Cambodia's Garment Industry – Origins and Future Prospects

Omar Bargawi
Economic and Statistics Analysis Unit

October 2005

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Acknowledgements

Acronyms

ACP	Africa, Caribbean and Pacific
ASEAN	Association of South-East Asian States
ATC	Agreement of Textiles and Clothing
CDC	Council for the Development of Cambodia
CDRI	Cambodia Development Resource Institute
CIB	Cambodian Investment Board
CIF	Cost-Insurance-Freight
CIV	Customs Import Value
EBA	Everything-But-Arms (Initiative)
EC	European Commission
ETE	Export Tax Equivalent
EU	European Union
FDI	Foreign Direct Investment
FOB	Freight-On-Board
GATT	General Agreement of Tariffs and Trade
GDP	Gross Domestic Product
GEM	General Equilibrium Modelling
GMAC	Garment Manufacturers Association of Cambodia
GSP	Generalised System of Preferences
GTAP	Global Trade Analysis Project
HS	Harmonised System
ICS	Investment Climate Survey
ILO	International Labour Organisation
IMF	International Monetary Fund
LDC	Least Developed Country
LoI	Law on Investment
MFA	Multi-Fibre Agreement
MFN	Most-Favoured Nation
NAFTA	North American Free Trade Agreement
NIEs	Asian Newly-Industrialised Economies
OTEXA	Office of Textiles and Apparel (U.S.)
RGC	Royal Government of Cambodia
SAARC	South Asian Association for Regional Co-operation
SITC	Standard International Trade Classification
SME	Square Metre Equivalent
TATA	US – Cambodia Trade Agreement on Textiles and Apparel

T&G	Textiles and Garments
US	United States of America
VER	Voluntary Export Restraint
WB	World Bank
WTO	World Trade Organisation

Executive Summary

The paper, written largely before Multi-Fibre Agreement (MFA) quotas on developing country exports of textiles and garments were removed on 31 December 2004, argues that Cambodia's garment industry is well placed to withstand the increase in competition in its export markets that quota removal has brought. This conclusion is highly significant for the Cambodian economy, over 80% of whose exports now consist of garments.

Cambodia's export-oriented garment industry has emerged and grown very fast since the mid-1990s when Asian textile and garment (T&G) producers - from Hong Kong, Taiwan, Malaysia, and Singapore - started to produce for export in Cambodia, taking advantage of the country's then quota-free access to the US and EU markets and, secondarily, of its relatively low wage rates. Investors were encouraged by a policy environment in which there was domestic peace and security following the Paris peace agreement in 1991, a commitment to macroeconomic stability, and a business-friendly investment climate enshrined in the Law on Investment of 1994. Investors were able to overcome Cambodia's disadvantages in infrastructure and human capital development, *inter alia* by bringing in technical and supervisory personnel from abroad.

The industry, which uses as raw material cloth imported mainly from other Asian countries, has continued since its inception to attract foreign direct investment, and has enjoyed strong export and employment growth, despite the imposition of quotas on its exports to the US market in 1997. It now comprises some 200 enterprises, of which some 90% are foreign-owned, with approaching 250,000 employees.

The removal of T&G quotas on the exports of all exporting countries at the beginning of 2005 in compliance with the WTO's 1994 Agreement on Textiles and Clothing represents both an opportunity and a threat for Cambodia. Cambodia will be free to export beyond current quota limits to markets where these apply; but it will also have to compete with exports from other garment-exporting countries on which quotas bore more heavily, notably China.

Commonly used general equilibrium models of international trade predict that garment prices in international markets will fall sharply, but that the world market for garments will grow, when quantitative restraints on exports from competitive producers such as China are removed. This will lead to a significant increase in world welfare, and to income gains by the more competitive producers in formerly quota-restricted producer countries, but to potential losses from falling prices by less competitive producers in other exporting countries, both formerly quota-restricted and otherwise. The case of Cambodia is not identified separately in the most commonly used international trade model, but the group of (ASEAN) countries with which it is assimilated is shown in simulations to experience an overall welfare loss.

The question examined in the paper is how far Cambodia's garment industry is likely to be able to withstand the effect of falling prices. The methodology used for this purpose makes use of the facts that:

- Cambodia's main garment exports to the US have been quota-restricted for a few years,
- quotas have been auctioned,
- some of these quotas have been binding, and
- during these years quotas have been removed from certain garment types.

It is based on estimated export tax equivalents (ETE) of quota rents: where these have been high there are good *prima facie* grounds for thinking that enterprises subject to this form of tax could be competitive in a post-MFA world.

The empirical evidence is not overwhelming but it is sufficient to build a case for arguing that Cambodia's garment sector has become robustly competitive and able to withstand adverse price shocks:

- ETEs on quota-restricted exports to the US have averaged 8%, and have ranged up to 29%, of the FOB value of the goods sold in important product lines, although Cambodia's exports were not severely restrained by US quotas.
- Prices received by Cambodian exporters for significant exports to the US of garment types removed from quota under Phase 3 of the implementation of the Agreement on Textiles and Clothing declined only slightly, enabling Cambodia to raise its market share in the face of competition from previously severely restricted suppliers like China.
- Labour productivity in the garment industry in Cambodia has improved to a point where it has become comparable with China and India - and higher than in Bangladesh.
- The share of operating profit in value-added has risen, in spite of the negative effects of, first, the imposition of quotas on Cambodia by the US, and then the US's removal of quotas on supplies of certain garments from all sources.
- Materials and utilities constitute around 60%, industry-wide, of the costs of garment production; there is scope for further cost savings from improved procurement methods and domestic trade facilitation measures.
- Freight and insurance charges on exports to the US from Cambodia are comparable with those affecting exports from other South-East Asian suppliers.

The paper concludes that Cambodia's garment industry should, on these grounds, be able to withstand a decline in the unit value of export sales of 10-15% without overall contraction, through a combination of appropriation of the quota rents formerly paid for export licences, falling input prices and improvements in efficiency. The industry may, however, have to alter its export product mix, abandoning products for which external market competition becomes fiercest. A post-MFA rise in the import price paid by Cambodia for textile inputs is, however, a risk factor.

Even if the abolition of quotas on textiles and clothing leaves Cambodia's garment industry relatively unscathed, there is likely to be some static welfare loss for Cambodia as the government loses the revenue formerly earned from the auctioning of export licences. However, even a static welfare loss at the top end of the possible range would be dwarfed by the welfare gain from a single year's growth in the garment sector.

Chapter 1: Introduction

1.1 Background: effects of the Multi-Fibre Agreement

Over the last thirty years, international trade and investment in the global textile and garment (T&G) sectors has been influenced by Multi-Fibre Agreement (MFA[1]) quantitative restrictions (quotas) applied by the major developed country importers (the United States, the European Union, Canada and Norway) on T&G exports from (predominantly) developing countries. MFA quotas were negotiated bilaterally and applied on a discriminatory basis to some exporting countries but not to others, thus differing from country to country in both product coverage and the degree of restrictiveness.

The MFA regime was replaced in 1995 by the WTO Agreement on Textiles and Clothing (ATC) as part of the Uruguay Round of multilateral trade liberalisation. The ATC requires that all MFA quotas on T&G products be removed over a ten-year transition period split into three phases and ending on 1 January 2005 (see Annex 1), thus finally incorporating international T&G trade into general GATT rules that prohibit discriminatory measures and call for the reduction and elimination of quantitative restrictions.

The quota system under the MFA has distorted international T&G trade and has resulted in global welfare losses since quota limits on the exports of selective producers have prevented an allocation of resources to the most efficient T&G producers and prevented prices in quota-protected developed country markets from falling. Competitive exporting countries with comparative advantages in T&G production have been restrained from expanding under the MFA quota system, while relatively uncompetitive producers have enjoyed guaranteed market access (up to the quota limit) to developed country markets (see Spinanger, 1999). The MFA quota system has also aided the spread of T&G investment and production to an ever increasing number of – mostly developing – countries. As quotas became relatively more restricted in one country, foreign investment flowed to quota-unrestricted countries, some of which, in turn, had quotas imposed on their exports leading to further production shifts. Moreover, regional preferential trade arrangements such as NAFTA and the EU trade agreements have led to further distortions in T&G trading patterns, as T&G exporters have made use of the preferential access and proximity to quota-imposing import markets by locating production within these preferential trading blocs. Production shifts have been more pronounced in the garment than the textile sector, given the relatively low investment costs associated with acquiring garment industry technology and the higher capital intensity and technology requirements in the textile industry (see Nordås, 2004).

The removal of MFA quotas is likely to result in global welfare gains through more efficient resource allocation, reduced prices for many consumers of T&G products and associated increases in global T&G demand. However, the distribution of these gains is unlikely to be spread equally amongst countries and regions. While consumers in formerly quota-restricted developed country markets are likely to benefit from reduced prices, those T&G exporters unable to compete on price may suffer welfare losses due to a deterioration in their terms of trade and/or market share losses as T&G production is reallocated to those countries that can operate more efficiently. The ease with which garment production can be transferred between locations (the so-called 'foot-loose' nature of the industry) should mean that any consolidation in the garment sector is likely to be more pronounced than in the textile sector (see Nordås, 2004).

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[1] The MFA came into effect at the beginning of 1974 replacing previous makeshift arrangements for restricting the international T&G trade.

For Cambodia, which only started exporting garments in the mid-1990s, a key question is whether its industry is going to be able to withstand the increased competition on world markets that the removal of quota entails. Cambodia has relied heavily on its export-oriented garment industry for employment generation (particularly amongst poor, rural women) and for foreign-exchange earnings over the last decade. In 2003, garment exports accounted for over 80% of Cambodia's total exports – one of the highest ratios in the world. About 95% of Cambodia's total garment exports go to developed country markets that impose quotas, in particular the US and the EU – a ratio that, alongside Bangladesh, ranks as the highest in the world. Assessing the prospects for Cambodia's garment industry after MFA quotas disappear and the anticipated price competition on world markets increases is therefore a key priority for those concerned about economic growth, employment and poverty reduction in Cambodia.

1.2 Research objectives and methodology

The objectives of this paper are to examine the origins of the export-oriented garment industry in Cambodia, and to assess the industry's prospects following the trade liberalisation brought about by the removal of textile and garment quotas on 1 January 2005 under the WTO's Agreement on Textiles and Clothing (ATC). The paper assesses the ability of Cambodia's garment industry to absorb the expected global falls in garment prices post-MFA, and to benefit from the future reallocation of global garment production, by analysing industry cost structures, productivity and profitability in the run-up to MFA quota removal. It examines the hypothesis that the industry will be forced to contract as it faces intensified competition and price reductions in its main markets.

The paper begins with an account of the conclusions of General Equilibrium Modelling (GEM) exercises of the impacts of global and regional MFA-quota removal, including GEM estimates of global T&G price effects resulting from quota removal. Global trade models use production functions for export supply which assume relatively high price-elasticity of supply.

Ability to absorb price changes will depend on industry cost structures as well as trends in industry productivity and profitability relative to other garment exporting developing countries.

An important cost for many T&G exporters in developing countries arises from the MFA quota regime itself. MFA quotas have been administered by exporting countries in the form of 'voluntary' export restraints (VER), where quota-constrained exporting country governments typically issue or auction export licences to producers up to individual product quota limits. If these quota limits are binding, the supply to the importing country is effectively restricted, thus making prices on quota-imposing importing markets higher than on the world market where excess supply depresses prices. The resulting price differential allows firms that have access to scarce export licences to earn economic rents.[2] The price firms pay to obtain a licence to export to MFA-restricted markets represents a cost which is analogous to an export tax and which is measured in the literature as an export tax equivalent (ETE) (see Francois and Spinanger, 2001b). The more restrictive a quota is, the higher the price for the product, which makes the quota licence more valuable and the ETE higher. Higher ETEs indicate that firms are able to absorb a larger terms-of-trade deterioration (price falls on import markets) when MFA quotas are removed, though the loss of economic welfare is also greater.

