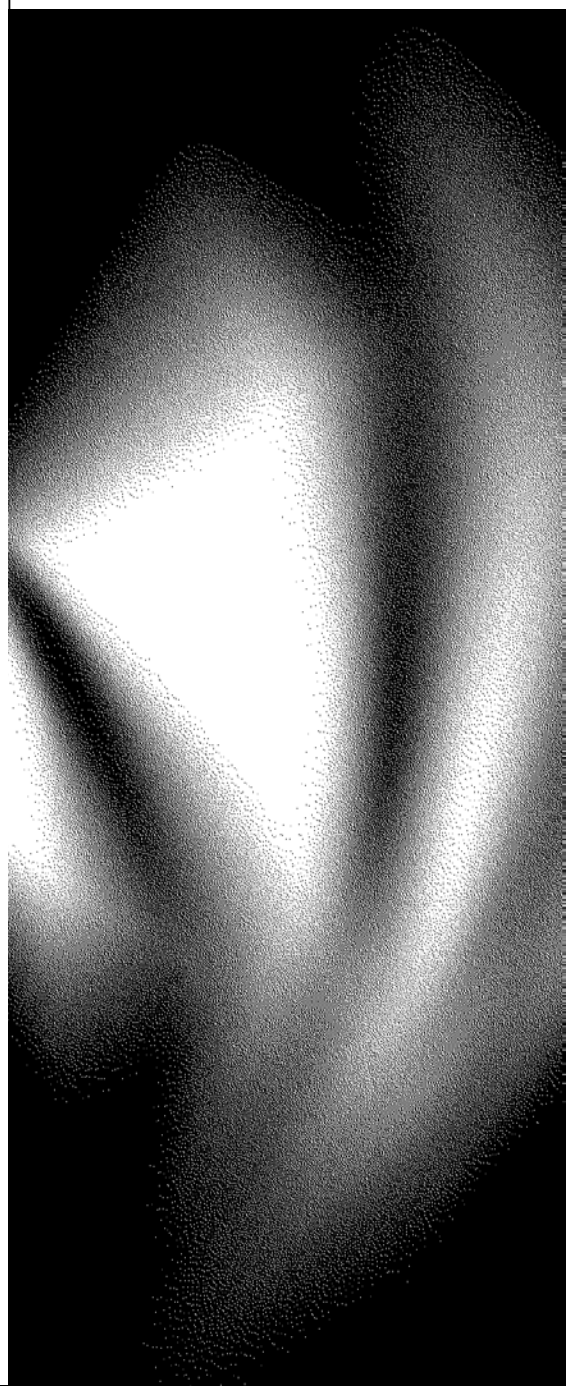
PRODUCTIVITY COMMISSION

Removing Tariffs on Goods Originating from Least Developed Countries

Research Report



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The Productivity Commission

The Productivity Commission, an independent Commonwealth agency, is the Government's principal review and advisory body on microeconomic policy and regulation. It conducts public inquiries and research into a broad range of economic and social issues affecting the welfare of Australians.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

Information on the Productivity Commission, its publications and its current work program can be found on the World Wide Web at www.pc.gov.au or by contacting Media and Publications on (03) 9653 2244.

Foreword

The Productivity Commission and its predecessor organisations have had a long-standing involvement in trade policy issues. This includes advising governments on the economic implications of different liberalisation strategies, including in the context of international negotiations.

The present technical study was requested by the Government to help it assess the effects, both at home and abroad, of removing remaining tariffs on imports from the world's least developed countries. This option is being contemplated by developed countries within the WTO Doha Round as a tangible means of promoting economic development.

The Commission's analysis, which has been one input to the Government's decision, suggests that removing tariffs on imports from least developed countries could significantly boost imports from those countries, primarily clothing, and would have little impact on prices, incomes or jobs in Australia.

The study, which was submitted to the Government at the end of August, was overseen by Commissioners Richard Snape and David Robertson.

Gary Banks
Chairman
October 2002

Terms of reference

The Productivity Commission is requested to undertake a research study examining the effects of removing tariffs on goods that originate in least developed countries (LDCs).

In undertaking the study the Commission is to examine:

1. The responsiveness of exporters in LDCs to the proposed removal of tariffs in Australia; and

2. The likely effects of the proposal on:

    (a) other developing countries, including members of the South Pacific Regional Trade and Economic Co-operation Agreement, which enjoy duty-free access to the Australian market through this agreement and other measures;

    (b) Australian manufacturers of goods directly in competition with imports from LDCs; and

    (c) Australian consumers and the economy generally.

The Commission is required to report within two months of receipt of these terms of reference.

IAN CAMPBELL

27 June 2002

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Acknowledgments

Research staff who contributed to this report include Peter Cribbett, Jon Garde, Alexandra Strzelecki, George Verikios and Xiao-Guang Zhang, under the direction of Patrick Jomini.

The Commission is also grateful for input received from officials from Agriculture, Fisheries and Forestry — Australia (AFFA), Department of Foreign Affairs and Trade, Department of Industry, Tourism and Resources, the Australian Customs Service, the Department of the Prime Minister and Cabinet, AusAID and the Commonwealth Treasury.

Abbreviations and explanations

Abbreviations

ABS	Australian Bureau of Statistics
ASTP	Australian System of Tariff Preferences
CGE	Computable General Equilibrium
CIF	Cost, Insurance and Freight
EBA	Everything But Arms
EU	European Union
FIC	Forum Island Country
FOB	Free on Board
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GNI	Gross Domestic Income
GSP	Generalised System of Preferences
GSTP	Generalised System of Trade Preferences
GTAP	Global Trade Analysis Project
HS	Harmonised Standard
IAC	Industries Assistance Commission
IC	Industry Commission
IF	Integrated Framework

IMF	International Monetary Fund
ITCB	International Textiles and Clothing Bureau
IVA	Industry Value Added
LDC	Least Developed Country
MFA	Multi Fibre Agreement
MFN	Most Favoured Nation
NEC	Not Elsewhere Classified
OECD	Organisation for Economic Cooperation and Development
PC	Productivity Commission
PMV	Passenger Motor Vehicle
PPP	Purchasing Power Parity
QUAD	Canada, the EU, Japan and the USA
ROO	Rules of Origin
SPARTECA	The South Pacific Regional Trade and Economic Co-operation Agreement
TCF	Textile Clothing and Footwear
TMB	Textiles Monitoring Body
TRIPS	Trade Related Intellectual Property Rights
UN	United Nations
UNDP	United Nations Development Program
UNCTD	United Nations Conference on Trade and Development
WTO	World Trade Organisation

Glossary

Agreement on Textiles and Clothing (ATC)	Agreement under which WTO members commit themselves to remove quotas on textiles and clothing, and to integrate the sector fully into GATT rules by 1 January 2005.
Australian System of Tariff Preferences (ASTP)	An agreement by Australia to provide preferential market access for LDCs and some South Pacific island territories. The ASTP scheme reduces the tariff rate for imports from beneficiary countries by 5 percentage points.
Doha Ministerial Declaration	In November 2001 at the WTO Ministerial Conference in Doha, WTO members reiterated commitments to pursue duty-and quota-free market access for products originating in LDCs.
Everthing but Arms (EBA)	EU proposal which provides duty and quota free market access for all products, except arms, originating from LDCs.
Foreign direct investment (FDI)	The acquisition by residents of a country of real assets abroad. This can mean acquiring land, constructing buildings, or buying existing foreign businesses.
Generalised System of Preferences (GSP)	An agreement granting products orginating in developing countries lower tariff rates. The GSP is a derogation from the MFN principle.
HS classification	The harmonised system is an international system used by customs and statistical organisations to record trade flows.
Least Developed Countries (LDC)	Countries the United Nations has identified as suffering from a variety of disadvantages which have retarded their economic development.

Multifibre Arrangement (MFA)	Officially known as the Arrangement Regarding International Trade in Textile, this multilateral agreement of 1974-94 regulated the special rules for textiles and clothing trade. The MFA permitted bilaterally negotiated arrangements (including quotas) in specific circumstances and under specific procedures. Replaced in 1995 by the WTO Agreement on Textiles and Clothing (ATC).
Most favoured nation (MFN)	An agreement whereby every time a member state improves the benefits that it gives to one trading partner, it must give the same "best" treatment to all other WTO members. A fundamental principle underlying some multilateral trade agreements.
Quad market	The Quad market comprises the United States, EU, Canada and Japan.
Rules of origin (ROO)	ROO are used to define where a product was made and determine whether it qualifies for preferential treatment. Under Australia's ROO, the country of origin of a good is where it was either wholly produced or manufactured, or where it was substantially transformed if more than one country was involved in its production.
Safeguards	Temporary protection (generally quantitative restrictions) given to domestic industries to allow them to adjust to damaging import surges. Most safeguard measures are regulated by Article XIX of GATT 1994 (as interpreted by the WTO Agreement on Safeguards), but some agreements have their own rules, for example textiles and clothing and agriculture.
South Pacific Regional Trade and Economic Co-operation Agreement (SPARTECA)	A non-reciprocal trade agreement made by members of the South Pacific Islands Forum. Australia and New Zealand offer duty-free and unrestricted access for virtually all products originating from the developing island member countries of the Forum.

Tariff Peak	In the context of this report, a tariff peak is defined as a tariff of 15 per cent or more. Tariff peak products tend to be heavily concentrated in agriculture and food products and in labour intensive sectors such as clothing and footwear.
United Nations Conference on Trade and Development (UNCTAD)	Organ of the United Nations General Assembly that deals with trade, investment and development issues.
World Trade Organisation.	Global organisation dealing with the rules of trade between nations. WTO agreements are negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments.

Key points

- Australia's imports from LDCs in 2001-02 amounted to A$242 million (0.2 per cent of all imports). Most were from Bangladesh, Burma (mainly clothing), Yemen (mainly petroleum products), and Samoa (mainly automotive components).
- Imports originating from LDCs and other developing countries benefit from a variety of preferential arrangements. These include the Australian System of Tariff Preferences, which provides for a 5 per cent reduction on the general tariff, and SPARTECA, which provides for duty-free entry into Australia for qualifying imports.
- Given the current patterns of trade and tariffs, complete removal of tariffs on imports from LDCs would primarily affect imports of clothing.
- The overall effects are likely to be small because Australia's existing trade with LDCs is small and, to a lesser extent, tariffs affecting these imports have little effect on the final prices paid by consumers.
- Projected trade effects include:
  - A 2.5- to 11-fold increase in imports of clothing from Bangladesh. Smaller increases are projected for Cambodia, Burma and Nepal. In part, these increases will raise production in these countries. There may also be some diversion of their exports from other destinations.
  - A decline in Fiji's share of total clothing imports in the longer term, as production capacity in Bangladesh adapts to enable greater substitution.
- Continuous changes in the Australian clothing industry make it able to play an increasing role in design and distribution, and a reduced role in production. As a result, employment is projected to fall by fewer than 100 jobs, mainly production outworkers. The Australian clothing industry would benefit from slightly reduced costs of semi-finished inputs.
- The effects on the rest of the Australian economy would be negligible. Consumer prices of clothing will fall by less than 0.05 per cent.
- Tariff revenues would fall by a maximum of A$2.5 million in the short term. However, planned tariff reductions in 2005 mean that foregone revenue will be smaller past that date.
- The benefits to LDCs of the proposed preferential tariff reduction depend on their ability to provide an economic, social and political environment that enables the investments required for the projected supply responses to occur.

Overview

In response to the Doha ministerial declaration exhorting industrialised countries to improve access for exports originating from least developed countries (LDCs), the Australian Government is considering removing all remaining tariffs on goods that originate in the 49 LDCs.

Although more than 10 per cent of the world's population live in LDCs, these countries account for less than 0.5 per cent of world trade. LDCs account only for a small proportion of Australia's total imports. In 2001-02, Australian imports from LDCs were valued at A$242 million (0.2 percent of all imports). The leading suppliers were Bangladesh and Burma (mainly clothing), Yemen (mainly petroleum products), and Samoa (mainly automotive components).

Trade can play an important role in promoting economic development, but LDCs face many challenges in their development efforts. These include:

- a reliance on primary products and a small number of manufactured products, especially in labour-intensive textile, clothing and footwear (TCF); and
- domestic supply constraints such as social, political and economic environments that are not always conducive to domestic or foreign investment.

LDCs and tariff preferences

Early in the 1970s, the Generalised System of Preferences (GSP) was introduced to improve developing countries' access to industrialised markets. This derogation from the most favoured nation principle is granted under Part IV of the General Agreement on Tariffs and Trade (GATT) by most OECD countries and has continued to operate under the GATT 'enabling clause'.

The Australian System of Tariff Preference (ASTP) allows goods originating in developing countries to benefit from a five percentage point reduction on the general tariff rate. The proposal to remove tariffs on imports originating from LDCs would provide LDCs with preferential access beyond that provided under the ASTP.

In addition, goods originating from South Pacific Forum Island countries which are members of SPARTECA[1] enter Australia tariff-free. Five LDCs are members of SPARTECA — Kiribati, Samoa, Solomon Islands, Tuvalu and Vanuatu — and, consequently, will not gain additional benefits from the proposed tariff reduction.

The effectiveness of other initiatives under the GSP, such as the European Union's Everything But Arms (EBA) initiative, is limited because they include a restrictive timetable for extending preferential treatment to some primary commodities and TCF products deemed to be 'sensitive'. In the Australian context, rules of origin mitigate to some extent the benefits that developing countries might derive from the ASTP.

Although improved trade opportunities alone will not overcome problems faced by LDCs, they can help to promote economic development and increase incomes. This report provides an assessment of the opportunities for LDCs and effects of removing Australian tariffs preferentially on goods that originate in LDCs.

Given the low general tariff rate that applies to many imports into Australia, goods originating from LDCs enter Australia tariff-free under the ASTP or SPARTECA, with the exception of TCF products and passenger motor vehicles (PMV) products (table 1).

Table 1 **Selected tariff rates faced by imports from ASTP beneficiaries[a]**
Per cent

	2000	*2005[b]*
Passenger motor vehicles and parts	10	5[c]
Apparel and certain finished textiles	20	12.5
Footwear	10	5
Woven fabrics	10	5
Sleeping bags, table linen	5	2.5
Other TCF (eg. Yarns and leather)	0	0
General manufacturing	0	0

a Under the ASTP, tariff rates are 5 percentage points lower than those faced by non-beneficiary countries; Forum Island Countries face zero tariffs under SPARTECA. **b** Projected. **c** Subject to legislative changes.

Source: Productivity Commission.

1 The South Pacific Regional Trade and Economic Cooperation Agreement includes Australia, New Zealand and the South Pacific Forum Island countries: the Cook Islands, the Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu and Samoa.

Australia's trade with LDCs

Although dutiable imports from LDCs are dominated by PMV products (table 2), most of these originate from Samoa and, subject to rules of origin, they benefit already from preferential access under SPARTECA. The proposed changes will therefore affect mainly LDCs that export TCF products to Australia.

Table 2 **Value of Australian TCF and PMV imports from LDCs, 2001-02[a]**

ANZSIC	*Category*	*A$ million*
22	**Textile, Clothing, Footwear and Leather Manufacturing**	
221	Textile Fibre, Yarn and Woven Fabric Manufacturing	13.5
222	Textile Product Manufacturing	6.2
223	Knitting Mills	1.6
224	Clothing Manufacturing	9.2
225	Footwear Manufacturing	0.1
226	Leather and Leather Product Manufacturing	1.9
22	**Total**	**32.6**
281	**Motor Vehicle and Parts Manufacturing**	**92.1**
Total		**124.7**

a Products classified under the corresponding industry classification.

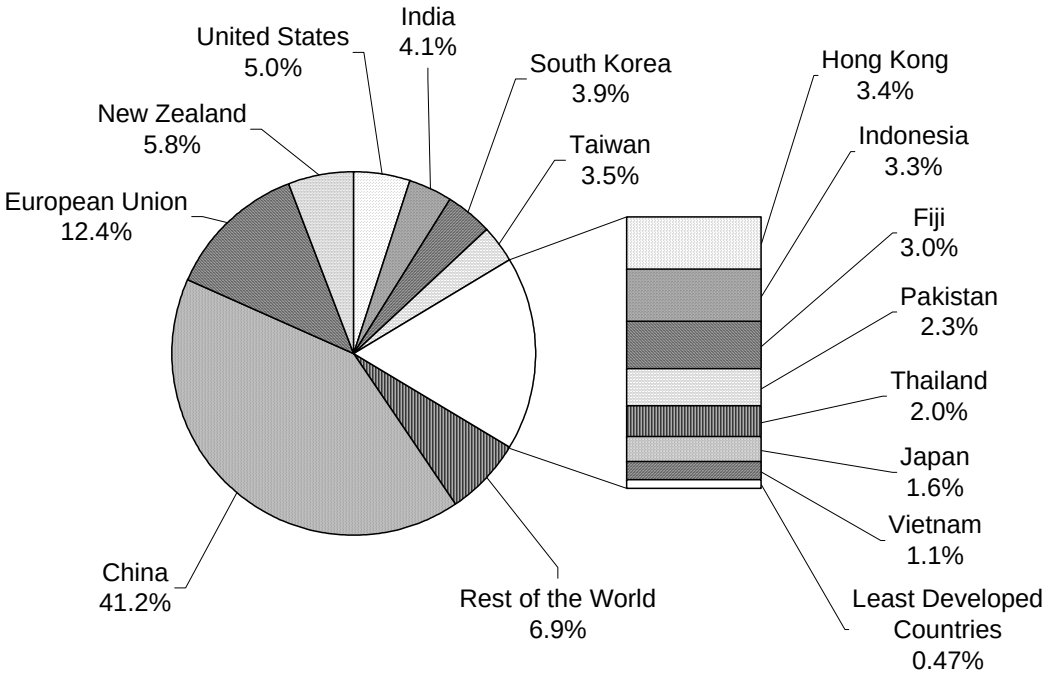
Source: ABS *International Trade, Australia*, Cat. No. 5465.0.

Though more than 65 per cent of Australian imports of TCF originate from developing countries, less than 0.5 per cent originate from LDCs (figure 1). The largest LDC exporters of TCF products to Australia are Bangladesh, Burma, Nepal and Cambodia (figure 2). These countries are likely to be the main beneficiaries of the proposed preferential tariff reduction.

Removing tariffs on goods originating from LDCs should stimulate production and exports, even if none exist currently. Anecdotal evidence indicates that new operations in the clothing sector are relatively easy to establish. For example, the establishment within a few years of a clothing industry in Fiji and Burma, and a recent reorientation of clothing production in Bangladesh, show that it is possible for other countries to develop similar industries in a favourable political, economic and social environment.

Figure 1 **Origin of Australian imports of TCF[a]**

Average shares, 1997-98 to 2001-02

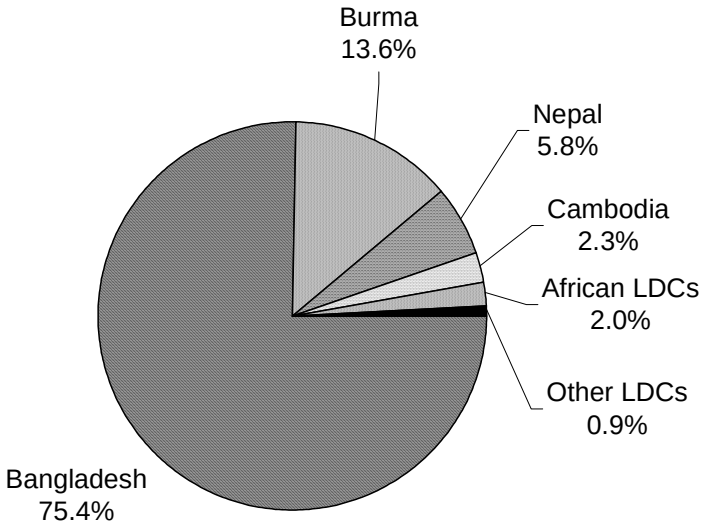


a Numbers may not add up due to rounding.

Data source: ABS *International Trade, Australia*, Cat. No. 5465.0.

Figure 2 **Australian imports of TCF from LDCs[a]**

Average shares, 1997-98 to 2001-02



a Numbers may not add up due to rounding.

Data source: ABS *International Trade, Australia*, Cat. No. 5465.0.

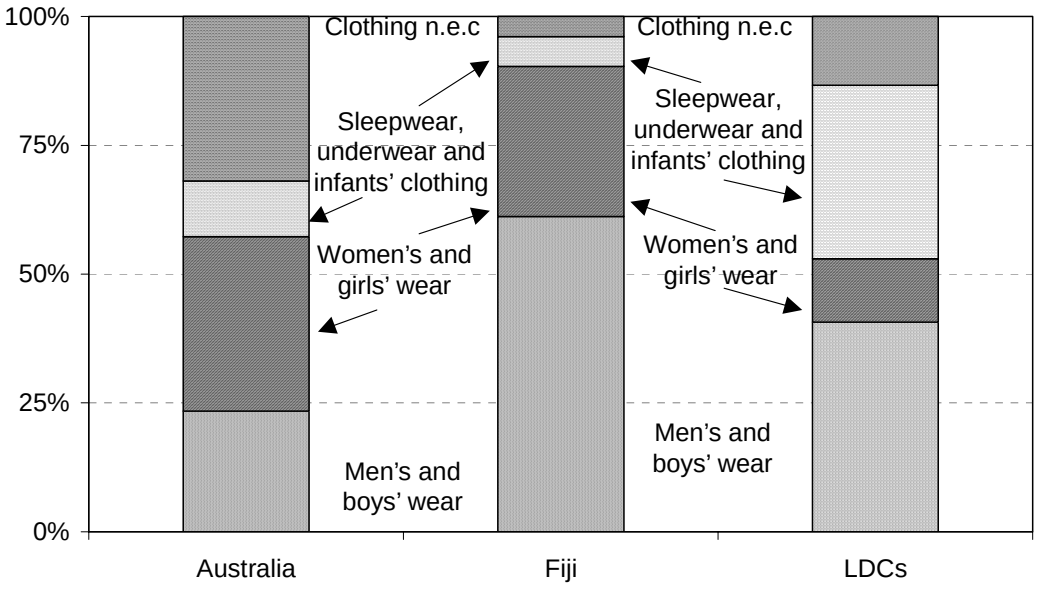
Diversity of clothing manufacturing and trade

Although some imports of clothing compete with Australian production, others are actually complementary to other imports and to Australian production. There is a significant amount of intra-industry trade in the clothing sector and different countries specialise in different products.

Australia's clothing industry is globally integrated: most of the design, distribution and some production for the domestic market are domestically based, but some labour-intensive parts of production are performed in developing countries. Production in Australia and Fiji[2] tends to be concentrated in high-fashion clothing (women's and girls' wear), whereas imports from LDCs tend to be concentrated in non-fashion products such as sleepwear, underwear and infants' clothing (figure 3).

Figure 3 **Composition of Australian production and imports from Fiji and LDCs, clothing**

Average shares, ANZSIC 3-digit[a]



a Production measured by industry value added, 1997-98 to 1999-00; imports for 1997-98 to 2001-02.

Data source: ABS *International Trade, Australia*, Cat. No. 5465.0 and ABS *Manufacturing Industry, Australia,* Cat. No. 8221.0.

These product differences suggest that, in the short term, only those parts of the industries in Fiji and Australia that compete directly with LDC exports will be

[2] Fiji is a developing country whose exports will be affected by the proposed tariff reduction.

affected. However, because clothing operations are relatively easy to establish and modify, LDCs may become more competitive in high-fashion production in the long term.

Effects of reducing tariffs on imports from LDCs — modelling results

The effects of the proposed changes in the Australian tariff are estimated using a global trade model.[3] The database used allows for the differential treatment of imports under the ASTP and SPARTECA.

