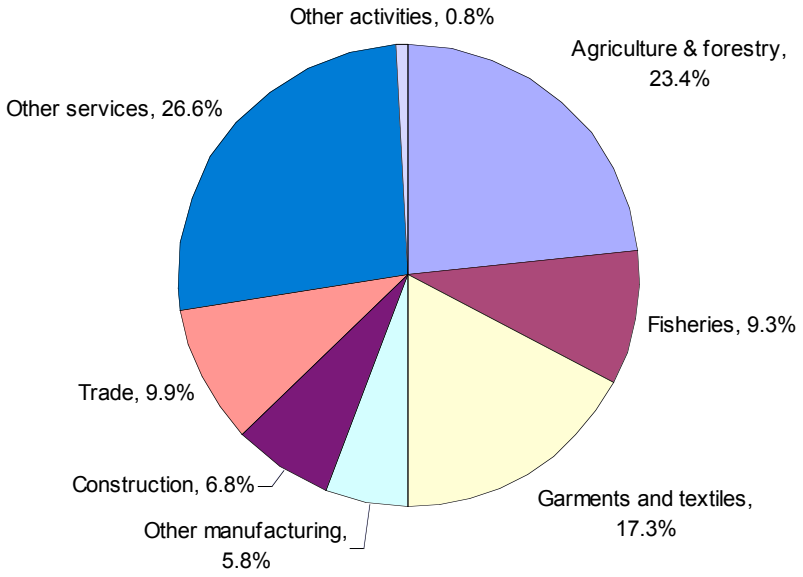
I. The garment industry in Cambodia

Overview

The garment industry has, in a remarkably short period of time, emerged as the preeminent industrial sector in Cambodia. The rapid growth of garment exports has created new opportunities for wage employment in manufacturing and, for workers in rural areas, a possible path out of small-scale agriculture. However, the rapid gains made by the garment industry may prove to be transient in the face of changing trade regimes and the dynamics of global competition. Moreover, despite its positive contribution to employment, the impact of garment employment on human development outcomes is complex and may not be as far-reaching as is sometimes assumed. Whether the benefits generated by the garment industry can be sustained in the long-run depends on Cambodia's ability to address a number of challenges and constraints.

Figure 1 shows the share of GDP generated by different economic sectors. Agriculture and the services sector account for the largest shares of the economy – nearly 70 percent of all value-added produced. However, earnings for individuals working in these sectors are low and many households engaged in these activities face high risks of poverty. An expansion of manufacturing would contribute to improved living standards and employment opportunities. The manufacturing sector currently accounts for 23 percent of economic activity, but this does not constitute a diverse industrial base. The garment industry dominates Cambodian manufacturing – accounting for 75 percent of value-added in manufacturing and 17 percent of all economic activity in the country. Garments are the single most important category of exports, comprising about 80 percent of the total value of products sold overseas (Ministry of Commerce, 2004).

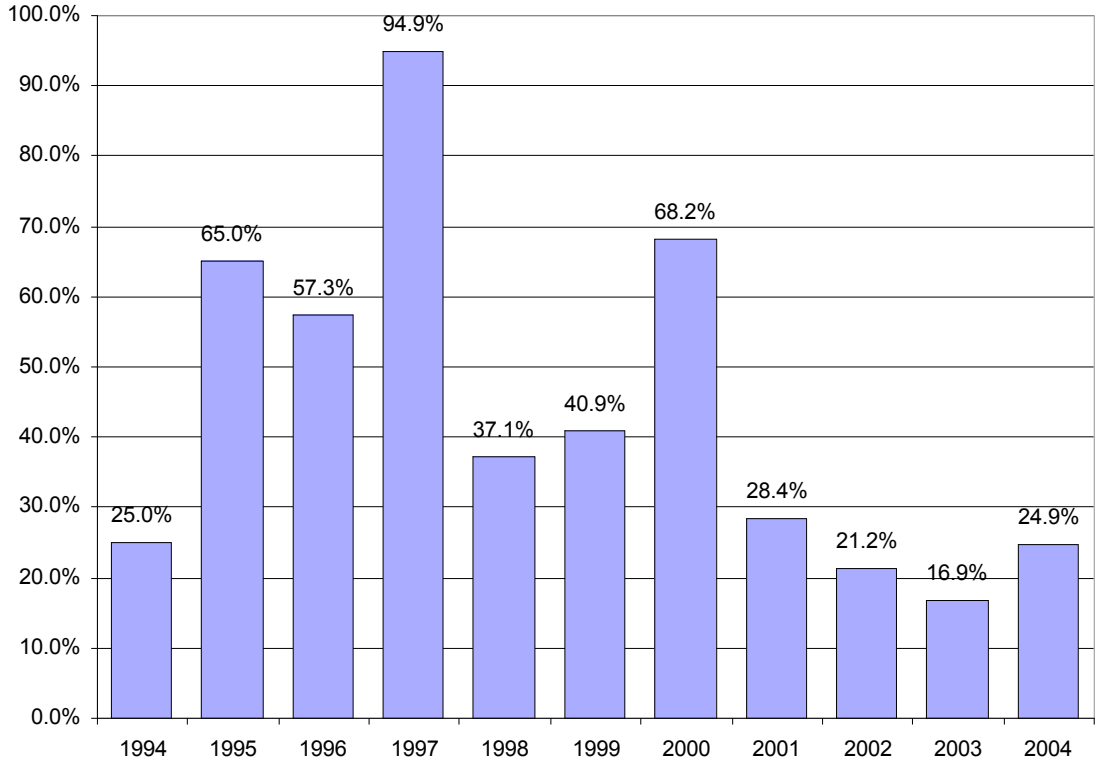
Figure 1. Gross domestic product by type of activity, 2004.



Source: National Institute of Statistics, Cambodia.

The centrality of garment production in the Cambodian economy is a recent phenomenon. In 1994, garment production accounted for less than 1 percent of GDP. Since that time, the growth of the industry has been spectacular. Figure 2 shows the annual growth in real value-added produced by the garment industry since 1994. In the decade, 1995-2004, the average annual growth rate of the garment industry was 45 percent, albeit from a low base.

Figure 2. Growth rate of the Cambodian garment sector, 1994-2004.



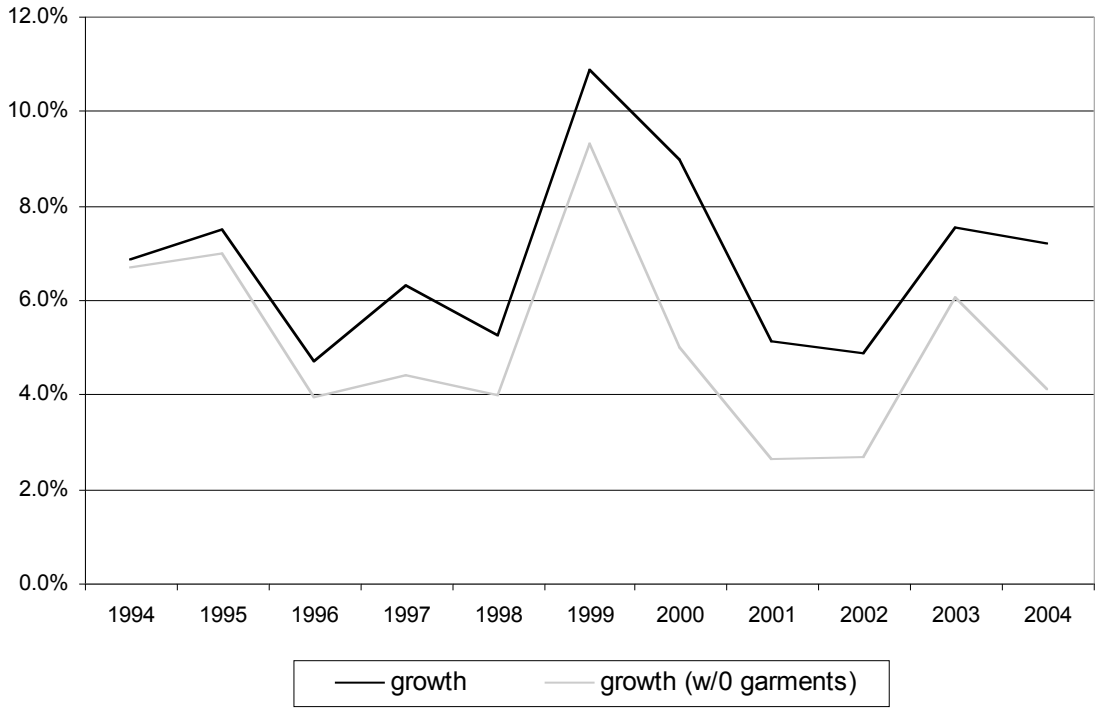
Source: National Institute of Statistics, Cambodia.

The rapid expansion of the garment industry affects the aggregate rate of economic growth in the economy. Figure 3 shows GDP growth for the country, including and excluding the garment industry. Garment production has supported aggregate economic growth at significantly higher levels – particularly after 1999. During the decade, 1995-2004, the average rate of economic growth was 1.9 percentage points higher because of the direct contribution of the garment sector.[1] This suggests that a

[1] The total contribution of the garment sector to economic growth exceeds 1.9 percent due to indirect multiplier effects in other parts of the economy.

substantial decline in the garment industry will have far-reaching implications for the entire Cambodian economy.

Figure 3. Economic growth rates with and without the garment sector, 1994-2004.



Source: National Institute of Statistics, Cambodia.

Products produced in the garment sector

Two broad product categories account for the majority of garments produced in Cambodia: woven, cut, and sew clothing and knitwear (Ministry of Commerce, 2004). Types of woven cut and sew garments include shirts, pants, blouses, skirts, and jackets manufactured from woven cloth. Examples of knitwear and circular knit garments include knitted shirts, t-shirts, gloves, underwear, pullovers, swimwear, and cardigans. There is a relationship between particular markets and the type of garment being produced and sold. For example, the U.S. imports the largest share of woven cut and sew clothing and circular knit garments. In contrast, the E.U. is the largest market for Cambodian knitwear (Ministry of Commerce, 2004).