To make its case, the paper first calculates ETEs of individual Cambodian garment products subject to quota, using data on export licence prices from official quota auctions. This provides

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[2] These rents do not always accrue entirely to the exporting country, as large retailers have managed to earn a portion through exerting their buying power (see Erzan et al., 1991).

information on firms' benefits from export tax reduction. Cambodia's ETEs are then compared with those of other major quota-constrained suppliers in order to analyse relative positions.

Third, the paper analyses production costs relative to other major T&G exporting countries, in particular labour and transport costs. Labour and transport costs have also been highlighted in qualitative surveys as important determinants of major T&G companies' production and sourcing decisions in a post-MFA trading environment (see Andriamananjara et al., 2004). The analysis includes evidence of rising productivity and profitability in Cambodia.

There is no reliable forecast of the extent of post-MFA price reductions that Cambodian exporters may suffer on their exports of hitherto quota-restricted products. Some indication of possible orders of magnitude can, however, be gleaned from price reductions in the US market following Phase Three of the MFA enlargement process. This evidence is used in conclusion to establish a *prima facie* case for saying that most garment exporters established in Cambodia should be able to withstand the more challenging market conditions that they now face.

The remainder of the paper is structured as follows. Chapter 2 offers a descriptive analysis of the origins, structure and past performance of Cambodia's garment industry. Chapter 3 examines the industry's future prospects, and is split into the following sections. Section 3.1 examines the likely global and regional economic impacts of MFA quota removal by analysing the results of GEM simulation exercises. Section 3.2 examines Cambodia's ability to absorb anticipated post-MFA price changes by examining how restricted the MFA quota regime has been for Cambodian producers and by quantifying Export Tax Equivalents (ETEs) for Cambodian garment products. It also analyses Cambodia's recent export performance on the US market in garment product categories freed from quota under Phase 3 of the ATC. Section 3.3 examines other production costs as well as industry productivity and profitability, and analyses Cambodia's relative performance compared with other quota-restricted garment exporting developing countries. Chapter 4 draws conclusions.

1.3 Data

The principal data sources used for this research are 1) primary data on US imports of T&G products (both quota and non-quota) and quota fill-rates available online at www.otexa.ita.doc.gov, 2) primary data provided by the Cambodian Ministries of Commerce and Finance on garment industry structure, output, trade and production costs, 3) Cambodian Investment Board (CIB) primary data on industry investment, 4) primary data on Cambodia garment industry quota auctions available online at www.gmac-cambodia.org/quota.htm, 5) primary data from the ILO on selected garment industry labour costs available online at www.ilo.org, and 6) secondary data from the World Bank on T&G industry productivity from Investment Climate Surveys (ICS). Lack of more comprehensive data on labour costs and volume output precluded a wider country coverage of industry production costs, productivity and profitability.

Chapter 2: Industry Origins, Structure and Performance

2.1 Industry origins

The international T&G industry has undergone several shifts in production since the 1950s. The first shift occurred in the 1950s and early 1960s when production moved from North America and Western Europe to Japan. The second supply shift was from Japan to the Asian newly industrialised economies (NIEs) – Hong Kong, Taiwan, South Korea and Singapore – and this permitted the latter group to dominate global T&G exports in the 1970s and 1980s. Over the past 10 to 15 years, there has been a third shift as production within Asia has moved from the NIEs to China and South East and South Asian exporters, and as exports from non-Asian countries, in particular Central America, the Caribbean, Eastern Europe and North Africa, have increased substantially.

These production shifts have been influenced by a range of factors, including the distortions to international trade arising from the MFA quota system and labour cost differentials. Preferential tariff systems under regional trade agreements such as the North American Free Trade Agreement or the EU trade agreements have also played an important part in explaining more recent production shifts (see Spinanger, 1999).

Shifts have also been influenced by the broader restructuring of the international T&G industry 'value-chain'. As large retailers (for example, Wal-Mart in the US) began to increasingly manage the T&G supply chain, for example by insisting that suppliers improve standards for product labelling and implement information technologies to boost the exchange of sales data, proximity to markets and flexibility of production became key concerns. In order to stay competitive, firms in the Asian NIEs moved their production to low-wage non-quota economies, or to locations with preferential market access, and devised ways to co-ordinate and control their sourcing networks, while at the same time focusing on the more profitable design and marketing segments within the garment 'value-chain'. An important mechanism for achieving this shift to higher value-added T&G activities in East Asia has been the process of 'triangle manufacturing' (see Gereffi, 1998). The essence of triangle manufacturing, which was initiated by the Asian NIEs in the 1970s and 1980s, is that overseas buyers place their orders with NIE manufacturers from whom they have sourced in the past, who in turn shift some or all of the requested production to affiliated offshore factories in low-wage countries. These offshore factories can be wholly owned subsidiaries of the NIE manufacturers, joint-venture partners, or simply independent overseas contractors. The finished products are then shipped directly to the overseas buyer under the import quotas the exporting country has managed to secure.

Export-oriented garment production in Cambodia is a relatively recent phenomenon, and needs to be analysed within the context of these broader international T&G industry changes.

Silk and cotton were produced and made into garments in Cambodia on a small scale during French colonial rule (1863-1953), but industrial production of textiles only began after independence from the French with the establishment of state-owned textile company SONATEX (see Prud'homme, 1969). There followed a period of modest expansion of T&G production which came to an abrupt end when the genocidal Khmer Rouge regime took power in the 1970s. The two following decades of civil war and conflict ended with the Paris Peace Accords of 1991 and the adoption of a new Constitution in 1993 which set in train Cambodia's transition from a predominantly centrally planned to a market economy.

The modern origins of Cambodia's garment industry can be traced back to around 1994 when foreign investors from Hong Kong, Taiwan, Malaysia and Singapore started operating the first export-oriented garment factories in Cambodia. According to the Garment Manufacturers Association of Cambodia (GMAC).[3] Cambodia's lack of quota restrictions on US markets in the mid-1990s, coupled with the fact that other Asian garment exporters, in particular China, began to be highly quota-constrained during this period,[4] were the principal reason for the establishment of the industry in Cambodia. Cambodia's relatively low wage costs stemming from its large pool of surplus labour were only a secondary factor. This assessment is consistent with the results of qualitative surveys on how T&G producers choose production and sourcing locations, which found that the availability of quotas was the single most important factor in influencing production and sourcing decisions in 2001 (Spinanger and Verma, 2003).

Cambodia's garment industry began to grow rapidly after 1997 (see Table 2.1), when Cambodia was granted Most-Favoured Nation (MFN) status by the US and signed a framework co-operation agreement with the EU that allowed access to EU markets under the Generalised System of Preferences (GSP).

Cambodia began to face MFA quota restrictions in the US market in 1999 when a bilateral three-year Trade Agreement on Textiles and Apparel (TATA) was signed. In 2002, the TATA was extended to the end of 2004, i.e. the end of the ATC transition period. Also in 1999, a three-and-a-half-year EC-Cambodia 'Textile Agreement' came into force, which gave Cambodia duty- and quota-free access to EU markets for T&G products subject to rules of origin requirements being met.[5] Quota restrictions in the Canadian market were removed in 2002, and Cambodia now enjoys quota- and duty-free access to this market as well.

While foreign garment manufacturers have helped integration into the global T&G supply and value-chains discussed above, Cambodia operates predominantly at the downstream, mass-market end of these chains, which encompasses cutting and making yarns and fabrics into finished garment products and where value-added and profit margins are relatively low. In producing these finished products the industry in Cambodia relies almost exclusively on imported materials, given the lack of a domestic textile industry which would, potentially, allow for more integrated production processes and an increase in domestic value-added. Materials are predominantly imported from regional Asian countries, in particular Hong Kong, Taiwan, China and South Korea. However, Cambodia is not alone in relying on imported materials for garment production. Other major garment exporters such as Bangladesh, Sri Lanka and Vietnam also have limited domestic textile industries and import large amounts of textiles to supply their export-oriented garment manufacturing sectors. Moreover, the fact that garments tend to have short production cycles with differing input requirements for differing cycles and with relatively low cost of conversion from one cycle to another, implies that a relatively sophisticated and mature textile industry is needed to supply adequately a garment manufacturing sector that aims to compete globally. The lack of even a basic textile industry means that garment manufacturing in Cambodia is likely to continue to be best served by imports from other low-cost producers.

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[3] Interview with GMAC Deputy Director on 9 August 2004.

[4] China exhibited average quota fill-rates of over 90% on the US market over the period 1997-9 for Cambodia's main MFA export categories (cat. 338/339/347/348/647/648). Data from *US Customs Service Textile Reports*, 1997-9.

[5] The EU's Everything-But Arms (EBA) initiative of 2001 did not alter Cambodia's market access for T&G products.

2.2 Industry structure

Between 1996 and 2003, a total of US$656 million in fixed asset investment and US$445 million in garment sector registered capital was approved by the government (see Fig. 2.1).

Fig. 2.1 Cambodia – Garment industry investment approvals
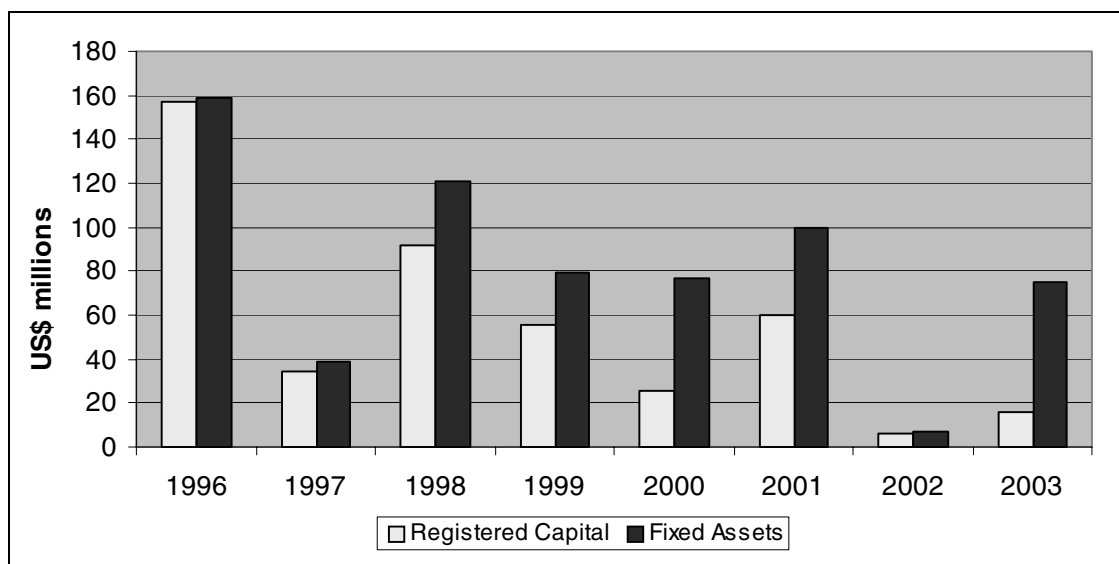
Source: Cambodian Investment Board (CIB) reported in *CDRI* Vol. 8, Issue 2.

Garment investment represented approximately 27% of total registered capital approvals and 17% of total fixed asset investment approvals between 1996 and 2003, and more than 36% of total foreign fixed asset investment approvals, in Cambodia over the period 1998-2003.[6] This data need to be interpreted with care, given that investment approvals do not necessarily translate into actual investment. Unfortunately, reliable data on actual investment spending are not collected in Cambodia.

The substantial decline in garment investment approvals observed in 2001/02 led some commentators, including the IMF (2004), to conclude that Cambodia's garment industry was starting to feel the negative effects of ATC implementation. However, recent Cambodia Investment Board (CIB) data show that garment sector investment increased sharply again in 2003 (see Fig. 2.1).

There are now around 200 garment firm units operating in Cambodia, of which about 90% are foreign-owned. In 2004, the typical garment firm employed between 200 and 1,500 workers, with an average of around 1,250 workers. Ownership is dominated by investors from other Asian countries, in particular Hong Kong, South Korea, China and Taiwan, who collectively owned nearly 70% of garment firms operating in Cambodia in 2000 (see Fig. 2.2).