Results are presented in two simulations. Both simulations project the effects of reducing remaining tariffs on goods originating from LDCs to zero. Under scenario S1, clothing originating from different countries is assumed to be highly substitutable. Under scenario S2, the degree of substitution is assumed to be less. Scenario S1 represents the long-term reaction of the global economy, assuming that the clothing industries in LDCs change their production capabilities to compete in higher fashion markets. Scenario S2 represents the short-term reaction, assuming that current patterns of specialisation among exporters of clothing to Australia remain.

Responsiveness of LDCs

Exports to Australia from LDCs that are not members of SPARTECA are projected to increase under both scenarios. Exports from Bangladesh increase between 2.5- and 11-fold, albeit from a relatively low base (table 3). Exports from Cambodia, Burma, and Nepal are also projected to increase. SPARTECA LDCs are not exporters of TCF to Australia, and thus would not be affected.

Among the LDCs affected by the tariff change, detailed results are only available for Bangladesh.[4] However, the mechanisms observed in that country apply equally to other affected LDCs. Most of the effects occur in clothing exports and to some extent in increased output of clothing (table 4).

[3] The standard GTAP (Global Trade Analysis Project) framework was adapted to the needs of this analysis. The model provides projections of trade and other economic flows in response to a change in policy. Results are interpreted as changes relative to a situation in which the previous policy regime would have prevailed. Projected changes are for each year, into the future.

[4] Detailed results include sectoral and macroeconomic results. Changes in exports from selected LDCs and from Fiji to Australia were obtained using a post-simulation procedure.

Table 3 **Changes in LDC clothing exports to Australia**

	Scenario S1		*Scenario S2*	
	%[a]	*A$ million*	*%*[a]	*A$ million*
Bangladesh	1151	287.5	254	63.5
Cambodia	260	2.9	129	1.4
Nepal	77	1.2	52	0.8
Burma	161	5.6	79	2.8
Laos	256	0.1	127	0.1

[a] Percentage changes from base, per annum.

Source: Productivity Commission estimates based on GTAP simulations.

Table 4 **Changes in Bangladesh in response to modelled changes in Australian tariffs**

	Scenario S1		*Scenario S2*	
	%[a]	*A$ million*	*%*[a]	*A$ million*
Clothing sector				
Exports to Australia	1151	287.5	254	63.5
Exports to EU	-0.15	-3.4	-0.02	-0.4
Exports to USA	-0.15	-3.9	-0.02	-0.4
Output of clothing	0.15	7.2	0.04	1.4
Macro				
Real GDP	0.001	5.7	..	0.2
Real consumption	0.005	3.0	..	0.7
Real aggregate exports	0.017	48.7	0.01	1.1
Real aggregate imports	0.041	53.7	0.01	1.2

[a] Percentage changes from base, per annum. .. less than 0.005 per cent.

Source: Productivity Commission estimates based on GTAP simulations.

Effects on other developing countries

Clothing exports to Australia from Fiji and China (two developing countries that will not qualify for the preferential tariff reduction) will be affected by the proposed preferential tariff change.

The pattern of Chinese exports of clothing and inputs into clothing (textiles and semi-finished clothing products) may be affected. China supplies some inputs into the clothing production of LDCs and Fiji. In addition, it accounts for a large proportion of clothing imports into Australia. Changing the pattern of tariffs is estimated to:

- reduce Chinese direct exports of clothing to Australia (-0.58 per cent under S1 and -0.19 per cent under S2); and

- encourage exports of textiles and semi-finished clothing to LDCs benefiting from the tariff change (for example, to Bangladesh, +0.85 per cent under S1 and +0.02 per cent under S2).

The effect on Fiji's exports of clothing to Australia are expected to be minor. They are projected to fall about 1.3 per cent, or A$1.8 million. To put this in context, Fiji's TCF exports to Australia reached a peak of A$273 million in 1999-00, before falling to A$132 million in 2001-02. This decrease can be attributed, in part, to recent political events that have affected economic activity. This points to the value of a stable environment to attract investment and to foster economic activity.

Effects on Australian clothing manufacturing

The effects on the Australian clothing industry are also projected to be small. Projected reductions in annual turnover are less than A$5 million for both scenarios considered, and expected to be concentrated in production activities that are in direct competition with imports from LDCs (table 5).

The largest projected change in employment in Australia's competing industries is a reduction of fewer than 100 jobs. This reduction is likely to be concentrated among outworkers involved in the production process.

To the extent that some imports of semi-finished products are inputs into the Australian industry, the industry will benefit from slightly lower prices in its inputs.

Table 5 **Effects on Australian clothing industry**

	Scenario S1		*Scenario S2*	
	%[a]	*A$ million*	*%*[a]	*A$ million*
Value added	-0.12	-1.46	-0.03	-0.41
Turnover		-4.17		-1.16

[a] Percentage changes from base, per annum.

Source: Productivity Commission estimates based on GTAP simulations.

Effects on Australian consumers

Consumer prices of clothing are projected to decrease only slightly (0.036 per cent under S1 or 0.023 per cent under S2). The effects are small because imports from LDCs account for a small share of clothing imports and the tariff, though relatively high, accounts for a small proportion of the price ultimately paid by consumers.

Effects on government finances

The collection of duties from imports originating from LDCs is in the order of A$2.5 million (less than 0.5 per cent of total tariff revenues). This is the order of magnitude of the revenue that might be foregone by eliminating tariffs on goods originating from LDCs. However, as tariffs are scheduled to be reduced in 2005 anyway (table 1), the amount of revenue foregone after that date is even smaller.

Conclusions

The overall effects of preferentially removing tariffs on goods originating from LDCs are likely to be small because Australia's existing trade with LDCs is small and, to a lesser extent, tariffs affecting these imports have little effect on the final prices paid by consumers.

The effects on the Australian clothing industry will be small, as the main impact of the initiative will be to switch imports sources from developing countries toward LDCs, rather than displacing Australian production.

Projected trade effects include:

- A 2.5- to 11-fold increase in imports of clothing from Bangladesh. Smaller increases are projected for Cambodia, Burma and Nepal. In part, these increases will raise production in these countries. There may also be some shift in their exports from other destinations.
- A decline in Fiji's share of Australia's clothing imports in the longer term, as production capacity in Bangladesh adapts and enables greater substitution.

Continuous changes in the Australian clothing industry make it able to play an increasing role in design and distribution, and a reduced role in production. As a result, employment is projected to fall by fewer than 100 jobs, mainly production outworkers. The Australian clothing industry would benefit from slightly reduced costs of semi-finished inputs.

The effects on the rest of the Australian economy would be negligible. Consumer prices of clothing would fall by less than 0.05 per cent.

Tariff revenues would fall by a maximum of A$2.5 million in the short term. However, planned tariff reductions in 2005 mean that foregone revenue will be smaller past that date.

The benefits to LDCs of the proposed preferential tariff reduction depend on their ability to provide an economic, social and political environment that enables the investments required for the projected supply responses to occur.

1 Introduction

Forty-nine countries, designated by the United Nations as the Least Developed Countries (LDCs), are the intended beneficiaries of several recent trade liberalisation initiatives intended to provide their exports with greater access to markets in industrialised countries, by removing tariff and quota restrictions. The improved access is intended to be non-reciprocal, that is, the initiative will not require beneficiary LDCs to respond by lowering their tariffs.

Some countries have already provided tariff and quota free access to their markets — for example, the European Union with its Everything but Arms (EBA) initiative — and others have announced their intention to do so.

Although trade opportunities alone will not overcome all the problems faced in LDCs, they can help to promote economic development and higher levels of income.

1.1 Nature of the study

In the context of Doha Declaration and subsequent initiatives to assist LDCs through trade, the Parliamentary Secretary to the Treasurer has asked the Productivity Commission to undertake a research study examining the effects of removing Australian tariffs on goods that originate in LDCs.[1]

The Commission is asked to examine:

1. The responsiveness of exporters in LDCs to preferential removal of Australia's tariffs; and
2. The likely effects of the proposal on:
   (a) other developing countries, including members of the South Pacific Regional Trade and Economic Co-operation Agreement (SPARTECA), which enjoy duty-free access to the Australian market;

[1] For the purposes of this proposal, 'duty' excludes charges such as Government cost recovery charges, excise equivalent duties, Product Stewardship Oil Levy, GST, Luxury Car Tax and Wine Equalisation Tax. These charges will remain payable on entry into Australia.

(b) Australian manufacturers of goods directly in competition with imports from LDCs; and

(c) Australian consumers and the economy generally.

1.2 Scope

The aim of this study is to provide an assessment of the economic impacts of Australia removing tariffs on goods that originate in LDCs on Australia, on the LDCs and on relevant developing countries, including members of SPARTECA.

1.3 Approach

The report looks first at the LDCs and their exports, the barriers to these exports, and measures aimed at improving LDC market access are also examined (chapter 2).

Then it examines (chapter 3) the Australian context focusing on:

- Australia's preference schemes;
- exports to Australia from LDCs that attract duty; and
- exports of these products to Australia from competing developing countries.

Similarity analysis is undertaken (chapter 4) to examine the potential effect of preferential reduction in tariffs by focussing on:

- LDC's exports to Australia;
- LDC and relevant developing country exports to Australia; and
- LDC exports and Australian domestic production.

The analysis identifies the LDCs and developing countries that are likely to be affected by the proposal, and possible effects on the Australian economy.

Computable general equilibrium modelling is undertaken in chapter 5 using the Global Trade Analysis Project (GTAP) model to quantify some of the short-term and long-term effects of the proposed preferential liberalisation.

1.4 Main sources of data

Data were extracted from a variety of sources, including the ABS *International Trade, Australia*, Cat. No. 5465.0, the World Bank's World Development Indicators 2001 database and various UNCTAD, UN, WTO, World Bank and IMF publications. Australian production data was sourced from ABS Manufacturing Production, Commodities Produced, Australia.

The GTAP database version 5.0 was used to support the GTAP modeling framework.

2 LDCs and their access to markets

Although 634 million people (more than 10 per cent of the World's population) live in LDCs, these countries are responsible for only 0.5 per cent of global output, and an even smaller share of world trade (0.4 per cent) (World Bank 2001).

Increasing opportunities for LDC trade has the potential to yield their citizens significant benefits: higher living standards, less poverty and faster development. One way that industrialised countries can increase opportunities for trade with LDCs is to offer them better market access.

This chapter provides a brief overview of the Doha Ministerial declaration, the LDCs and the significance of their exports. It then examines barriers to LDC trade. The chapter concludes by surveying existing preferential access schemes established for LDCs. Australia's initiatives to improve LDC market access and trade with LDCs are discussed in chapter 3.

2.1 The Doha Ministerial Declaration

Some industrialised countries already grant many products originating in LDCs lower tariff rates than those applied under the most favoured nation clause. These preferences are granted without requiring LDCs to reciprocate.[1]

At the WTO Ministerial Conference in Doha in November 2001, WTO members committed to pursuing duty-free and quota-free market access for products originating in LDCs. More specifically, WTO member governments agreed to assist developing countries, by:

- providing technical assistance and undertaking initiatives to build national productive capacity;
- examining the relationships between trade debt and finance, and trade and the transfer of technology to developing countries;
- pursuing the objective of duty-free and quota-free market access for products originating from LDCs;

[1] However, these preferences do not currently apply to some agricultural and Textile Clothing and Footwear products deemed to be sensitive by industrialised countries.

- reviewing and strengthening the 'special and differential treatment' provisions for developing countries; and
- working towards facilitating and accelerating the accession of LDCs and other small economies into the WTO.

Preferential access is not a substitute for multilateral tariff reductions; rather it is complementary.[2] However, it provides LDCs with increased opportunities to participate in the world trading system. The extent to which potential gains are realised depends on implementation details and the ability of LDCs to respond to changed access, which often requires domestic reforms.

2.2 The Least Developed Countries

Forty-nine countries are currently designated by the Economic and Social Council of the United Nations as LDCs.[3] Thirty-four LDCs are located in Africa, nine are in Asia and five are small Pacific islands. The remaining one, Haiti, is a small Caribbean island (box 2.1).[4]

Countries are characterised by the United Nations as 'least developed' to identify those in greatest need. The Economic and Social Council of the United Nations reviews the list of LDCs every three years. The latest review (in 2000) used the following criteria:

- **Low-income,** using a three-year average estimate of the GDP per capita (under US$900 for inclusion and above US$1035 for graduation).
- **Human resource weakness,** using a composite Augmented Physical Quality of Life Index based on indicators of nutrition, health, education and adult literacy.

[2] For example, preferential tariff reductions *may* lead to sourcing products from relatively inefficient producers. See for example Baldwin and Murray (1977), and more recently Topp (2001) for relevant discussions. On the other hand, the proposed tariff reduction is consistent with Australia's aid effort focussing on enhancing developing countries' development and trade capability.

[3] The term LDC is used in the report to refer to the group of countries defined as LDCs by the United Nations. The Australian Customs Service and other bodies may have a slightly different coverage.

[4] Most LDCs are either small islands or are land-locked. Their relative isolation can constitute impediments to trade.

Box 2.1 **The least developed countries**

The LDCs are concentrated in sub-Saharan Africa. The list of LDCs is reviewed by the United Nations every three years. This review may confirm a country's continued membership of the group or include others. Other countries may include newly formed ones, such as East Timor, which is likely to be included in the list of LDCs.

Africa
Angola
Benin
Burkina Faso
Burundi
Cape Verde
Central African Republic
Chad
Comoros
Democratic Republic of the Congo (Zaire)
Djibouti
Equatorial Guinea
Eritrea
Ethiopia
Gambia
Guinea
Guinea-Bissau
Lesotho
Liberia
Madagascar
Malawi
Mali
Mauritania
Mozambique
Niger
Rwanda
Sao Tome and Principe

Africa (cont.)
Senegal
Sierra Leone
Somalia
Sudan
Togo
Uganda
United Republic of Tanzania
Zambia

Asia
Afghanistan
Bangladesh
Bhutan
Cambodia
Lao People's Democratic Republic
Maldives
Burma
Nepal
Yemen

Caribbean
Haiti

Pacific
Kiribati
Samoa
Solomon Islands
Tuvalu
Vanuatu

Source: UNCTAD (2001b).

- **Economic vulnerability** is based on a composite Economic Vulnerability Index drawing on:
  - instability of agricultural production;
  - instability of exports of goods and services;
  - economic importance of non-traditional activities (share of manufacturing and modern services in GDP);

- merchandise export concentration; and
- handicap of economic smallness (as measured by total population).

In the 2000 review, a country qualified to be added or retained on the list if it met all three criteria and had a population of less than 75 million. Under that review, Senegal was added, but no country was graduated from the list (UNCTAD 2001b).

As the criteria suggest, most citizens of these countries have low incomes, standards of health, education and literacy (table 2.1).

Table 2.1 **Selected development indicators, 1999**

	Population	*GNI per capita*	*Life expectancy at birth*	*Infant mortality rate*	*Literacy rate*
Countries	million	US$ (2001 dollars)	years	per 1000 live births	per cent aged 15 and above
LDCs	634	280	51	94	49
High income[a]	896	26 440	78	6	more than 95
Australia	19	20 950	79	5	more than 95
World	5 978	5 020	66	54	na

[a] High-income economies are those in which 1999 GNI per capita exceeded US$9,266.

Source: World Bank (2001).

LCDs are also more vulnerable to economic misfortune than industrialised countries. Factors contributing to this vulnerability include:

- volatility of primary production and prices;
- volatility of exports of goods and services; and
- a concentration of merchandise exports in a small number of product lines.

Further statistics on each LDC are provided in appendix A.

2.3 Benefits for LDCs from increased market access

Trade liberalisation has contributed to improving the material living standards of many of the world's poor and to the alleviation of absolute poverty. Despite rapid population growth over the 20th century, the proportion of the global population in absolute poverty has declined as economic growth — facilitated, in part, by trade liberalisation — has resulted in increases in the incomes of the poorest quarter of the population.

Countries that have not participated in the general expansion of international trade have imposed lower living standards on their people — including reductions in basic health care, education and other community services.

- There is evidence that 'self-reliance' (or import-substitution) strategies have performed poorly compared with export-oriented development strategies. Much of Africa and Latin America has suffered from low growth rates, while East Asia has prospered, with the largest and most rapid reduction in poverty in history, notwithstanding temporary setbacks since 1997.
- Many of the poorest countries — Burma, Sierra Leone, Rwanda, Guinea-Bissau, the Republic of Congo, Chad, Burundi, Albania and North Korea — are not poor because of open trade policies. Rather, responsibility lies with internal institutions and policies and other factors inimical to economic growth such as political instability, poorly–defined property rights, civil unrest and disease.

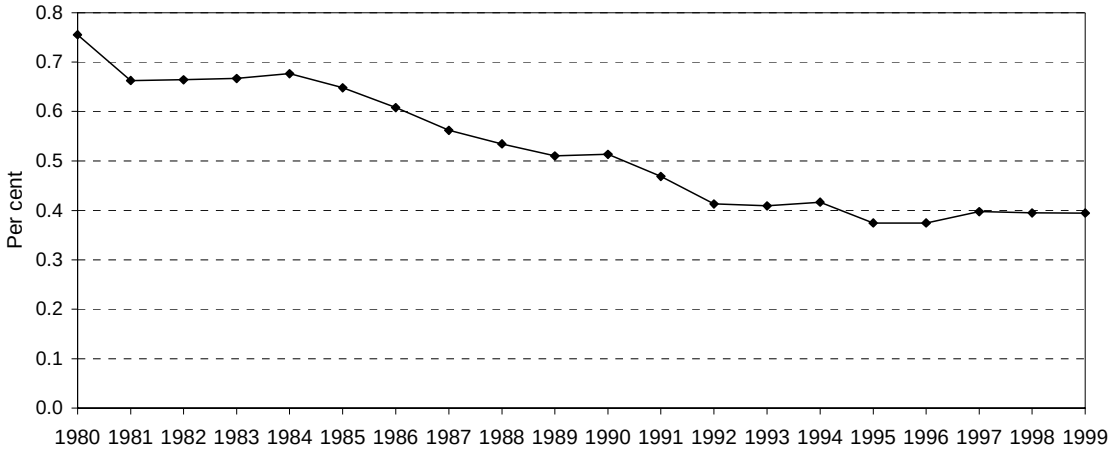
Although many of the world's people continue to live in poverty, open trade policies have helped to raise living standards, not only for the world's rich but also for many of the poor, and have reduced the proportion of people living in absolute poverty (Nankivell 2002).

The benefits of greater market access, and the increases in trade that go with it, are evident in the differences in growth rates for open and closed economies. Growth rates of open economies averaged 4.5 per cent per year while closed economies averaged just 0.7 per cent per year in a study of 122 countries for the period 1970-90. In addition, open economies avoided extreme macroeconomic crises and achieved structural adjustments (Winters 2000). While these differences in growth rates are largely attributable to domestic policies, they provide an indication of the potential benefits from participating in world trade and of improved market access.

2.4 LDC exports

Trade plays an important role in promoting economic development, but the share of LDC exports in total world exports is small and has been declining. In 1999, LDC exports had fallen to only 0.4 per cent of world exports, although they comprised 10.6 per cent of the world population (figure 2.1).

Figure 2.1 **LDC share of world exports, 1980 to 1999**



Data source: World Bank (2001).

In many developing countries, pro-market reforms have encouraged faster growth, diversification of exports, and more effective participation in the multilateral trading system. Export growth in developing countries rose from 4.3 per cent per year in the 1980s to 6.4 per cent in the 1990s. Growth in GDP per person in these countries increased from 0.4 to 1.5 per cent per year (WTO 2001).[5]

There have also been improvements for LDCs. Excluding countries at war or in transition, export growth in LDCs rose from 2.9 per cent per year in the 1980s to 3.2 per cent in the 1990s. In addition, while GDP per person fell by 0.6 per cent per year in the 1980s, it increased by 0.8 per cent per year in the 1990s (WTO 2001).

The WTO has attributed the declining share of LDC exports in total world exports to their reliance on the exports of primary product. The structure of exports of many LDCs remain dominated by primary commodities. Primary commodities in all but a handful of LDCs account for 80 per cent or more of total merchandise exports.[6] Manufactures have been the fastest growing component of commodity trade, while primary commodity prices have exhibited volatility (WTO 2000).

Table 2.2 illustrates the importance of primary products and textiles and clothing in LDC exports. In a few Asian LDCs, particularly Bangladesh, textile and clothing exports dominate. In a few LDCs exports are also dominated by petroleum products — as for example Angola and Yemen (Hagen, Maestad and Wigg 2001).

5 Excluding countries at war or in transition to industrialised countries.

6 The exceptions are Bangladesh, Cambodia, Lao, Burma and Madagascar.

Table 2.2 **Major LDC export commodities**
1996–98 average

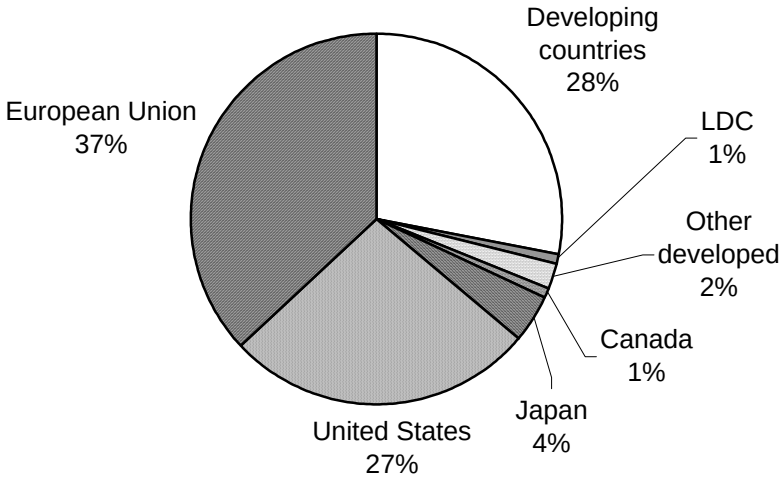
Product [a]	*Share of total $US value*
	per cent
Minerals fuels oil and related products	26.2
Articles of apparel and clothing accessories	19.7
Natural/cultured pearls, precious stones	9.2
Coffee, tea, mate and spices	6.2
Fish and crustacean, molluscs	5.7
Cotton	3.9
Ores, slag and ash	3.3
Ships, boats and floating structures	2.8
Wood and articles of wood	2.7
Tobacco etc	1.8
Copper and articles thereof	1.7
Raw hides and skin	1.4
Oil seed, oleagi fruits and misc grains	1.2
Other base metals	1.2
Edible fruits and nuts, melons	1.1
Edible vegetables, roots and tubers	1.1
All other products	10.7
Total	**100**

[a] HS 1 and 2 digit level. HS: harmonised system classification. The harmonised system is an international system used by customs and statistical organisations to record trade flows. The 1 and 2-digit levels are very aggregated.

Source: Hagen, Maestad and Wigg (2001).

Industrialised countries are the main destinations for LDC exports. In 1999 around 71 per cent of LDC exports were destined for industrialised countries. The most important markets were the United States of America and the EU. Together, the Quad countries (Canada, Japan, the EU and the United States of America) received around 69 per cent of total exports from LDCs. Other industrialised countries, including Australia, accounted for less than two per cent of LDC exports. Developing countries were also important destinations, receiving around 28 per cent of LDC exports. There is little trade between LDCs — around one per cent of LDC exports went to other LDCs (figure 2.2).

Figure 2.2 **Destination of LDC exports, 1999**



Data source: UNCTAD (2001a).

2.5 Barriers to LDC trade

High tariffs, quota limits and domestic subsidies, impede LDC access to OECD markets that offer potential sources of export revenue. LDCs' ability to export is also hampered their own supply constraints.