The difference in products and export markets is important. Woven cut and sew garments have relatively weak linkages to other domestic productive activities and are associated with low value-added assembly operations. Much of this clothing production is CMT (cut, make, and trim) in which inputs are imported, garments are assembled, and

the finished product is exported. There are relatively few opportunities for increased value-addition in CMT operations. Cambodian knitwear, in contrast, has stronger domestic linkages, higher labor content, and often is produced using a multi-stage assembly process (Ministry of Commerce, 2004). Therefore, the opportunity for increasing the value-added generated by the garment industry depends on the product mix and the relative importance of different export markets.

Ownership structure

The vast majority of garment firms in Cambodia are foreign-owned (Yamagata, 2006; Rodgers, 2006; Kolben, 2004; Ministry of Commerce, 2004). The rapid growth of the garment industry has depended on foreign direct investment (FDI). In some cases, garment firms represent a joint venture with Cambodian investors, but most firms are entirely foreign-owned. For example, a recent study found that 95 percent of garment firms are foreign-owned and only 5 percent are joint ventures with Cambodian partners (Yamagata, 2006). Nearly all of the foreign investment in the garment sector comes from other Asian economies in the region: Hong Kong, Taiwan, China, Korea, and Singapore (Yagamata, 2006).

The short history of the garment sector in Cambodia and the foreign ownership structure of the industry suggest that garment production is not firmly embedded in the Cambodian economy. This raises several concerns. First, linkages between the garment sector and other parts of the domestic economy are weak. Second, the industry depends on imported inputs for production. Third, foreign investors may be less likely to invest in industries with upstream linkages to the garment sector. Many of these industries – e.g. textile production – are more capital-intensive than garment manufacturing and therefore require a more long-term commitment of fixed capital resources – a commitment foreign investors seeking short-run returns may be unwilling to make. Finally, the lack of embeddedness of the garment sector in the rest of the economy will make garment firms more footloose and more sensitive to shifts in the global economic system and trade regimes. This raises concerns about the long-run sustainability of the employment opportunities and human development improvements associated with the growth of the industry.

Trade policy and market access

The Multi-fiber Arrangement (MFA) was the international agreement that governed trade in clothing, wearing apparel, and textiles from 1974 to 1994. It represented a system of quotas and trade preferences aimed, in part, at protecting the garment and textile sectors of high-income, industrialized economies. The quota system influenced the geographical development of the global garment industry by determining market access on a country-by-country basis. "Quota-hopping" was commonplace – firms locating in countries that had not yet fulfilled their quotas for affluent Western markets. In 1995, at the end of the Uruguay Round, the MFA was superseded by the Agreement on Textiles and Clothing (ATC) which called for the elimination of all MFA quantitative restrictions on clothing and textiles in 2005.

With the phase-out of the MFA quota system, it was expected that countries whose garment exports had been constrained by the quantitative restrictions would enjoy increased benefits, while countries whose competitive advantage was based solely on quota-hopping would be hurt. The changes in the quota system had particularly important implications for a large number of Asian countries (Adhikari and Yamamoto, 2005). The situation was further complicated by China's accession to the WTO in 2001. It was expected that, with the elimination of quantitative restrictions, China's market share would expand at the expense of other Asian producers.

The actual impact on garment exports from Asian countries post-2005 was mixed. Following the end of the MFA, China did experience a significant increase in clothing exports. However, a number of other countries also saw their exports to the U.S. market increase after 2005, including Bangladesh, Cambodia, India, Indonesia, and Pakistan (Adhikari and Yamamoto, 2005). However, of these countries, only India was able to increase its exports to the EU. Other Asian countries – for example, Hong Kong, Korea, Nepal, and the Philippines – experienced a decline in exports after 2005. However, in these cases, it is unclear whether the fall in exports was a result of the trade reforms or simply an extension of an on-going trend (Adhikari and Yamamoto, 2005).

It is difficult to say what long-run impacts these reforms will have on Cambodia's garment industry. There are a number of complicating factors. To minimize the disruptive effects of the elimination of the MFA provisions, a number of restrictions on Chinese exports of textiles and garments to high-income markets remain in place until 2008. These restrictions would have helped maintain Cambodia's competitive position vis-à-vis China in the short-run.

More importantly, Cambodia had negotiated a bilateral trade agreement with the United States in 1999 which granted Cambodia preferential access to U.S. markets if producers comply with a set of core labor standards in their factories. This agreement allowed Cambodia to avoid import duties of 16 percent on exports to the U.S. – which gave the country an important competitive edge. The "Better Factories Program" of the International Labor Organization (ILO) grew out of this trade agreement. Under the Better Factories program, the ILO is charged with monitoring compliance with the labor standards. In this way, Cambodia has the unique opportunity to secure market access by positioning itself as an ethical producer with support from prominent international agencies. Cambodian garment exports to the U.S. increased significantly after the 1999 agreement came into effect (Rodgers, 2006).

Challenges facing the Cambodia garment sector

Despite the remarkable performance of the garment sector since the mid-1990s, the industry faces serious challenges. Addressing these challenges is critical, not only for sustaining growth of the sector in years to come, but also in terms of maintaining the current level of production and exports. This section summarizes some of the most important issues.

a. End of protective measures with respect to China and Viet Nam's accession to the WTO.

As previously discussed, the protective measures that were adopted to guard against the disruptive effects of an export surge from China following the end of the MFA are set to expire in 2008. The impact this will have on the Cambodian economy is unclear and depends on the country's ability to maintain market share throughout the transition. Much of Cambodia's competitive advantage has been based on two factors: (1) access to markets due to preferential trade agreements/quota positions and (2) low-wage labor (discussed below). The garment sector was able to maintain production – and actually expand – following the phase-out of MFA provisions due to these factors. They will also be important in determining how the sector will respond to the elimination of the protective measures in 2008. However, it is unlikely that these two factors will be sufficient to maintain Cambodia's competitive position in the long-run.

The foothold established with the 1999 U.S. bilateral trade agreement and the on-going Better Factories Program help secure market access for Cambodian products. This may change in the future. For example, the "better factories" model may be expanded and applied to other countries, reducing the benefits of the agreement for Cambodia. Nevertheless, these developments have granted Cambodia a window of opportunity to improve its competitive position along a number of other dimensions.

In addition, Viet Nam became the WTO's 150th member on January 11th, 2007. This change in Viet Nam's multilateral trading status may have a number of implications for Cambodia. Viet Nam has already established itself as a garment exporter to Japan, Europe, and the U.S., although the share of Vietnamese exports remains small relative to that of China (Nadvi et al., 2004; Jenkins, 2004). In the U.S. and E.U. markets, Vietnamese exports represent a potential competitive challenge to Cambodia's market share.[2] When Viet Nam formally joins the WTO, its garment exports will gain significantly better access to U.S. and E.U. markets and, as a result, competitive pressures on Cambodia will increase. Viet Nam has made in-roads into the quality-sensitive (and higher-value added) markets in Japan and Europe (Nadvi et al., 2004). In addition, Viet Nam has a domestic textile sector that – despite a number of problems – could help Vietnamese exports meet rules of origin requirements for the European market.

However, WTO accession also has a number of downsides for the Vietnamese economy. Tariff liberation will likely have a significant negative impact on the country's agricultural sector and import penetration will continue to increase. The sectoral impact of accession will therefore be quite uneven. While the garment sector may see its exports rise, the textile sector has already felt the negative effect of growing imports and these pressures are likely to increase. Cambodia would be well advised to take proactive steps to support its own industrial development path during this period of transition.

[2] There are already in place bilateral agreements with Viet Nam. For example, U.S. negotiated the U.S. Viet Nam Bilateral Trade Agreement (USVBTA) in 2001, which gave Viet Nam improved access to U.S. markets.

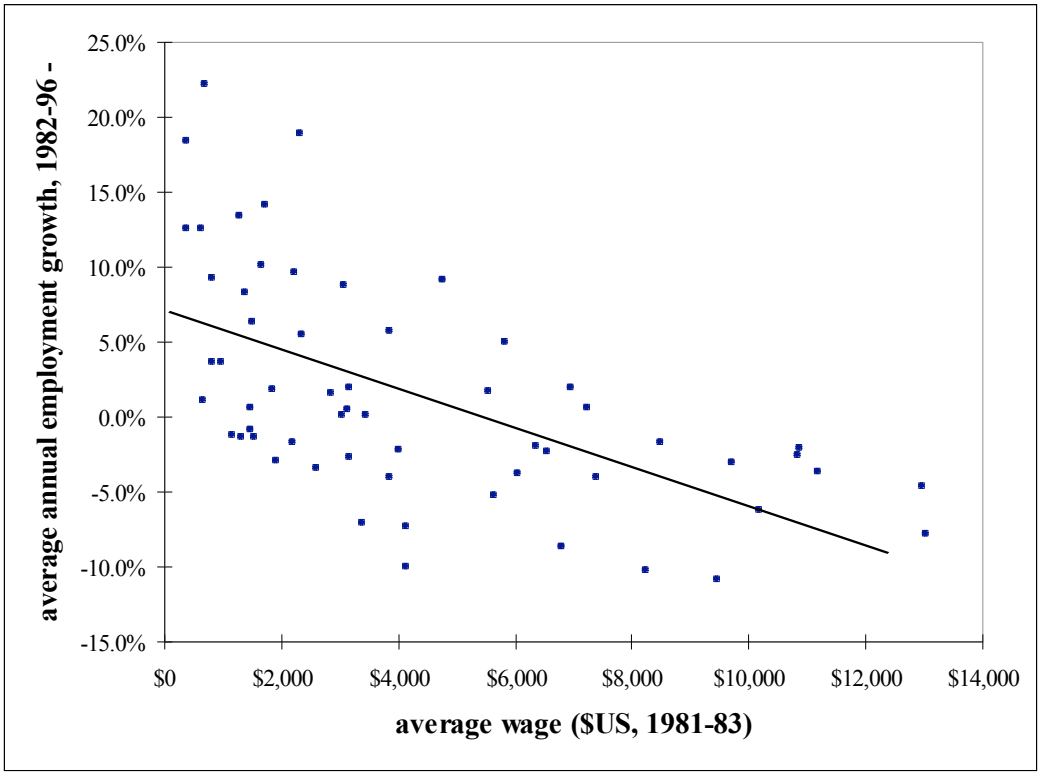
b. Limits of low-wage competition

The availability of inexpensive labor influences the geographical distribution of the global garment industry. Figure 4 shows average initial wage levels (from 1981 to 1983), expressed in U.S. dollars, and subsequent average growth rates of employment in the garment sectors of 59 countries around the world over the period 1982-1996.[3] There is a clear, negative relationship between initial wage levels and subsequent employment growth. The Cambodian garment sector is relatively new compared to the countries features in Figure 4, but similar dynamics are at play. The country's low wages have contributed to attracting foreign direct investment into the garment sector, leading to a rapid expansion of employment over the past decade. Cambodia's average hourly wage rate – at approximately $0.30 – is low relative to the country's main competitors (Ministry of Commerce, 2004).[4] Therefore, the garment industry remains internationally competitive in terms of labor costs, despite lower productivity relative to its principal competitors. Improvements in productivity would make Cambodia even more competitive in terms of production costs (Salinger *et al.*, 2005).