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[6] Registered capital is here defined as the value of shares held in individual garment firms as reported to the CIB. Fixed assets are assets of a long-term nature, in particular land and buildings used for garment production.

Fig. 2.2 Garment industry ownership (2000)
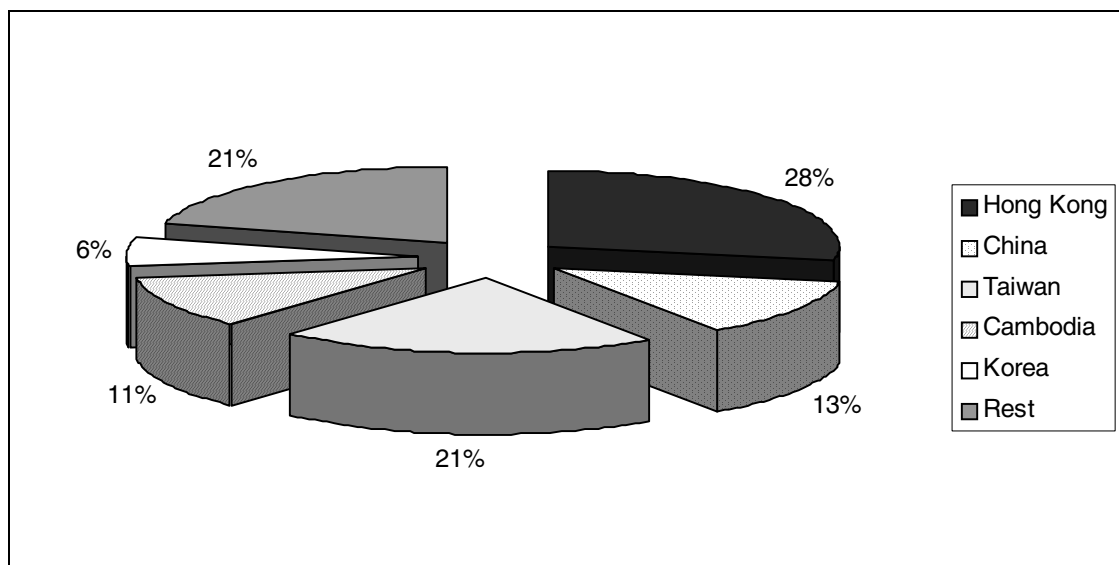
Source: Ministry of Commerce

2.2.1 Industry Foreign Direct Investment (FDI)

The heavy foreign ownership and large amount of foreign direct investment (FDI) that has continued to flow into the sector since its establishment in the mid-1990s deserves closer scrutiny.

The literature on the locational determinants of FDI (e.g. UNCTAD, 1998, Dunning, 2002; Lall, 2000) identifies three broad determinants: host-country economic characteristics, the policies of host countries, and measures introduced by host countries to promote and facilitate investment. The relative importance of these determinants is said to depend on the motive and type of investment, the industry in question, and the size and strategy of the investor. We have already discussed the influence of broader international T&G industry dynamics on the establishment of the industry in Cambodia, but the role of domestic policies in inducing FDI, and how constraints to the setting-up of the industry were overcome, are worth exploring further.

Following the signing of the 1991 Paris Peace Accords, the Royal Government of Cambodia (RGC) introduced a set of policies aimed at ensuring macroeconomic stability, as well as liberalising exchange rates, the trade regime and the price system. Attracting foreign investment and fostering Cambodia's integration with regional (ASEAN) and global (WTO) trading systems were stated objectives of the RGC, which also embarked on a process of privatising or leasing out state-owned enterprises. The economic results over the following period were encouraging. GDP growth averaged 6% over the 1991-6 period; inflation, which had averaged about 140% per annum during the period of 1990-2, had fallen to 7.1% in 1996; and exports grew at an average rate of 40% between 1993 and 1997, albeit from a very low base.

The passage of the Law on Investment (LoI) in 1994 was an important further signal that the RGC was serious about creating a business-friendly investment regime. The LoI included a wide range of taxation concessions and incentives for approved investment activities, and established the Council for the Development of Cambodia (CDC) as the sole institution responsible for investment activities in Cambodia. LoI provisions included tax holidays of up to eight years, special corporate taxation rates of 9%, tax-free reinvestment of profits and tax-free repatriation of earnings. In addition, the inclusion of full import duty exemptions for export-oriented projects

was particularly appealing to foreign garment manufacturers, given the lack of domestic sourcing options for materials. It also facilitated the importation of capital equipment by foreign garment firms.

It is worth briefly contrasting Cambodia's investment and trade policies with those of another large garment-exporting least developed country, Bangladesh, in order to highlight key differences. The origins of the Bangladeshi export-oriented garment industry can be traced back to the late 1970s when domestic entrepreneurs using foreign technical expertise and local bank financing started to expand production for export rapidly (see Fagernäs and Roberts, 2004). Bangladesh has also received garment industry FDI from the likes of Korea and Hong Kong, but at much more limited levels than Cambodia. Although the garment sector in Bangladesh also enjoys tax and investment privileges comparable with those in Cambodia, there are key differences between the countries' T&G sector policies. Whereas the Cambodian authorities do not discriminate against foreign investors and suppliers, Bangladeshi policies are skewed towards protecting domestic firms. For example, except for FDI in export processing zones, all new investment in the T&G sectors needs to be approved by the Bangladeshi Board of Investment in consultation with the local Garment Manufacturers' Association. According to Mlachila and Yang (2004), the result has been that FDI approval is limited to T&G sub-sectors in which Bangladesh is not competitive. Administrative hurdles associated with importing raw materials for T&G production have also added to production costs for both domestic and foreign manufacturers in Bangladesh, while reducing the flexibility of firms to source from the most efficient providers (see ibid.).

What is clear from this brief discussion of host country FDI policies is that the RGC was pursuing policies in the mid-1990s that should broadly have been supportive of foreign garment manufacturers interested in investing in Cambodia. However, significant challenges to investing in Cambodia, and using it as a manufacturing base, persisted at this time. Years of international isolation and civil war had left Cambodia with extremely weak human capital and physical infrastructure, as well as an inadequate financial system. Foreign garment companies investing in Cambodia in the mid-1990s were able to overcome one of the most pressing constraints – how to finance capital equipment needed for the setting-up of the industry – by relying on financing through their parent companies abroad.

Foreign supply networks also played a key role in overcoming domestic shortages in skilled labour. The GMAC highlighted Cambodia's relatively relaxed immigration laws as particularly conducive to the establishment of an export-oriented garment industry. The LoI permits companies engaged in export-oriented activities such as garment production to bring into Cambodia management personnel and experts, technical personnel, skilled workers, and spouses and dependants as authorised by the Council for the Development of Cambodia. According to the GMAC, Hong Kong, China and Taiwan-based garment firms operating in Cambodia have, in particular, relied on the expertise of Chinese managers who have received relevant training in their home country before being posted to Cambodia through parent company networks.

In conclusion, the origins of Cambodia's export-oriented garment industry can be traced to the relatively permissive investment and open trade regimes as well as the lack of quota restrictions on important Western markets at a time when regional exporters were beginning to face constraints. Relatively low wages appear to have played only a secondary role in the establishment of the industry in Cambodia.

2.3 Industry performance

Over the last decade, Cambodia's garment industry has been a key source of export growth and formal employment (see Table 2.1), and directly contributes approximately 10% to the country's GDP. Given the fact that the industry was practically non-existent in the early 1990s, its growth all the more remarkable. Over the past decade, garment industry employment in Cambodia has risen from 18,000 to over 200,000 workers. Although this represents only about 3% of total employment in Cambodia, it accounts for over 36% of employment in the emerging manufacturing sector.[7] Most of the workers are young women (aged 18-25) who migrate from poor rural areas to the capital Phnom Penh where the majority of garment factories are located.

Between 1997 and 2003, exports of garment products from Cambodia grew by over 300% in volume, and over 600% in nominal US$ value terms. Exports to the US alone rose from less than US$1 million in 1995 to over US$1.1 billion in 2003.

Table 2.1 Growth of Cambodia's garment industry

Year	Export volume ('000 doz)	Garment exports (US$m)	Garment share of total exports (%)	Employment ('000s)	No. of garment factories
1995	854	27	3.3	18	20
1996	1,076	80	12.1	24	24
1997	9,306	227	28.9	82	67
1998	12,206	359	51.7	79	129
1999	15,516	661	66.2	96	152
2000	22,419	985	77.0	161	190
2001	29,390	1,156	81.4	187	185
2002	33,903	1,338	81.3	208	187
2003	38,857	1,607	83.8	234	197

Source: Cambodian Ministry of Commerce, Trade Dept

The quota-restricted markets of the US and the EU are Cambodia's main export destinations, respectively accounting for 70% and 25% of total garment exports in 2003.

Exports to the non-quota-imposing Japanese market, the third largest in the world, are negligible. In comparison, some of Cambodia's main competitors have been able to send a much larger proportion of their garment exports to Japan. China, for instance, has over a quarter of its exports destined for Japan, while India sent 2.5% of its exports to Japan. While failing to penetrate the quota-free Japanese market, Cambodia's exports to Canada have grown from less than US$20 million in 2002 (when Cambodia was granted quota- and duty-free access under the Canada LDC market access initiative) to over US$70 million in 2003, or about 4% of total garment exports, indicating that Cambodia's garment industry is proving responsive to preferential market access opportunities. Cambodia's garment exports to the EU have also shown growth of about 15% per annum since quota- and duty-free access was granted by the EU to all least developed countries under the 'Everything-But-Arms Initiative' in 2001. However, these growth rates are significantly below those of the pre-EBA period of 1998 – 2001 when exports to the EU grew at over 70% per annum.

The preferential market access that Cambodian exports currently enjoy in both the Canadian and EU markets will be eroded when ATC implementation is completed. A question mark hangs,

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[7] Based on data from the latest Cambodian National Institute of Statistics Labour Force Survey.

in particular, over Cambodia's ability to continue to enjoy export growth in the EU market because of the stringent rules-of-origin and burdensome documentation requirements under the EBA (the Canadian requirements are less stringent). Under the EBA rules-of-origin requirements, products manufactured in Cambodia from woven fabric or yarn imported into Cambodia and originating in a country from the EU, ASEAN (except Burma), SAARC and the ACP, will be considered as originating in Cambodia (so-called Regional Accumulation). Unfortunately, the majority of manufactured garments from Cambodia include imported materials from non-ASEAN countries (Hong Kong, China, South Korea and Taiwan) and thus do not benefit from Regional Accumulation. As a result, most garment exports from Cambodia do not qualify under the EBA.

Chapter 3: Industry Prospects

3.1 Economic modelling of ATC impact

Trade liberalisation under the ATC is expected to increase global welfare and international trade in T&G products as a result of improvements to global resource allocation and price reductions brought about by the elimination of MFA quota distortions. At the same time, the distribution of these welfare gains and trade increases is not expected to be spread evenly amongst T&G consumers and producers. At the country level, the net effect of terms-of-trade changes and allocative-efficiency improvements will determine welfare changes and relative trade performance. Consumers in formerly quota-restricted import markets are likely to benefit, while producers in exporting countries that have been earning rents under the MFA will probably suffer losses. For competitive exporting countries potential losses from deteriorating terms of trade will be offset by the expected reallocation of global resources to countries with comparative advantages in T&G production, and by the predicted increase in global T&G trade. Uncompetitive exporting countries, on the other hand, may suffer from both deteriorating terms of trade as rents are eroded and from welfare and trade losses as their T&G industries stagnate or are reallocated to more competitive exporting countries.

A widely used approach for examining the potential impacts of MFA quota removal (and wider trade liberalisation) on global, regional and country-level welfare and trade applies General Equilibrium Modelling (GEM) techniques, predominantly through the Global Trade Analysis Project (GTAP[8]) model. The key advantage of applying GEM techniques is that interdependences between economies and sectors are taken into account in the analysis of trade liberalisation effects.