Tariffs

High tariffs often occur in sectors that are important sources of export revenue for LDCs, namely primary products and textiles and clothing. Although average tariffs in Quad markets are low, tariff peaks[7] and tariff escalation[8] have a disproportionate effect on LDC exports. Tariff peaks tend to be concentrated in agriculture and food products, and in labour intensive sectors such as apparel and footwear (Hoekman, Ng and Olerreaga 2001).

While 90 per cent of high income countries' imports of manufactures face tariff rates below 10 per cent, only about half of textile and clothing imports have such low tariffs. In addition, 28 per cent of OECD countries' imports of textile and

[7] A tariff peak is defined in Hoekman, Ng and Olerreaga (2001) as a tariff exceeding 15 per cent.

[8] Tariff escalation occurs when tariff levels increase with the level of processing, resulting in high rates of protection to the importing country's processing sector (WTO 2002).

clothing still face tariff peaks, down from 35 per cent before the Uruguay Round (World Bank 2002).

UNCTAD (2001a) found that despite policy initiatives to improve LDCs' preferential market access, the 1990s were marked by substantial erosion of preferential LDC market access 2001. Table 2.3 shows that 13 per cent of tariff lines faced ad-valorem or specific tariffs when entering Quad markets in 1999.

Table 2.3 **Structure of LDC exports and protection in Quad markets, 1999**

	Unit	*Canada*	*EU*	*Japan*	*United States*
Total LDC exports (1)	US $m	228	9 875	1 019	6 962
Total imports in product lines of LDC (2)	US $m	83 671	637 766	126 378	528 279
Total imports (3)	US $m	211 085	783 684	305 438	1 015 144
LDC share of competitive imports ((1)/(2))	per cent	0.27	1.55	0.81	1.32
LDC share of total imports ((1)/(3))	per cent	0.11	1.26	0.33	0.69
Total HS6 tariff lines[a]	no.	758	2 222	545	946
in lines with protection	no.	201	55	74	335
of which above 5 per cent	no.	181	51	36	282
LDC Exports entering duty-free	US $m	103	9 567	499	3 596
LDC Exports dutiable	US $m	124	308	521	3 366
LDC Exports dutiable above 5 per cent	US $m	124	308	226	3 273
Share of LDC exports facing protection	per cent	54.6	3.1	51.1	48.3
Share of LDC exports facing tariff > 5 per cent	per cent	54.4	3.1	22.2	47.0
Share of HS6 lines with tariff	per cent	18.5	4.2	12.1	17.1
Share of HS6 lines with tariff > 5 per cent	per cent	12.8	3.8	7.6	14.1

a Harmonised system classification, at the 6-digit level of aggregation. The harmonised system is an international system used by customs and statistical organisations to record trade flows. The 6-digit level of classification is relatively detailed.

Source: UNCTAD (2001a).

These products are often deemed by the countries providing preferential access to be sensitive products and are often excluded from preferential trade agreements, or are included on less generous terms (for a discussion of preferential schemes, see section 2.6).

In addition, the Uruguay Round of multilateral trade negotiations actually increased tariff dispersion because non-tariff barriers — for example, quotas in agriculture — were replaced by the imposition of tariffs. As a result, tariffs that are more than three times higher than the average most favoured nation duty are not uncommon in Quad markets.

Moreover, the tariff structure of industrialised countries shows significant tariff escalation. Market access for processed products (embodying greater value added) is more restricted. For example, in the EU and Japan in 2001, fully-processed manufactured food products faced tariffs twice as large as products in the first stage of processing. Final goods confronted an average MFN tariff of 24 per cent in the EU and 65 per cent in Japan (Hoekman, Ng and Olerreaga 2001).

Quotas

Under the Uruguay Round, some quotas were curtailed and converted into equivalent tariffs.[9] However, bilateral quotas continue to affect trade in textiles and clothing, although they are being progressively phased out under the WTO Agreement on Textiles and Clothing (ATC).

The ATC replaced the Multi Fibre Agreements (MFA) on 1 January 1995.[10] Under the ATC, WTO members committed to remove quotas on textiles and clothing, and to integrate the sector fully into GATT rules by 1 January 2005. This integration is being carried out progressively over the ten year period of the agreement. For each tranche, importing countries must select products for integration from each of tops and yarns; fabrics; made-up textile products; and clothing. Within these categories, however, there is considerable discretion for OECD countries to select from the several hundred products identified in the Annex to the ATC.

The effectiveness of the ATC in improving access for LDCs has been limited by two conditions. First, scheduled integration, or quota removal, is 'back loaded' with quota-free access for nearly half the imports due only at the end of the transition period, in 2005.

9 Quantitative restrictions on the amount that can be imported under preferential tariff rates remain in a number of countries. These are known as tariff rate quotas.

10 Prior to the ATC, the MFA had provided a framework which outlined the processes for imposing quantitative restrictions on textile and clothing exports from developing countries to industrialised countries. These product-specific and country-specific quantitative restrictions were implemented by means of a complex set of bilateral restraints on developing countries' exports to industrialised countries. Quantitative restrictions under the MFA had a profound effect in restricting exports of textiles and clothing from developing countries (including some LDCs) to industrialised countries.

Second, the removal of quotas in the ATC is framed in terms of overall shares of import volume, rather than in terms of shares of import value. As a result, countries have removed quotas on the high volume, low value, less sensitive products first. By 2000, 33 per cent of the volume of textile and clothing had been integrated. However, the textile and clothing products that had been integrated by the United States and the EU only accounted for 6 per cent and less than 5 per cent, respectively, of the value of textile and clothing imports in 1995-97 (World Bank 2002).

Subsidies

Many industrialised countries subsidise their agricultural production. The OECD has estimated that in 2000, agricultural producers in high income countries received US$245 billion in government assistance. This comprised subsidies and effective market price supports through trade policies restricting imports. This is about five times the value of international development assistance (World Bank 2002). Many commodities of export interest to LDCs are amongst those most heavily subsidised; for example, rice and sugar.

This support boosts agricultural production in high income countries and displaces agricultural imports from LDCs. Trade is distorted further when production surpluses are sold on the world market with the aid of export subsidies, depressing the prices for many agricultural commodities.

Supply constraints

One of the most important impediments to expanding LDC exports is domestic supply constraints which limit their ability to exploit opportunities provided by trade and preferential agreements.

The OECD (1997) has commented that LDCs have implemented successive rounds of structural adjustment programs, including trade policy reforms, to open up their economies. However, these adjustments have not triggered a spontaneous and sustainable export drive. Structural adjustment is a necessary, but not sufficient condition for export expansion and diversification in developing countries.

In identifying supply constraints, Hagen, Maestad and Wiig (2001) argue that even with the elimination of most barriers to their exports, LDCs' exports are unlikely to increase substantially in the short to medium term. The supply constraints they listed explain the disadvantages that LDCs face — for example: low productive capacity of firms; inadequate infrastructure and high transport costs; poor regulatory

frameworks and inefficient government institutions; as well as unstable social, political, and economic environments. These problems are often interrelated and while not every LDC suffers from all of them, most suffer from some.[11]

As long as such problems persist in LDCs, trade preferences cannot be expected to have much effect on the LDCs' participation in world trade. Preferential access does not substitute for improving the economic environment within LDCs.

2.6 Preferential market access for developing countries

Different preferential access regimes have been granted by WTO members as part of the Generalised System of Preferences (GSP). Australia's preference scheme is outlined in chapter 3.

The concept of GSP was introduced in the multilateral framework through the work of UNCTAD with the objective of introducing a harmonised preferential regime across industrialised countries. Australia had initiated its own system of preference, the Australian System of Tariff Preference, prior to this. As a measure to increase developing countries' export opportunities[12], the GSP grants products originating in developing countries lower tariff rates than those provided by most favoured nation treatment.

The GSP is defined in an UNCTAD resolution (no. 21/1968) and was formalised into the GATT framework (now the WTO framework) in 1979. The main principles underlying the GSP schemes are:

- generality (all developing countries are beneficiaries);
- non-reciprocity (no obligation for developing countries to reciprocate); and
- non-discrimination among beneficiaries (UNCTAD 2001a).

Limits to the effectiveness of market access schemes

A number of factors can erode the effectiveness of preferential market access schemes for LDCs. For example, preferences are often applied selectively in terms of the products and countries covered. Non-tariff measures such as rules of origin (ROO), safeguards and graduation procedures may also limit the effectiveness.

[11] Appendix B discusses LDC supply capacity constraints in more detail.

[12] The GSP is therefore a derogation from the most favoured nation principle.

Several studies since the 1960s have shown that, under the GATT, developing countries' growth was handicapped by biases in the historical process of trade liberalisation, which focused on goods produced and traded among industrialised countries. In addition, many exports from developing countries (for example, in processed materials, tropical and temperate agricultural produce and labour-intensive manufactures) also faced higher tariff and non-tariff barriers (such as anti-dumping and safeguards measures).

Preferences are often applied to products that already face low MFN tariffs of below 10 per cent (World Bank 2002). Products where there are tariff peaks, such as in agriculture and textiles and clothing, are often excluded from preference schemes or have special provisions. There are tariff rate quotas which are quantitative restrictions on the amount that can be imported at the preferential rates.

Non-tariff measures can also erode the effect of preferential schemes. For example, ROO have the potential to reduce market access for LDCs. ROO are used within preference arrangements to define where a product is made, and thus whether it receives the preference. They are an essential part of the trade rules where policies discriminate between exporting countries, such as preferential tariffs (arising from GSP and free trade agreements), quotas, anti-dumping actions and countervailing duties (charged to counter export subsidies). ROO are also used to compile trade statistics and for product labelling.

ROO may not limit access for agricultural products and raw materials which make up a large proportion of LDC exports.[13] However, they can limit access for manufactures such as textiles and clothing. For example, several Asian LDCs could export textiles and clothing to the Quad countries if they could freely import the intermediate products, but ROO limit their ability to do this. Hagen, Maestad and Wigg (2001) noted that Bangladesh is unable to meet the EU ROO for apparel made from woven fabrics, as a large proportion of those fabrics is imported. Only 15 per cent of woven fabrics are produced domestically in Bangladesh.

As a result, in many countries a substantial share of imports covered by a GSP does not receive a preference (Hagen, Maestad and Wigg 2001). In 1997 the LDC utilisation rate for GSP preferences in three of the Quad countries was significantly lower than that for all preference beneficiaries. This was despite LDCs typically receiving a higher preference margin (table 2.4).

[13] Exports of raw materials may be affected by ROO if the materials are processed in a country whose exports are affected by ROO.

Table 2.4 **Utilisation rate of GSP preferences in Quad countries, 1997**
Per cent of value of eligible product

	LDC utilisation rate	*All beneficiaries utilisation rate*
Canada	54.5	65.9
EU	26.7	55.9
Japan	73.0	42.5
United States	29.1	61.1

Source: Hagen, Maestad and Wigg (2001).

Further, some industrialised countries have resorted to anti-dumping and safeguard measures that have reduced anticipated export gains for LDCs and developing countries. Similarly, reductions in agricultural protection by OECD countries agreed in the Uruguay Round have been offset by new subsidies and other 'hidden' forms of protection (for example, administrative procedures).

2.7 Preferential market access schemes for LDCs

Some WTO members have worked within the multilateral trading system to integrate LDCs into the world economy and to improve the living standards of their citizens by increasing exports and attracting investment.

OECD countries have granted preferential market access for developing countries. Twenty-eight WTO members (including Australia) pledged further market access improvements for LDCs at the WTO General Council meeting in May 2000 (WTO 2001). Many agreed to drop all barriers and to provide 'duty-free and quota-free' access for all imports from LDCs. They join a number of other countries that already provide open markets.

In May 2002, a number of countries provided preferential market access for LDCs.

- The United States adopted the African Growth and Opportunity Act in May 2000. Under the Act, 34 sub-Saharan countries (including 23 LDCs), were designated as beneficiaries. These countries were intended to benefit from preferential treatment on 1835 tariff lines from December 2000.
- The EU, Norway and Switzerland provide duty and quota-free market access for LDC exports, except arms (the EBA initiative). Transition periods are in place for some products such as bananas (restrictions to be phased out by 2006) and rice and sugar (restrictions on both to be phased out by 2009). The EBA

initiative also has safeguard provisions in place.[14] The transition period decreases significantly the benefits that might be expected from the initiative.[15]

- Japan announced its '99 per cent initiative on Industrial Tariffs' in December 2000. Following implementation in April 2001, the coverage of duty and quota-free treatment for LDCs' industrial product exports increased from 94 per cent to 99 per cent of line items and includes textile and clothing exported from LDCs.
- Canada added a further 570 tariff lines to the list of goods from LDCs eligible for duty-free treatment effective 1 September 2000; about 90 per cent of all LDC imports now receive duty-free treatment in Canada.
- New Zealand has offered duty-free and quota-free access to all imports from LDCs since 1 July 2001 (WTO 2001).

Initiatives to improve LDC market access, such as eliminating or removing tariffs, reduced the average non-weighted tariff applied by major trading partners to LDC exports from 10.6 per cent in 1997 to 6.9 per cent in the first quarter of 2001 (WTO 2001).

Increased participation in the WTO will assist LDCs' integration into the world economy. A number of LDCs are either members of the WTO, or are in the process of becoming members. WTO members have taken several initiatives to help LDCs participate more fully in the WTO and to assist LDCs currently in the process of accession (box 2.2).

[14] Safeguards are measures that can be invoked by an importing country to protect against imports that threaten to harm, or actually harm a country's industries.

[15] See Matambalya and Wolf 2001 for an up to date discussion of the limitations that can be used to affect this type of initiative.

Box 2.2 **LDCs in the WTO**

Of the 49 least-developed countries currently on the UN list, 30 have become WTO members.

These are Angola, Bangladesh, Benin, Burkina Faso, Burundi, Central African Republic, Chad, Democratic Republic of the Congo, Djibouti, Gambia, Guinea, Guinea Bissau, Haiti, Lesotho, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Burma, Niger, Rwanda, Senegal, Sierra Leone, Solomon Islands, Tanzania, Togo, Uganda, Zambia.

Nine additional least-developed countries are in the process of accession to the WTO. They are Bhutan, Cambodia, Cape Verde, Laos, Nepal, Samoa, Sudan, Vanuatu and Yemen. Furthermore, Ethiopia and Sao Tome and Principe are WTO Observers.

WTO members have taken a number of initiatives to help LDCs participate more fully at the WTO and to assist LDCs currently in the process of accession. For example, the WTO has:

- encouraged activities to encourage non-resident members and observers to follow the daily business of the WTO;
- facilitated the participation of LDCs at WTO Ministerial forums;
- improved the WTO's Trade Policy Review Mechanism;
- expanded WTO training and policy courses; and
- generally improved information available to LDCs about the WTO and its processes.

Source: WTO (2002).

2.8 Summary

At the recent Doha Ministerial Conference, WTO members committed to assist LDCs by, among other things, pursuing the objective of duty-free and quota-free market access for products originating from LDCs.

Forty-nine countries are currently designated as LDCs. Most citizens of these countries have low incomes and are disadvantaged in terms of standards of health, education and literacy when compared with industrialised countries like Australia. LCDs are also more vulnerable to economic misfortune than industrialised countries.

Trade can play an important role by promoting economic development and by providing higher levels of income to alleviate poverty. However, the share of LDC exports in total world exports is small and has been declining.

There are a number of barriers that can limit LDCs' ability to export. Tariff peaks and tariff escalation have a disproportionate effect on exports by LDCs. Tariff peak products tend to be heavily concentrated in agriculture and food products and in labour intensive sectors, such as apparel and footwear. LDCs also continue to face quotas in textiles and clothing. LDCs' ability to export is also hampered by low productive capacities, inadequate national infrastructure and high transport costs, poor regulatory framework and inefficient government institutions, and unstable social, political and economic environments.

A number of WTO members have worked within the multilateral trading system in an effort to integrate LDCs into the world economy and to improve the living standards of their citizens. Many industrialised countries have granted preferential market access for LDC exports. This is often done under a GSP scheme. However, the effectiveness of these schemes can be limited by excluding selected products and countries. Non-tariff measures can also erode the effectiveness of preferential schemes.

3 LDC access to Australian markets

Australia provides preferential market access to developing countries in recognition that increasing trade is important in improving living standards in these economies.

However, a number of LDCs do not have full duty-free access under Australia's existing schemes. Also, as is common in many industrialised countries, some products that are important exports for LDCs face high tariffs or quota limitations. Benefits could flow to LDCs if Australia eliminated tariffs on imports from LDCs.

This chapter provides a brief overview of LDCs' access to Australian markets, including the ASTP and preferential access arrangements under SPARTECA. This chapter examines LDC exports to Australia and the tariffs faced by the LDCs.

3.1 Australian initiatives for LDC market access

Australia currently provides preferential market access for beneficiary countries under the Australian System of Tariff Preferences (ASTP). The beneficiary countries are limited to specified countries in the *Tariff Act 1995* schedule 1 (the schedule is reproduced in appendix C). Generally, the countries are:

- specified LDCs;
- South Pacific island territories (known as Forum Island Countries (FICs)) that receive preferences under SPARTECA, but can also receive preferences under the ASTP in certain circumstances if they are unable to meet the SPARTECA ROO (for a discussion of ROO, see below and appendix D); and
- over 100 specified developing countries such as China, Pakistan, Thailand and Indonesia.

For imports from specified LDCs, the ASTP scheme generally reduces the tariff rate by a 5 percentage point margin when the general tariff rate is greater than 5 per cent. When the general tariff rate is 5 per cent or less, the rate is zero unless specified otherwise in the Tariff Act. Where a specific rate of duty applies, the rate is set at the general tariff rate less 5 per cent of the value of the goods.[1]

[1] For example, Australia imposes specific rate tariffs on cheese.

The ASTP scheme excludes some products from LDC preferences, including some that are important to LDCs, such as Textiles Clothing and Footwear (TCF). For example, the 1997 Industry Commission inquiry into the TCF Industries noted that there were 89 separate tariff items relating to yarns for which LDCs did not receive preferential treatment (IC 1997). In addition, these LDCs still faced high tariff rates in Passenger Motor Vehicle (PMV) and some TCF products, even with the 5 per cent preference margin.

Specified developing countries have also received preferential rates, although as tariff rates have fallen, preferences extended to these countries have been reduced. For example, the 1997 Industry Commission inquiry into the TCF commented that while a significant proportion of TCF imports were from the specified developing countries, they were not at preferential rates of duty. It also commented that only nine TCF tariff lines specified a rate for such developing countries in 1997. Of these, five were equivalent to the rate for the LDCs (IC 1997).

The Handicraft By-Law allows duty-free entry for fabric, or other goods, that contain not less than 90 per cent of natural fibres by weight, and were made by hand (including hand held tools and hand-or foot-powered looms). The by-law also applies to certain types of handmade footwear. It does not apply to towels and towelling and some curtains.

In May 2000, Australia provided duty-and quota-free access on around 93 per cent of LDC exports to its market. Nearly 84 per cent of tariff lines were duty-free for LDCs and preferential rates of duty applied in products including agriculture, fish, textiles and clothing (WTO 2001). In addition, duty-free access was provided to FICs under SPARTECA (box 3.1).

Rules of origin

For an ASTP or SPARTECA beneficiary to claim a preference[2] under Australia's ROO, generally, the country of origin of the good must be where it was either:

- wholly produced or manufactured; or

[2] Preference can flow not only from trade initiatives aimed at FICs, LDCs and other developing countries, such as the ASTP and SPARTECA, but also from the Closer Economic Relations Trade Agreement with New Zealand, and preferential trade agreements, such as the Canada Australia Trade Agreement.

Box 3.1 **The South Pacific Regional Trade and Economic Co-operation Agreement (SPARTECA)**

SPARTECA is a non-reciprocal trade agreement made by members of the South Pacific Islands Forum.

Under the agreement, Australia and New Zealand offer duty-free and unrestricted or concessional access for virtually all products originating from the developing island member countries of the Forum. These countries are known as Forum Island Countries (FICs).

The FIC signatories to SPARTECA include the Cook Islands, the Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu and Samoa. Five of these — Kiribati, Samoa, Solomon Islands, Tuvalu and Vanuatu are classified as LDCs.

SPARTECA includes provisions for:

- general economic, commercial and technical co-operation; and
- safeguards relating to dumped and subsidised goods and suspension of obligations.

SPARTECA also provides for special treatment and assistance to be extended to the smaller island countries of Cook Islands, Kiribati, Nauru, Niue, Tonga, Tuvalu and Samoa.

To qualify for duty-free and unrestricted or concessional access benefits, goods exported to Australia and New Zealand must meet the rules of origin set out in SPARTECA.

Source: South Pacific Islands Forum Secretariat (2002).

- substantially transformed if more than one country was involved in its production.

A substantially transformed good must:

- have had its last process of manufacture[3] performed in the country claiming origin; and
- at least 50 per cent of the cost of the good must be local area content incurred within the qualifying area of the scheme.

Australia is part of the qualifying area for each scheme, so if the country claiming preference used materials imported from Australia, they are able to include the cost of these materials as local area content.

[3] The last process of manufacture must create a product that is essentially different from the component parts or materials that went into the process. Minor processing operations, such as labelling or packaging, are not considered to be a process of manufacture under the ROO. Neither are activities such as repairing, overhauling or refurbishing.

- Under SPARTECA the qualifying area is Australia, New Zealand and the FICs.
- Under the ASTP the qualifying area is Australia, LDCs as defined under the Tariff Act, all FICs and over 100 specified developing countries. All countries are specified in Schedule 1 of the Tariff Act (reproduced in appendix C).

While the ASTP has a wider qualifying area than SPARTECA, ASTP beneficiaries do not have an advantage over FICs in terms of qualifying area. FICs can source from the wider ASTP qualifying area and face the ASTP LDC rate.

SPARTECA countries have been allowed greater flexibility for local area content for TCF products.[4] The SPARTECA TCF provisions allow FICs to export certain TCF products to Australia on a duty-free basis with a local area content of between 35 per cent and 50 per cent (rather than with the normal 50 per cent minimum), provided this is compensated by exports of other products with a local area content in excess of 70 per cent. The main beneficiary of the scheme is Fiji, whose TCF industries were adversely affected by the cessation of Australia's TCF Import Credit Scheme.

There is a possibility that ROO could limit the benefits from the preference schemes. LDCs could be constrained by the requirement for 50 per cent local area content.[5] This could occur regardless of the fairly wide qualifying area that includes a number of the developing countries that are large TCF exporters, such as China, India, Indonesia and Thailand. In addition, a significant barrier to non-SPARTECA LDC exports to Australia is Australia's often high tariffs in the TCF and PMV product categories, even with the ASTP preference margin of 5 per cent (see section 3.3).

3.2 LDC exports to Australia

Australia's merchandise imports totalled A$126 billion in 2001-02. The EU and the United States account each for around a fifth of Australia's imports; the Quad countries account for around 60 per cent.