[3] The 59 countries included in Figure 4 do not include Cambodia.

[4] Estimates of hourly wages vary somewhat from study to study, but they are largely consistent. In it's review of the garment industry, the Ministry of Commerce estimates hourly wages to have been $0.23 in 2000 (Ministry of Commerce, 2004). Our calculations, based on the 2004 CSES, suggest that hourly wages were about $0.30 in 2004.

Figure 4. Average initial wage rates ($US) and subsequent levels of employment growth in the garment industry, 1981-1996.



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Source: UNIDO, Industrial Statistics Database, 2003.

Although labor costs are important in determining a country's competitive advantage in garment manufacturing, wage rates are not decisive (ILO, 2000). In many countries – including a number of Asian economies – that have experienced rapid growth in their garment industry, real wages have increased along with employment as the industry expanded (Heintz, 2003). Therefore, initial low labor costs have been important in attracting garment producers to Cambodia, but it is unlikely that attempts to reduce wage rates further will enhance Cambodia's competitive position now that the garment industry is established. Efforts along these lines will likely worsen industrial relations and could compromise Cambodia's market niche as an ethical producer – outcomes that would be costly relative to the small savings that would be realized by lowering labor costs.

This is not to say that production costs – including labor costs – are not critical factors for the future trajectory of the garment sector. However, the Cambodian garment sector will need more dynamic strategies for maintaining its competitive position in the future.

c. Supply chain efficiency and logistics

Increasingly, the efficiency of production, distribution, and communications systems determine competitiveness in the global garment industry (Abernathy *et al.*, 1999). Supply chain logistics are becoming increasingly important to corporate retailers and multinational garment firms that subcontract production to firms such as those operating in Cambodia. This is particularly important for firms in Southeast Asia whose primary markets are in Europe and North America. Geographical remoteness from these markets increases the importance of supply chain efficiency.

Cambodia falls behind other countries in the region in terms of its efficient integration into global supply chains and production networks (Ministry of Commerce, 2004). This is reflected in the long lead times required for garment production in Cambodia. Lead times in Cambodia are often 50-100 percent longer than lead times in China, India, Indonesia, and Viet Nam (Ministry of Commerce, 2004). For clothing retailers who aim to minimize inventory costs (including losses associated with out-of-date garment stocks), a high level of responsiveness and rapid turn-around in the supply chain is often as important, if not more important, than minimizing production costs. Improving the efficiency of supply chains may be the single most important innovation Cambodia could undertake to improve the garment sector's competitive position.

Improving transportation and communications infrastructure will help increase the efficiency of supply chain logistics in the country and reduce costs. Cambodia does not posses a deep-sea port; therefore, garment exports to the U.S. and Europe must be shipped via a third country – e.g. Singapore. Investments in Cambodia's complementary transportation infrastructure – e.g. roads and ports – should therefore be sufficient to compensate for this structural disadvantage. Communications infrastructure is critical for receiving and processing orders in a timely manner. Volatility in basic economic services

– e.g. power and electricity – further compromises Cambodia's supply chain efficiency (Ministry of Commerce, 2004).

Cambodia's lack of upstream domestic linkages, mentioned earlier, also compromise supply-chain efficiency and increase lead times. The garment sector is highly dependent on imported inputs. Uncertainty around supplies from source countries will reduce the domestic industry's performance in terms of production and distribution.

d. Low density of domestic linkages

Dependence on imported inputs and the lack of well-developed domestic linkages pose a number of problems for the Cambodian garment sector that go beyond the question of supply chain efficiency. One area of concern is the rules of origin requirements, particularly in terms of determining Cambodia's access to European markets. The EU, under its "Everything But Arms" initiative, allows preferential access to its markets for low-income countries, but requires that these countries meet strict rules of original requirements. These rules of origins requirements vary, but usually they require that imported materials account for less than 40 percent of the export price of Cambodian garments (Kakada and Hach, 2005). This becomes a serious constraint to market access in Europe due to the country's low density of domestic linkages.

The lack of strong domestic linkages has other implications for the Cambodian economy. Multiplier effects – in terms of economic growth and employment – are significantly smaller in the absence of such linkages. This reduces the benefits Cambodia captures through its participation in the global garment trade. Specifically, it constrains the growth of value-added associated with an expansion of garment exports and reduces the positive impact garment exports could have on the country's external balance. Since the garment sector currently specializes in low value-added assembly operations, the value-added generated by the sector falls short of its potential – if Cambodia were to develop strong domestic linkages and promote up-grading to higher value-added activities.

e. Summary

This section has identified four main challenges facing Cambodia's garment sector: anticipating future changes in the trade regime, recognizing limits to wage-based competition, improving supply-chain efficiency, and building stronger domestic linkages. The final section of this report will discuss in greater detail strategies for addressing these challenges. Before turning to the policy discussion, however, we will examine two other relevant issues: (1) the dynamics of clothing demand in Cambodia's main export market – the United States and (2) the human development impact of employment in the garment sector.

II. The U.S. Clothing Market

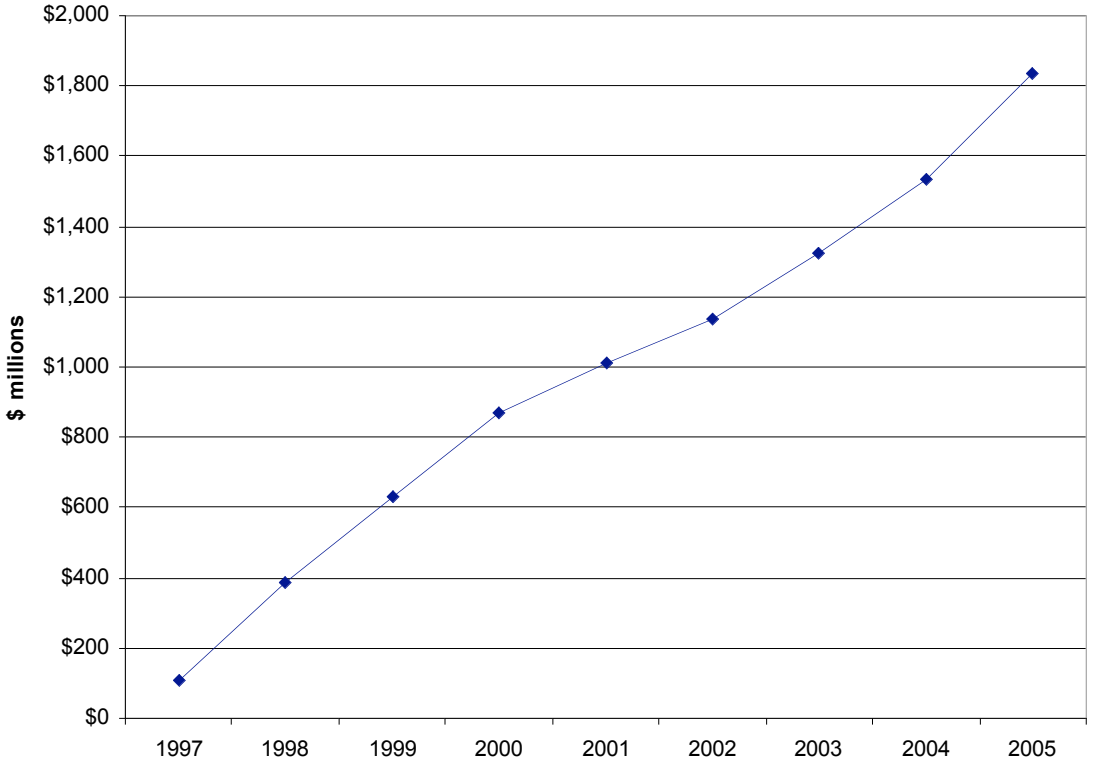
The U.S. market is currently the single most important market for Cambodian exports – accounting for 56 percent of all exports in 2004 (Table 1). Garments make up the largest share of exports to the U.S. Moreover, garment exports to the U.S. from Cambodia have been growing rapidly since the mid to late 1990s (Figure 5). Exports to the U.S. currently undergird the growth of the Cambodian garment sector and, as a result, contribute to the country's overall economic performance.

Table 1. Major export markets for Cambodia, 2004.

Market	**Percent of total exports**
United States	56.0%
European Union	25.9%
..... *of which Germany*	*11.7%*
..... *of which U.K.*	*6.9%*
Viet Nam	4.4%
Canada	4.2%
Japan	3.5%
Singapore	1.7%
All others	4.4%

Source: IMF Direction of Trade Statistics.

Figure 5. U.S. imports of garments, wearing apparel, and textiles from Cambodia, 1997-2005.