A number of analytical studies using the GTAP general equilibrium model and database have simulated the likely impact of these complex interactions on global, regional and country-level welfare and trade. The GTAP model contains features of particular importance to an assessment of international T&G trade. First, the GTAP production system allows for differences in intermediate input intensities, while import intensities are allowed to vary across uses. Reducing the cost of imported garments to consumers is different from lowering the cost of intermediate imports used by domestic firms, which in turn may be competing with consumer-oriented imports in the product market. Second, the GTAP model allows for product differentiation by country of origin – the widely employed 'Armington' assumption (see Armington, 1969). For example, Chinese garments are treated as distinct from (but highly substitutable with) Bangladeshi garments. This permits the effects of discriminatory policies – and the removal of discrimination - on bilateral trade flows to be quantified.

An important limitation of GTAP-type international trade models for the study of the impact of policy change on particular products is that products are treated at a highly aggregate – SITC 2-3 digit – level. 'Wearing apparel' is treated as a single homogeneous product. The models thus gloss over the sometimes very different supply and demand functions governing market outcomes in different sub-sectors of trade in garments.

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[8] The GTAP model is a general equilibrium model for the world economy based on conventional economic theory using data-sets for a wide range of countries/regions. Firms maximise profits and consumers maximise their utility. Markets are assumed to be perfectly competitive and constant returns to scale prevail in all production and trading activities. Newer versions of the GTAP model have introduced increasing returns to scale. For more information on the GTAP model see Hertel (1997).

Of particular importance in using the model are prior estimates of the relative restrictiveness of MFA quotas. Being able to determine which countries are effectively quota-constrained and which are not is a crucial first step in assessing the potential country-level, regional and global effects of quota removal. The more tightly producers are believed to be quota-constrained, the larger the predicted increase in their market share following ATC implementation (see Martin et al. 2004; Elbehri, 2003; Terra, 2001). This is because exporting country governments restrict firms' exports to quota-restricted markets by licences which are sold or auctioned, thus effectively requiring firms to pay an export tax. The degree of quota restrictiveness is often measured in terms of its export tax equivalent (ETE). The more restrictive a quota is, the higher the value to a firm of an export licence, and thus the higher the ETE will be. Relatively restricted suppliers will therefore have higher ETEs, allowing them to absorb post-MFA price falls relative to unrestricted suppliers. The most desirable approach to calculating ETEs is to directly collect data on licence prices in exporting countries. Unfortunately, the paucity of available licence price data has meant that the ETE estimates included in the GTAP database have had to rely on a rather limited dataset.[9] Moreover, quota restrictiveness varies over time from product to product and across suppliers, implying that ETE estimates included in the GTAP database need to be interpreted with care.

In addition, the GTAP database does not include separate data for Cambodia but aggregates Cambodian data into a Rest-of-World region. The heterogeneity of the Rest-of-World region means that GTAP modelling results only allow us to examine broader global and regional impacts. Nevertheless, these predicted global and regional impacts provide an important context for the Cambodia-focused analysis that follows.

We shall concentrate here on examining the results of some of the most recent GTAP simulation exercises. Although these studies differ in their policy simulations and baseline scenarios (see Annex 2), all models predict global welfare gains and an expansion of the global T&G market as a result of MFA quota removal. Diao and Somwaru (2001) estimate that the annual growth of T&G trade in the 25 years after MFA quota removal will be more than 5% larger than without ATC implementation. This translates into approximately $US20 billion more trade upon implementation and US$200 billion over a 25-year period. They also predict that global garment trade will increase twice as fast as textile trade in the post-quota environment. Avisse and Fouquin (2001) predict that MFA quota removal will increase world garment trade by 14% and textile trade by 10%.

Of particular importance to our research are the estimates of import price changes brought about by MFA quota removal reported in Terra (2001). Import prices are generally expected to fall, although more steeply in garment products compared with textiles (see Table 3.1).

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[9] Quota price data have been collected for China (USITC, 2004), India (see Kathuria and Bhardwaj, 1998), Hong Kong (Francois and Spinanger, 2001b) and Bangladesh, Pakistan, Taiwan, Indonesia and Cambodia (Andriamanajara et al., 2004 & Martin et al., 2004).

Table 3.1 Effects of MFA quota removal on import prices

Destination	US-Canada		European Union		Other	
	Textiles	**Clothing**	**Textiles**	**Clothing**	**Textiles**	**Clothing**
Origin						
US_Canada	-0.2	-0.5	-0.2	-0.5	-0.2	-0.5
EU[a]	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Export_Dev[b]	-3.2	-11.2	-2.1	-3.6	0.3	0.3
Argentina	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Brazil	-1.7	-0.8	-1.7	-0.8	-0.1	-0.1
Chile	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Mexico	-0.5	8.0	-4.1	-4.1	-0.5	-0.5
Uruguay	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
LA Ots.[c]	-1.2	26.2	-1.2	-15.3	-1.2	-1.2
Rest of World	0.0	-0.7	0.0	-0.3	0.0	0.0

Source: Terra (2001)
Notes: a) EU = European Union countries
b) Export_Dev = leading T&G developing country exporters constrained by quotas (Bangladesh, China, North Korea, UAE, Philippines, Haiti, Hong Kong, India, Indonesia, Macau, Malawi, Pakistan, Republic of Korea, Romania, Singapore, Sri Lanka, Taiwan, Thailand, Turkey and Vietnam)
c) LA Ots. = Latin American countries not listed separately

Although the predicted price changes for the Rest-of-World region, which incorporates Cambodian data, are only marginal, we are more interested in the predicted price changes for exports from quota-constrained developing countries reported in Table 3.1. As sections 3.2 and 3.3 will show, Cambodia has been constrained by MFA quotas and is thus more likely to experience the price impacts reported for similarly constrained developing countries. Terra estimates that FOB import prices for garment products from those developing countries that have been restricted by MFA quotas (Export_Dev in Table 3.1) would fall by over 11% on the US market and by over 3.5% on the EU market. The difference is explained by the relatively greater restrictiveness of the US's quotas relative to domestic market size.

Although generally agreeing that MFA quota removal will result in global welfare gains, the GEM results differ in their estimates of how these expected gains will be distributed across countries and regions. While the US and the EU are consistently expected to benefit from MFA quota removal, particularly from terms-of-trade effects as T&G import prices fall, the simulation results for developing countries are mixed.

Terra (2001) predicts that ATC implementation will increase the garment production of quota-restrained developing countries, as a whole, by 20%, and textile production by 6% relative to the 1995 model base year. At the same time, non-quota-restrained suppliers that have seen export gains due to their preferential market access, in particular Mexico, and African and Latin American countries, will see their market share shrink. Avisse and Fouquin (2001) estimate that ATC implementation will result in garment production in Asia increasing by 54% and its share of the world market rising to 60% from 40% in 1995 (the model base year).

Within Asia, modelling results see China as the big winner from ATC implementation. Agama et al. (2003) predict that China will double its garment exports and achieve net welfare gains of over US$2 billion upon ATC implementation as terms-of-trade losses (arising from VER rent losses) are more than compensated by the gains in allocative efficiency China is expected to reap. The same study predicts (smaller) net welfare and export gains of over 50% for South Asia. The ASEAN5[10] and NIE[11] countries are expected to realise overall welfare losses arising from terms-of-

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[10] Thailand, Malaysia, Indonesia, Philippines and Vietnam.
[11] Hong Kong, Korea, Singapore and Taiwan.

trade effects as T&G prices fall, although the T&G exports of ASEAN countries are expected to rise by around 8%. Francois and Spinanger (2001a) report similar results with China achieving welfare gains of over 5% of GDP and T&G export increases of over 20% following ATC implementation. India follows with expected welfare gains of approximately 1% of GDP and export increases of around 9%. However, the ASEAN5 are predicted to achieve small welfare and export gains as improvements in allocative efficiency marginally outweigh negative terms-of-trade effects.

As discussed above, drawing Cambodia-specific conclusions from these regional GTAP modelling results is not possible because of GTAP database constraints.

While GEM simulations are important tools for analysing the potential impacts of trade liberalisation, the limitations of these economic modelling exercises need to be borne in mind. While GEM simulations have been shown to be good in predicting welfare and trade changes in the long run, the comparative static nature of many GEM exercises allows relatively little analysis of the adjustment process over time and the longer-term effects of trade policies through investment accumulation and productivity change. In the case of China's expected production and export increases, for example, a question mark hangs over how fast this reallocation could feasibly occur, given the contingent protection measures included as part of China's WTO Accession Agreement. These measures include special safeguards for a period of up to 12 years on T&G products and anti-dumping measures for up to 15 years.

For Cambodia, the key question is whether its export-oriented garment industry is going to be able to withstand the expected garment price falls on its key US and EU markets following MFA quota removal, and whether it is going to be able to continue to attract investment for its garment sector in the future. We shall therefore turn next to a detailed analysis of Cambodia's industry cost structures, starting with an examination of costs imposed by the MFA quota system on its garment producers. We shall estimate the extent to which Cambodia has been restricted by MFA quotas by measuring Export Tax Equivalents (ETEs) for key Cambodian garment exports in the run-up to MFA quota removal. High ETEs relative to other quota-restricted garment exporters would suggest that Cambodian producers are well placed to absorb predicted price falls for their garment products on the key US and EU markets.

3.2 Cambodia's ability to absorb price falls: relative quota restrictiveness and ETEs

In 2003, the US imposed T&G import quotas on exports from 51 countries. Combined, these countries accounted for approximately 80% of total US T&G imports in 2003 (see Annex 3).

Cambodia has faced quota restrictions on its exports to the US ever since the signing of the bilateral TATA in 1999. Over the period 1999-2003, its garment exports to the US have increased for both products under quota and those free from any quota constraints. Moreover, its garment exports under quota as a percentage of its total US garment exports has declined from 84% in 1999 to 63% in 2003, as exports of non-quota products grew by about 60% per annum between 1999 and 2003 (see Fig. 3.1). For comparison, China's ratio of garment exports under quota in 2002 was 46%, while that of Bangladesh stood at 69% in the same year.

Fig. 3.1 Garment exports to US and EU, 1999–2003
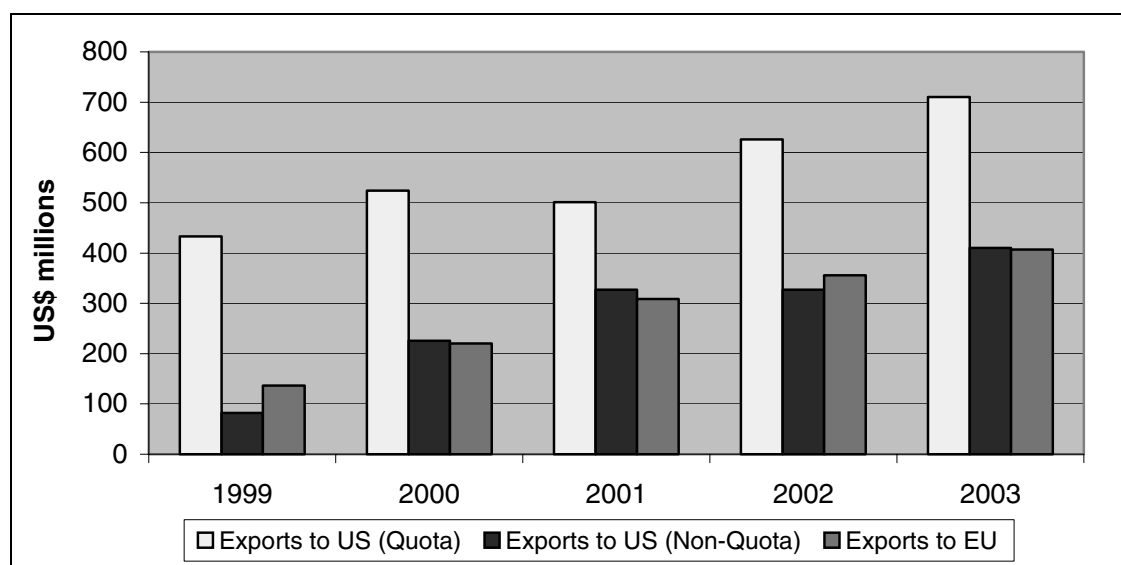
Source: Cambodian Ministry of Commerce, Trade Department

When quotas are first introduced to an exporting country, the proportion of exports under quota tends to be high but declines if the exporting country is competitive, as exports are diversified to unrestricted products in the restricted market. Subsequent bilateral negotiations then often lead to quota restrictions being extended to previously unrestricted product categories. The industry's relatively recent emergence has meant that quota coverage was only extended once in 2002 to one further garment product category.