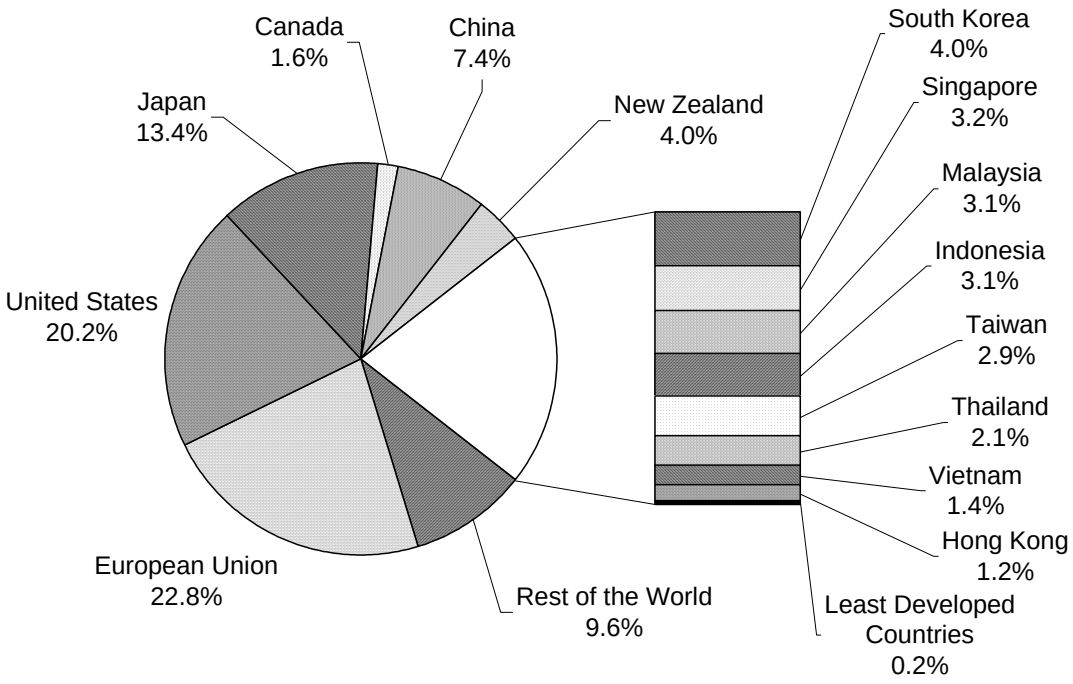
Imports from LDCs were valued at A$242 million in 2001-02. Imports from LDCs represent 0.2 per cent of total imports (figure 3.1).

[4] In addition, derogation from the local area content rules under SPARTECA is possible in special circumstances. Samoa currently has a derogation for certain automotive wiring harnesses exported to Australia (see appendix D).

[5] This effect could be mitigated to some extent by the SPARTECA TCF scheme.

Figure 3.1 **Composition of Australian imports[a]**

Average annual shares over the period 1997-98 to 2001-02



a Numbers may not add up due to rounding.

Data source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

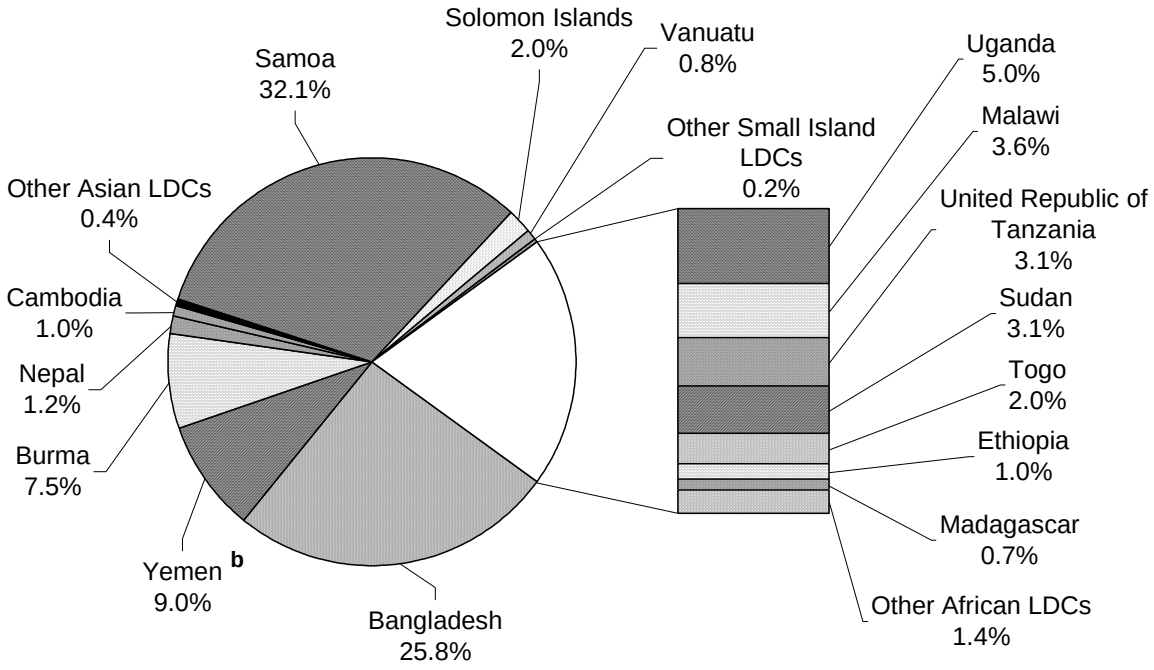
Australian imports from LDCs are primarily from the Asian LDCs. Imports from these countries account for around 45 per cent of all imports from LDCs. The three largest Asian LDC exporters to Australia are Bangladesh, Yemen and Burma (figure 3.2). While Bangladesh and Burma export mainly TCF, Yemen's exports are occasional shipments of oil products, conditioned by fluctuations in the global oil market.

FICs account for 35 per cent of total imports from all LDCs. These imports are dominated by Samoa (around 32 per cent), which is the largest LDC exporter to Australia (figure 3.2).[6] While the Pacific Islands account for 35 per cent of imports from LDCs they are small countries with a combined population of less than 0.1 per cent of the population in LDCs. Their high shares are attributable to SPARTECA, which gives imports from these countries duty-free access to Australian markets. Geographic proximity is also important.

6 Exports from Samoa consist mainly of automotive parts which benefit largely from duty free access under SPARTECA subject to ROO.

Imports from African LDCs account for only 20 per cent of imports from LDCs. No African country stands out as a significant exporter to Australia (figure 3.2).

Figure 3.2 **Sources of Australian imports from LDCs[a]**
Average annual shares over the period 1997-98 to 2001-02



[a]Numbers may not add up due to rounding. [b]The main (and frequently sole) import from Yemen is petroleum. The volume of imports from Yemen has been erratic — most years there have been no imports.

Data source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

3.3 Australian tariffs

Under the general programs of phased tariff reductions introduced in May 1988 and March 1991, most tariff rates were reduced to 5 per cent or less by July 1996. In fact, the only remaining general tariffs of more than 5 per cent are in the PMV and TCF sectors, with the exception of five tariff sub-headings relating to cheese.[7]

[7] In addition, Australia has phased out most quotas in line with the Uruguay Round. Australian TCF quotas were abolished in March 1993, although some were replaced by a tariff. Australia has already achieved 100 per cent integration under the WTO Agreement on Textiles and Clothing. (For a discussion of the WTO Agreement on Textiles and Clothing, see chapter 2.) However, Australia retains some quotas on cheese.

The level of tariff assistance afforded to the PMV and TCF sectors has also declined significantly during the 1990s. The Government has announced that there will be no tariff reductions for those sectors between 2000 and 2004. Legislation has been passed to reduce tariffs further on 1 January 2005.

Tariffs in the TCF sector will be held at their July 2000 levels until January 2005, then reduced from:

- 25 per cent to 17.5 per cent on clothing and finished textiles;
- 15 per cent to 10 per cent on footwear and fabrics; and
- 10 per cent to 7.5 per cent on sleeping bags and table linen.

Items within this sector currently dutiable at general rates of 5 per cent will continue at that rate.

Tariffs on PMV, components and replacement parts will be held at 15 per cent between 2000 and 2004 and reduced to 10 per cent on 1 January 2005. (The tariffs on four wheel drive and light commercial vehicles will remain at 5 per cent.)

The Government has indicated that post 2005 PMV and TCF tariffs are subject to review. The Commission is currently inquiring into the post 2005 assistance arrangements for the Australian automotive manufacturing sector (PC 2002).

Preferential tariffs

All goods originating in members of SPARTECA enter Australia tariff free. Five LDCs are members — Kiribati, Samoa, Solomon Islands, Tuvalu and Vanuatu.

Goods originating in the remaining LDCs enter Australia under the ASTP at a preferential tariff rate 5 percentage points lower than the general rate. Effectively, this means that goods originating in these countries enter Australia tariff free with the exception of line items in the TCF and the PMV groups of products. An indication of the pattern of tariff rates faced on goods originating in these countries is presented in table 3.1. These countries still face high tariffs in PMV and a number of TCF products, particularly apparel and certain finished textiles, and will continue to face high tariffs in this category even after 2005.

Table 3.1 **Selected PMV and TCF tariff rates[a] faced by LDC ASTP beneficiaries[b]**

Per cent

	1990	*1996*	*2000*	*2005*
Passenger motor vehicles	35	20	10	5
Apparel and certain finished textiles	50	32	20	12.5
Footwear	40	22	10	5
Woven fabrics	35	20	10	5
Sleeping bags, table linen	20	10	5	2.5
Other TCF (eg. yarns and leather)	10	0	0	0
General manufacturing	10	0	0	Under review

[a]Under the ASTP, tariff rates for LDCs are 5 percentage points lower than those faced by non beneficiary countries. [b]Forum Island Countries, such as Samoa, face zero tariffs under SPARTECA.

Source: PC (2000).

3.4 Imports affected by tariffs

Of the A$242.3 million imported from LDCs in 2001-02, around A$124.6 million, or 51 per cent, comprised TCF and PMV parts (table 3.2 and appendix E). However, the PMV parts were imported mainly from Samoa which benefits from duty-free access under SPARTECA subject to ROO.

In contrast, TCF imports contribute a large share of dutiable imports from LDCs. TCF imports from LDCs were A$32.6 million in 2001-02 (table 3.2). For this reason the remainder of the chapter and analysis in chapters 4 and 5 will focus on TCF.

Table 3.2 **Australian TCF and PMV imports from LDCs[a]**

ANZSIC	*Category*	*1997-98*	*1998-99*	*1999-00*	*2000-01*	*2001-02*
22	**Textile, Clothing, Footwear and Leather Manufacturing**					
221	Textile Fibre, Yarn and Woven Fabric Manufacturing	10.9	11.5	12.9	13.9	13.5
222	Textile Product Manufacturing	9.6	8.6	8.9	6.7	6.2
223	Knitting Mills	1.7	1.1	1.0	1.5	1.6
224	Clothing Manufacturing	5.7	6.3	11.7	10.9	9.2
225	Footwear Manufacturing	0.1	0.1	0.9	0.6	0.1
226	Leather and Leather Product Manufacturing	2.2	2.5	3.4	2.7	1.9
22	**Total**	**30.3**	**30.1**	**38.8**	**36.3**	**32.6**
281	**Motor Vehicle and Part Manufacturing**	**55.0**	**56.7**	**59.0**	**81.2**	**92.1**

[a] Products classified under the corresponding industry classification ($million)

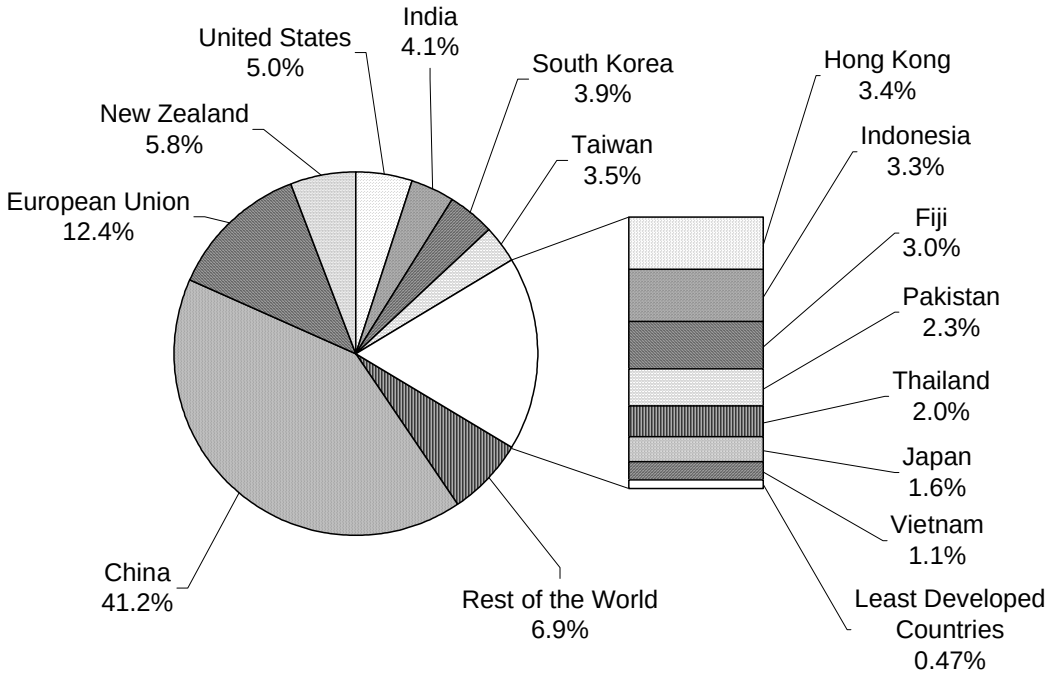
Source: Extracted from ABS *International Trade, Australia*, Cat. No. 5465.0.

TCF imports from LDCs

While TCF is an important LDC export to Australia, less than 0.5 per cent of Australian imports of TCF was from LDCs. This share is very low when compared with China's share (over 40 per cent of TCF imports into Australia). A number of developing countries have shares over seven times larger than the share for all LDCs combined, for example, India, South Korea and Taiwan. Fiji's share is about six times larger than the LDCs' share. The LDCs' share is also low when compared to imports from industrialised countries such as the EU, the United States and New Zealand (figure 3.3).

Bangladesh is the largest TCF exporter to Australia, accounting for around three quarters of TCF imports from LDCs on average. Between them, Bangladesh and Burma account for around 90 per cent of LDC exports of TCF to Australia. Nepal has the next highest share at close to 6 per cent. African and other LDC exports of TCF to Australia are negligible (figure 3.4).

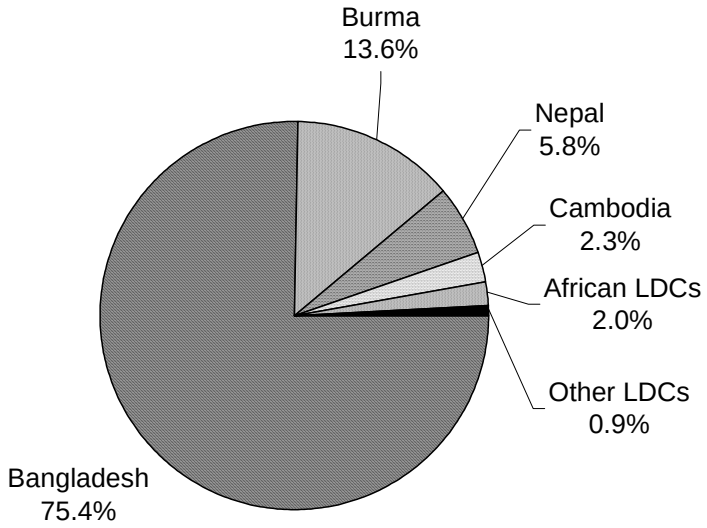
Figure 3.3 **Origin of Australian TCF imports[a]**
Average annual shares over the period 1997-98 to 2001-02



[a]Numbers may not add up due to rounding.

Data source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

Figure 3.4 **Australian imports of TCF from LDCs[a]**
Average annual shares over the period 1997-98 to 2001-02



[a]Numbers may not add up due to rounding.

Data source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

3.5 Summary

Australia provides preferential market access for developing countries under the ASTP scheme and SPARTECA. The ASTP scheme reduces the tariff rate for imports from developing countries by a 5 percentage point margin, while SPARTECA allows duty-free entry for imports from beneficiary countries.

The ASTP scheme excludes some products from tariff preferences, including some that are important to LDCs, such as TCF. In addition, non-SPARTECA LDCs still face high tariffs in some categories of TCF and PMV, particularly apparel and certain finished textiles. TCF is an important export to Australia for these LDCs.

Australian ROO may mitigate the effects of Australia's preference schemes for some LDCs that export TCF products. These limiting factors are not unique to Australia, but are common to preference schemes operated by industrialised countries

Imports from LDCs account for a small percentage of total imports into Australia. Australian imports from LDCs are primarily from the Asian LDCs. Bangladesh is the largest TCF exporter, accounting for around three quarters of Australia's imports of TCF from LDCs.

4 Patterns of trade and production

The preferential removal of remaining tariffs on imports from LDCs would increase the volume of imports from LDCs into Australia and may result in some substitution away from imports from members of SPARTECA, in particular Fiji. These imports could displace some Australian production. As discussed in chapter 3, the products mainly affected are in the TCF categories.

The effects of preferentially removing tariffs on goods originating from LDCs are partly conditioned by current trade patterns between LDCs, other economies, and Australia. Current trade patterns provide an indication of possible responses, especially in the shorter term, as:

- they give an indication of current comparative advantages conditioned by the pattern of trade restrictions and transport costs; and
- new production or trade requires some lead time either to install new production facilities or to develop the infrastructure underlying new trade links.

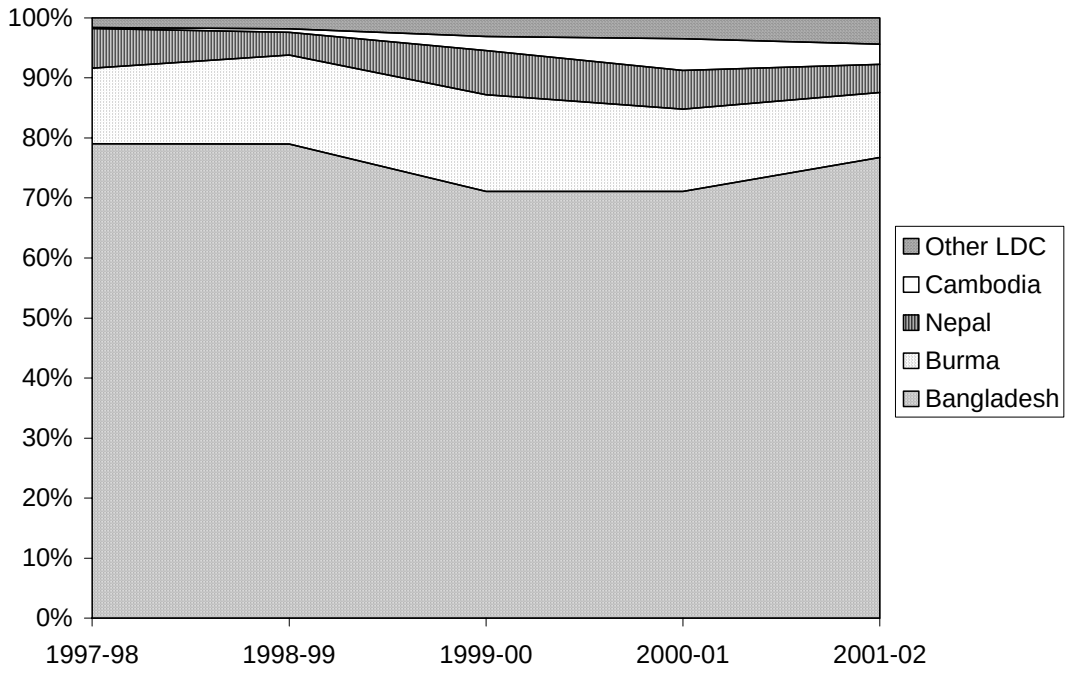
Current trade patterns are reviewed in this chapter to indicate the possible effects of the proposed tariff removal. Specifically the chapter compares:

- the structure of relevant LDC exports to Australia (section 4.1);
- the structure of LDC exports with the structure of exports to Australia by relevant SPARTECA developing countries (section 4.2); and
- the structure of LDC exports with the structure of import-competing parts of the Australian economy likely to be affected by the proposed preferential tariff removal (section 4.3).

4.1 Structure of LDC exports to Australia

The existing pattern of Australian TCF imports provides a guide as to which LDCs are likely to benefit. Asian LDCs are likely to gain the most because they already have significant exports of TCF. Based on 2001-02 ABS trade data, the four largest LDC exporters of TCF to Australia were Bangladesh, Burma, Cambodia and Nepal (figure 4.1). They are likely to be the main beneficiaries of the proposal. However, their shares of TCF imports into Australia are low when compared to developing countries such as Fiji and China.

Figure 4.1 **Composition of Australian imports of TCF originating from selected countries**



Data Source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

As a result of removing tariffs on goods from LDCs, we can expect an increase in TCF exports from Bangladesh, Burma, Cambodia and Nepal. However, these may not be the only LDCs to benefit. LDC producers of similar types of TCF goods may be precluded from exporting to Australia by the current tariffs since demand for their products is heavily dependent on price. Removing tariffs for LDCs could stimulate exports where none currently exist. In addition, other LDCs do not currently produce significant quantities of TCF products, but the preferential elimination of Australian tariffs could encourage Australian investment, and help establish TCF industries.

Five LDCs are members of SPARTECA (Kiribati, Samoa, Solomon Islands, Tuvalu and Vanuatu) which means they already have duty-free access to Australian markets and could face increased competition from the other LDCs. However, LDC members of SPARTECA do not export significant quantities of TCF to Australia. Consequently, they are unlikely to be affected by the removal of TCF tariffs on goods originating in the remaining LDCs.

While Bangladesh, Burma, Nepal and Cambodia are expected to be the largest potential beneficiaries, the effects are not expected to be widespread within their

economies. This is primarily because TCF exports from these countries to Australia are small compared to the size of their economies (table 4.1).

Table 4.1 **TCF exports to Australia as a percentage of GNI,[a] 1998-99**

Country	*per cent*
Bangladesh	0.050
Nepal	0.022
Cambodia	0.005

a No suitable GNI data available for Burma.

Sources: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service) and WDI 2000.

At a disaggregated level there could be significant benefits for the TCF sectors of Bangladesh, Burma, Nepal and Cambodia. The benefits could be significant for some exporting firms. The similarity analysis presented below provides an indication of the degree to which different countries' TCF sectors compete with each other, and how this might affect supply responses.

Similarity analysis

'FK indexes' were calculated following Finger and Kreinin (1979) to provide an overall measure of similarity between two countries' exports of TCF commodities to Australia (box 4.1).

The FK indexes for TCF imports from selected country pairs using HS6 data are presented in table 4.2. The indexes suggest that overall similarity between the main LDC TCF exporters to Australia is low. The low similarity suggests that imports from Bangladesh, Burma, Cambodia and Nepal are not very substitutable for each other.

The extent to which LDCs benefit will also depend on how similar their imports are to large TCF exporters to Australia such as China and the EU. The indexes between each LDC of interest and China indicate that overall similarity was low with the exception of Cambodia and Nepal. The comparisons between each LDC and the EU indicated low degrees of similarity (table 4.2). This suggests that imports from the LDCs of interest are not very substitutable with imports from China and the EU. The main exception is the similarity of imports from Cambodia and Nepal with China.

Box 4.1 **The overall Finger Kreinin index**

In the context of this report, the Finger Kreinin (FK) index is defined as an indicator of overall similarity between two countries' exports of TCF goods to Australia.

$$FK_{TCF} = \sum_{i \in TCF} \min\left[\frac{I_{Ai}}{\sum_{j \in TCF} I_{Aj}}, \frac{I_{Bi}}{\sum_{j \in TCF} I_{Bj}}\right]$$

where I_{ci} are imports of good i from country c, c is country A or B; and commodities are defined as the TCF group of goods.

The index ranges from 0 when country A exports goods that are completely different to those exported by country B, to 1 when the composition of both countries' exports is identical.

For example, if two countries export three goods according to the pattern in the table below, the FK index is zero, reflecting the different structures of the two countries' exports.