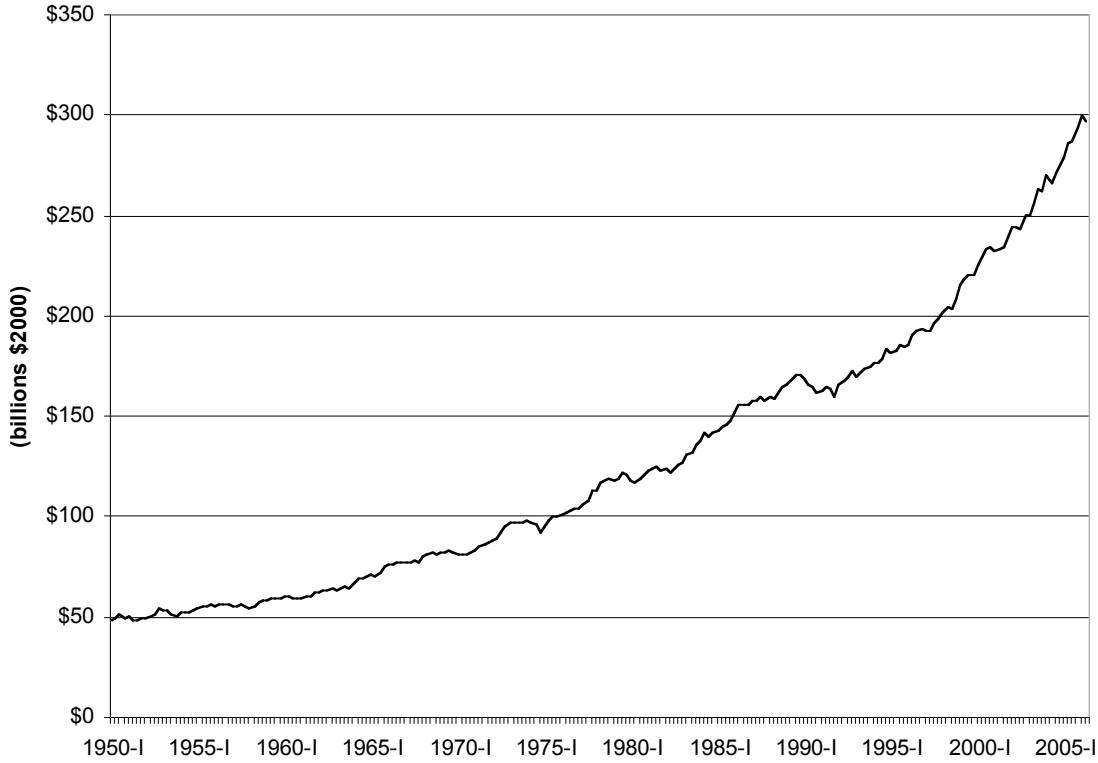
Source: US International Trade Commission.

The garment sector in Cambodia is part of what has been called a "demand-driven" commodity chain (Gereffi, 1994). In a demand-driven commodity chain, dynamics at the retail level in final consumer markets drive the activities of subcontractors and the actual producers. Often the lead firm in such supply chains is a multinational retailer (e.g. The Gap, Inc.) – not a manufacturing firm. Market power in the supply chain is concentrated at the level of the retail firm while producers (e.g. garment manufacturers) face highly competitive conditions. When subcontracted producers face highly competitive conditions and are linked to more oligopolistic market structures at the retail level, a significant share of any increase in value-added at the level of production (e.g. through improved productivity) will be captured further up the chain as rents for the lead firm or lower prices for the final consumers (Heintz, 2006).

Since the garment sector is integrated into a demand-driven commodity chain, examining the characteristics of the final consumer market for clothing will be important for a fuller understanding of the dynamics governing the sector. In the case of Cambodia, the most significant consumer market for clothing is the U.S. market.

U.S. demand for clothing has shown remarkable growth during the decades since the 1950s (Figure 6). From the 1950s to the present day, expenditures on clothing, measured in constant dollars, expanded nearly six-fold. Growth has been particularly robust in the 1990s – including the years of rapid expansion of Cambodian exports. Increases in real U.S. household incomes explain a portion of the expansion in clothing demand. At the same time, it is important to note that expenditure on clothing fell as a fraction of personal disposable income during this period, suggesting that clothing demand is income inelastic relative to other categories of expenditure.[5] Table 2 shows clothing expenditures as a fraction of personal disposable income for each decade since 1950.

Figure 6. Real U.S. personal consumption expenditures on clothing and footwear, 1950-2006.



Source: U.S. Bureau of Economic Analysis.

[5] The relative price of clothing has declined over much of this period - i.e. clothing has become cheaper relative to other goods and services (Heintz, 2006). This also contributes to a falling income share .

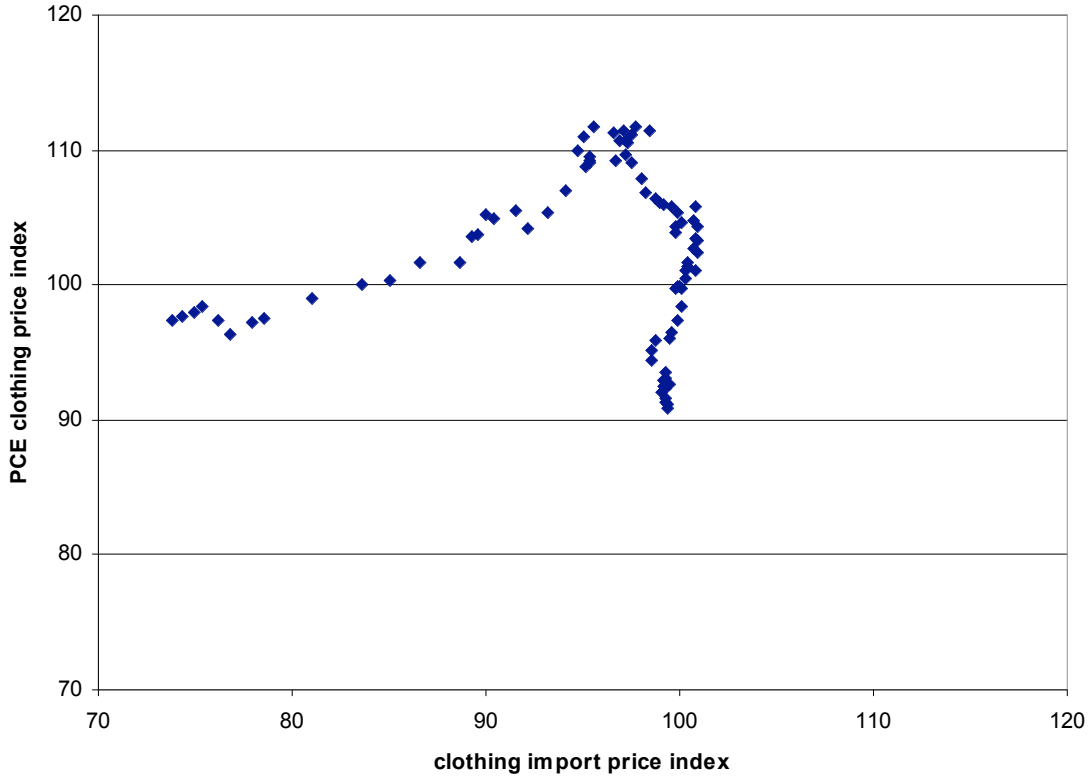
Table 2. Clothing expenditures as a fraction of disposable income, 1950-2005

Period	Expenditure share of disposable income
1950s	8.4%
1960s	7.0%
1970s	6.1%
1980s	5.0%
1990s	4.5%
2000-2005	3.9%

Source: U.S. Bureau of Economic Analysis.

The U.S. market depends on imported clothing for the vast majority of clothes purchased and sold in the country's retail markets. However, the relationship between import prices and clothing has changed in recent years. Figure 7 shows the relationship between the import price of clothing and the consumer price of clothing (measured by the personal consumption expenditure price index) for the period 1985 to 2006 (second quarter). The graph shows two distinct relationships between import prices and retail prices. For the data points associated with the earlier part of this period (1985 to approximately 1994), there is a positive relationship between import prices and retail prices. This is to be expected if the cost of imports is directly associated with the final retail price. However, for the data points associated with the later part of the period (1995 to 2006) import prices are virtually constant while retail prices exhibit a steady decline. This pattern appears as the vertical sequence of points in Figure 7.

Figure 7. U.S. consumer clothing prices and the clothing import price index, 1985-2006.



Source: U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics.

The shift in the relationship between import prices and retail prices is suggestive. The fact that import prices of garments remain constant during this later period may indicate that global competition in the garment industry keeps import prices fixed at a given level. Producers for the global market are price-takers and retailers can purchase inventory at a price that approximates perfectly competitive conditions. However, despite the fixed price of imports, retail prices have fallen over this period. This is consistent with the argument that competition in the retail sector has shifted away from direct production costs and towards efficient management of the supply chain and inventories. It also may reflect consolidation and rationalization at the upper segments of the commodity chain, in which corporate retailers increasingly source from producers directly, cutting out a layer of intermediaries.

This shift in the relationship between import prices and retail prices occurred at the same time that Cambodia's garment sector began to experience its dramatic growth. This has important implications for how the garment sector competes in the U.S. market. First, Cambodian producers will be price takers in highly competitive markets. Second, Cambodia's weaknesses with respect to supply chain logistics – as have been highlighted earlier – may become a serious barrier to its continued success in the U.S. market.

Demand for Cambodian exports is a derived demand – based on the dynamics of the final consumer markets. We can examine the relative importance of the determinants of clothing consumption by estimating a demand function for garments for the U.S. market. Specifically, we focus on the relative importance of income and price in determining demand for clothing in the U.S. market. Table 3 shows estimates of the long-run price and income elasticities for the U.S. market over three time period: 1950-1969 (when domestic production supplied the majority of clothing), 1970-1984 (corresponding to the initial phase of globalized garment production), and 1985-2006 (associated with the advanced stage of global garment production and the emergence of lean retailing). Details of the estimation procedure are contained in the appendix.

Table 3. Elasticity estimates, U.S. clothing demand.

Variable	***1950-1969***	***1970-1984***	***1985-2006***
Income	+0.76	+1.03	+0.79
Price	n.s.	-0.42	-0.69

n.s. indicates that the elasticity is not significantly different from zero.
Source: See appendix

Elasticities measure the responsiveness of demand to changes in prices and incomes. For example, an income elasticity of 0.5 indicates that a 10 percent increase in income is associated with a 5 percent increase in demand. Similarly, a price elasticity of -0.7 indicates that a 10 percent increase in prices would lead to a 7 percent fall in demand.