Cambodia has also benefited from relatively generous annual quota growth rates compared with many of its competitors. The TATA includes an automatic 6% quota growth rate for the base line quantities, but - uniquely to Cambodia - also offers a potential annual increase in Cambodia's quota rates of up to 14% (18% since the TATA extension in 2002) if Cambodia is able to demonstrate compliance with its own labour code as well as with international labour standards. Assessments of Cambodian labour standards led the US to grant Cambodia quota increases of 4% for 2000, and 9% for 2001 (respectively, 10% and 15% including the guaranteed 6% annual increase). The US did not commit itself to the full increase, on the grounds that Cambodia failed to make substantial progress in respect of the core labour standard of freedom of association and the right to recognise and bargain collectively. This linking of trade with social standards has proved controversial. Following criticism about the apparent lack of transparency in US decision-making, and perceptions that politics and protectionism were the overriding factors behind the labour standards provision, the ILO was asked in 2001 to monitor garment factories and produce regular compliance reports. The US granted further quota increases of 9% for 2002, (15% including the guaranteed 6%), 12% for 2003 (18%) and 14% for 2004 (20%). Despite the controversy behind the labour standards provision in the TATA, the average annual quota growth rates of 15% per annum that Cambodia enjoyed between 2000 and 2004 far exceeded those of competitor countries such as Bangladesh (average quota growth of 10% per annum between 1995 and 2004), China (average quota growth of 1.5% per annum between 1997 and 2004) and Sri Lanka (average quota growth of 7.5% per annum between 1995 and 2004).

Cambodia's 13 US quotas covered 25 MFA garment product categories (see Table 3.2), compared with 30 for Bangladesh, 38 for Sri Lanka, 59 for Thailand and 77 for China. The total value of Cambodian exports under quota amounted to US$760 million in 2003 or approximately 40% of total Cambodian garment exports to the US.

Table 3.2 Cambodia: Garment quota fill-rates (in % of total base quotas) on US market

Categories	Product	Quota Fill Rate					
		1999	2000	2001	2002	2003	Average
331/631	Gloves and Mittens	81.9	56.4	43.4	23.9	0.0	41.1
334/634	Men's & Boys' Coats	90.7	61.5	87.8	78.9	79.0	79.6
335/635	Women & Girls' Coats	45.5	55.9	89.1	66.1	91.8	69.7
338/339	Men's & Boys' Knit Shirts & Blouses	94.7	83.9	98.6	92.6	80.8	90.1
340/640	Men's & Boys' Shirts, Not Knit	49.7	65.3	58.5	69.6	65.1	61.6
345	Women & Girls' Shirts/ Blouses, Not Knit	41.2	94.7	67.0	39.9	57.5	60.1
347/348 & 647/648	Trousers, Cotton & Man-Made Fibres	97.1	100.0	75.7	86.2	93.4	90.5
352/652	Underwear	57.0	39.2	54.5	87.4	67.7	61.2
435	Women & Girls' Wool Coats	-	-	-	4.3	5.3	4.8
438	Wool Knit Shirts	95.9	68.8	64.3	62.5	25.6	63.4
445/446	Women/ Girls' & Men/ Boys' Wool Sweaters	49.8	41.7	65.5	37.7	6.0	40.1
638/639	Men & Boys' Knit Shirts, Man-Made Fibres & Blouses	89.0	79.7	53.3	64.3	50.2	67.3
645/646	Men's & Boys' Sweaters, Man-Made Fibres	9.1	41.9	33.8	24.7	4.6	22.8
Average		66.8	65.7	66.0	56.8	48.2	57.9

Source: OTEXA

In 2003, approximately 80% of Cambodia's exports under quota were concentrated in just 6 product categories (Knitted Shirts and Trousers, i.e. MFA quota cat. 338/339/347/348/647/648), which have exhibited average quota fill-rates of over 90% (see Table 3.2). To highlight main competitors, Table 3.3 compares Cambodia's exports to the US under these 6 quota categories with exports from other producing nations.

Cambodia's competitors on the US market in its 6 main quota categories include both non-quota-constrained producers or producers with preferential market access such as Mexico and Caribbean Basin countries, as well as other suppliers with US quota restriction in these product categories, such as China, Hong Kong and Vietnam.

Establishing the extent to which quota restrictions have imposed costs on exporters in these latter countries, including Cambodia, is an important factor behind determining future ability to compete on price.

Table 3.3 Exports (US$m) to US markets in 2003 under Cambodia's high-fill quota categories

Cat. 347/8 & 647/8 (Trousers, Cotton & Man-made Fibres)		Cat. 338/9 (Men & Boys Knit Shirts)	
World	14,828	World	10,848
1. Mexico	3,233	1. Mexico	1,234
2. Dominican Republic	923	2. Honduras	1,049
3. Hong Kong	827	3. Guatemala	804
4. Vietnam	769	4. Vietnam	667
5. China	577	5. El Salvador	587
6. Indonesia	538	6. Pakistan	544
7. Guatemala	523	7. Peru	410
8. Cambodia	**409**	8. Hong Kong	377
9. Philippines	404	9. Turkey	368
10. Taiwan	347	10. India	341
11. Turkey	344	11. Macau	254
12. Honduras	342	12. Philippines	227
13. Bangladesh	334	13. Jordan	206
14. Nicaragua	259	14. Dominican Republic	203
15. Macau	257	**15. Cambodia**	**199**
16. Canada	251	16. China	197
17. El Salvador	247	17. Canada	183
18. Sri Lanka	238	18. Thailand	178
19. Thailand	235	19. Brunei	155

Source: OTEXA

A simple examination of Cambodia's high quota fill-rates (in these 6 quota categories) might suggest that quotas are binding, i.e. restrictive, and that Cambodia would be competitive in these product categories once quotas are removed.[12] However, fill-rates can be difficult to measure and quotas might be binding despite relatively low fill-rates, for reasons such as inefficient administration of quotas. Moreover, an examination of fill-rates for other restricted producers reveals that binding quotas are present across the majority of suppliers. We therefore require a more sophisticated measurement of the costs resulting from quota restrictiveness for Cambodia's garment industry relative to other producers.

As outlined in sections 1.2 and 3.1, quantifying export tax equivalents (ETEs) of individual garment products under quota allows us to measure the degree to which quotas have increased export prices. ETEs can also be regarded as the economic rents which result from the ability to charge higher prices on MFA restricted import markets or firms' maximum willingness to pay for the right to export a given garment product. These rents and the ETEs will disappear as the MFA regime is dismantled. However, estimating ETEs for garment exporting countries in the run-up to MFA quota removal allows us to quantify the extent to which firms will be able to cope with garment price falls without adjusting other production and input costs.

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[12] An average fill-rate of over 50% is sometimes used to define a binding quota. Annex 3 provides a list of countries with 'binding' quotas.

Here, data from official RGC auctions of quota licences are used to quantify Cambodia's ETEs in 2002.[13] These ETEs are then compared with those of other major garment-exporting developing countries. The collected licence prices are listed on a quarterly basis in US$ and in the MFA quota category-specific unit (usually dozen). To quantify the ETEs, we express the 2002 prices per item in terms of Square Metre Equivalents (SME). For each quota category (n), we then approximate the supply price net of rent (SP_n) as the difference between the FOB export unit value of exports to the US market (UV_n) and the licence price per unit (L_n):[14]

$$SP_n = UV_n - L_n$$

The ETEs for each product category are then quantified as:

$$e_n = L_n / SP_n$$

Table 3.4 lists the computed ETEs of quota product categories that exhibited quota fill-rates of over 30% in 2002.

Table 3.4 Cambodia's ETEs in 2002

Quota Category	Product	ETE
334/634	Men's & Boys' Coats	5.80%
335/635	Women & Girls' Coats	9.50%
338/339	Men's & Boys' Knit Shirts	11.00%
340/640	Men's & Boys' Shirts, Not Knit	2.60%
345	Women & Girls' Shirts/ louses, Not Knit	29.00%
347/48/647/48	Trousers, Cotton & Man-Made Fibres	9.00%
352/652	Underwear	2.00%
438	Wool Knit Shirts	5.70%
638/639	Men & Boys' Knit Shirts, Man-Made Fibres & Blouses	7.20%

The ETEs range from 2% in quota categories 352/652 (Underwear) to 29% for quota category 345 (Women and Girls' Shirts/Blouses, Not Knit). Table 3.5 compares Cambodia's trade-weighted average ETE with those of other large Asian garment exporters to the US.[15] Cambodia's relative quota restrictiveness puts it below the majority of other large garment producing countries in the region.

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[13] Data are available on the Internet under www.gmac-cambodia.org/quota.htm.

[14] FOB unit values, measured in 2002 US$ were proxied for price. Data from www.otexa.ita.doc.gov. The values and quantities of US imports are reported on a 'customs value' basis and are equivalent to the FOB designations for exports.

[15] The ETEs for other producers are taken from Andriamananjara et al. (2004). They were computed using the same methodology as our Cambodian estimates and are therefore comparable.

Table 3.5 Weighted average ETEs for Asian garment producers (2002)

Country	ETE
Bangladesh	21.56%
China	19.74%
Hong Kong	18.62%
India	12.48%
Pakistan	11.26%
Macau	9.81%
Cambodia	7.90%
Indonesia	5.41%
Taiwan	0.70%

Source: Andiamananjara et al. (2004)

However, in comparing the computed garment product ETEs, it is important to keep in mind that the licence price data for Cambodia rely on official auctions of only about 60% of total garment exports under quota in 2002. The rest was allocated to firms according to past export performance. It is thus possible that Cambodia's quota restrictiveness is higher than our computed ETEs would suggest, because the true opportunity cost of obtaining a quota licence is being masked by relatively uncompetitive quota bidding and inefficient quota allocation systems. Estimates of ETEs in other T&G producing countries often rely on data from secondary (unofficial) auctions of quota licences. We were unable to obtain such data for Cambodia.

3.3 Recent trade performance under the ATC

While Cambodia appears relatively less quota-constrained than China and some South-East Asian garment producing countries, it is also useful to examine its relative export performance in garment product categories freed from global quotas on the US market in 2002 as part of Phase 3 of ATC implementation (see Annex 1). Although these product categories only represented about 8% of total US garment imports in 2002, they offer an important test of how total quota removal will affect global trade and production. The garment products freed in 2002 were categories 239 (Baby Garments), 331/631 (Gloves and Mittens), 349/649 (Brassieres, Other Body Support Garments), 350/650 (Dressing Gowns/Robes) and 670 (Luggage). In the run-up to Phase 3 of ATC implementation, Cambodia exported US$49 million of these products to the US, accounting for approximately 5% of Cambodia's total garment exports to the US in 2001. Among these categories, 239 and 350/650 are the most important, with exports alone totalling US$45m. in 2001.