Value and shares of exports, illustrative example

Commodity	*Country A*		*Country B*	
	Value	*Share*	*Value*	*Share*
1	400	0.5	0	0
2	0	0	30	1.0
3	400	0.5	0	0

Table 4.2 **FK indexes for TCF imports from selected countries**

Using the average of annual HS6 data for the years 1997-98 to 2001-02

	Bangladesh	*Burma*	*Cambodia*	*Nepal*	*China*
Burma	4				
Cambodia	10	6			
Nepal	5	5	14		
China	13	11	44	24	
EU	9	5	15	14	33

Source: Productivity Commission estimates.

While similarity in the composition of exports may be low overall, it is possible for high levels of similarity to occur in some product lines. An individual similarity index can be used to identify the product lines, in this case at the HS6 level, that are contributing to the overall FK index measure of similarity (box 4.2).

Box 4.2 **The individual similarity index**

The individual similarity index is inspired from an index developed by Grubel and Lloyd (1975). In the context of this section it is used to identify the source of similarity between exports to Australia from two different countries.

$$SI_i = \min\left[\frac{I_{Ai}}{\sum_{j\in TCF} I_{Aj}}, \frac{I_{Bi}}{\sum_{j\in TCF} I_{Bj}}\right] \Big/ \overline{Z}_{ABi}$$

where:

$$\overline{Z}_{ABi} = \left[\frac{I_{Ai}}{\sum_{j\in TCF} I_{Aj}} + \frac{I_{Bi}}{\sum_{j\in TCF} I_{Bj}}\right] \Big/ 2$$

I_{ci} are imports of commodity i from country c, c is country A or B; and commodities are defined as the TCF group of commodities.

The individual similarity index for a particular category ranges from 0 when there is no similarity between each country for that category's share of total TCF (that is the share for a particular category is zero in one or both of the countries) to 1 where the shares are identical.

When the value of the overall FK index falls between zero and one, the individual similarity index can be used to identify the product lines that are contributing to the overall FK index measure of similarity. The relationship between the FK index and the individual similarity index is:

$$FK_{TCF} = \sum_{i\in TCF} \overline{Z}_{ABi} SI_i :$$

The contribution of a particular commodity to the FK index is defined as:

$$SC_i = \overline{Z}_{ABi} SI_i$$

Table 4.3 shows the five largest items contributing to selected FK indexes.[1] Table 4.3 indicates that for the country pairs presented, most of the similarity was occurring in items of clothing.

[1] The results of the decomposition for country pairs that had lower FK indexes were not presented as they also had low levels of similarity for all HS6 categories. That is, the similarity was not concentrated in a small number of categories.

Table 4.3 **Five largest contributing items to selected FK indexes, TCF**

Using the average of annual HS6 data for the years 1997-98 to 2001-02

Item	*Contribution*[a]
Bangladesh–Cambodia	
Jerseys, pullovers, cardigans, waistcoats and similar articles of man-made fibres, knitted or crocheted	2.85
Men’s or boys' trousers, bib and brace overalls, breeches and shorts, not knitted or crocheted, of synthetic fibres	2.74
T-shirts, singlets and other vests of cotton, knitted or crocheted	0.64
Men’s or boys' shirts, not knitted or crocheted of cotton	0.50
Women’s or girls' trousers, bib and brace overalls, breeches and shorts (excl. swimwear), not knitted or crocheted of cotton	0.36
Other items	3.29
FK index	**10.39**
Cambodia–Nepal	
Women’s or girls' trousers, bib and brace overalls, breeches and shorts (excl. swimwear), not knitted or crocheted of cotton	2.06
Men’s or boys' trousers, bib and brace overalls, breeches and shorts, not knitted or crocheted, of cotton	1.27
Travel goods, sports bags and the like nes, with outer surface of plastic sheeting or textile materials	1.24
T-shirts, singlets and other vests of cotton, knitted or crocheted	0.95
Women’s or girls' skirts and divided skirts, not knitted or crocheted of cotton	0.72
Other items	7.7
FK index	**13.90**
Cambodia–China	
Footwear with outer soles of rubber, plastics, leather or composition leather and uppers of leather nes	5.35
Jerseys, pullovers, cardigans, waistcoats and similar articles of man-made fibres, knitted or crocheted	4.35
Men’s or boys' trousers, bib and brace overalls, breeches and shorts, not knitted or crocheted, of cotton	4.13
T-shirts, singlets and other vests of cotton, knitted or crocheted	4.05
Footwear, with outer soles and uppers of rubber or plastics nes	2.96
Other items	23.20
FK index	**44.05**

(Continued next page)

Table 4.3 **(Continued)**

Item	*Contribution*
China–Nepal	
Travel goods, sports bags and the like nes, with outer surface of plastic sheeting or textile materials	2.92
Women's or girls' trousers, bib and brace overalls, breeches and shorts (excl. swimwear), not knitted or crocheted of cotton	2.76
Hats and headgear nes, knitted or crocheted, or made up from lace, felt or other textile fabric, in the piece (but not in strips)	1.46
Men's or boys' shirts, not knitted or crocheted of cotton	1.36
Men's or boys' trousers, bib and brace overalls, breeches and shorts, not knitted or crocheted, of cotton	1.27
Other items	14.10
FK index	**23.85**

a Contributions are calculated as SC_i in box 4.2.

Source: Productivity Commission estimates.

4.2 Non-LDC exports of TCF

Fiji already receives duty-free access under SPARTECA arrangements. Import statistics show that the composition of TCF imports from Fiji differs from TCF imports from LDCs. This suggests TCF imports from the LDCs may not be easily substitutable for TCF imports from Fiji. As a result of these product differences, an expansion of LDC exports to Australia may have a small effect on Fijian exports. Only those parts of the Fijian industries that compete directly with LDCs are likely to be significantly affected.

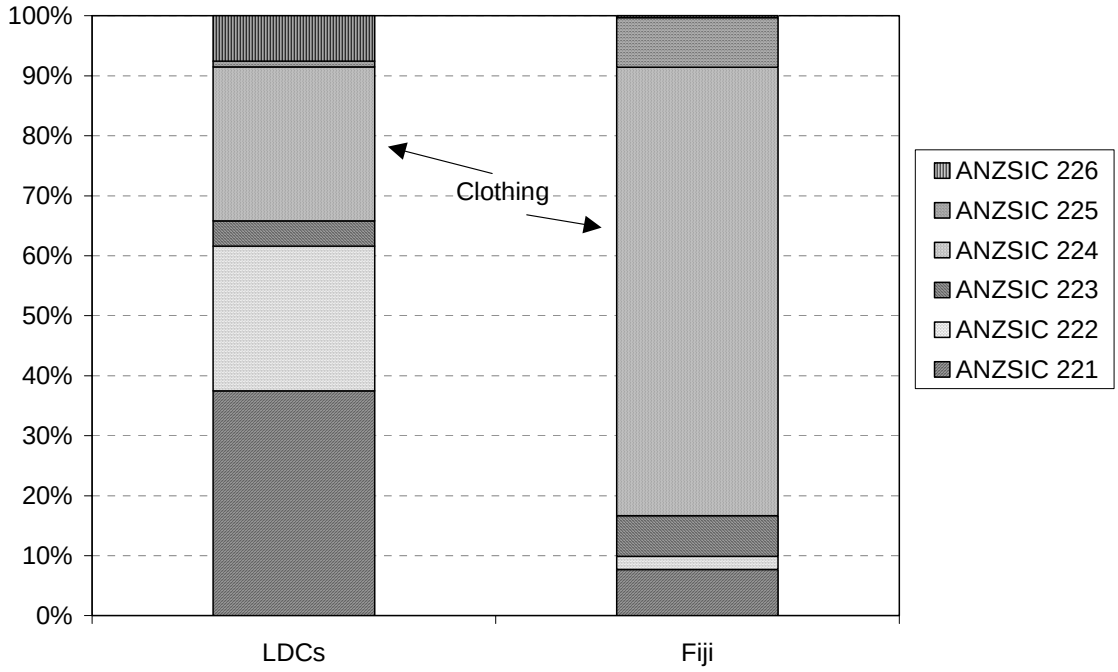
Australia is a major export market for Fiji, accounting for around a third of Fiji's exports. Around half of these exports, or A$132 million, were TCF products in 2001-02. In contrast, LDC TCF exports to Australia were around A$33 million (see appendix E). Also, Fiji is by far the largest SPARTECA TCF exporter, accounting for around 4 per cent of total TCF imports into Australia (see chapter 3).

Exports to Australia in affected product lines by other members of SPARTECA are not significant proportions of their total exports.

Clothing exports to Australia are important to Fiji. Over the period 1997-98 to 2001-02, around three quarters of Fijian TCF exports to Australia were clothing, compared to around a quarter for LDCs. In contrast, Textile Fibre, Yarn and Woven Fabric accounted for the largest share of LDC exports of TCF between 1997-98 and 2001-02. This indicates there is limited scope for substitution between existing LDC and Fijian TCF exports to Australia (figure 4.2).

Figure 4.2 **Composition of Australian TCF imports from the LDCs and Fiji**

Using the average of annual ANZSIC 3 digit level[a] data for the years 1997-98 to 2001-02



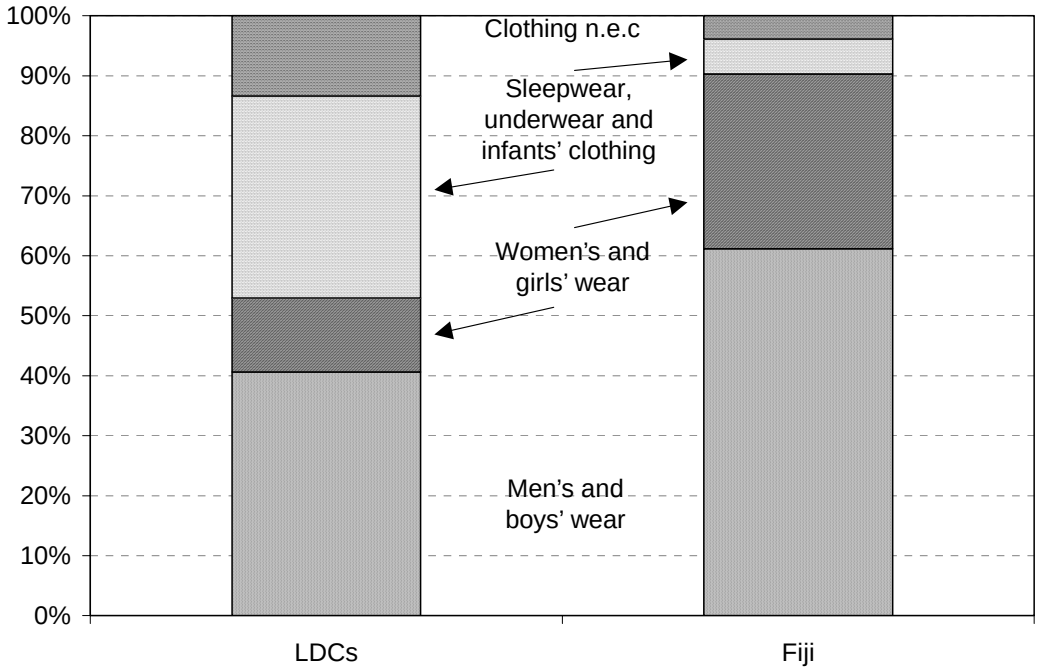
[a] 221 Textile Fibre, Yarn and Woven Fabric Manufacturing; 222 Textile Product Manufacturing; 223 Knitting Mills; 224 Clothing Manufacturing; 225 Footwear Manufacturing; 226 Leather and Leather Product Manufacturing.

Data source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

Figure 4.3 indicates that Fiji tends to concentrate its exports on fashion sensitive segments of the garment industry — women's and girls' wear and men's and boys' wear. Competition between Fiji and the LDCs will be limited in this category. LDCs export in less fashion conscious generic categories such as sleepwear and underwear. Fiji is better able to compete in the fashion part of the Australian market. Its close links to Australian markets enable it to fill orders quickly using short production runs.

Figure 4.3 **Composition of Australian clothing imports from LDCs and Fiji**

Using the average of annual ANZSIC 4 digit level[a] data for the years 1997-98 to 2001-02



[a] 2241 Men's and Boys' Wear; 2242 Women's and Girls' Wear; 2243 Sleepwear, Underwear and Infant Clothing; 2249 Clothing n.e.c. n.e.c Not elsewhere classified.

Data source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

A significant portion of Fiji's exports are produced from inputs sourced from Australia. For example, fabric for garments may be exported from Australia to Fiji, assembled into garments, and re-exported back to Australia. Some Australian TCF producers moved their labour-intensive manufacturing operations offshore to Fiji (and other developing countries) to take advantage of lower labour costs.

Under the SPARTECA ROO, Fiji is able to count inputs sourced from Australia as local area content (see appendix D). In addition, the Overseas Assembly Provisions (OAP) allows firms to assemble clothing overseas from cut fabric made in Australia and import the finished product to Australia free of duty on the Australian content.[2]

In such cases the effect on the local economy is related to the value added there, not the total value of the exports. However, this effect is difficult to isolate without

[2] At least 80 per cent of the fabric or leather used in the finished garment has to be made in Australia while the offshore content attracts duty at the normal rate.

undertaking an input–output analysis for the TCF sectors of each of the countries of interest.

There are limitations from comparing imports at the 4-digit ANSZIC level. There is often insufficient disaggregation to be able to compare imports and tell where the similarities are occurring between the exporting countries. There can also be insufficient detail at the 4-digit level on a product's characteristics. The next section presents similarity analysis at a more disaggregated level.

Similarity analysis

The FK indexes for TCF imports from Fiji and selected countries using HS6 data are presented in table 4.4. The indexes suggest that overall similarity between Fiji's exports and those of the three largest LDC exporters of TCF products to Australia — Bangladesh, Burma and Nepal — is low. This indicates that imports from these countries are not easily substitutable. While the composition of Fijian and Cambodian TCF exports are somewhat similar, Cambodia's volumes are low. As a result, effects on Fiji will probably be small.

Fiji's export composition is more similarity to China's than the composition of exports from the Bangladesh, Burma and Nepal. This indicates that there is potential for a greater degree of substitution between Fiji and China in terms of TCF exports to Australia, than between Fiji and these LDCs. In addition, China's TCF exports amounted to around A$3.8 billion in 2001-02. These factors combined indicate that even a small percentage increase in TCF imports from China could have a greater effect on Fiji than any increases in LDC exports to Australia arising from removing tariffs.

Table 4.4 **FK indexes for TCF imports from selected countries relative to imports from Fiji**

Using the average of annual HS6 data for the years 1997-98 to 2001-02

	Index
Fiji–All LDCS	16
Fiji–Bangladesh	11
Fiji–Burma	10
Fiji–Cambodia	48
Fiji–Nepal	14
Fiji–China	48
Fiji–EU	17

Source: Productivity Commission estimates.

While similarity between Fiji and the three main LDC TCF exporters to Australia may be low overall, there is scope for high levels of similarity in some product lines.

The contribution of similarity in each HS6 category to each FK index was calculated. Table 4.5 presents the contributions for the five largest items to the FK indexes. The contributions indicate that for the country pairs presented, most of the similarity occurred in items of clothing.

Table 4.5 **Five largest contributing items to selected FK indexes, TCF**
Average shares based on HS6 data for 1997-98 to 2001-02

Item	*Contribution*[a]
Fiji–Bangladesh	
Men's or boys' trousers, bib and brace overalls, breeches and shorts, not knitted or crocheted, of synthetic fibres	2.74
Jerseys, pullovers, cardigans, waistcoats and similar articles of man-made fibres, knitted or crocheted	1.02
T-shirts, singlets and other vests of cotton, knitted or crocheted	0.64
Uppers, whether or not attached to soles other than outer soles and parts thereof of footwear (excl. stiffeners)	0.61
Men's or boys' shirts, not knitted or crocheted of cotton	0.50
Other items	5.38
FK index	**10.89**
Fiji–Burma	
Men's or boys' shirts, not knitted or crocheted of cotton	3.13
T-shirts, singlets and other vests of cotton, knitted or crocheted	0.98
Men's or boys' jackets and blazers, not knitted or crocheted of synthetic fibres	0.83
Women's or girls' briefs and panties, knitted or crocheted of cotton	0.47
Women's or girls' jackets and blazers, not knitted or crocheted of synthetic fibres	0.44
Other items	3.82
FK index	**9.67**
Fiji–Nepal	
Women's or girls' trousers, bib and brace overalls, breeches and shorts (excl. swimwear), not knitted or crocheted of cotton	2.76
Men's or boys' shirts, not knitted or crocheted of cotton	1.36
Men's or boys' trousers, bib and brace overalls, breeches and shorts, not knitted or crocheted, of cotton	1.27
T-shirts, singlets and other vests of cotton, knitted or crocheted	0.95
Jerseys, pullovers, cardigans, waistcoats and similar articles of cotton, knitted or crocheted	0.66
Other items	7.14
FK index	**14.15**

(Continued next page)

Table 4.5 **(Continued)**

Item	*Contribution*
Fiji–Cambodia	
Men's or boys' trousers, bib and brace overalls, breeches and shorts, not knitted or crocheted, of cotton	9.20
Men's or boys' trousers, bib and brace overalls, breeches and shorts, not knitted or crocheted, of synthetic fibres	7.86
T-shirts, singlets and other vests of cotton, knitted or crocheted	4.99
T-shirts, singlets and other vests of textile materials (excl. cotton), knitted or crocheted	3.32
Footwear with outer soles of rubber, plastics, leather or composition leather and uppers of leather nes	2.81
Other items	20.14
FK index	**48.32**
Fiji–China	
Men's or boys' trousers, bib and brace overalls, breeches and shorts, not knitted or crocheted, of cotton	4.13
T-shirts, singlets and other vests of cotton, knitted or crocheted	4.05
Women's or girls' trousers, bib and brace overalls, breeches and shorts (excl. swimwear), not knitted or crocheted of cotton	3.53
Footwear with outer soles of rubber, plastics, leather or composition leather and uppers of leather nes	2.81
Men's or boys' shirts, not knitted or crocheted of cotton	1.76
Other items	32.1
FK index	**48.35**

a Contributions are calculated as SC_i in box 4.2.

Source: Productivity Commission estimates.

4.3 Australian TCF production

Australia's TCF industries are diverse and undertake a wide range of activities from the processing of raw materials, such as cotton, wool, leather and synthetics, through to the production and design of final goods such as clothes, shoes, household linen, carpets and industrial textiles. Many parts of the Australian industries are interdependent both within Australia and internationally. In addition, the industry has adapted to increased competition from low labour cost TCF imports.

The effect on the Australian industry of preferentially eliminating tariffs on imports from LDCs is expected to be limited. The evidence suggests that the Australian TCF industry produces goods which are not close substitutes for those imported from LDCs. Granting duty-free access to imports from LDCs may benefit the

Australian industry if some of these imports are inputs into Australian production. This in turn would benefit consumers by lowering the price of garments.

Even a dramatic increase in the volume of TCF imports from LDCs would still represent a small proportion of total TCF imports. Nevertheless, effects on specific product lines may occur.

Australian TCF production and TCF imports from LDCs

Australian TCF industries have faced increasing competition from imports since the early 1970s, with the growth of low cost production in developing countries in East and South East Asia. With the reduction of tariffs and the removal of quotas in the 1990s, imports increased sharply. The market share supplied by domestic production declined from 63 per cent in 1989-90 to 51 per cent in 1996-97 (PC 1999).

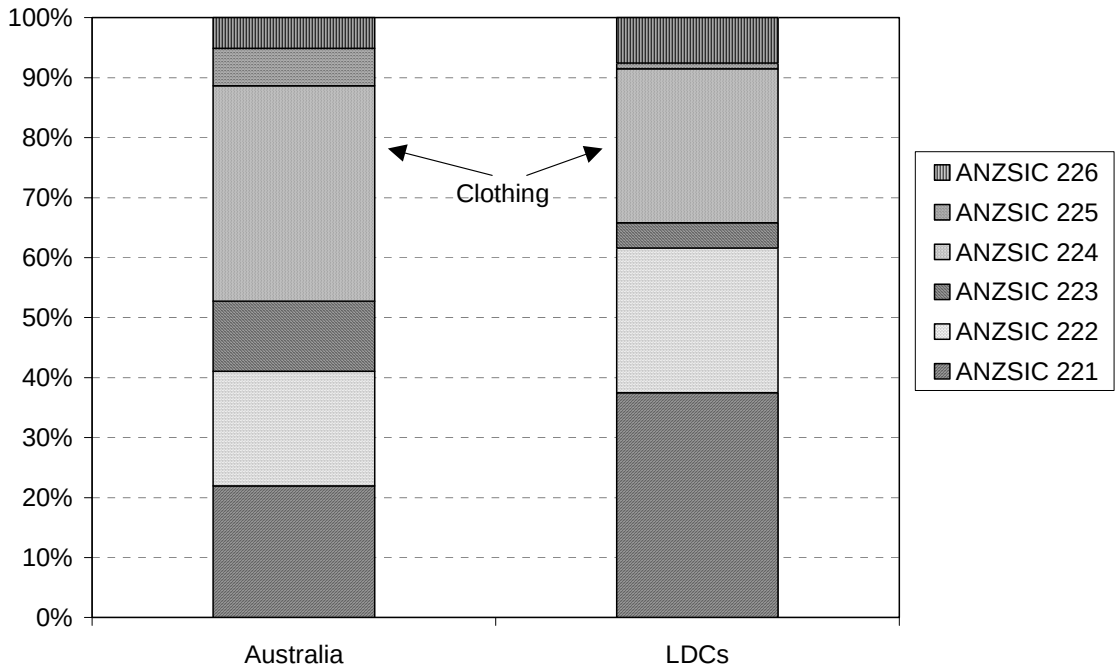
TCF value added has been declining since the 1970s. The significance of sectors within the Australian TCF industry has changed. Most notably, clothing manufacturing has become less important, while the significance of textile product manufacturing has increased.

Despite clothing's declining significance in Australian TCF production, it is still the largest sector within the Australian TCF industry in terms of value added and employment.[3] The share of clothing in Australian TCF production typically exceeded the share of clothing in TCF imports from LDCs (figure 4.4). Australian production is more highly concentrated in downstream processing, while LDC exports to Australia are more highly concentrated in less transformed materials.

[3] In 2000, the ABS estimated clothing's share of value added and employment to be 33 and 40 per cent respectively (ABS Cat No. 8221.0).