The estimates presented in Table 3 suggest that there have been significant changes in the U.S. clothing market over time. In the early period, 1950-69, clothing demand was largely income determined. Increases in real purchasing power drove the growth of consumption. In the middle period, 1970-84, price emerged as an important determinant of demand. At the same time, the responsiveness of demand to income also increased. U.S. clothing demand was driven by both higher incomes and lower relative prices. Global sourcing of clothing helped reduce prices and increase the market for garments. In the later period, 1985-2006, demand became even more responsive to price changes, but somewhat less responsive to growth in real incomes. Relative prices of clothing continued to decline throughout this period – in part due to inexpensive imports – helping to sustain growth in the U.S. clothing market.[6]

These changes have important implications for how Cambodia competes in terms of maintaining its share of the U.S. garment market. First, income growth in affluent markets like the U.S. will help support garment demand, but the increase in demand for clothing will be proportionately smaller than the increase in incomes. Therefore, economic growth in high-income countries will have a positive, but limited, impact on demand for Cambodian garment exports. Second, price factors will likely dominate the determinants of demand for Cambodian clothing in the future. The price elasticities

[6] These results suggest that competitive strategies in affluent consumer markets are endogenous to patterns of global production and subcontracting. For an analysis of such dynamics, applied to the practice of branding, see Heintz (2006).

presented in Table 3 represent the responsiveness of demand to a general change in U.S. clothing prices. Demand for imports from a specific country – e.g. Cambodia – will be significantly more price-sensitive since a wide variety of substitutes are available (i.e. imports from China, India, and Bangladesh, for example).[7]

As has already been discussed, reductions in retail prices in the U.S. have not responded to changes in import prices in recent years. Those prices are currently taken as given by a competitive global market. Instead, retail firms have become more competitive due to innovations with respect to managing their supply chains. Therefore, Cambodia faces an important challenge to become responsive to the needs of supply-chain management and the changing nature of clothing demand. Production costs, although important, may be secondary to securing the country's competitive position in the future.

Finally, the availability of substitutes for Cambodian-produced clothing determines the degree of competitive pressures that the garment sector faces. Therefore, any strategy that distinguishes Cambodian garment production from clothing from other source countries could be an effective tool for maintaining demand and market share in the future. Specifically, if Cambodia can brand itself as an "ethical producer" of clothing, it may be able to reduce competitive pressures in terms of price and thereby capture a greater share of the value produced along the garment supply chain.

III. Human Development Impact of Garment Employment

The primary channel through which the growth of the garment sector will impact human development is through the creation of new employment opportunities. When employment expands along with economic production, the benefits of growth will be broadly shared. This is because the majority of Cambodia's working-age population earns the bulk of its income through employment. Therefore, how the garment industry impacts human development is largely a question of the number and type of employment opportunities created, who has access to these jobs, and how these opportunities translate into better outcomes in terms of reduced poverty, improved well-being, and a wider range of individual freedoms and choices.

Employment in Cambodia's garment sector can be placed in two broad categories: (1) wage employment in private garment factories and (2) self-employment in small-scale enterprises. The first category accounts for an estimated 83% of all garment employment and is the most relevant type of employment for a study of the export sector. Own-account employment (11%) and employment as unpaid workers on family enterprises (6%) account for the remainder of total garment employment. This study examines the human development implications of trade policy and garment production. Therefore, the primary focus will be on wage employment in the garment sector.

[7] It is important to note that the analysis relies on aggregate estimates. The dynamics of market demand will likely vary between different product categories. Nevertheless, the aggregate analysis highlights important issues.

According to analysis of the Cambodia Social and Economic Survey (CSES), women account for an estimated 81% of all wage employment in the garment sector. In contrast, women account for 50% of all employed individuals in Cambodia and only 42% of all wage employees. Similarly, 31% of all women who work as wage employees in Cambodia work in the garment sector. Therefore, the garment sector is a critically important source of wage employment for women.

The vast majority of garment workers in Cambodia are young. Table 4 shows the distribution of wage employees in the garment sector by age and sex. About 92% of all wage workers are less than 35 years old, with most being aged 15-25. Men working in the garment sector are somewhat older on average than are women. Based on survey data, there is evidence of some child labor in the sector (i.e. participation of workers under the age of 15), although its prevalence is quite small – approximately 0.4% of total employment. Girls are somewhat more likely than boys to be engaged in wage employment in the garment sector.

Table 4. Age distribution of wage employees in the garment sector, 2004.

Age	***Male***	***Female***	***Total***
8-14	0.3%	0.4%	0.4%
15-24	62.4%	73.4%	71.2%
25-34	27.2%	18.8%	20.5%
35-44	6.4%	5.4%	5.6%
45+	3.7%	1.9%	2.3%

Source: Authors' calculations based on CSES 2004 data.

Garment workers tend to be more literate and more likely to have completed primary education than other employed individuals in Cambodia. Table 5 summarizes literacy rates and primary education rates for all employed individuals and garment workers. Overall, women are less likely to be literate or to have completed primary education than are men. However, women working as wage employees in the garment sector are much more likely to be literate (89.3%) and to have finished primary education (56.7%) when compared to the average for all employed women. This suggests that the quality of labor supply is important for determining access to garment employment.

Table 5. Literacy and primary education rates, by employment and sex, 2004.

		Literacy rate (%)	Completed primary education (%)
All employed individuals	M	78.9%	50.1%
	F	62.4%	36.9%
All non-agricultural employment	M	86.8%	59.6%
	F	77.2%	47.2%
Wage employees, garment sector	M	95.9%	75.1%
	F	89.3%	56.7%

Source: Authors' calculations based on CSES 2004 data.

Female garment workers are less likely to be or to have been married than women in the population at large. About 51 percent of women in Cambodia aged 15 to 35 years have never been married. For garment workers of the same age, 76 percent have never been married.[8] What would garment workers be doing if they were not employed in factories? This is a difficult question to answer. Since most garment workers are young, literate women between the ages of 15 and 25, we can look at the employment status of this subpopulation, excluding garment workers. Table 6 summarizes these results. Most young women in this subpopulation are employed as unpaid laborers on family enterprises. Less than a third are employed in other types of wage employment (20.9 percent) or in self-employment (8.4 percent).

Table 6. Employment status of non-garment employees, female, literate, aged 15-25.

Employment status	Percent
Economically inactive	18.4%
Unemployed	8.7%
Unpaid worker on family enterprise	43.6%
Own-account worker	8.4%
Wage employee	20.9%
Employer	0.0%

Source: Authors' calculations based on CSES 2004 data.

Households with members engaged in wage employment in the garment sector are concentrated in a few regions in Cambodia. According to the CSES (Table 7), the provinces with the greatest concentration of households in which at least one member is a garment employee are all located in the south: Kândal, Kâmpóng Cham, and Phnom Penh. Because of the regional concentration of households with members working in Cambodia's garment industry, any changes to global trade that affects Cambodia's garment exports, either positively or negatively, will have region-specific effects. However, these results should be interpreted with some caution – garment workers often leave home in search of work. Therefore, some garment workers may be counted in their household of origin, while others may be counted in the household to which they have migrated.

Table 7. Regional distribution of employment, wage employment, and garment employment, 2004.

Province	**% total employment**	**% wage employment**	**% garment employment (wage)**
Banteay Meanchey	4.7%	5.3%	0.9%
Battambang	6.6%	7.0%	1.0%
Kampong Cham	13.9%	14.4%	12.8%
Kampong Chhnang	4.0%	1.9%	1.8%
Kampong Spe	5.6%	4.7%	9.0%

[8] For young women aged 15 to 25, the differential is narrower: 74 percent of all such individuals have never been married compared to 83 percent of all garment workers.

Kampong Thom	5.3%	5.2%	5.7%
Kampot	3.6%	2.7%	1.0%
Kandal	10.2%	15.0%	30.0%
Koh Kong	1.2%	0.7%	0.1%
Kratié	1.6%	1.7%	0.3%
Krong Keb	0.4%	0.2%	0.2%
Krong Pailin	1.2%	1.6%	1.5%
Mondulkiri	0.2%	0.0%	0.0%
Oddar Meancheay	0.5%	0.2%	0.0%
Phnom Penh	7.1%	17.4%	21.4%
Pursat	3.2%	2.5%	0.9%
Preah Vihear	1.0%	0.3%	0.0%
Prey Veng	9.3%	5.1%	3.9%
Ratanakiri	0.8%	0.5%	0.0%
Siem Reap	6.4%	4.8%	0.3%
Sihanoukville	0.2%	0.5%	0.0%
Stung Treng	0.7%	0.2%	0.0%
Svay Rieng	4.8%	2.6%	3.2%
Takéo	7.4%	5.2%	5.7%

Source: Authors' calculations based on CSES 2004 data.

Within-country migration is an important factor determining the labor supplied to the garment industry. Individuals from provinces with higher-than-average incidences of poverty migrate to take up jobs in the garment sector (Ministry of Commerce, 2004). A significant fraction of garment workers live apart from the households from where they originally come (Table 8). Moreover, an estimated 71 percent of all garment workers send 30 percent or more of their earnings back to the households where they live in the form of remittances (Ministry of Commerce, 2004). This suggests that, although there is a regional concentration of households with garment workers in the south of Cambodia, the existence of sizeable labor migration and remittances mean that changes in garment employment and working conditions will have a much broader impact.[9]

Table 8. Fraction of household members who are absent from the household of origin by employment category, 2004.

Employment category	Percentage of workers absent from household
All employed individuals	5.4%
All wage employees	15.6%
All garment wage employees	33.6%

Source: Authors' calculations based on CSES 2004 data.

Average wages in the garment sector tend to be comparable to earnings in other forms of wage employment. Table 9 summarizes average hourly wages, average weekly

[9] As mentioned in the main text, it is difficult to trace migration patterns through the Cambodia Socio-Economic Survey alone. This is because household membership by be defined in terms of the household or origin or in terms of the current residence of garment workers. Therefore, the degree of migration suggested by Tables 7 and 8 may be understated.

earnings, and average hours worked per week for all wage employees and garment wage employees. On average, garment sector wages are only slightly lower than other forms of wage employment. For women, hourly earnings in the garment sector are actually higher than in other forms of wage employment. Workers in the garment sector work longer hours each week than the average for all wage employees. Employees work an average of about 53 hours per week in the garment sector, compared to an average of 45 hours per week for all wage workers. Labor regulations stipulate a 48 hour workweek – workers who work longer hours are entitled to overtime pay.[10] Due to these long hours, average weekly earnings for women in the garment sector actually exceed the average for all male wage workers, despite the existence of a gender wage gap.