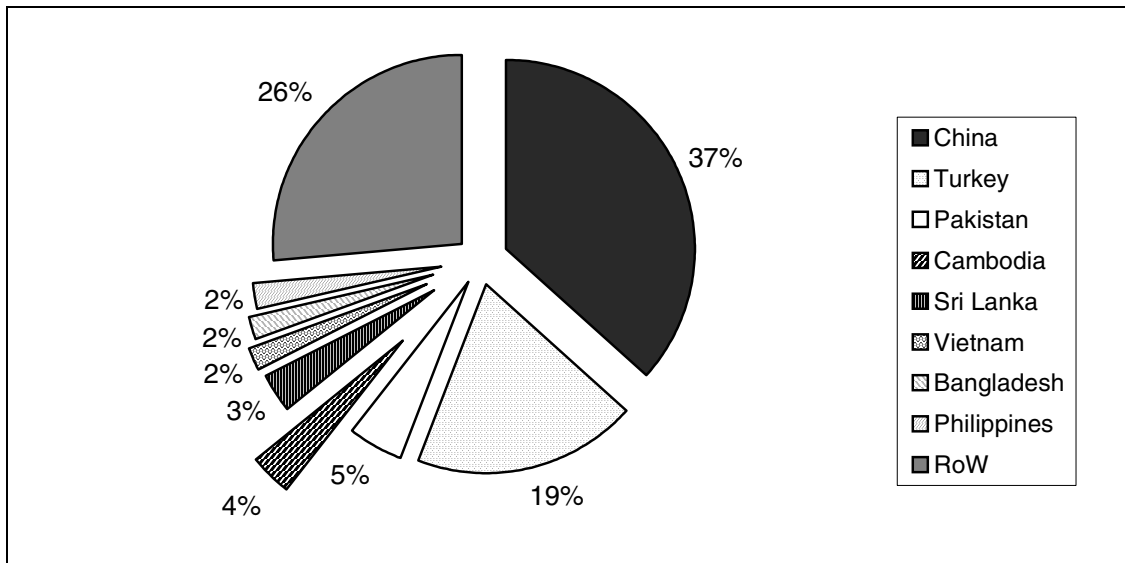### 3.3.1 Category 350/650 (Dressing Gowns/Robes)

Figs. 3.2 and 3.3 show the US market import shares for categories 350/650 before and after Phase 3 of ATC quota integration.

Fig. 3.2 MFA Cat. 350 and 650 (Dressing Gowns and Robes) - US market share in 2001 (US$ value terms)
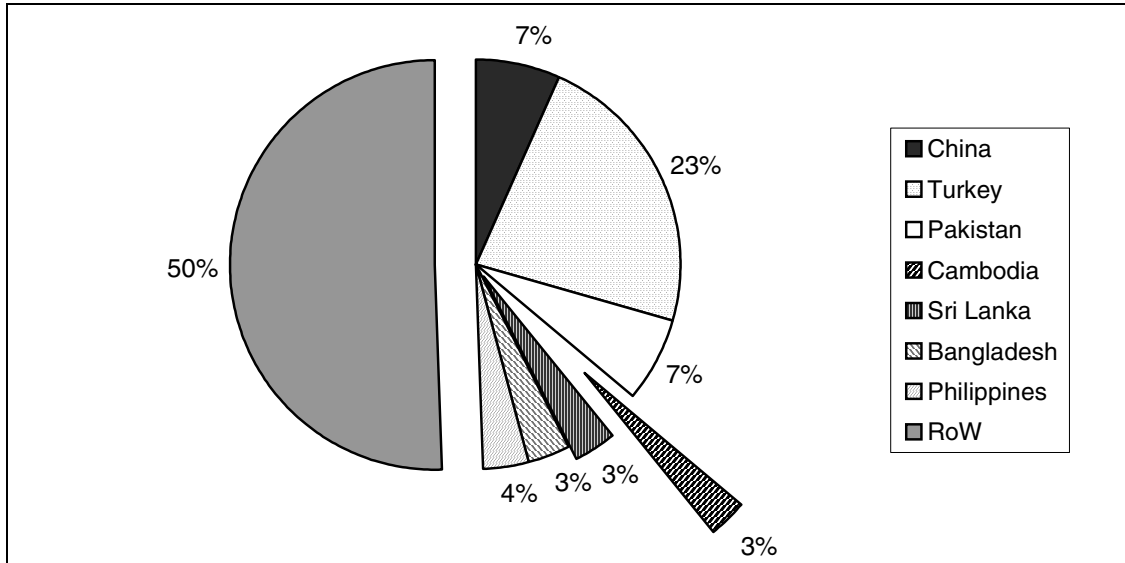
Source: OTEXA

Fig. 3.3 MFA Cat. 350 and 650 (Dressing Gowns and Robes) - US market share in 2003 (US$ value terms)

Source: OTEXA

Perhaps the initially most striking difference between the two figures is the dramatic increase in China's US market import share of products 350/650 (from around 7% in 2001 to 37% in 2003). At the same time, however, Cambodia has managed to increase its share of the US market for categories 350/650 from 3 to 4%. Indeed, a detailed examination of the data reveals that of all developing countries exporting products under categories 350/650 in 2001, only China, Cambodia, Vietnam and Sri Lanka have increased their exports in value terms since quotas were freed. Table 3.6 shows changes in unit prices for the main developing country exporters of these products to the US.

Table 3.6 US import market for Cat. 350 and 650 (Dressing Gowns and Robes) – FOB unit price changes (US$ per SME)

	2001	2003	% Change
World	75.85	51.45	-32%
China	99.29	46.69	-53%
Cambodia	43.86	42.92	-2%
Turkey	128.05	80.01	-38%
Pakistan	47.31	44.15	-7%
Sri Lanka	98.46	62.58	-36%
Bangladesh	44.32	32.62	-26%

Source: OTEXA

One observes the anticipated price falls from quota removal, as US import unit prices (measured as FOB import prices per SME) have fallen by over 30% since 2001. For comparison, prices only fell by approximately 18% over the period 1998-2001. Again, the impact of unit price changes has differed across producers. The relatively modest unit price falls for Cambodian 350/650 products are worth noting, although price changes may take longer than two years to feed through.

3.3.2 Category 239 (Baby Garments)

For product category 239, the US import market share and unit price changes have also been dramatic, but Cambodia's export performance is far less encouraging. Cambodia's export values have fallen from US$31 million in 2001 to US$16 million in 2003, while export volume over the same period has fallen from 11.9 SMEs to 6.5 SMEs. Although Cambodia only held about 0.8% of the total US market for 239 products in 2001, this share has declined further over the following two years. Over the same period, all major developing country exporters of category 239 products to the US have seen their exports of these products decline – apart from China, Vietnam and El Salvador. Again, China's export performance has been spectacular with its 239 US market share increasing from 6% in 2001 to over 44% in 2003. The reductions in 239 unit prices have also been extremely steep (see Table 3.7).

Table 3.7 US import market for Cat. 239 (Baby Garments) - FOB unit price changes (US$ per SME)

	2000	2003	%Change
World	3.07	2.48	-19%
China	5.62	2.25	-60%
Thailand	2.83	2.54	-10%
Philippines	3.11	2.78	-11%
Indonesia	3.33	2.89	-13%
India	3.30	2.70	-19%
Bangladesh	2.33	2.20	-6%
Vietnam	2.97	3.04	2%
Malaysia	4.21	3.57	-15%
El Salvador	3.24	2.28	-30%
Sri Lanka	3.81	3.47	-9%
Cambodia	2.85	2.48	-13%

Source: OTEXA

World unit prices for 239 products in the US market have fallen by an average of 19% between 2000 and 2003.[16] For comparison, 239 product unit prices between 1998 and 2000 only fell by an average of 6%. Average unit price falls have been particularly dramatic for China (60%), while Vietnam has seen small unit price rises.

Our analysis of Cambodia's quota restrictiveness in the run-up to full MFA quota removal has shown that Cambodia is relatively less constrained than some of the other main developing country garment exporters in the region. The analysis of export performance following Phase 3 of ATC implementation has indicated that Cambodia's garment industry is capable of maintaining export growth and production in selected quota-free categories on the US market. We now turn to an analysis of non-quota-related factors that are likely to influence future T&G trade and production in a non-quota world.

3.4 Analysis of wider production costs, industry productivity and profitability

While analysing MFA-imposed costs is important for assessing the industry's ability to absorb projected garment price falls, other industry costs are also likely to influence the industry's future ability to compete on price in a more liberalised global trading environment for T&G products. We shall concentrate here on analysing industry labour and transportation costs. Labour and transportation costs have also been highlighted in qualitative surveys (see Andriamananjara et al., 2004; Spinanger and Verma, 2003) as important factors behind investment and sourcing decisions of T&G producers operating throughout Asia. Our discussion of production costs will be strengthened by examining industry productivity and profitability.

3.4.1 Production costs, productivity and profitability

Given the labour-intensity of garment production, one would expect that labour costs would be an important factor behind the production and investment decisions of T&G firms. We have briefly discussed their relative importance in the establishment of Cambodia's industry in the mid-1990s in section 2.1. Table 3.8 contrasts legal working hours as well as minimum and average wages in Cambodia with those of a selection of other garment-exporting Asian developing countries.

Table 3.8 Working hours and wages in the garment industry in selected Asian developing countries

Country	Year	Legal hours of work (per week)	Monthly minimum wage set by law (US$)	Hourly wage rate (US$)
China	2002	40	12-39	0.88[a]/0.68[b]
Pakistan	2002	n/a	n/a	0.41
Bangladesh	2002	48	49	0.39
India	2002	n/a	n/a	0.38
Cambodia	2003	48	45	0.33
Indonesia	2002	n/a	n/a	0.27

*Notes*: a) coastal areas; b) other than coastal
Sources: Cambodian Ministry of Commerce; USITC (2004)

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[16] We have used 2000 as the comparator here, because the data for 2001 showed substantial deviation from trend US imports for this product category in the run-up to quota removal.

At US$0.33 per hour, wages in Cambodia's garment industry are lower than in many other developing Asian countries. However, comparisons of wage rates alone say relatively little about the Cambodian garment industry's ability to compete on international markets or to attract investment. High or rising wage rates need not harm competitiveness if coupled with improvements in productivity, defined as increased amounts of output per unit of production input. Our focus will be on measuring labour productivity, i.e. the amount of output per unit of labour unit, and the changes in labour productivity over time. This should provide us with a better measure of industry performance than simple comparisons of wages. Growth in labour productivity may be due either to more efficient use of labour, without more of other inputs, or to the fact that each worker works with more of the other inputs such as physical capital, human capital or intermediate inputs. Estimated labour productivity may also show an increase if the mix of activities in the garment industry has shifted from activities with low levels of productivity to activities with higher levels, i.e. a movement up the 'value-chain', even if none of the activities have become more productive.

For the purposes of this research, output is measured as the total production value (in US$) of the garment industry minus the inflation-adjusted value (converted to US$ on the basis of the nominal exchange rate) of the intermediate inputs – the raw materials, semi-finished products and energy inputs used up in the manufacturing process – and minus the value of administrative costs associated with production and export.[17] This net output is then divided by the total number of garment workers to produce a measure of net output or value-added per worker. Fig. 3.4 provides a comparison of our estimate of value-added per worker in the Cambodian garment industry in 2003 with World Bank value-added per worker estimates in other selected garment industries, while Table 3.9 shows labour productivity growth in the Cambodian garment industry over the period 1999-2003 including a breakdown of production costs.