Figure 4.4 **Composition of Australian TCF manufacturing value added and clothing imports from LDCs**

Average shares based on annual ANZSIC 3-digit data[a] for 1997-98 to 2001-02



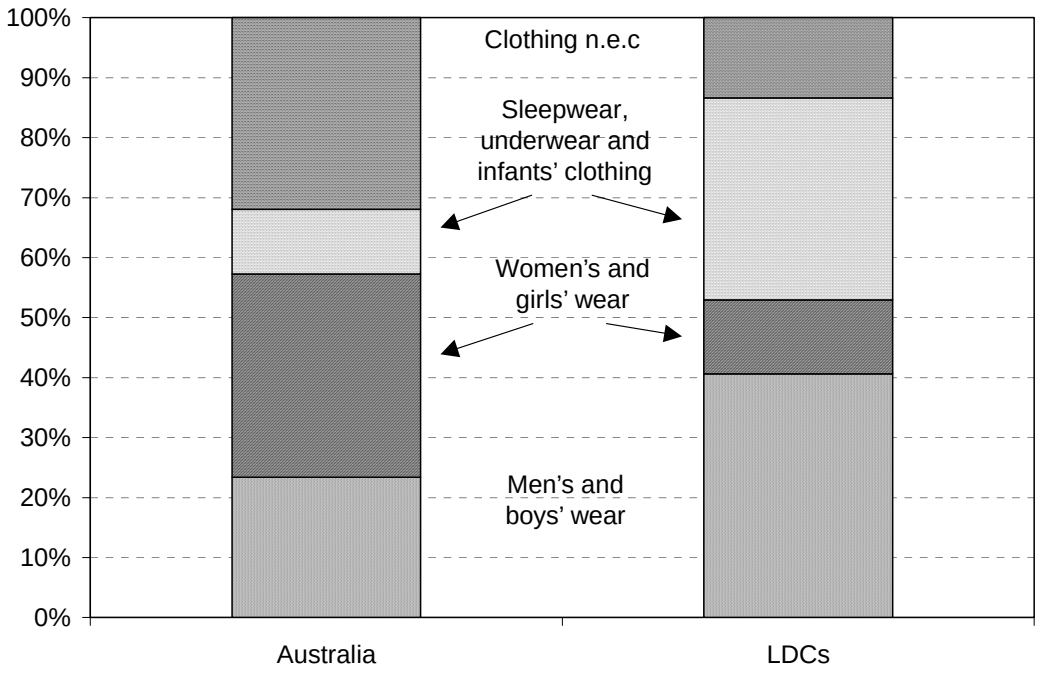
[a] 221 Textile Fibre, Yarn and Woven Fabric Manufacturing; 222 Textile Product Manufacturing; 223 Knitting Mills; 224 Clothing Manufacturing; 225 Footwear Manufacturing; 226 Leather and Leather Product Manufacturing.

Data sources: ABS (*Manufacturing Industry, Australia,* Cat. No. 8221.0); ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

As clothing is an important part of the Australian TCF industry, it warrants further examination. The Australian TCF industry has both high-end clothing producers and some producers of lower quality garments. However, a comparison of the product mixes within the clothing category (at the ANZSIC 4 digit level) suggests that a large proportion of value added is located in the more fashion sensitive women's and girls' wear segment of the Australian industry. Imports from LDCs have a larger proportion of generic Sleepwear, underwear and infant's clothing and Men's and boys' wear (figure 4.5).

Figure 4.5 **Composition of Australian clothing manufacturing value added and clothing imports from LDCs**

Average shares based on ANZSIC 4 digit data [a] for 1997-98 to 2001-02



[a] 2241 Men's and Boys' Wear; 2242 Women's and Girls' Wear; 2243 Sleepwear, Underwear and Infant Clothing; 2249 Clothing n.e.c. n.e.c Not elsewhere classified.

Data sources: ABS (*Manufacturing Industry, Australia,* Cat. No. 8221.0); ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

The Textile, Clothing, Footwear, Leather (TCFL) Action Agenda Advisory Board (2002) commented that the reduction in protection and consequent opening of the Australian TCF market has been accompanied by a growth in lower quality more generic clothing and footwear imports. This import competition was mainly from developing countries with lower labour costs

Developing countries have been able to exploit their advantage of low cost labour to produce labour intensive goods. The migration of production to developing countries and greater global specialisation in production has been driven by rising incomes and wage rates in developed countries and by technological and communications advances (IC 1997).

The Australian TCF industry has already implemented significant adjustments in response to falling levels of assistance and increasing import competition from developing countries with low labour costs. Some of these adjustments have been aimed at differentiating the Australian product from cheaper 'homogeneous' or 'generic' TCF imports from developing countries. This will limit the effect that

imports from LDCs will have on the Australian market as these are also typically 'generic products'.

Remaining firms in the Australian TCF industry have focused on areas such as design, product research and development, marketing and other information processing activities. The TCFL Action Agenda Advisory Board (2002) has commented that certain Australian enterprises have been successful in producing and marketing quality goods that compete on style and quality, often in niche markets.

The relative success of local production of female outerwear is partly due to the high fashion content, which requires short and constantly changing production runs. Local manufacturers are close to the market and are in a better position to respond to changing consumer demands (IC 1997). The high fashion component of women's and girls' wear reflects a greater concentration on brand names and niche markets.

In addition, an increasing proportion of Australian TCF producers have moved their labour intensive manufacturing operations offshore to developing countries, such as Fiji, to take advantage of lower labour costs or are sourcing inputs from these countries. The OAP program has facilitated this.

Similarity analysis

The similarity of Australian TCF production to TCF imports from LDCs can be examined using the similarity analysis developed in boxes 4.1 and 4.2. In this section, the indexes are calculated to measure the similarity of Australian TCF production (value added) with TCF imports from selected countries.

FK and individual similarity indexes were calculated using data on Australian TCF industry value added and TCF imports at the 4-digit ANZSIC level. The Australian TCF industry data used was for the period 1997-98 to 1999-2000. The import data used was for the period 1997-98 to 2001-02.

Table 4.6 presents the results for the FK indexes. For all LDCs combined the FK index was around 40. This result was heavily influenced by Bangladesh: the composition of its exports is very different to the composition of Australia's production.[4] Burma's index indicated the composition of its exports was less similar to Australian production than Bangladesh. Burma was the second largest LDC exporter of TCF to Australia at around 14 per cent in over the period 1997-98 to 2001-02. This suggests that imports from either Bangladesh or Burma, which

[4] Bangladesh accounted for around 75 per cent of LDC TCF exports to Australia over the period 1997-98 to 2001-02 (see chapter 3).

together account for around almost 90 per cent of total LDC imports, are not close substitutes for Australian production.

The results in table 4.6 indicate that both Nepal and Cambodia had FK indexes indicating a higher level of overall similarity than Bangladesh or Burma. However, Nepal had fairly low TCF exports to Australia, at A$1.5 million in 2001-02, or 6 per cent of the total TCF imports from LDCs over the period 1997-98 to 2001-02. Cambodia's TCF exports to Australia of around A$1.1 million in 2001-02 were also low.

Also, the FK index calculations show that overall the composition of total imports from LDCs is less similar to the composition of Australian production than imports from either Fiji or China (table 4.6). This evidence suggests that imports from Bangladesh are less substitutable for Australian production than the imports Australia receives from Fiji or China. Therefore any increase in imports from Bangladesh resulting from the elimination of tariffs would have less effect on the Australian TCF industry than an increase in imports of the same size from either Fiji or China.

Table 4.6 **FK indexes for Australian TCF production[a] and TCF imports from selected countries**

Average shares based on ANZSIC 4-digit data for 1997-98 to 2001-02[b]

Country	*Index*
Total LDC	40
Bangladesh	26
Burma	18
Nepal	42
Cambodia	43
Fiji	49
China	58
EU	61

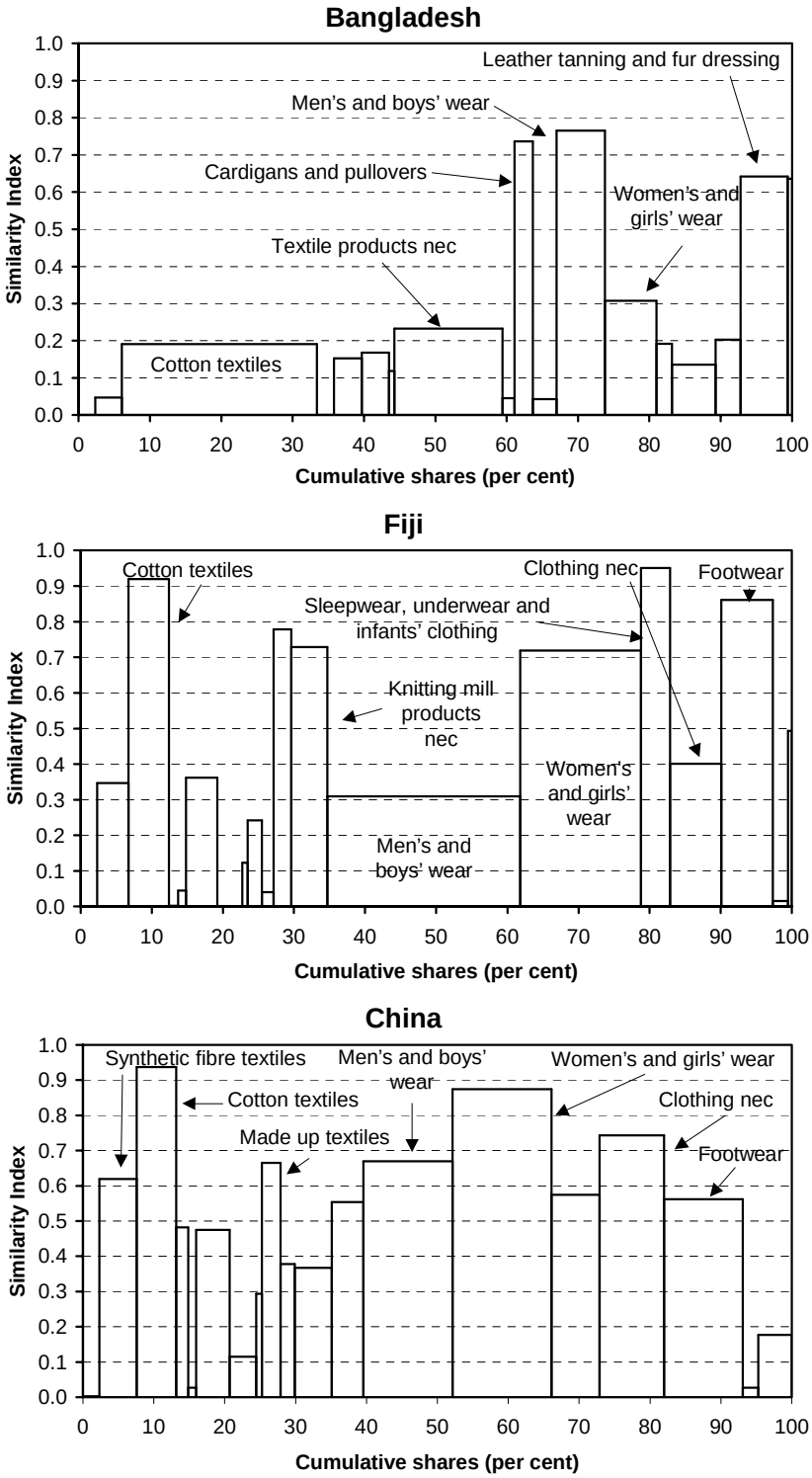
a Production measured by industry value added. **b** Industry value added is for 1997-98 to 1999-2000.

Source: Productivity Commission estimates.

Figure 4.6 presents similarity indexes comparing imports from each of Bangladesh, Fiji and China with Australian production. These countries are focused on because:

- Bangladesh is the largest LDC exporter of TCF to Australia;
- Fiji is a significant developing country exporting TCF to Australia under SPARTECA; and
- China accounts for the largest share of any country of total TCF exports to Australia at around 41 per cent (see chapter 3).

Figure 4.6 **Similarity of Australian TCF production[a] with TCF imports from selected countries at the ANZSIC 4-digit level[b, c]**



a Australian production measured by industry value added. **b** Indexes are graphed against cumulative average shares. These average shares are calculated as the average, for each 4-digit category, of its share of total Australian TCF value added, and its share of TCF imports for each country of interest. **c** Average shares based on imports for 1997-98 to 2001-02. Industry value added for 1997-98 to 1999-2000.

Data source: Productivity Commission estimates.

In each chart, the individual similarity indexes comparing Australian TCF production with TCF imports from Bangladesh, Fiji and China are graphed. The area of each block on the charts represents the contribution of each 4-digit category to the overall FK index measure of similarity for the corresponding country (SC_i in box 4.2). The sum of the areas of each block in each chart represents the FK index for that country. For example, in the Bangladesh chart, the areas of all blocks, such as the blocks labelled Cotton textiles, Textile products nec, Cardigans and pullovers, Men's and boys' wear and so on, when added together, (including the unlabelled blocks) equals the FK index of 26 shown in table 4.6.

In figure 4.6 the pattern of boxes for Bangladesh is lower than either Fiji or China; this illustrates that Bangladesh had a lower FK index than either Fiji or China. It also illustrates that most of the similarity between Australian production and imports from Bangladesh occurred in Cotton textiles and Textile products, and in Men's and boy's wear and Leather tanning and fur dressing. The similarity of imports from Fiji and China was spread across more ANZSIC categories and reflects the greater diversification of their TCF exports to Australia. The largest contributors to similarity for Fiji and China were Cotton textiles, Men's and boys' wear, Women's and girls' wear, Clothing nec and Footwear. This indicates that not only are imports from Fiji and China more similar to Australian production than imports from Bangladesh, but also that a larger amount of the similarity occurs in clothing for these countries than for Bangladesh.

4.4 Summary

The analysis of current patterns of trade indicate that, removing tariffs on goods from LDCs is likely to:

- increase TCF exports from Bangladesh, Burma, Nepal and Cambodia to Australia;
- reduce exports by Fiji to Australia; Fiji is the largest SPARTECA TCF exporter, imports from Fiji are different from imports from LDCs, indicating that they are not very substitutable for each other; therefore, the reduction in exports from Fiji may be small;
- most other members of SPARTECA will not be significantly affected because their exports to Australia in affected product lines are not significant proportions of their total exports; and
- the effect on the Australian industry is expected to be limited as the Australian TCF industry produces goods which are not close substitutes for those imported from LDCs.

5 Effects of reducing tariffs preferentially on goods originating from LDCs

This chapter analyses the effects of eliminating tariffs on imports from LDCs into Australia. This 'what-if?' analysis requires an economic model that describes the behaviour of production and of international trade as conditions are changed. The GTAP model is a computable general equilibrium model of world trade which is adapted to this task. The role of the model is to provide insights into the mechanisms at work and order of magnitude of the effects of policy changes.

Previous chapters have shown that according to current trade patterns, the proposed changes in the tariff are likely to affect mainly:

- trade in clothing;
- among the LDCs, Bangladesh, Burma, Cambodia and Nepal, and
- the clothing sectors in Fiji and Australia.

The results therefore concentrate on these main effects. The results give the effect of removing tariffs on imports originating from LDCs in isolation from any other events, influences, or normal growth processes.

This chapter is divided into three parts. The first summarises the characteristics of the simulations conducted. Model results are presented in part two. Some data and modelling limitations require the results to be interpreted carefully; the third part provides an interpretation of these results.

5.1 Version of GTAP and simulations

The likely effects of the proposed changes in the tariff are projected using the standard GTAP framework.[1] The database is modified from the standard version to account for the existing tariff regime, especially the detailed system of ASTP and the application of local content requirement rules.

[1] See appendix F for a short presentation of the GTAP framework, and Hertel (1997) for details.

Two sets of results are provided, based on the default parameter settings of GTAP and on a lower setting. The parameters allow for imported and domestic products to be substitutable and for imports from different regions to be substitutable for each other. The original GTAP values for the parameters are relatively large, implying a high degree of substitutability (this is referred to as scenario S1). However, the similarity analysis indicates that there may be substantial differences between the types of clothing produced in Australia, Fiji and the LDCs (chapter 4). As a result, the original values for the substitution parameters were halved (this is referred to as scenario S2).[2]

The database does not account separately for most LDCs. However, among the LDCs from which Australia does import TCF products, Bangladesh appears separately. Therefore most detail is available for this country. A post-solution procedure is used to estimate the effects on exports to Australia for other countries of interest (Burma, Nepal, Cambodia, and Laos especially).[3]

The simulations project the effects of reducing all remaining tariffs on goods originating from LDCs to zero, assuming that rules of origin enable LDCs to source materials in qualifying areas (as described in appendix G) for their exports to qualify for duty-free entry into Australia.

5.2 Modelling results

Results are reported as percentage changes and absolute changes in A$. These changes are not changes over time, but deviations at a given point in time from a base case that does not include the preferential tariff cut. Results are mainly for the clothing industries in the relevant countries, which are the main industries affected by the proposed change.

Results are reported for both scenarios in terms of:

- response of LDCs;
- effects on other developing countries, and
- effects on Australian TCF manufacturers and the rest of the Australian economy.

2 See appendix F for further discussion of implications from the different assumptions.

3 This procedure is inspired from tops-down and micro-simulation techniques. See appendix F.

Responsiveness of LDCs

Clothing exports to Australia from LDCs that are not members of SPARTECA are projected to increase. Clothing exports from Bangladesh to Australia increase between 2.5- and 11-fold (table 5.1). Exports to Australia from Cambodia, Burma and Nepal are also projected to increase by smaller amounts.

LDCs benefiting from the tariff reduction increase their exports to Australia by diverting some of their traditional TCF exports from other destinations (in the case of Bangladesh, away from the US and the EU, table 5.2), and partly by diverting resources from other parts of their economies into their clothing sector. In Bangladesh, the clothing sector is projected to grow between 0.04 per cent (S2) and 0.15 per cent (S1).

Table 5.1 **Response of LDC clothing exports to Australia**

	Scenario S1		*Scenario S2*	
	%[a]	*A$ million*	*%*[a]	*A$ million*
Bangladesh	1151	287.5	254	63.5
Cambodia	260	2.9	129	1.4
Nepal	77	1.2	52	0.8
Burma	161	5.6	79	2.8
Laos	256	0.1	127	0.1

[a] Percentage changes from base, per annum.

Source: Productivity Commission estimates based on GTAP simulations.

Table 5.2 **Changes in Bangladesh**

	Scenario S1		*Scenario S2*	
	%[a]	*A$ million*	*%*[a]	*A$ million*
Clothing sector				
Exports to Australia	1151	287.5	254	63.5
Exports to EU	-0.15	-3.4	-0.02	-0.4
Exports to USA	-0.15	-3.9	-0.02	-0.4
Output of clothing	0.15	7.2	0.04	1.4
Macro				
Real GDP	0.001	5.7	..	0.2
Real consumption	0.005	3.0	..	0.7
Real aggregate exports	0.017	48.7	0.01	1.1
Real aggregate imports	0.041	53.7	0.01	1.2

[a] Percentage changes from base, per annum. .. less than 0.005 per cent.

Source: Productivity Commission estimates based on GTAP simulations.

Inputs into the clothing industry increase to accommodate the increase in exports and production. This includes increases in inputs into Bangladesh's production (such as domestically produced cotton) and imported inputs. Other imports increase too in response to increased real consumption. Both effects are reflected in the increase in aggregate imports (table 5.2). Overall, there is a small positive effect on real GDP and real consumption in Bangladesh.

The same mechanisms apply to the other LDCs identified in table 5.1 that benefit from Australia eliminating tariffs on its imports of clothing from LDCs.

Effects on other developing countries

Clothing exports to Australia from Fiji and China will be affected by the proposed preferential tariff change. Australia accounts for more than a third of Fiji's exports. Exports of clothing account for around 25 per cent of all Fijian exports (UN 2000) .

The pattern of Chinese exports of clothing and inputs into clothing (textiles and semi-finished clothing products) may be affected. China supplies some inputs into the clothing production of affected LDCs and Fiji. In addition, it accounts for a large proportion of clothing imports into Australia. Changing the pattern of tariffs is estimated to:

- reduce Chinese direct exports of clothing to Australia (-0.58 per cent under S1 and -0.19 per cent under S2); and
- encourage exports of textiles and semi-finished clothing to LDCs benefiting from the tariff change (for example, in Bangladesh, +0.85 per cent under S1 and +0.02 per cent under S2).

Fiji's exports of clothing to Australia are projected to fall about 1.3 per cent, or A$1.8 million.[4,5]

Effects on the Australian economy

Effects on the Australian clothing industry are projected to be small (table 5.3). This reinforces the idea that the main effects are in changes in the source of clothing

4 Fiji is not identified separately in the GTAP database. Results are based on a post-simulation procedure using GTAP results for the aggregate in which it is included.

5 To put this in context, Fiji's TCF exports to Australia reached a peak of A$273 million in 1999-00 before falling to A$132 million in 2001-02. This points to the value of a stable environment in which to attract investment and foster economic activity.

imports: there is a small shift away from the main suppliers of clothing to Australia toward LDCs.

Projected effects on employment in Australian clothing manufacturing are similar to those on output. Based on the latest manufacturing survey estimates of official employment in the clothing industry (25 600 employees), this translates into a reduction in employment of fewer than 50 jobs.[6]

Table 5.3 **Effects on Australian clothing industry**

	Scenario S1		*Scenario S2*	
	%[a]	*A$ million*	*%*[a]	*A$ million*
Value added	-0.12	-1.46	-0.03	-0.41
Turnover		-4.17		-1.16

[a] Percentage changes from base, per annum.

Source: Productivity Commission estimates based on GTAP simulations.

To the extent that some imports for clothing are inputs into the Australian clothing industry, the prices of these inputs are projected to decrease.

Consumer prices of clothing are projected to decrease by 0.036 per cent (under S1; 0.023 per cent under S2). The main reason the price change is so small is because the tariff is a small component of the price ultimately paid by consumers (less than 5 per cent; a large proportion of the value chain of clothing is attributable to value added activities between the producer and the importer and the final user) and the share of clothing (finished or semi-finished) imported from LDCs is very small (less than 0.5 per cent).

The effects on government finances are also projected to be small: the collection of duties on imports from LDCs is in the order of A$2.5 million per annum.[7] As tariffs are expected to decrease (see table 3.1), the effect on government revenues of the proposed preferential tariff reduction is expected to decrease.

The overall effects on the Australian economy as a whole are negligible and affected by:

- the decreased cost of clothing to consumers which translates into an increase in real income; however, clothing does not constitute a large share of consumers'

6 Assuming a larger estimate of around 40 000 employees based on the ABS *Labour force survey* (this includes part of the outworker workforce), this would amount to fewer than 100 jobs.

7 This is based on recent tariff collection history. It is a maximum as some imports from LDCs may not satisfy rules of origin and remain subject to the ASTP duty.

budgets (less than 3 per cent of consumption expenditure) and this effect is small;

- the decreased cost of semi-finished items to clothing manufacturers; this may increase the effective rate of assistance to Australian manufacturers and contribute to negative allocative effects in Australia; however, this effect is very small;[8] and
- the ability of resources (employees and capital) to be redeployed from their use in the clothing industry to other industries.

In summary, model projections show that the proposed changes to the tariff are likely to result in:

- significant increases in exports of clothing to Australia from a few Asian LDCs. This results from:
  - a reallocation of exports from these countries away from the US and the EU toward Australia;
  - a reallocation of Australia's imports from other sources of clothing, such as Fiji and China; and
  - a small increase in clothing imports into Australia;
- small increases in activity and employment in the clothing industries of affected LDCs;
- very small reductions in activity and employment in the Australian clothing industry; and
- insignificant changes in macroeconomic aggregates in Australia.

5.3 Interpreting the results

The effects reported in the previous section are based on the best information available, and constitute the best estimates of responses. However, there are limitations in the information available, and the responses modelled are heavily influenced by information on current trade flows.

For example, in the short term it may be difficult for some LDCs to expand production to take advantage of the new opportunities offered by the new tariff structure. Alternatively, in the longer term, actual responses may be larger than reported, as the new tariff structure may no longer make it prohibitive for some LDCs to export to Australia.

8 See Plunkett et al 1992 for a discussion of effective rates of assistance.

In addition, existing data do not provide information on the investment links between the countries involved. This is especially relevant in the case of Fiji, where a significant part of the investment in the clothing industry is in the form of foreign direct investment (FDI) from Australia. Similarly, the effects of the new regime on opportunities for Australian clothing manufacturers to invest abroad can not be quantified. However, if Australian clothing manufacturers already have FDI links with Bangladesh, then some expansion is relatively easy.

Finally, the proposed preferential reduction in tariffs interacts with other initiatives affecting the trade environment:

- by 2005, Australian tariffs faced by beneficiaries of the ASTP will be reduced or reviewed (see table 3.1). This will reduce the effect of the proposed preferential tariff reduction on goods originating from LDCs; and
- similar initiatives by the EU and under consideration by the other Quad countries may complement the proposal reviewed in this study.