Table 9. Average hourly wages, weekly earnings, and hours worked per week (Riels), 2004.

	Male	***Female***	***Total***
	Hourly wages		
All wage employees	1,318	1,137	1,241
Garment employees	1,219	1,204	1,207
	Weekly earnings (dollar conversions are PPP adjusted)		
All wage employees	54,298 ($94.12)	48,840 ($84.66)	51,980 ($90.11)
Garment employees	60,578 ($105.00)	58,987 ($102.25)	59,296 ($102.79)
	Hours worked per week		
All wage employees	44.9	45.9	45.3
Garment employees	51.9	53.0	52.8

Source: Authors' calculations based on CSES 2004 data.

Clearly, employment in the garment sector provides many young women with a weekly income that is superior to what they may earn elsewhere in the Cambodian labor market. Access to such remunerative employment can make a real difference in household incomes and may reduce poverty and improve human development outcomes for the entire household (Heintz, 2006). In the case of Cambodia, women employed in the garment sector earn approximately 59,000 Riels per week, or about $102 adjusted for purchasing power parity (PPP). Moreover, wage employment in the garment sector provides jobs for young women outside of the household. In other countries, such employment has been shown to enhance women's relative autonomy and improve gender equity, leading to sustained improvements in human development (Kabeer, 2000).

If the mean weekly wage were adjusted using market exchange rates (instead of a PPP conversation factor), a weekly wage of 59,000 Riels would be equivalent to $14.70, or about $60 per month. This is above the minimum wage of $45 per month. However, there is considerable variability in reported hourly wages and wages vary significantly across occupational categories in the garment sector (Yamagata, 2006). Using CSES

[10] Enforcement of laws governing overtime in Cambodia is uneven – the overtime premium is not always paid.

(2004) data, we calculated the median wage for garment workers to be approximately $54.[11] Estimates from the CSES (2004) suggest that approximately 25 percent of all employees in the garment sector earn below the monthly minimum wage. Other studies estimate that this proportion may be higher. For example, a 2001 study found that approximately half of all garment workers earn less than the monthly minimum wage (UNIFEM, 2004).

Although increasing women's access to paid employment has the potential to change gender roles and improve human development outcomes, the impact depends on the resilience of gender norms in society and the type of employment to which women have access (Benería and Floro, 2005; Benería, 2003). Remunerative employment does not always translate into control over a portion of the household's income – for example, when a large share of the income is surrendered in the form of remittances to the household head. If working conditions are harsh or exploitative and if control of income is surrendered to other household members, others will benefit at the expense of these employed women. More specifically, human development outcomes do not only depend on total household income, but also how income is distributed and utilized within the household.

Despite these caveats, reductions in garment employment in Cambodia will likely have negative impacts on human development with particularly important implications for women. Reductions in garment production will reduce the opportunities for women to engage in wage employment. A detailed study of women garment workers in Bangladesh found that when garment production takes place outside of the household, woman enjoy greater autonomy and independence (Kabeer, 2000). This is likely to hold true in Cambodia as well. However, it is important to note that work in the garment sector is not ideal. Surveys of garment workers found that only 14.4 percent want to continue working in their current jobs (Ministry of Commerce, 2004). Garment work is frequently seen as either a stepping stone to other opportunities or as a way of helping family members in the household of origin.

Does the garment sector contribute to the human development of household members, other than the worker herself? We examine the human development impact at the household level with a particular focus on poverty indicators. The goal of this exercise is to document how access to garment employment may change household-level poverty outcomes. The focus is on household membership, recognizing that many garment workers reside away from their household of origin.

Three household-level indicators are used to examine how access to employment in the garment sector affects poverty outcomes: (1) the quality of floor in the house (i.e. whether the house has a dirt or plank floor); (2) the existence of basic toilet/sanitation facilities; and (3) access to electrical services. These indicators are used in lieu of direct measurements of income poverty for two reasons: (a) income poverty thresholds that separate the poor from the non-poor often reflect arbitrary criteria and (b) measurements

[11] These estimates derived from the CSES (2004) are largely consistent with the estimates of monthly wages that were calculated from other survey information (see, for example, Yamagata, 2006).

of income, particularly of the self-employed, are prone to errors. Given the difficulty of measuring total household income from all sources from the CSES, we focus on these other indicators of living standards.

Table 10 shows the proportion of employed individuals who come from households with low-quality floors, basic sanitation facilities, and electrical service. The table compares people employed in the garment sector with all employed individuals. Note that only individuals aged 15 years or older are included in the analysis.

Table 10. Living standards indicators by type of employment, 2004.

	All employed individuals	*Garment sector employees*
House has dirt or plank floors	79.0%	70.5%
Household has access to basic sanitation facilities	26.1%	40.4%
Household has access to electrical service	19.5%	36.6%

Source: Authors' calculations based on CSES 2004 data.

The estimates presented in Table 10 are suggestive. Individuals who work as garment workers are less likely to belong to households with low-quality floors and are more likely to be members of households with basic sanitation facilities and electrical services. One obvious explanation for the observed pattern is that garment employment makes a significant contribution to household resources, raising living standards. Higher living standards will potentially help households achieve broad-based improvements in human development by relaxing important resource constraints. However, the estimates in Table 10 are not conclusive. Numerous factors could influence both the living standards indicators and access to garment employment. If this is the case, the link between garment employment and the various indicators may be spurious – garment employment simply stands in for other factors. Therefore, it is important to analyze the contribution of access to garment employment when other factors are held constant.

To isolate the contribution of garment employment to improving the three living standards indicators, we use a statistical model (a probit model) that estimates by how much having access to garment employment increases (or decreases) the probability that an individual comes from a household having decent sanitation facilities, having electrical service, or having a low-quality floor. The results of this exercise are presented in Equations 1a, 2a, and 3a of Table 11.

Table 11. Probit results.

	(1) Low-quality floor		**(2) Electricity**		**(3) Sanitation**	
	(a)	(b) IV	(a)	(b) IV	(a)	(b) IV
Age	-0.003*	-0.005*	0.005*	0.009*	0.008*	0.011*
Literate	-0.018	-0.005	0.386*	0.303*	0.349*	0.253*
primary	-0.295*	-0.283*	0.578*	0.487*	0.595*	0.473*

education						
household size	-0.012*	-0.009*	0.025*	0.016*	0.039*	0.025*
Absent	-0.104*	0.1556*	-0.048	-0.516*	-0.007	-0.540*
Garment	0.091	-1.551*	0.113*	3.140*	-0.007	3.409*

** indicates statistical significance at the 5% level. In all cases, dummy variables for the 24 provinces were included in the regression (Note: coefficients do not represent marginal probability estimates).*

The results in Table 11 shed some additional light on the human development implications of employment in the garment sector. In all cases, 23 provincial dummy variables were included (but not shown) to control for regional effects.[12] Of all the variables examined in Equations 1a, 2a, and 3b, the human capital variables – basic literacy and completion of primary education – and age (used as a proxy for experience) have the most significant and consistent impacts on improving standards of living. In contrast, being employed in the garment sector only increased the probability of having access to electricity. In other cases, being a garment worker did not have any independent impact on the poverty indicators used.

However, there is a problem with the technique used to estimate Equations 1a, 2a, and 3a. Being employed in the garment sector is not an exogenous variable. As we have seen, it depends on factors such literacy, age, gender, and martial status. Similarly, poverty status of households may be a reason for young women to leave home to work in the garment industry. Because of this, Equations 1a, 2a, and 3a cannot separate the impact of garment employment on the living standards indicator from the impact of other variables on the probability of being employed in the garment sector, including the impact of variables determining labor supply.

To address this endogeneity problem, we use an instrumental variable (IV) estimation technique to help identify the impact of garment employment on the three living standards indicators. Martial status and gender are used as additional instruments – they are assumed to be exogenous determinants of labor supply to the garment sector. Equations 1b, 2b, and 3b of Table 11 present the results of the instrumental variable estimation procedure. The results with respect to literacy, primary education, and age remain similar to those already discussed. However, now employment in the garment sector has a consistent, and statistically significant, positive impact on the living standards indicators (although if the individual has left the household in search of work, the positive impact is weakened – this can be explained by the costs of participation in spatially distant labor markets).

What do these results suggest? One implication is that labor supply, not just labor demand, is important in determining the human development impacts of Cambodia's garment industry. The fact that women are engaged in paid employment improves the likelihood that their households exhibit better poverty indicators. At the same time, low living standards create pressures for women to enter the paid labor force. Put another

[12] 23 dummy variables are needed to control for the 24 provinces in Cambodia.

way, women's employment earnings make a crucial difference in the living standards of households and their risk of poverty (Heintz, 2006; Chen *et al*., 2005).

The results indicate that both demand- and supply-sides of the labor market for garment workers need to be acknowledged. The garment sector provides relatively decent employment opportunities for young, literate women, who are somewhat better educated on average. By providing employment opportunities to women, households with members engaged in garment employment enjoy somewhat better economic outcomes. However, if the supply-side situation were to change – e.g. women were excluded from these jobs or basic literacy and educational attainment of young women deteriorated – the human development impact of the garment sector would diminish significantly. For example, basic educational achievement among girls and young women in Cambodia has been shown to be extremely important for access to better employment opportunities (UNIFEM, 2004). Therefore, it is incorrect to focus only on the demand-side of the labor market when assessing the human development impact of employment in the garment industry.

IV. Policies options and strategies for the garment sector

A development strategy for Cambodia's garment industry must address two central questions: 1) how can the main challenges facing the sector – which have been highlighted in this report – be addressed?; and (2) how can the human development impacts of garment employment be maintained and enhanced? Before identifying policies and strategies that provide answers to these questions, it is helpful to acknowledge the constraints under which Cambodia currently operates.

Constraints on domestic policies

i. Structure of the supply chain.