Fig. 3.4 Value-added per worker in garment industry in selected countries
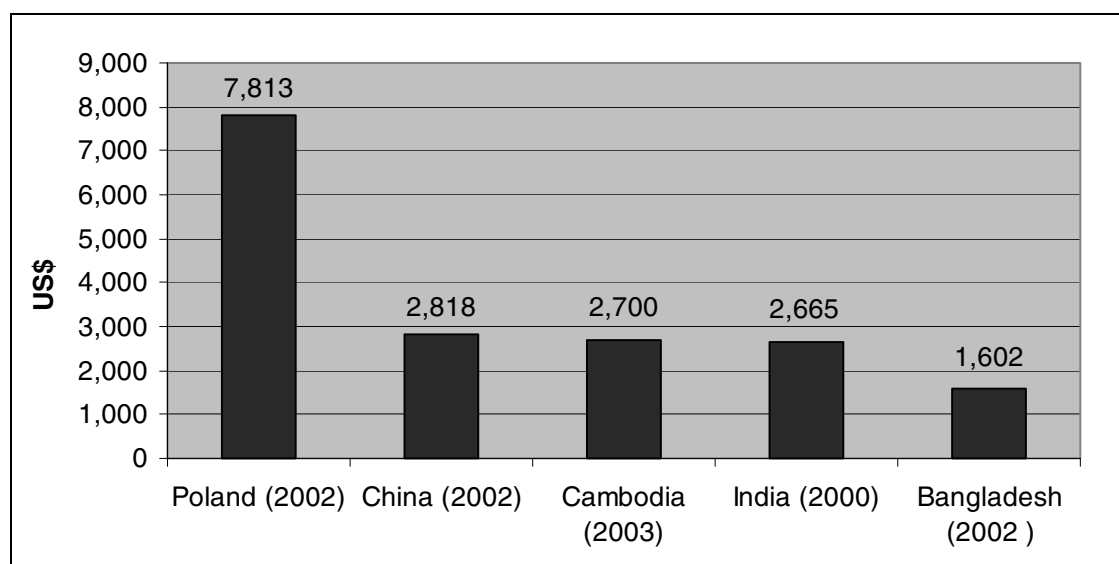
Sources: Cambodia – own calculation using Customs Department data on imports of categories 50-63 & Ministry of Commerce data on exports of categories HS 61-63; World Bank ICSs for Poland, China, India and Bangladesh

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[17] Administrative costs are not normally included in net output measurements, which focus on purchased inputs that have been embodied in the value of the product, but they are included here because numerous assessments (e.g. WB, 2004; IMF, 2004) have identified bureaucracy and 'facilitation' costs as a particular drag on productivity in Cambodia.

Table 3.9 Cambodian garment industry value-added per worker and input costs in constant prices (1999-2003)

	Value-added per worker (constant 1999 US$)	Annual growth in value-added per worker (%)	Cost of materials, inputs and utilities (% of output)	Administrative costs (% of output)	Labour costs (% of output)	Operating profits (% of output)
1999	1,705		71.0	4.2	n/a	n/a
2000	2,134	25	60.9	4.1	15.6	19.4
2001	2,270	6	58.6	4.6	12.4	24.4
2002	2,168	-5	61.7	4.6	13.6	20.1
2003	2,700	25	57.0	4.0	11.8	27.2

Source: Own calculations using Government of Cambodia data on cost of materials, utilities, labour and other inputs.

In 2003, value-added per worker in Cambodia's garment industry stood at US$2,700, only marginally below labour productivity levels enjoyed by China and above those in major South Asian garment exporting countries.[18] Given the fragility of this single value-added estimate, it is important to examine broader trends in labour productivity in Cambodian industry. Growth in value-added per worker has been strong over recent years, rising 12% per annum between 1999 and 2003 or approximately 58% over the period. At the same time, operating profits have shown a healthy increase from approximately 19% of output in 2000 to 27% in 2003, where output is measured as the value (in constant 1999 prices) of Cambodian garment exports (HS-Chapters 60-63). At the same time, labour costs as a percentage of output declined from approximately 15% in 2000 to 12% in 2003, despite several increases in the minimum wage over the period. What Table 3.9 also demonstrates is the relative importance of materials and utilities costs in the Cambodian garment manufacturing process. Although cost savings from material inputs are constrained by the fact that the Cambodian industry relies heavily on imported inputs, there nevertheless exists scope for future cost savings through more efficient sourcing of materials. The data on administrative costs rely on World Bank survey results which estimate that total industry costs associated with administration (including undocumented 'facilitation' fees), transport costs and quota fees stood at US$70 million or 4% of industry output in 2003 (World Bank, 2004). The Bank has estimated that undocumented 'facilitation fees' alone amount to approximately 13% of these total administration costs, suggesting that there is ample scope here for additional industry cost savings.

A further measure we shall utilise to determine the industry's future ability to compete on world markets is unit labour costs, defined as the ratio of the industry's wage bill (in US$) over its volume output. Unit labour costs represent a direct link between productivity and the cost of labour used in generating output. If labour productivity increases but wages remain unchanged, then unit labour costs decrease. Conversely, if wages increase while labour productivity remains unchanged, then unit labour costs rise. Thus, changes in unit labour costs reflect the net effect of changes in wages and in worker productivity. Fig. 3.5 compares unit labour cost changes for the garment industries in Cambodia and Bangladesh over periods of several years.

The decline in Cambodia's unit labour costs between 2000 and 2003 reinforces our earlier analysis of significant improvements in labour productivity in Cambodia's garment industry

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[18] It should be noted here that our estimate of Cambodian value-added per worker using government primary data differs significantly from World Bank estimates of US$ 1,190 in the 2003 ICS for Cambodia. The ICS relies on a sample survey of selected firms for data collection. A 2000 CDRI survey estimated Cambodian value-added per worker at US$ 2,100 (CDRI, 2001).

which have offset any negative effects arising from rising wage costs. Unit labour costs in China and Bangladesh, on the other hand, have seen increases over the periods 1994–2000 and 1997–2002 respectively, indicating that wage growth has outpaced any labour productivity improvements or that labour productivity has remained unchanged or even fallen while wages have increased.

Fig. 3.5 Changes in unit labour costs in Cambodia and Bangladesh
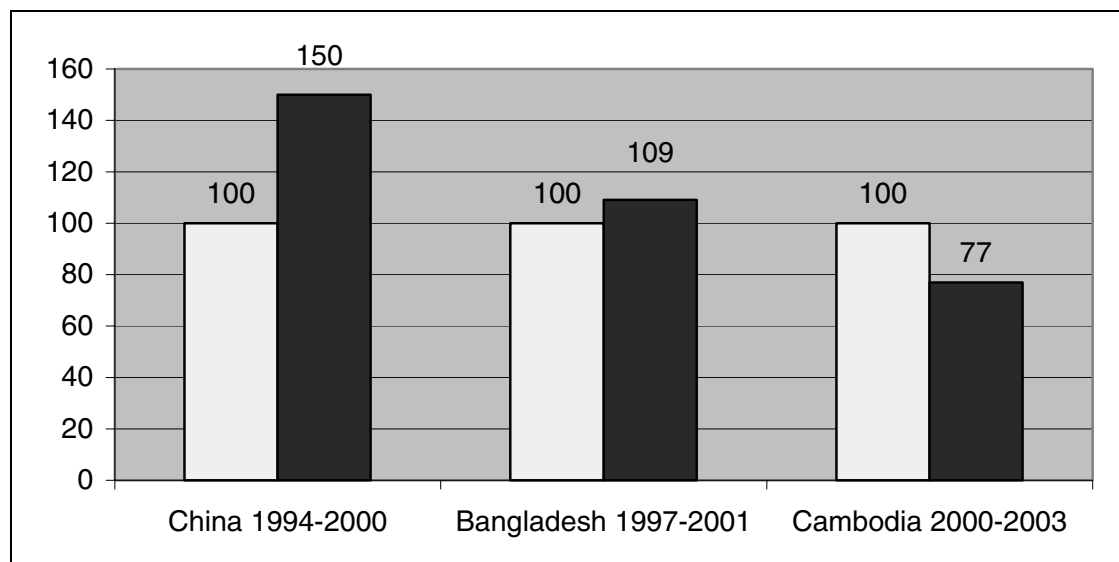
Sources: Government of Cambodia primary data; Mlachila and Yang (2004), US Department of Labour (2002) and ILO Labour Statistics (www.ilo.org)

The restructuring and increased segmentation of the T&G 'value-chain' discussed in section 2.3 has also meant that garment firms have increasingly focused on improving manufacturing lead times and flexibility in order to maintain a competitive edge. The costs associated with bringing products to market are an important component.

Transport costs can be represented by the difference between the CIF product values reported by the importing country and the FOB values reported by the exporting country. However, this CIF-FOB difference may represent discrepancies in the reported value of the merchandise rather than transportation costs. A critical statistic for obtaining credible transportation data is the 'customs import value' (CIV), which can be obtained from the United States' trade recording system. The CIV value is defined as the price actually paid for the merchandise, excluding import duties, freight, insurance, and other charges incurred in the importing of merchandise to its destination, and is thus comparable with the foreign partners' FOB value. The import charges are the difference between the CIF value and the CIV value. These charges represent the aggregate cost of all freight, insurance, and other charges incurred in transporting merchandise from alongside the carrier at the port of exportation to alongside the carrier at the first port of entry. Import charges as measured here can be regarded as representing 'actual' transport cost. These data are available at the detailed bilateral commodity level. The use of transport cost obtained by a CIF/CIV ratio as opposed to a CIF/FOB ratio can eliminate problems associated with the inconsistencies existing in reported merchandise trade between partners. Table 3.10 shows CIF/CIV ratios for selected garment producers on the US market.

Table 3.10 Bilateral CIF/CIV transport cost margins for US market (for SITC Code 84 - Apparel Products)

Country	CIF/CIV Margin
Mexico	0.86%
Hong Kong	4.89%
China	5.78%
Sri Lanka	5.82%
Macau	5.89%
Taiwan	6.09%
Cambodia	6.33%
Indonesia	6.38%
India	6.81%
Vietnam	6.90%
Bangladesh	7.11%
Pakistan	8.59%

Our estimates of transport cost margins vary from 0.86% for Mexico to 8.59% for Pakistan. Clearly, the proximity of Mexico to the US market explains that country's low transport cost margin, while East and South-East Asian producers appear to fare better than South Asian exporters to the US. Noteworthy is that Cambodia's transport costs are lower than those of its larger neighbour Vietnam.

Cambodia is also naturally disadvantaged because of the relative distance to its important US markets. Moreover, two decades of conflict and civil war have left it with both a national road network and a port at Sihanoukville requiring significant investment and upgrading. The location of the majority of garment firms around Phnom Penh or close to Sihanoukville has mitigated these disadvantages to some extent, but Cambodia still fares relatively worse in terms of average shipping times to the important US market compared with other South-East Asian T&G producers (see Table 3.11).

Table 3.11 Shipping time to US (days including in port of origin, destination and at sea)

Taiwan	14.3
Hong Kong	14.9
China	15.0
Indonesia	22.5
Cambodia	22.6
India	25.0
Pakistan	26.0
Bangladesh	27.1
Macau	27.2

Source: Veson Nautical, http://apps.veson.com/distances.

Although naturally disadvantaged relative to most other South-East Asian countries, our analysis of industry profitability and productivity, which included transport as a component of administrative input costs, suggests that transport costs have not impeded production, investment and profitability growth of Cambodia's garment industry, and are unlikely to do so in the future, given their minor contribution to overall input and production costs.

Chapter 4: Conclusions: Impact of ATC on Exports and the Economy

Cambodia's export-oriented garment industry, which has enjoyed spectacular growth on the back of foreign direct investment (FDI) that has continued to flow into the sector over the last decade, faces both opportunities and threats from liberalisation of international textile and garment (T&G) trade through the WTO Agreement on Textiles and Clothing (ATC). Opportunities because the industry will no longer be restricted by quotas that have been imposed by major developed country importers on Cambodian garment products. Threats because restrictions on exports from all other T&G producing countries will also be lifted at the same time.

This paper has argued that the Cambodian garment industry has exhibited strengths that have not been fully allowed for in the computable general equilibrium-based trade models which have been extensively used to simulate the effects of full ATC implementation, including the abrogation of all garment import quotas. Model-based conclusions have been reflected in the analyses of the international financial institutions (World Bank, 2004; IMF, 2004). These studies have tended to focus more directly on the wider business environment in which Cambodian firms operate, and have thus emphasised a set of factors other than production costs for determining the future performance of Cambodia's garment industry.