The purpose of this section is to address some of these issues in a qualitative way, based on the modelling results.

Short-term vs long-term effects

The two sets of results reported can be used to inform the possible effects of the proposed tariff changes at different stages in the development of LDCs. The lower elasticity scenario (S2) assumes that the product lines in Bangladesh, Australia and Fiji are relatively differentiated. This is supported by the similarity analysis in chapter 4. In the first instance it is reasonable to assume that product lines would not change significantly, but resources would be reallocated to respond to the additional demand.[9] The results in scenario S2 are therefore interpreted as the possible reactions within 2–5 years.

The experience with Fiji indicates that it is easy to start a clothing industry or to modify its product line. Therefore, in the longer term (beyond five years), LDCs may turn to producing items that are similar to those produced in Australia and Fiji. This is represented by the higher elasticity scenario (S1), which projects relatively strong export responses for some Asian LDCs.

[9] Both simulations assume a long-run economic environment in which capital and labour is reallocated in response to the modelled changes. However, the shorter term simulation (S2) assumes that there are few changes in product lines, whereas the longer term (S1) simulation assumes that a country may adapt its product lines and therefore compete more readily with other countries in the clothing market. The magnitude of the projected reallocation is conditioned by the substitution parameters used.

In general, the effect of the substitution elasticity on results can be summarised in the following way:

- a low value means that imported and domestically produced varieties are very different from each other and reducing the cost of an import increases its use mainly through real income effects, with small effects on the domestic import-competing industry;[10]
- a high value means that imports and the sector producing domestically-produced clothing are assumed to be very similar; this results in large substitution effects between import sources and may result in a contraction of the import-competing industry.

Limiting factors

The time frames mentioned in the previous section may be affected by factors that limit the ability of LDCs to respond to changes. Hagen, Maestad and Wiig (2001) observed that the responsiveness of production in LDCs is limited. They argue that it is unlikely that LDC production will increase substantially in the short to medium term given current limitations in these countries, even with an elimination of barriers to most of their exports to industrialised countries.

A further set of problems arises from international infrastructure, as transport facilities may bypass some LDCs completely, while some LDCs may not have efficient transport links with Australia.

That said, Asian LDCs (including Bangladesh and Burma) do appear to have a greater capacity to respond than other LDCs and have some product lines that will be affected by tariff removal.[11] As indicated in the simulations, these LDCs are likely to be able to take advantage of the opportunity provided and may expand production by diverting resources from other sectors into these product lines.

Efforts in capacity building in LDCs may improve the infrastructure in LDCs. Some LDCs may then become attractive places for investment, and offer opportunities for the Australian clothing industry to locate some of the more labour intensive parts of its production chain as it has in Fiji.

[10] While model results only represent substitution between imported and domestically produced clothing, there may be a complementary relationship between clothing from different sources. In this case effects occur only through the income effects of lower prices of imports. If the domestic industry relies on part of these imports, then it too benefits from the lower cost of one of its inputs.

[11] Anecdotal evidence indicates that Burma has recently expanded its TCF production capability and that Bangladesh has increased its production of more differentiated clothing products.

Trade facilitation initiatives may further assist LDCs in gaining access to Australian clothing markets.[12] This type of initiative would be considered in the context of international trade negotiations.

Interactions with other trade initiatives[13]

Other industrialised countries are considering similar initiatives as the one investigated in this report. UNCTAD (2001a) estimated the effects of the European Everything But Arms (EBA) initiative and the possibility of extending an EBA-style initiative to include the Quad countries. While the current effect of the EBA initiative is restricted by its commodity coverage and the timetable for implementation in specific markets, the UNCTAD analysis takes a long-term view and assumes that the proposed preferential treatment has been implemented entirely and all adjustments occur as a result.

Implementing an EBA-style initiative to imports originating from LDCs into the Quad countries is projected to:

- increase exports of some agricultural products from Sub-Saharan Africa to the EU (rice and sugar) and Japan (dairy and food products); these increases are net increases that account for any substitution effects; and
- increase exports of clothing from Bangladesh, especially to the US.

The first effect complements the proposed change in tariffs in Australia. The effect is concentrated on sub-Saharan LDCs with whom Australia has relatively little trade.

The second effect counteracts to some extent the effect of the Australian proposal. Under the Quad EBA-style scenario, total exports of clothing from Bangladesh are projected to increase by about A$1.5 billion, largely in response to removing US trade barriers.[14] This effect would swamp the A$14 million projected for the Australian proposal, and would reduce its effect on exports to Australia. However,

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12 Trade facilitation refers to measures intended to simplify, harmonize and expedite border procedures worldwide. This includes, for example, procedures to expedite express shipments, simplified procedures for low-value shipment transactions, and dissemination of information on customs procedures, laws and regulations.

13 This section combines results from this study with results obtained in UNCTAD (2001b) and Bora et al (2002).

14 This result is obtained with the same standard set of parameters as used in scenario S1 in this report. It results from a combination of:

– the US substituting away from imports from China, the EU and other countries; and
– an increase in Bangladesh's production of clothing.

given the timing issues involved in implementing the US participation of an EBA-style initiative, Bangladesh may still benefit from the Australian proposal if it were implemented relatively quickly.

This latter result illustrates the distortionary effects that limitations on trade in textiles and clothing are having on trade and production patterns in the world. It also illustrates how the small Australian involvement with LDCs (relative to that of the Quad countries, and especially the EU and the US) means that the proposed preferential tariff reduction has relatively small effects on Australia and on LDCs in comparison with the effects of a Quad EBA-style preferential arrangement.

5.4 Summary

The effects of preferential tariff elimination on Australian imports of goods originating from LDCs can be summarised as follows:

- the effects on most LDCs are likely to be small given Australia's limited trade with LDCs;
- the effects are likely to be concentrated on trade in clothing with a limited number of Asian LDCs, specifically Bangladesh, Burma, Nepal, Laos and Cambodia; this results in increased activity in the local clothing industries in these countries;
- indirect effects are likely to reduce Australian imports of clothing from Fiji, and to a lesser extent, from China;
- any significant expansion of clothing production and exports in LDCs is predicated on their ability to address constraints to such expansion, whether in terms of physical or administrative infrastructure;
- though small relative to the possible effects of an EBA-style initiative by the Quad countries, the Australian proposal is complementary and may be of more immediate benefit to LDCs;
- the effects on the Australian clothing industry are likely to be small, as the main effect of the initiative from the Australian perspective is to switch from sourcing imports from developing countries toward sourcing more imports from LDCs, rather than substitute for Australian activity; and
- the results of this study point to opportunities for Australian clothing manufacturers to expand their investment in LDCs as part of an internationally integrated industry which uses the advantages offered by low-cost locations for production and locates more time-sensitive operations closer to final consumers.

APPENDICES

A Key LDC statistics

This appendix presents selected key development indicators in the areas of population, income, health and education for all LDCs. For the purposes of comparison, these indicators are also presented for Australia, high income countries and the world. The statistics show that LDCs typically have lower incomes per capita, (GNI) lower life expectancies at birth, higher infant mortality rates and higher illiteracy rates than Australia and high income countries. This appendix also presents selected statistics on each LDCs' trade with the rest of the world.

Table A.1 **Key LDC statistics, 2000**

Country	*Population*	*GNI*	*GNI/Capita*	*Life expectancy at birth*[a]	*Infant mortality rate*[a]	*Illiteracy rate male/female*
	millions	*$US/billions*	*$US*	*years*	*per 1000 live births*	*% persons aged 15+*
Africa						
Angola	12.7	3.1	240	46.5	126.8	na
Benin	6.3	2.4	380	53.1	87.4	43.1/75.3
Burkina Faso	11.3	2.5	220	44.9	104.6	66.1/85.9
Burundi	6.8	0.8	110	42.1	104.8	43.4/59.3
Cape Verde	0.4	0.6	1330	68.6	38.8	15.2/33.8
Central African Republic	3.6	1.0	290	44.1	95.7	40.2/65.1
Chad	7.7	1.5	200	48.5	100.8	48.4/66.0
Comoros	0.6	0.2	380	60.6	60.8	33.5/47.2
Democratic Republic of the Congo	51.4	4.5	90	45.8	85.0	26.5/49.7
Djibouti	0.7	0.6	800	47.3	109.3	24.4/45.6
Equatorial Guinea	0.5	0.4	880	50.6	103.8	7.5/25.6
Eritrea	4.1	0.7	170	42.4	60.4	32.6/59.3
Ethiopia	64.3	6.7	100	53.2	103.7	56.4/66.8
Gambia	1.3	0.4	340	46.4	74.8	56.0/70.6
Guinea	7.4	3.4	450	44.0	96.0	na
Guinea-Bissau	1.2	0.2	180	44.6	126.8	40.3/81.0
Lesotho	2.2	1.2	540	47.2	91.7	27.6/6.4
Liberia	3.1	na	na	54.3	112.8	29.9/62.3
Madagascar	15.5	3.9	250	39.5	90.0	26.5/40.3

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Table A.1 **(Continued)**

Country	*Population*	*GNI*	*GNI/Capita*	*Life expectancy at birth*[a]	*Infant mortality rate*[a]	*Illiteracy rate male/female*
	millions	*$US/billions*	*$US*	*Years*	*per 1000 live births*	*% persons aged 15+*
Malawi	11.0	1.8	190	67.9	131.5	25.5/53.5
Mali	10.8	2.6	240	42.6	119.6	51.1/65.6
Mauritania	2.7	1.0	370	53.9	88.0	47.2/67.9
Mozambique	17.6	3.9	220	43.1	131.2	39.9/71.3
Niger	10.8	1.9	180	45.7	116.0	76.2/91.6
Rwanda	8.5	2.0	230	40.0	123.2	26.4/39.8
Sao Tome and Principe	0.2	0.0	290	64.7	47.0	na
Senegal	9.5	4.8	500	52.4	67.3	52.7/72.3
Sierra Leone	5.0	0.6	130	37.4	168.0	na
Somalia	9.7	na	na	47.8	120.7	na
Sudan	29.7	9.4	320	55.5	67.2	30.2/53.7
Togo	4.7	1.4	300	49.1	76.5	25.5/59.2
Uganda	22.2	6.8	300	42.1	88.3	22.4/43.1
United Republic of Tanzania	33.7	9.1	270	45.0	94.8	15.3/32.9
Zambia	10.1	3.0	300	38.5	114.0	14.8/28.6
Asia						
Afghanistan	26.6	na	na	46.1	147.3	48.1/78.1
Bangladesh	129.8	47.1	370	60.7	61.2	47.7/70.1
Bhutan	0.8	0.5	590	61.5	58.8	na
Cambodia	12.0	3.0	260	53.7	100.2	40.3/77.7
Lao People's Democratic Republic	5.2	1.7	330	54.2	93.3	35.9/66.8
Maldives	0.3	0.5	1960	67.9	29.2	3.7/3.6
Myanmar	45.6	na	na	59.7	77.4	11.0/19.4
Nepal	23.0	5.2	240	58.2	75.4	40.8/76.1
Yemen	17.5	6.6	370	56.0	79.0	32.5/74.8
Caribbean						
Haiti	8.0	3.8	480	53.4	69.9	48.0/52.1
Pacific						
Kiribati	0.1	0.08	940	61.4	56.0	na
Samoa	0.2	0.24	1430	68.9	23.3	18.2/20.7
Solomon Islands	0.4	0.28	630	71.0	21.4	na
Tuvalu	na	na	na	na	na	na
Vanuatu	0.2	0.23	1130	65.4	36.2	na

a 1999 data.

Sources: World Bank (2001) and UNCTAD (2001).

Table A.2 **LDC trade, 1999**

	Exports	*Imports*	*Exports as % GDP*	*Main Export*	*Share of main export in total exports*	*Main destination country*	*Share of exports to main destination*
	$US millions	*$US millions*	*%of GDP*		%		%
Africa							
Angola	7919	3932	90.2	Petroleum	70.9	Developed	82.6
Benin	360	651	15.6	Cotton yarn	38.9	Developing	69.6
Burkina Faso	240	664	10.7	Raw cotton	36.0	Developing	58.7
Burundi	48	149	9.0	Coffee	73.4	Developed	61.6
Cape Verde	131	319	23.4	Air transport services	34.6	Developed	84.0
Central African Republic	181	247	18.3	Diamonds	42.2	Developed	85.0
Chad	233	450	15.9	Cotton lint	48.9	Developed	75.1
Comoros	52	64	25.6	Travel	51.7	Developed	83.9
Democratic Republic of the Congo	829	1224	18.1	Diamonds	17.2	Developed	93.9
Djibouti	247	347	44.6	Govt services to expats	57.2	Developing	90.3
Equatorial Guinea	907	559	94.9	Petroleum products	43.4	Developed	85.9
Eritrea	138	523	22.7	Port services	76.5	Developed	na
Ethiopia	984	1962	15.4	Coffee	36.1	Developed	70.9
Gambia	212	270	47.9	Travel	58.8	Developed	56.1
Guinea	808	917	25.9	Bauxite and alumina	51.6	Developed	75.7
Guinea-Bissau	75	125	31.8	Cashew nuts	74.0	Developing	83.2
Lesotho	236	819	26.5	Clothing	42.8	Developed	na
Liberia	na	na	na	Iron ore	55.1	Developed	55.4
Madagascar	1195	1529	23.2	Coffee	11.7	Developed	71.8
Malawi	473	680	27.3	Tobacco	59.9	Developed	76.1
Mali	606	922	24.5	Cotton products	48.4	Developing	45.0
Mauritania	378	500	41.4	Iron ore	47.8	Developed	81.2
Mozambique	732	1511	14.9	Business services	42.7	Developed	74.6
Niger	283	424	15.5	Uranium	39.4	Developed	59.1
Rwanda	103	390	6.3	Coffee	43.2	Developed	61.5
Sao Tome and Principe	16	39	33.1	Cocca	37.5	Developed	90.0
Senegal	1535	1872	35.0	Fish	19.8	Developing	56.8
Sierra Leone	110	212	18.5	Travel	45.3	Developed	73.7
Somalia	na	na	na	Livestock	44.3	Developing	92.0
Sudan	1838	1871	na	Sesame seeds	19.7	Developing	58.5

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Table A.2 **(Continued)**

	Exports	*Imports*	*Exports as % GDP*	*Main Export*	*Share of Main main export destination in total country exports*		*Share of exports to main destination*
	$US millions	*$US millions*	*%of GDP*		%		%
Togo	418	610	35.5	Cotton products	30.9	Developing	36.7
Uganda	626	1985	10.1	Coffee	53.7	Developed	75.6
United Republic of Tanzania	1327	2146	14.7	Travel	34.9	Developed	54.6
Zambia	907	1333	30.6	Copper	70.6	Developed	54.5
Asia							
Afghanistan	na	na	na	Fruits and dried nuts	51.3	Developed	50.9
Bangladesh	6611	9060	14.0	Garments	52.3	Developed	86.6
Bhutan	144	292	29.6	Electricity	24.9	Developing	24.9
Cambodia	1600	1919	40.1	Sawn timber	25.3	Developing	45.2
Lao People's Democratic Republic	544	636	22.9	Wood products	27.3	Developed	81.8
Maldives	457	452	103.8	Travel	71.0	Developed	67.8
Myanmar	na	na	na	Food and live animals	34.6	Developing	59.9
Nepal	1419	1922	23.9	Basic manufactures	38.9	Developed	61.3
Yemen	4305	3150	50.5	Petroleum	83.7	Developing	77.1
Caribbean							
Haiti	489	1258	12.5	Clothing	29.7	Developed	78.1
Pacific							
Kiribati	na	na	na	Licence fees/royalties	58.5	Developed	61.9
Samoa	76	126	32.7	Travel	47.4	Developed	94.4
Solomon Islands	na	na	na	Timber products	42.7	Developed	51.3
Tuvalu	na	na	na	Travel	29.5	Developed	37.1
Vanuatu	na	na	na	Travel	33.9	Developed	83.8

Sources: World Bank (2001) and UNCTAD (2001).

B LDC supply capacity constraints

Many LDCs face a host of supply constraints that can limit their ability to exploit opportunities arising from trade and preferential agreements. Often the supply constraints are the very factors that have caused many of the disadvantages that LDCs face (for example, low productive capacity of firms, inadequate infrastructure and high transport costs, poor regulatory frameworks and inefficient government institutions and unstable social, political, and economic environments). The problems are often interrelated and while not every LDC suffers from each of these problems, most suffer from some of them at least.

B.1 Low productive capacity of firms

Firms within LDCs are often characterised by low productivity and a poor accumulation of productive inputs. Low LDC productivity reflects, for example:

- low adoption of new technologies;
- inefficient organisation and resource allocation; and
- inability to achieve scale economies due to small production runs.

LDCs do not have a significant accumulation of productive physical capital. Hagen, Maestad and Wiig (2001) noted while rates of net domestic fixed investment are comparable to those of middle income countries, around half of this was public investment and its contribution to productive capacity could be low. Table B.1 also shows that net domestic saving was negative. Therefore, much of the investment required to increase productive capacity is financed from overseas. Hagen, Maestad and Wiig (2001) note that the main source of overseas financing has been foreign aid, however, foreign aid is a declining source of external financing and LDCs are also heavily indebted. This has made financing investment in productive capacity difficult for LDCs.

Table B.1 **Savings and investment**
Average 1995–98

	LDCs
	% of GDP
Net domestic fixed investment	12.1
Net domestic savings	-2.2

Source: Hagen, Maestad and Wigg (2001).

Private foreign investors have been reluctant to invest because of underdeveloped financial sectors. Underdeveloped financial sectors can also reduce the efficiency with which funds are transferred as payment for inputs and outputs. In addition, unstable political and economic environments (see section B.4), poor regulatory frameworks and inadequate infrastructure (see section B.3) have also ensured LDCs are typically not attractive targets for private investors, either foreign or domestic.

A number of agencies have worked towards improving productive capacity within LDCs (box B.1).

Box B.1 **The integrated framework**

The Integrated Framework (IF) is a joint IMF, ITC, UNCTAD, UNDP, World Bank and WTO technical assistance program for LDCs. The framework aims to:

- help LDCs include trade into their national development plans and strategies for poverty reduction;
- help ensure trade, as an engine for growth, is central to development plans; and
- ensure that trade-related technical assistance and capacity building is delivered within a coherent policy framework rather than on a stand-alone basis.

The IF is in operation on a pilot basis in Cambodia, Madagascar and Mauritania. The possibility of the extending it is being examined, based on progress reported at the Fourth WTO Ministerial Conference.

The agencies have set up a Trust Fund for the IF, with several donor countries contributing a total of $6.2 million.

Source: WTO http://www.wto.org/english/thewto_e/minist_e/min01_e/brief_e/brief03_e.htm accessed 16/05/02

Accumulation of human capital is low. As an illustration of the difficulties faced, table B.2 shows the low levels of educational attainment in LDCs. Both education and health expenditure are important determinants of human capital accumulation. Hagen, Maestad and Wigg (2001) note that combined public and private educational expenditure, averaged over the period 1995–98 as a share of GDP for

LDCs, is below that of low income countries. The situation is the same for combined public/private health spending averaged over the same period.

Table B.2 **Educational attainment in LDCs, 1995**

	Average of adult population	*Population with no education*
	Years	per cent
Males	3.0	48.7
Females	1.8	66.0
Adult population	2.4	57.5

Source: Hagen, Maestad and Wigg (2001).

B.2 Inadequate infrastructure and high transport costs

LDCs are also characterised by inadequate physical and communications infrastructure. Infrastructure in LDCs has suffered from low public and private investment and declining foreign aid. Inadequate infrastructure, in terms of lack of capacity or poor quality, within LDCs can lead to higher costs; for example, transport costs. In extreme cases, infrastructure can be non-existent.

In addition to the effects of poor infrastructure, high transport costs can arise from, for example:

- greater distance to export markets, the effect of which can be exacerbated for the many landlocked LDCs as overland transport is more costly than sea transport;
- small markets for transport services to LDCs, which preclude economies of scale and scope; and
- regulations concerning transport within LDCs, including regulations that increase transaction costs; for example, customs clearance and documentation requirements and regulations that preserve monopolies.

These factors can ensure that LDCs often not only face higher transport costs than developed countries due to greater distances to markets, but that they also face higher transport costs per kilometre travelled.

Transport costs can be a crucial determinant of LDC export competitiveness. This arises because LDCs typically export high volume, low value homogeneous commodities (for example, agricultural commodities), the exports of which are sensitive to small changes in price. The World Bank (2002) has commented that transport costs often represent a more binding constraint to participation in international trade than tariffs and other trade barriers.

LDCs also face high air transport costs. This can increase costs of production for firms in LDCs who need their staff to travel to their export markets. High air transport costs can also represent a barrier to trade in services, such as tourism. Tourists can be sensitive to travel costs, particularly where substitute destinations exist. Often it can be cheaper to fly to destinations in developed countries even though the distances involved can be similar. This can be due to economies of scale, but can also be due to international regulations restricting international air transport services or domestic regulations.

Other forms of inadequate infrastructure can also make exporting difficult for LDCs. For example, the energy supply can be unreliable. Blackouts and fluctuations in voltage are not uncommon in LDCs and can damage electrical equipment. Communications infrastructure can also be unreliable and often does not use the best technologies available. This makes it difficult for LDCs to communicate with foreign export markets and receive information on input costs, production processes and market opportunities.

B.3 Poor regulatory framework and inefficient government institutions

LDCs are characterised by a poor domestic regulatory and legal framework and inefficient government institutions. For example, ill-defined property rights or poor contract law can discourage investment, or governments can impose foreign investment controls. Government taxation policies can be uncertain and can contribute to uncertainty over future returns for investors. Government 'red tape' or corruption can also discourage investment. Theses factors not only discourage investment, they can also reduce existing production or productive capacity.

In addition, exports can be discouraged by overvalued exchange rates. Hagen, Maestad and Wigg (2001) noted that for the LDCs where data were available, a third had exchange rate premiums of over 20 per cent.

Moreover, many developing countries (especially LDCs) had difficulty meeting the Uruguay Round obligations related to investment and intellectual property. This arose because many lack the financial, legal and administrative resources to implement the commitments or use WTO provisions, such as dispute settlement, even with extended transition periods and some technical assistance.

Also, the institutions needed to meet the quality requirements for exports, such as quality control, testing and certification of compliance with standards and so on, is often inadequate or non-existent in LDCs.

B.4 Unstable social and economic environments

LDCs often face political instability, famine and disease (such as HIV/Aids). The WTO found that over the period 1987 to 1997, the 12 LDCs that had negative annual growth for both exports and imports had all been suffering from prolonged civil strife (WTO 2000).

In addition, LDCs can face volatile macroeconomic environments and often unstable real exchange rates. For example, Hagen, Maestad and Wigg (2001) noted there has been extreme volatility in real effective exchange rates for many LDCs and LDC government economic policies can contribute to this instability.

Unstable social and economic environments increase risks and lower expected returns for both foreign and domestic investors. Hence, they are more likely to invest in more stable countries. Instability can also make planning difficult for firms within the LDCs — for example, when input and output prices are unstable — and make them reluctant to commit to long production runs. Unstable prices and risks over continuity of supply, brought about by volatile economic conditions, can also make importers reluctant to purchase from LDCs, particularly large production runs over a long period of time.

C Preference countries

This material was extracted from the *Customs Tariff Act 199*5, *Schedule 1: Classes of Countries and Places in relation to which special rates apply*.