As has already been discussed, the garment sector is integrated into global supply chains which limit the policy scope for improving Cambodia's competitive position. Specifically, the potential for competing on the basis of product innovation is sharply curtailed. Decisions involving product design, development, and distribution are made by buyers, not suppliers, in the commodity chain. Product specifications and marketing strategies must be taken as given. Therefore, innovations to enhance competitiveness must be made in terms of production processes and supply chain logistics. Cambodia could, in the future, move upwards in terms of producing more high-quality garments for more exclusive brands and less mass-marketed clothing. However, this form of up-grading does not depend on product innovation, but rather on improving the quality of supply-side dynamics to meet buyer's expectations (Gereffi, 1999).

ii. Dollarization and exchange rate policies.

Many East Asian economies have deliberately maintained low relative real exchange rates as part of a strategy to support overall export performance. Interventions

in foreign exchange markets to keep the national currency at a competitive level can be used as a tool for creating an economic environment conducive to sustained export growth. For highly competitive, labor-intensive sectors, such as clothing, real appreciations of the exchange rate have potentially devastating impacts on product demand. Furthermore, exchange rate adjustments may help soften the impact of supply-side shocks (e.g. unexpected increases in energy prices) that adversely affect production costs and competitiveness.

Cambodia's ability to use a targeted exchange rate as a tool for improving competitiveness is severely constrained. Much of the economy is effectively dollarized and, as a result, the country cannot manage its exchange rate independently. Dollarization also implies that increases in production costs (particularly exogenous price hikes associated with external shocks) will not be off-set by a depreciation in the nominal exchange rate. Domestic price increases will therefore produce effects similar to a real appreciation – reducing the competitive position of exports. The lack of an independent exchange rate policy means that other policy areas and strategies must be even more responsive to a changing economic environment in order for Cambodia to retain its competitive position.

iii. Lack of embeddedness

As discussed previously, the export-oriented garment sector in Cambodia is nearly entirely foreign-owned with few linkages to other domestic industries. We have described this situation as a lack of "embeddedness" in the domestic economy. This reality may place additional constraints on policy responses in Cambodia. For example, the lack of embeddedness makes domestic production more footloose and more sensitive to policy changes than would otherwise be the case. This could create a bias towards short-term policy responses instead of a long-run development strategy. Along similar lines, there may at times be a conflict between the need to build domestic productive capacity and know-how and the demands of foreign investors. These dynamics may affect the implementation and sequencing of policy choices.

Policy responses for the garment sector

i. Horizontal strategies: supply-chain efficiency and non-wage production costs

Improving the efficiency of both supply-chains and production processes is one area of intervention that will be critical for Cambodia's garment sector, in particular, and industrial development more broadly. One set of policies for achieving these objectives are "horizontal" strategies – broad-based initiatives that are not targeted at specific sectors, but will generally improve economic efficiency and lower certain production costs. The emphasis of these horizontal strategies should be to improve supply-chain operations and to lower non-wage production costs. As argued earlier in this report, Cambodia is reasonably competitive in terms of wage rates in the garment sector and it is unlikely that significant benefits will be forthcoming if an effort is made to compress wages as a competitive strategy.

Examples of horizontal strategies include public investment in creating and maintaining strategic economic infrastructure; the improvement of human resources through investments in skills-building and education; engaging in trade negotiations that support development objectives; improving the efficiency of public sector delivery; and establishing institutions to support innovation and the diffusion of technological knowledge to formal, informal, and agricultural activities. If appropriately designed, such measures will simultaneously improve productivity, enhance competitiveness, raise average earnings, and improve employment opportunities.

Perhaps the most important horizontal intervention for the garment sector involves state-led investment in transportation and communications infrastructure and in the provision of critical economic services, such as predictable energy supplies. Such investments will lower production costs and improve the way in which Cambodia integrates itself into global commodity chains. High quality, dependable infrastructure is important for attracting – and keeping – foreign direct investment, the cornerstone on which the garment industry is currently built.

A second category of horizontal intervention that has repeatedly been identified as important for the garment sector is the reduction of corruption and rent-seeking in the public sector. Surveys suggest that over 70 percent of all firms in Cambodia identify corruption as a "moderate," "major," or "very severe" constraint to growth (Ministry of Commerce, 2004). For example, bribes to public officials may account for 5 or 6 percent of total sales – a sizeable increase in production costs that compares unfavorably with the cost of bribes in other competing countries (ibid.). The flip-side of reducing corruption is the improvement of public sector delivery and accountability. As will be discussed in greater detail below, many of the interventions that Cambodia requires in order to maintain and improve its competitive position in the face of significant trade reforms depend on a strong state capable of delivering in core policy areas.

It should be noted that although these horizontal strategies are important for the performance of the garment sector, the benefits will be far-reaching. Specifically, they also lay the foundation for industrial diversification in the future – an issue to which we will return later.

ii. Vertical strategies: industrial up-grading and domestic linkages

The lack of embeddedness of Cambodia's garment industry is associated with two problems: (1) the lack of domestic linkages to other types of productive activity and (2) the relatively low value-added currently generated by clothing manufacturing. Industrial upgrading – that is, diversifying economic activities by fostering higher value-added production – involves addressing both of these challenges.

As has already been discussed, the majority of production in the garment sector involves labor-intensive assembly operations that rely on imported inputs – e.g. CMT, or cut, make, and trim production. Industrial upgrading in the garment sector involves

broadening the scope of productive activities to include "full-package supply" services – in which producers move from basic assembly operations to managing the logistics of supply chains at the level of production (Gereffi, 1999). Industrial upgrading in the garment sector therefore becomes a natural extension of efforts to improve supply-chain efficiency. In addition to enhancing the efficiency of production and distribution through infrastructure investments and improvements in basic economic services, industrial upgrading involves shifting a portion of the management of sourcing, production, and distribution activities to local firms. Such upgrading would be impossible without complementary investments to improve supply-chain efficiency.

Cultivating domestic linkages would also contribute to the process of industrial upgrading. For example, if domestic suppliers of inputs for garment production (e.g. textile production or spinning) were to grow, the potential for building and managing relationships between these producers and clothing firms would increase. It is this process of establishing organizational linkages among the various actors in a global commodity chain that forms the basis of industrial upgrading in the sector (Gereffi, 1999). Relationships do not have to be established between domestic firms for upgrading to take place. However, the establishment of industrial clusters in Cambodia that would support the export sector (in this case, garments) could foster the development of these relationships.

The East Asian "tiger economies" – specifically, Korea, Taiwan, and Hong Kong – provide examples of how industrial up-grading has taken place in the modern garment industry. These countries entered global garment production in the 1970s and 1980s, specializing in assembly operations. Gradually, they began to manage the portion of supply chain activities involving the sourcing of inputs and the manufacture of clothing – moving towards "full-package supply" (Gefeffi, 1999). As industrial upgrading continued, garment assembly moved out of these countries and into the low-wage manufacturing sector of other countries in Asia (including, eventually, Cambodia) and Latin America. Ownership of the garment firms remained with investors in Korea, Hong Kong, and Taiwan. The end result is a "triangle" model of manufacturing, in which (a) retailers in North America and Europe purchase products from manufacturers based in countries like Korea, Hong Kong, and Taiwan; (b) these manufacturers coordinate production with firms in lower-wage countries like Cambodia, Indonesia, or Viet Nam; and (c) the firms in low-wage countries ship the products directly to the retailers who placed the original order (ibid.)

Much of the basis for industrial up-grading in the garment sector is knowledge of the organizational linkages of the supply chain, establishing relationships among the various firms, and compiling information concerning reliable sourcing practices (Gereffi, 1999). Due to the foreign ownership structure and the lack of embeddedness of the industry, Cambodia currently lacks a solid foundation for pursuing a policy of industrial upgrading. Therefore, the first step in maintaining the dynamism that the garment sector has exhibited in recent years is to build the basis for learning, information transfer, and domestic investment in supply-chain relationships.

We suggest two policy directions for establishing a basis for industrial up-grading in the garment sector:

(1) Expanding the number of joint ventures between Cambodian producers and foreign investors; and
(2) Pursing targeted industrial policies to increase the density of domestic linkages to garment manufacturing.

If these objectives are to be achieved, the industrial policy mix must extend beyond the horizontal strategies discussed in the previous sector and include "vertical" policies. Vertical policies refer to interventions that are targeted at particular sectors, groups of firms, or economic activities. For example, vertical interventions can be used to encourage the growth of activities that would increase domestic economic multipliers, to cultivate dynamic competitive advantage in strategic sectors, and to build the productive capacity that already exists.

In the case of clothing, vertical strategies could be used to encourage the expansion of joint ventures among garment producers and to encourage knowledge-sharing activities. Since industrial up-grading requires accumulation of a certain level of organizational capital – in the form of productive relationships and supply-chain know-how – the goal of these vertical strategies would be to increase investment in these types of intangible assets. Of course, foreign investors may be wary of information sharing, since their knowledge of supply-chains is the basis of their own competitive advantage. Therefore, incentives must be put in place to cultivate the accumulation of organizational capital in Cambodia.

Vertical strategies could also be used encourage growth of industries with upstream linkages to the garment sector. Specifically, cotton cultivation, spinning, and textile production all have potential.[13] Some of these activities are significantly more capital intensive than garment manufacturing. Investors may be reluctant to commit the fixed capital needed if there is substantial uncertainty about the garment sector's long-run sustainability. Therefore, vertical strategies are needed to encourage investment in complementary industries, but also to help manage the perceived risks associated with investment in a long-run industrial development strategy.

The structure of Viet Nam's garment industry and its potential for industrial upgrading provides a number of lessons for Cambodia. Viet Nam has a domestic textile industry which could serve as the basis for stronger domestic linkages and improved supply-chain logistics. Currently, the quality of textiles produced often fails to meet the standards required in global commodity chains and the garment industry still depends on imported textile inputs (Nadvi et al., 2004). In addition, domestic textile firms, many of which are, or were recently, state-owned enterprises, have had to adjust dramatically to increased import penetration associated with economic reforms (ibid.). Nevertheless, policies to improve quality standards in the textile industry could fortify domestic

[13] Cotton production may become more economically viable in the future if the U.S. reforms its agricultural subsidies in the near future in response to on-going pressure in international trade negotiations.

linkages. In this respect, Viet Nam is currently in a better position to meet the rules of origin requirements of the European markets.