The paper has shown that:

- exporting firms have effectively been taxed through the prices they have had to pay for licences to export to the US market; the Export Tax Equivalent has been estimated at 8% on average and up to 29% of FOB values on some successful items;
- in spite of this disability, investment – largely foreign – has continued to flow into the sector; garment manufacturers show few obvious signs of apprehension about their ability to continue expansion in a quota-less trading environment;
- the garment sector has been able to increase the share of profit in the value of goods sold and in value-added; unit labour costs and labour's share in value-added have fallen;
- there remains scope for further cost reduction through savings in materials, logistic and 'facilitation' costs.

There is no reliable basis for estimating the effect on export unit values of the removal of MFA export quotas on garment supplies to the world market from large and competitive suppliers such as China and India. However, Cambodia's garment exports are concentrated to the tune of 70% on the US market. In this market, such estimates of price impact as there are (Terra, 2001) suggest that the fall in price could be significant – perhaps of the order of 10-15%. Evidence from the effect on prices of Phase 3 of trade liberalisation under the ATC suggests that the impact of full liberalisation will vary widely from product to product, although estimates of changes in individual product prices post-MFA are unfortunately not available.

A fall in unit value of sales of 10-15% should be readily absorbable by Cambodian exporters, either through the saving they will make on the cost of export licences or, if this is not sufficient, through material cost savings, efficiency improvements and some shaving of profit margins. Given likely differences in price falls across individual product categories, it is, however, not possible to conclude that Cambodian exporters will be able to absorb price changes in all garment export products.

This assessment of the prospects of Cambodia's garment industry lends credibility to the optimistic outlook for the industry advanced by the GMAC, and is borne out by anecdotal evidence about recent movements amongst selected Cambodian firms up the garment 'value-chain' by manufacturing more sophisticated designs.[19]

From the perspective of the Cambodian economy as a whole, however, the conclusion is slightly less rosy. Garment manufacturing is an activity where the share of value-added in the value of output is low – 35%-40%. In Cambodia, where foreign investment predominates in export-oriented garment manufacturing, the domestic value-added share is lower still. The effect of a 10% fall in the unit value of sales could be a much larger percentage fall in sector value-added – in the range 25%-30%, assuming that other prices remain unchanged.

The first-round impact of this on GDP can be readily estimated. The share of value-added in the textile, garment and footwear sectors in GDP rose from 3.8% in 1997 to 12.5% in 2003, most of it is attributable to value-added in export-oriented garment production. Were this value-added to fall by 25-30%, GDP would decline by 2.2-2.6% (before counting (limited) indirect and induced effects). This is far less than the 22% annual rate of value-added growth in the sector over the same period. Therefore it should not constitute a serious setback in sector expansion. This simple calculation assumes that firms will maintain their output because they are compensated for falling prices by the removal of the implicit tax on their export sales. If employment also remains unchanged, the burden of the GDP loss will be shared by the government and the (mainly foreign) enterprise proprietors.

However, the outlook would be more serious if, in the new international trading environment, the prices of the textile inputs used by Cambodian manufacturers rise. Hitherto Cambodia has been able to import textiles from large East Asian manufacturers whose sales to their major developed country markets have been quota-restricted, depressing prices in non-quota markets, such as those in South-East and South Asia. The abolition of developed country quotas on East Asian textile exports will make sales to the EU and North American markets more profitable, and is likely, if anything, to raise the prices of these products to buyers in South-East and South Asia. An increase in wholesale textiles prices would also affect Cambodia's competitors in the garment business, but those whose former garment export quotas were more stringent stand to suffer less as the implicit tax relief that they will now enjoy will be greater.

Cautious optimism about the future of the industry remains in order. Survival and continued expansion will nevertheless depend heavily on enterprises' ability to adjust to evolving challenges in the international market, and on the government's good will in enabling exporting firms to pursue further programmes of cost reduction.

Postscript

The research for this paper was conducted over the second half of 2004, i.e. before the removal of MFA quotas under the ATC on 1 January 2005. Although there are already data emerging which point to continued growth in the Cambodian garment industry over the first six months of 2005, it is still too early to conclude that this confirms the paper's findings of a positive outlook for the Cambodian garment industry.

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[19] Interview with GMAC Deputy Director, 9 August 2004.

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Annex 1: The WTO Agreement on Textiles and Clothing (ATC)

The ATC came into force with the WTO Uruguay Round agreements of 1995 and created special interim rules to govern trade in textiles and garments among WTO member countries. It provides for the gradual elimination of quotas on textiles and garments established by major developed countries (the US, EU, Canada and Norway)[20] under the Multi-Fibre Arrangement (MFA), which was negotiated under the General Agreement on Tariffs and Trade of 1947 and governed most world trade in textiles and garments during the period 1974-94. Under the MFA, importing countries negotiated bilateral agreements with exporting countries to set quotas, which represents a departure from GATT rules in two respects: they were applied on a country-specific basis, in contradiction of the non-discrimination obligation, and they contradicted the general principle of reducing or avoiding absolute quantitative limits.

The ATC requires that all textile and garment quotas be removed over a ten-year transition period ending on 1 January 2005. During the transition period, WTO countries are required to integrate groups of articles representing specified minimum percentages of their respective 1990 textile and garment import volumes in four stages (see Table A1). Goods totalling 16% of major importing countries' trade were integrated on 1 January 1995; another 17% on 1 January 1998; and an additional 18% on 1 January 2002, for a total of 51%. The remaining 49% of the trade was to be integrated at the end of the transition period on 1 January 2005. For quotas that were not eliminated in one of the first three stages of integration, the ATC required importing countries to increase the base annual growth rates applicable to each such quota, which were specified in the bilateral MFA agreements in place in 1994. Because the products subject to GATT integration under the ATC include not only all of the articles covered by the MFA, but also numerous non-MFA goods (e.g. pure silk goods), the major importing countries chose first to integrate the non-MFA goods, or MFA articles that were not under quota as well as low value-added items, and to defer integration of the most sensitive articles until the end of the transition period.

Table A1 ATC integration scheme for textiles and clothing

	Integration[a] (Base: 1990 import volume)	Growth rate of residual quotas (Base: Previously agreed growth rates)
Stage I (1 January 1995)	16% (Total: 16%)	16% higher than initial rate (Example: From 3% to 3.48%)
Stage II (1 January 1998)	17% (Total: 33%)	25% increase (Example: From 3.48% to 4.35%)
Stage III (1 January 2002)	18% (Total: 55%)	27% increase (Example: From 4.35% to 5.52%)
End of transition period (1 January 2005)	49% (Total: 100%)	

Note: a) Importing countries are free to choose the products that they integrate at each stage, as long as products are included from the four groupings: tops and yarn, fabrics, made-up textile products, and clothing.
Source: WTO

[20] Norway's quotas have been removed for all exporting countries.

Annex 2: Selected GTAP studies of ATC impact

Authors	Database	Model	Policy Simulations	General Results
Francois and Spinanger (2001a)	GTAP 4 (Base year 1995)	Standard Static GTAP model and parameters	Quota removal plus Uruguay Round trade liberalisation in the context of China's WTO accession	T&G exports from China and South Asia increase substantially. Preferential access to the US and EU reduced and shift in demand away from countries such as Turkey and Mexico. Sub-Saharan exports also decrease.
Terra (2001)	GTAP 4 (Base year 1995)	Standard Static GTAP model and parameters	(i) Quota removal and (ii) Quota removal plus tariff reductions	Developing countries subject to the biggest quantitative restrictions would expand their exports at the expense of the importing developed countries, but also of other developing countries which are less restricted (i.e. Latin American countries). MERCOSUR and Chile would reduce their exports of clothing significantly, and their exports of textiles moderately. Effects would be stronger in (ii) than in (i).
Avisse and Fouquin (2001)	GTAP 4 (Base year 1995)	Standard Static GTAP model and parameters	Quota removal	Output share of Asia increases from 12% to 18%. China's exports would increase by 87%, South and South-East Asia's would increase by 36%. Latin America and NAFTA would lose 39% and 27% respectively.
Diao and Somwaru (2001)	GTAP 5 (Base year 1997) 25 year baseline	Counterfactual analysis using an intertemporal version of GTAP	MFA phase-out simulated by improving the efficiency of T&G exports from constrained countries. Other trade barriers on T&G imports are reduced by 30 to 40% in all countries. Econometric estimate that a percent increase in garment trade share is associated with a 3.3% increase in per capita income.	Annual growth of world T&G trade would be more than 5%. Market share of developing countries as a whole would increase by 4% following ATC. China gains almost 3% of the world T&G market, while other Asian countries capture more than 2%. Non-quota-restricted developing countries predicted to lose about 20% of their markets to the constrained countries.
Agama, Dean and Rivera (2003)	GTAP 5 (Base year 1997)	Standard Static GTAP model and parameters	(i) Quota removal and (ii) Quota removal plus tariff reductions	China and South Asia gain most from ATC. Africa, Mexico and Latin America lose out. Tariff reductions would reverse losses for Africa.

Annex 3: Suppliers to US subject to US T&G Import Quotas in 2003

Supplier	Total Imports (US$)	Import Share	No. Quota Categories	No. 'Binding' Quota Categories[a]
World	77,434,041,083			
China	**11,608,827,617**	**15.0%**	**87**	**73**
Mexico	**7,940,807,779**	**10.3%**	**3**	**2**
Hong Kong	**3,817,892,307**	**4.9%**	**65**	**33**
India	**3,211,522,235**	**4.1%**	**22**	**14**
Vietnam	**2,484,264,730**	**3.2%**	**25**	**21**
Korea, South	**2,566,954,480**	**3.3%**	**65**	**35**
Indonesia	**2,375,701,755**	**3.1%**	**43**	**28**
Pakistan	**2,215,208,936**	**2.9%**	**37**	**21**
Dominican Republic	2,128,407,825	2.7%	13	2
Taiwan	**2,184,961,520**	**2.8%**	**65**	**24**
Thailand	**2,071,662,957**	**2.7%**	**45**	**23**
Philippines	**2,040,311,013**	**2.6%**	**24**	**15**
Bangladesh	**1,939,362,279**	**2.5%**	**20**	**18**
Guatemala	1,773,354,534	2.3%	5	2
El Salvador	1,757,774,070	2.3%	1	0
Turkey	**1,743,713,947**	**2.3%**	**34**	**11**
Sri Lanka (Ceylon)	1,493,023,119	1.9%	25	12
Macau	**1,282,181,139**	**1.7%**	**27**	**16**
Cambodia	**1,251,210,165**	**1.6%**	**13**	**8**
Malaysia	**737,539,823**	**1.0%**	**42**	**9**
Costa Rica	593,916,826	0.8%	5	0
Colombia	538,924,539	0.7%	2	1
Egypt	534,779,536	0.7%	18	2
Russia	494,802,237	0.6%	1	0
Brazil	**405,467,919**	**0.5%**	**22**	**4**
United Arab Emirates	**279,004,939**	**0.4%**	**21**	**9**
Singapore	270,843,396	0.3%	25	4
Bahrain	187,747,149	0.2%	3	0
Bulgaria	180,788,095	0.2%	7	2
Nepal	155,281,037	0.2%	9	3
Oman	132,121,705	0.2%	7	2
Romania	**113,900,587**	**0.1%**	**25**	**3**
Jamaica	105,478,842	0.1%	8	0
Fiji	79,557,906	0.1%	1	1
Qatar	85,418,303	0.1%	3	1
Poland	65,309,850	0.1%	9	2
Ukraine	63,682,066	0.1%	4	4
Hungary	53,804,192	0.1%	9	1
Macedonia	**42,356,707**	**0.1%**	**5**	**2**
Belarus	**38,728,913**	**0.1%**	**4**	**2**
Kuwait	35,107,621	0.0%	2	0
Czech Republic	23,402,335	0.0%	5	0
Uruguay	14,485,250	0.0%	7	0
Slovak Republic	11,942,475	0.0%	4	1
Laos	**3,898,929**	**0.0%**	**1**	0

Note: a) A 'binding' quota is here defined as having a quota fill-rate above 50%. Bold suppliers have at least one quota fill-rate above 90%.

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