In addition, Viet Nam's garment sector is more strongly embedded in the domestic economy. Foreign ownership has been increasing in Vietnam and foreign-own firms accounted for 25 percent of garment production in 1999. However, this is still far below the rate of foreign-ownership in Cambodia – 95 percent. The combination of an embedded domestic industry and growing foreign investment could – if developed properly – help promote the type of knowledge-sharing needed for industrial upgrading.

Moreover, the Vietnamese state-led corporation, Vinatex, coordinates the activities of a number of textile, spinning, weaving, dyeing, and garment firms in what could be seen as an industrial cluster. Such clustering vertically integrates firms in Viet Nam's garment supply chain and helps local producers capture the benefits of coordinated industrial activity. The integration of production activities has important implications for market access. Domestic fabric inputs account for 25 percent of the value of exports for Viet Nam's garment industry as a whole, but they account for 40 percent of the value of Vinatex's exports (Nadvi et al., 2004).

Cambodia has three sets of policy tools at its disposal for pursing the types of vertical industrial development strategies highlighted here:

(1) Active industrial policies. Examples of active industrial policies include the creation of industry-specific public institutions to facilitate knowledge sharing, conduct applied research, provide on-going skills-building, and give support and expertise to firms operating in the sector.

(2) Fiscal incentives. Fiscal policies are often used to implement strategic industrial policies. Tools include tax rebates, investment incentives, and subsidies to encourage specific types of industrial activities. Care must be taken to insure that these interventions are compatible with WTO provisions. Although restrictions on export subsidies/import taxes can be limiting, substantial scope still exists for using fiscal incentives to encourage strategic productive activities.

(3) Development finance. Development finance institutions can be instrumental in mobilizing domestic resources to support activities with high social returns or to contribute to the realization of a long-run strategy for fostering dynamic competitive advantage. Development finance institutions also play a role in risk management in the pursuit of industrial development objectives. Available instruments include: low-interest rate credit for loans supporting a development objective; the provision of long-run finance for industrial development; and partial underwriting of credit to strategic activities to lower risk premiums.

The industrial policy toolkit is not limited to one of these policy categories. A combination of policy instruments could be more effective in achieving the objectives outlined in this section. However, it is important to note that all of these policies will use

fiscal and economic resources. Therefore, macroeconomic and budget policies must be coordinated with industrial policies in order for these types of interventions to be successful. In addition, industrial policies are particularly prone to abuse and rent-seeking. Improving governance to minimize corruption, increase accountability, and improve delivery is essential.

iii. Limits of markets

The strategies for the garment industry outlined in this section – infrastructure investment, improvement of economic service delivery, development finance, targeted industrial policies, support for long-run investment, and the pursuit of dynamic competitive advantage – cannot be pursued through a purely market-based development policy. Significant market failures are associated with each of these policy areas and relying on markets alone will not be enough to achieve the core objectives needed to retain elements of the dynamic growth path of Cambodia's garment sector.

The market failures associated with the central aspects of industrial policy are diverse:

Externalities – many of the interventions discussed here have external benefits that are not fully captured by market prices or private profits. For example, investment in industrial clusters that increase the density of domestic linkages generates benefits for economic actors that extend beyond the private benefits that the investors in these sectors would capture.

Public goods – investments in infrastructure often involve the provision of goods and services that are "non-excludable" and "non-rival". Individuals or firms cannot be excluded from the benefits provided and the use of the good by one individual does not reduce the benefits that others receive. Under these conditions, markets will tend to under-supply such goods.

Economies of scale – the generation of electrical power and information-based aspects of managing global commodity chains are often characterized by economies of scale, in which marginal costs are often negligible relative to average costs.[14] In this situation, markets may not be able to efficiently price such goods in order to insure an adequate supply in the long-run.

Coordination failures – credit may be rationed in financial markets when lenders and borrowers have different objectives, contracts are not costlessly enforceable, and information is not shared. Financial resources for investment in socially desirable activities will be inadequate.

[14] The marginal cost of many types of information may be close to zero – the initial cost of acquiring knowledge for a single firm can be substantial, but the cost of sharing existing knowledge with a multitude of firms may be quite small in comparison.

Dynamic inefficiencies – short-run and long-run incentives may contradict each other. Firms may act based on short-run returns – particularly in the face of economic uncertainty – but the decisions they make may be undesirable in the long-run. Markets that respond exclusively to short-run signals will misallocate resources.

State-led interventions and non-state/non-market institutions are instrumental in solving these allocation and coordination failures of markets (Chang, 2003, 1994). This does not imply that markets have no role in the industrial development of the garment sector. On the contrary, markets provide critical information about global consumption patterns and trends, the relative scarcity of inputs, and the distribution of productive resources. Such information is necessary, but not sufficient, to determine the optimal policy mix and allocation of resources to support long-run sustained growth. Therefore, a combination of non-market interventions and the use of market-generated information is necessary to achieve an employment-friendly growth path. In short, the future of the garment sector depends on the implementation of a "state-led/market-guided" industrial strategy that integrates many of the policy options outlined here.

The concept of a "state-led/market-guided" economic development strategy is not original – variations on this general approach have been applied successfully in a number of Asian economies, e.g. China, Viet Nam, Korea, Taiwan, and Hong Kong. In all of these countries, the garment industry has played, or continues to play, an important part in the early years of industrial growth. Cambodia could draw on this experience in planning for the future of its industrial development.

iv. Enhancing the human development impact of the garment sector

Much of this report has emphasized trade and industrial policies as they pertain to the garment sector in Cambodia. The focus has been on export demand, competitiveness, and the level of production. From the point of view of labor markets, this means the emphasis has been on the demand for labor, specifically the demand for wage employment in the export manufacturing sectors. However, it is important to incorporate the analysis of the human development impacts of the garment sector that was discussed earlier in the report – in which the supply side of labor markets were important in the overall human development picture.

The workers who supply their labor to the garment industry are young, generally literate, women. The human development impact of such employment cannot be separated from the characteristics of the labor supply. Women's access to paid employment has directly implications for their own human development and gender equity. It also has implications for the living standards in the household from which they come. Basic education is a critical determinant of women's access to paid employment in Cambodia – particularly given the significant gender gap in educational attainment evident in the country (UNIFEM, 2004).

Therefore, to sustain and improve the human development impact of garment employment, a set of complementary policies that extend beyond the focus on trade and

industrial policies must be put in place. First, there is a need to insure that women continue to have access to paid employment in the garment sector. This requires gender-disaggregated employment indicators to monitor trends in employment – particularly if the sector grows and diversifies. Second, there is a clear pattern of occupational segregation within the garment sector itself which suggests that women face barriers to upward labor mobility that are not revealed by aggregate employment numbers (Yamagata, 2006). The human development impact of garment employment could be enhanced by removing such gender-based constraints to worker mobility. Third, improvements in educational attainment are associated with better access to employment. Therefore, efforts to improve education and narrow the gender-gap in educational attainment are necessary to translate growth in the garment sector into better human development outcomes.

The fact that the garment sector relies on the labor of young women raises a number of concerns relating to the life-cycle of working women. The tenure of most garment workers in the industry is relatively short. Therefore, the human development impacts of employment in the sector may be short-lived. Of particular importance is the transition out of wage employment in the garment sector. Often, opportunities for upward mobility among former garment workers are negligible and many workers face uncertain futures (UNIFEM, 2004). Interventions are needed to help women transition out of work in the garment sector and into other forms of gainful employment.

Finally, Cambodia's economy is not diversified. The industrial sector relies on garment assembly operations for most of its output and virtually all of its exports. Any change in the global economic environment that adversely affects the garment sector would threaten the country's entire economic base. Because of this reality, human development outcomes that depend on access to better-paid industrial employment are extremely vulnerable. Therefore, there is a need to diversify the country's exports and industrial production – not only in terms of the stability of economic production, but also in terms of sustaining long-run improvements in human development.

Appendix – Estimates of the U.S. Price and Income Elasticity of Clothing Demand

The price and income elasticities contained in Table 3 of the main text were estimated using a conventional dynamic product demand model:

$$\ln X_t = \alpha + B_1 \ln X_{t-1} + \beta_2 \ln X_{t-2} + \gamma_1 \ln P_t + \gamma_2 \ln Y_t + \mu_t$$

in which X_t represents the real demand for clothing, P_t represents the average consumer price level for clothing, and Y_t represents real personal disposable income. Real demand for clothing was defined as total personal consumption expenditures (PCE) on clothing divided by the clothing price index, as measured by the personal consumption expenditure (PCE) deflator for clothing. Quarterly data for the analysis were taken from the U.S. Bureau of Economic Analysis (BEA).[15]

Unit root tests (i.e. Augmented Dickey-Fuller tests) show that the variables used in the model are integrated of the first order. Therefore, OLS regression results may produce spurious relationships between the variables. However, a cointegrating relationship may exist between the variables if a linear combination of the variables is stationary. We test for the existence of a cointegrating relationship using the coefficient estimates from the OLS regression to define the linear combination of the dependent and independent variables. Tests of the estimated residual (μ_t) show them to be stationary. Therefore, the estimates presented here represent a cointegrating relationship (i.e. a long-run equilibrium relationship).

The long-run price elasticity of demand can be easily calculated from the coefficients of the above model:

$$= \frac{\gamma_1}{1-(\beta_1+\beta_2)}.$$

Similarly, the long-run income elasticity of demand is:

$$= \frac{\gamma_2}{1-(\beta_1+\beta_2)}.$$

Table A1 below summarizes the coefficient estimates of the model for the three subperiods highlighted in Table 3 (see main text): 1950-69, 1970-84, 1985-2006.

[15] Data can be downloaded from the BEA website: www.bea.gov.

Table A1. Coefficient estimates for the U.S. clothing demand model.

Variable	***1950-69***	***1970-84***	***1985-2006***
Constant	-0.74 (-2.56)	-1.68 (-3.36)	-0.47 (-0.91)
X_{t-1}	0.59 (4.77)	0.69 (4.81)	0.72 (6.61)
X_{t-2}	0.02 (0.17)	-0.18 (-1.52)	-0.06 (-0.63)
P_t	0.08 (0.94)	-0.21 (-3.36	-0.24 (-3.86)
Y_t	0.30 (3.41)	0.50 (4.63)	0.28 (3.22)
N	*78*	*60*	*86*
R-squared (adj)	*0.99*	*0.99*	*0.99*

Note: See text for a full discussion.

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