Part 1: Forum island countries

Cook Islands	Niue
Fiji	Solomon Islands
Kiribati	Tonga
Marshall Islands, Republic of	Tuvalu
Micronesia, Federated States of	Vanuatu
Nauru	Samoa

Part 2, Division 1: Developing countries

Albania	Dominican Republic
Algeria	Ecuador
Antigua and Barbuda	Egypt
Argentina	El Salvador
Bahamas	Gabon
Barbados	Ghana
Bahrain	Grenada
Belize	Guatemala
Bolivia	Guyana
Bosnia and Herzegovina	Honduras
Brazil	Hungary
Brunei Darussalam	India
Bulgaria	Indonesia
Cameroon	Iran
Chile	Iraq
China, People's Republic of	Israel
Colombia	Jamaica
Congo	Jordan
Costa Rica	Kenya
Cote d'Ivoire	Korea, Democratic People's Republic of
Croatia	Korea, Republic of
Cuba	Kuwait
Cyprus	Lebanon
Czech Republic	Libyan Arab Jamahiriya
Dominica	

(continued)

Malaysia	St Vincent and the Grenadines
Malta	Saudi Arabia
Mauritius	Seychelles
Mexico	Singapore
Mongolia	Slovak Republic
Morocco	Slovenia
Nicaragua	Sri Lanka
Nigeria	Suriname
Oman	Swaziland
Pakistan	Syrian Arab Republic
Panama	Thailand
Paraguay	Trinidad and Tobago
Peru	Tunisia
Phillipines	Turkey
Poland	United Arab Emirates
Qatar	Uruguay
Romania	Venezuela
St Christopher and Nevis	Vietnam, Socialist Republic of
St Lucia	Zimbabwe

Part 2, Division 2: Places treated as developing countries

Anguilla	Midway Islands
Bermuda	Monsterrat
British Indian Ocean Territory	Netherlands Antilles
British Virgin Islands	St Helena
Cayman Islands	St Pierre and Miquelan
Falkland Islands and Dependencies	Taiwan Province
Former Yugoslav Republic of Macedonia	Territories administered by the Palestinian Authority
Gibraltar	Turks and Caicos Islands
Hong Kong	Virgin Islands of the United States
Johnston Island	Wake Island
Macao	

Part 3, Division 1: LDCs

Afghanistan	Lesotho
Angola	Liberia
Bangladesh	Madagascar
Benin	Malawi
Bhutan	Maldives
Botswana	Mali
Burkina Faso	Mauritania
Burundi	Mozambique
Cambodia	Myanmar, Union of
Cape Verde	Namibia
Central African Republic	Nepal
Chad	Niger
Comoros	Rwanda
Congo, Democratic Republic of	Sao Tome and Principe
Djibouti	Senegal
Equatorial Guinea	Sierra Leone
Eritrea	Somalia
Ethiopia	Sudan
Gambia	Tanzania, United Republic of
Guinea	Togo
Guinea-Bissau	Uganda
Haiti	Yemen, Republic of
Lao People's Democratic Republic	Zambia

Part 3, Division 2: Places treated as LDCs

American Samoa	Palau
French Polynesia	Pitcairn Island
Guam	Tokelau Islands
Mariana Islands	Wallis and Futuna Islands
New Caledonia	

D Australia's rules of origin

Australia's ROO apply to both preference and non-preference countries. Preferential rules are used to determine the origin of goods originating in a country that receives preference, and to ensure that only goods originating in such countries obtain preference such as lower tariff rates.

Preference can flow not only from trade initiatives aimed at FICs, LDCs and developing countries, such as the ASTP and SPARTECA, but also from the Closer Economic Relations Trade Agreement with New Zealand, and preferential trade agreements such as the Canada Australia Trade Agreement.

Non-preferential rules are used to determine the origin of goods originating in a country that does not receive preferences and may, for example, be used to cover requirements for application of anti-dumping and countervailing measures or to compile trade statistics.

Under Australia's ROO, generally, the country of origin of a good is where it was either wholly produced or manufactured, or where it was substantially transformed if more than one country was involved in its production. There are also direct shipment requirements for goods from Canada.

A substantially transformed good must have had its last process of manufacture performed in the country claiming origin and must meet a certain level of local area content. The last process of manufacture must create a product that is essentially different from the component parts or materials that went into the process. Minor processing operations, such as labelling or packaging, are not considered to be a process of manufacture under the ROO. Neither are activities such as repairing, overhauling or refurbishing.

Under the local area content rules, if a preference country (with the exception of Canada) is to claim a preference, generally at least 50 per cent of the total factory cost of the product must be allowable factory cost.

For non-preference countries (along with Canada):

- at least 25 per cent of the total factory cost of the product must be allowable factory cost, where that type of good is not commercially manufactured in Australia; or

- at least 75 per cent of the total factory cost of the product must be allowable factory cost, where that type of good is commercially manufactured in Australia.

Total factory cost is the sum of total expenditure on materials and the allowable expenditure on labour and overheads in respect of the product at the last place of manufacture.

Allowable factory cost is the sum of allowable expenditure on materials, labour and overheads in respect of the product at the last process of manufacture.

The only difference between the total factory cost and the allowable factory cost is the difference between the total and the allowable expenditure on materials. The total factory cost includes all materials, regardless of origin. The allowable factory costs includes only materials that have originated within the qualifying area for the particular scheme.

Australia is part of the qualifying area for each scheme, so if the country claiming preference used materials imported from Australia, they are able to include the cost of these materials as allowable expenditure. For example:

- under the Closer Economic Relations Trade Agreement with New Zealand, the qualifying area is Australia and New Zealand;
- under SPARTECA the qualifying area is Australia, New Zealand and the FICs;
- under the ASTP the qualifying area is Australia and generally all FICs, specified LDCs, and over 100 specified developing countries including China, Pakistan, Thailand and Indonesia. All countries are specified in Schedule 1 to the Tariff Act (reproduced in appendix C). A FIC can source from the wider ASTP qualifying area, but it will face the ASTP LDC rate.

The local content rules are more flexible for TCF products imported from SPARTECA countries. The SPARTECA TCF provisions scheme allows FICs to export certain TCF products to Australia on a duty free basis with a local area content of between 35 per cent and 50 per cent (rather than with the normal 50 per cent minimum), provided they have earned enough points from exports of other products with a local area content in excess of 70 per cent. The main beneficiary of the Scheme is Fiji, whose TCF industries were adversely affected by the cessation of Australia's TCF Import Credit Scheme.

In addition, derogation of local area content rules under SPARTECA is possible in special circumstances. Samoa currently has a derogation for certain automotive wiring harnesses exported to Australia. Samoa sought special assistance for this industry mid-2001 and was able to establish that changes to assistance arrangements for Australia's PMV industry had the potential to severely damage this industry, and

Samoa's economy. After consulting with the Department of Foreign Affairs and Trade and the Department of Industry, Tourism and Resources, Customs made a decision in October 2001 that allowed Samoa's automotive wiring harnesses to enter Australia duty free with a minimum local area content of 40 per cent, rather than the usual 50 per cent, for two years (Australian Customs Service, pers. Comm.).

E Selected LDC trade statistics

This appendix presents selected statistics on LDC trade with Australia. The first section of the appendix presents statistics on imports of all goods to Australia. The second section of the appendix focuses on TCF imports to Australia, which is an important component of LDC trade, along with the average tariff rates on TCF.

E.1 Australian imports of all goods

Table E.1 **Australian imports from selected countries and country groups**

Cost, Insurance and Freight (CIF) valuation [a]

	$ million (current dollars)					*Percentage of total*				
	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*	*1997-98*	*1998-99*	*1999-00*	*2000-01*	*2001-02*
European Union	23183.1	24619.1	25565.6	26819.3	28474.6	24.00	23.79	22.02	21.44	22.59
United States	21168.3	22119.2	24333.3	23596.7	22580.8	21.91	21.37	20.96	18.87	17.91
Japan	13511.8	14456.0	14999.6	16260.2	16360.3	13.99	13.97	12.92	13.00	12.98
Canada	1562.2	1674.9	1980.3	2006.9	1739.9	1.62	1.62	1.71	1.60	1.38
Total Quad	59425.5	62869.1	66878.7	68683.1	69155.6	61.52	60.74	57.61	54.91	54.86
New Zealand	3960.8	4192.7	4612.6	4803.2	4998.9	4.10	4.05	3.97	3.84	3.97
China	5657.8	6496.9	7973.7	10438.8	11851.7	5.86	6.28	6.87	8.35	9.40
South Korea	3965.7	4109.0	4563.2	4962.5	4953.6	4.11	3.97	3.93	3.97	3.93
Taiwan	2967.2	3139.7	3404.3	3478.9	3271.8	3.07	3.03	2.93	2.78	2.60
Hong Kong	1087.3	1282.6	1336.1	1415.8	1457.4	1.13	1.24	1.15	1.13	1.16
India	750.2	715.2	763.1	804.0	928.0	0.78	0.69	0.66	0.64	0.74
Fiji	316.8	358.8	368.4	262.3	240.0	0.33	0.35	0.32	0.21	0.19
Singapore	2742.8	3061.7	4493.9	4059.3	4129.3	2.84	2.96	3.87	3.25	3.28
Malaysia	2529.5	2981.7	3949.1	4385.9	4042.0	2.62	2.88	3.40	3.51	3.21
Indonesia	3064.0	3518.8	2882.9	3582.9	4247.9	3.17	3.40	2.48	2.86	3.37
Thailand	1563.3	2008.2	2561.0	2949.9	3049.9	1.62	1.94	2.21	2.36	2.42
Vietnam	715.8	1045.5	1811.9	2631.3	1973.7	0.74	1.01	1.56	2.10	1.57
Other ASEAN [b]	450.2	438.8	702.6	921.5	1082.6	0.47	0.42	0.61	0.74	0.86
Total LDC [b]	167.4	199.6	306.9	218.5	242.3	0.17	0.19	0.26	0.17	0.19
Rest of the world	7234.7	7083.3	9470.4	11480.0	10422.5	7.49	6.84	8.16	9.18	8.27
Total	96599.2	103501.6	116078.8	125077.9	126047.1	100.00	100.00	100.00	100.00	100.00

[a] CIF valuation is equal to the FOB (free on board) transactions value plus the costs of freight and merchandise insurance involved in shipping the goods beyond the FOB point.
[b] Burma, Cambodia and Laos are ASEAN members that are classified as LDCs. They have been included as LDCs rather than ASEAN countries in this table.

Source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

Table E.2 **Australian imports from LDCs**

Cost, Insurance and Freight (CIF) valuation [a]

	$ million (current dollars)					*Percentage of LDC total*				
	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*	*1997-98*	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Africa										
Angola	0.277	0.002	0.041	0.060	0.011	0.17	–	0.01	0.03	–
Benin	~	~	0.002	~	0.002	~	~	–	~	–
Burkina Faso	0.039	0.013	0.001	~	–	0.02	0.01	–	~	–
Burundi	0.001	~	0.007	0.233	0.111	–	~	–	0.11	0.05
Cape Verde	~	0.001	~	0.002	0.001	~	–	~	–	–
Central African Republic	~	~	~	0.003	0.013	~	~	~	–	0.01
Chad	0.009	~	~	0.021	~	0.01	~	~	0.01	~
Comoros	0.018	0.023	0.005	0.312	0.023	0.01	0.01	–	0.14	0.01
Democratic Republic of the Congo	0.018	0.078	–	0.051	0.036	0.01	0.04	–	0.02	0.01
Djibouti	~	~	~	0.001	~	~	~	~	–	~
Equatorial Guinea	~	~	~	~	~	~	~	~	~	~
Eritrea	0.017	0.005	0.258	0.119	0.042	0.01	–	0.08	0.05	0.02
Ethiopia	2.567	2.153	2.472	2.031	2.063	1.53	1.08	0.81	0.93	0.85
Gambia	0.001	0.004	0.004	0.008	0.027	–	–	–	–	0.01
Guinea	0.003	0.008	0.004	0.017	~	–	–	–	0.01	~
Guinea-Bissau	–	~	~	~	~	–	~	~	~	~
Lesotho	0.046	0.069	0.062	0.056	0.008	0.03	0.03	0.02	0.03	–
Liberia	0.015	0.012	0.002	–	0.006	0.01	0.01	–	–	–
Madagascar	0.800	1.128	1.324	2.818	2.032	0.48	0.57	0.43	1.29	0.84
Malawi	6.914	6.165	7.831	8.928	9.553	4.13	3.09	2.55	4.09	3.94
Mali	0.234	0.584	0.143	0.227	2.008	0.14	0.29	0.05	0.10	0.83
Mauritania	0.023	0.007	0.016	0.007	0.009	0.01	–	0.01	–	–
Mozambique	0.004	0.013	~	0.046	0.025	–	0.01	~	0.02	0.01

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Table E.2 **(continued)**

	$ million (current dollars)					*Percentage of LDC total*				
	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*	*1997-98*	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Niger	0.095	0.075	0.167	0.002	0.167	0.06	0.04	0.05	–	0.07
Rwanda	–	~	~	0.001	0.162	–	~	~	–	0.07
Sao Tome and Principe	0.001	0.004	~	~	~	–	–	~	~	~
Senegal	0.001	0.988	0.152	0.103	0.026	–	0.49	0.05	0.05	0.01
Sierra Leone	0.017	0.055	0.014	0.127	0.112	0.01	0.03	–	0.06	0.05
Somalia	0.002	~	0.002	0.011	0.003	–	~	–	–	–
Sudan	0.099	0.049	47.468	0.249	0.128	0.06	0.02	15.47	0.11	0.05
Togo	0.152	0.102	0.132	0.059	23.218	0.09	0.05	0.04	0.03	9.58
Uganda	6.402	6.513	16.009	14.311	14.903	3.82	3.26	5.22	6.55	6.15
United Republic of Tanzania	5.543	4.891	5.859	7.066	11.244	3.31	2.45	1.91	3.23	4.64
Zambia	1.749	1.698	3.097	1.316	0.130	1.04	0.85	1.01	0.60	0.05
Total	25.043	24.640	85.074	38.187	66.061	14.96	12.35	27.72	17.48	27.26
Asia										
Afghanistan	0.054	0.044	0.036	0.068	0.035	0.03	0.02	0.01	0.03	0.01
Bangladesh	58.733	49.764	61.227	63.830	48.022	35.08	24.94	19.95	29.22	19.82
Bhutan	0.008	0.002	0.004	0.001	~	–	–	–	–	~
Cambodia	0.918	0.970	1.977	3.604	3.449	0.55	0.49	0.64	1.65	1.42
Lao People’s Democratic Republic	0.143	0.449	1.118	1.283	1.397	0.09	0.23	0.36	0.59	0.58
Maldives	0.003	0.054	0.084	0.086	0.041	–	0.03	0.03	0.04	0.02
Burma	13.683	12.892	17.646	19.590	19.862	8.17	6.46	5.75	8.97	8.20
Nepal	2.702	1.546	3.467	2.927	2.589	1.61	0.77	1.13	1.34	1.07
Yemen	~	44.935	69.627	0.009	0.069	~	22.52	22.69	–	0.03
Total	76.243	110.657	155.186	91.397	75.463	45.53	55.45	50.57	41.83	31.14

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Table E.2 **(continued)**

	$ million (current dollars)					*Percentage of LDC total*				
	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*	*1997-98*	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Caribbean										
Haiti	0.016	0.019	0.012	0.014	0.033	0.01	0.01	–	0.01	0.01
Pacific										
Kiribati	0.494	0.727	0.410	0.346	0.128	0.30	0.36	0.13	0.16	0.05
Samoa	58.414	58.061	60.671	82.085	94.721	34.89	29.09	19.77	37.57	39.09
Solomon Islands	6.363	4.208	4.750	3.825	2.246	3.80	2.11	1.55	1.75	0.93
Tuvalu	–	0.044	0.011	0.010	0.017	–	0.02	–	–	0.01
Vanuatu	0.870	1.218	0.738	2.611	3.673	0.52	0.61	0.24	1.20	1.52
Total	66.141	64.259	66.580	88.877	100.784	39.50	32.20	21.70	40.68	41.59
Total all LDC	167.443	199.574	306.852	218.476	242.341	100.00	100.00	100.00	100.00	100.00

a CIF valuation is equal to the FOB (free on board) transactions value plus the costs of freight and merchandise insurance involved in shipping the goods beyond the FOB point.
– Negligible. ~ Nil.

Source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

Table E.3 **Average tariff rate on imports from LDCs[a]**

Per cent

	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Africa					
Angola	–	–	4.60	–	5.00
Benin	~	~	–	~	5.00
Burkina Faso	0.09	–	–	~	–
Burundi	–	~	0.43	–	–
Cape Verde	~	–	~	–	–
Central African Republic	~	~	~	–	5.07
Chad	–	~	~	–	~
Comoros	–	–	–	–	–
Democratic Republic of the Congo	5.97	–	5.00	–	0.33
Djibouti	~	~	~	–	~
Equatorial Guinea	~	~	~	~	~
Eritrea	–	–	–	0.04	–
Ethiopia	0.03	0.01	–	0.01	0.01
Gambia	–	–	–	–	0.07
Guinea	–	–	–	2.31	~
Guinea-Bissau	–	~	~	~	~
Lesotho	–	–	1.11	10.46	–
Liberia	–	–	5.89	–	–
Madagascar	6.45	2.62	1.11	0.01	0.78
Malawi	–	–	–	0.01	–
Mali	0.40	0.95	3.58	0.52	0.01
Mauritania	23.76	–	1.23	7.20	2.35
Mozambique	–	–	~	0.87	0.07

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Table E.3 **(continued)**

	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Niger	1.17	0.25	0.43	–	0.40
Rwanda	–	~	~	0.89	–
Sao Tome and Principe	–	–	~	~	~
Senegal	3.25	0.03	0.32	4.73	0.08
Sierra Leone	0.84	0.39	0.37	4.20	11.21
Somalia	7.02	~	–	2.26	–
Sudan	–	–	–	0.01	–
Togo	–	–	–	–	–
Uganda	–	–	0.08	–	–
United Republic of Tanzania	–	0.11	0.78	0.35	0.14
Zambia	0.01	0.02	0.06	0.01	0.01
Total	0.23	0.17	0.10	0.12	0.08
Asia					
Afghanistan	–	0.13	–	0.26	–
Bangladesh	1.10	1.06	1.41	1.38	2.20
Bhutan	–	–	–	–	~
Cambodia	1.60	3.45	9.84	9.14	5.82
Lao People’s Democratic Republic	11.37	14.77	3.05	4.25	12.16
Maldives	2.91	7.77	21.63	6.80	6.67
Burma	5.49	8.65	7.85	5.16	3.66
Nepal	4.60	5.26	2.37	1.99	3.04
Yemen	~	–	–	–	–
Total	2.05	1.69	1.66	2.63	3.00

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Table E.3 **(continued)**

	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Caribbean					
Haiti	–	–	2.87	3.95	0.64
Pacific					
Kiribati	–	–	–	–	0.01
Samoa	–	–	–	3.27	0.49
Solomon Islands	0.01	0.02	0.04	0.01	0.11
Tuvalu	–	–	–	–	–
Vanuatu	0.02	0.63	0.02	0.03	0.02
Total	–	0.01	–	3.06	0.47
Total all LDC	0.93	0.94	0.86	2.35	1.14

a Calculated using value for duty. – Negligible. ~ Nil.

Source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

E.2 Australian imports of TCF

Table E.4 **Australian imports of TCF from selected countries**

Cost, Insurance and Freight (CIF) valuation [a]

	$ million (current dollars)					*Percentage of LDC total*				
	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*	*1997-98*	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Bangladesh	23.9	23.8	27.6	25.8	25.0	79.03	78.93	71.07	71.10	76.71
Burma	3.8	4.5	6.3	5.0	3.5	12.60	14.87	16.10	13.71	10.83
Nepal	2.0	1.1	2.9	2.3	1.5	6.60	3.77	7.35	6.44	4.62
Cambodia	0.1	0.2	0.9	1.9	1.1	0.20	0.57	2.35	5.25	3.37
Other LDC	0.5	0.6	1.2	1.3	1.5	1.58	1.86	3.13	3.50	4.46
Total LDC	30.3	30.1	38.8	36.3	32.6	100.00	100.00	100.00	100.00	100.00
European Union	885.3	901.6	881.4	888.5	889.7	13.78	13.39	12.19	11.44	11.44
United States	399.9	375.2	352.6	344.0	296.0	6.23	5.57	4.87	4.43	3.81
China	2183.4	2476.8	2946.1	3579.1	3757.5	34.00	36.78	40.73	46.07	48.31
New Zealand	411.5	409.6	443.2	395.5	421.4	6.41	6.08	6.13	5.09	5.42
Taiwan	276.6	280.4	255.0	221.8	214.8	4.31	4.16	3.53	2.85	2.76
Hong Kong	204.4	214.6	239.3	284.6	272.1	3.18	3.19	3.31	3.66	3.50
India	303.0	288.6	288.5	283.4	292.7	4.72	4.29	3.99	3.65	3.76
Fiji	221.3	265.1	273.0	181.4	132.2	3.45	3.94	3.77	2.34	1.70
Indonesia	251.1	250.9	234.0	227.8	208.2	3.91	3.73	3.24	2.93	2.68
South Korea	284.5	279.9	295.3	286.1	251.2	4.43	4.16	4.08	3.68	3.23
Pakistan	165.4	151.8	145.1	191.2	172.4	2.58	2.25	2.01	2.46	2.22
Thailand	145.4	128.8	135.4	145.5	143.8	2.26	1.91	1.87	1.87	1.85
Rest of the world	660.2	680.1	705.9	703.5	692.7	10.28	10.10	9.76	9.06	8.91
Total	6422.3	6733.6	7233.6	7768.7	7777.3	100.00	100.00	100.00	100.00	100.00

[a] CIF valuation is equal to the FOB (free on board) transactions value plus the costs of freight and merchandise insurance involved in shipping the goods beyond the FOB point.

Source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

Table E.5 **Australia's average tariff rate on imports of textile fibre, yarn and woven fabrics (ANZSIC 221) from selected countries[a]**

Per cent

	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Bangladesh	0.32	0.19	0.05	0.24	0.26
Burma	7.99	~	~	~	~
Nepal	16.20	10.46	4.80	4.47	5.43
Cambodia	7.92	~	–	25.00	5.90
Other LDC	13.27	5.63	2.49	4.90	1.53
Total LDC	0.34	0.19	0.07	0.24	0.27
European Union	7.09	6.88	6.17	5.72	6.16
United States	7.12	6.25	6.10	5.63	5.35
China	8.64	8.52	8.20	9.74	9.49
New Zealand	0.05	0.05	0.04	0.06	0.08
Taiwan	7.28	7.55	7.01	6.22	6.82
Hong Kong	3.70	4.42	3.39	2.34	2.07
India	7.16	7.28	7.65	7.73	7.73
Fiji	0.01	–	–	0.04	0.03
Indonesia	4.68	4.48	4.37	3.79	4.40
South Korea	7.57	6.43	5.69	5.31	4.94
Pakistan	10.70	10.91	12.16	14.96	15.01
Thailand	5.40	5.25	5.67	6.16	6.66
Rest of the world	5.25	5.21	5.05	4.55	4.85
Total	6.44	6.23	6.02	6.54	6.64

a Calculated using value for duty. – Negligible. ~ Nil.

Source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

Table E.6 **Australia's average tariff rate on imports of textile products (ANZSIC 222) from selected countries[a]**

Per cent

	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Bangladesh	–	0.04	0.04	0.12	0.15
Burma	–	~	–	9.62	5.00
Nepal	0.21	0.37	0.20	0.27	0.71
Cambodia	7.99	7.00	5.05	4.96	5.00
Other LDC	0.15	3.97	6.37	4.33	4.48
Total LDC	0.01	0.11	0.60	0.58	0.47
European Union	8.53	8.23	7.81	7.36	7.52
United States	6.04	6.27	5.65	5.38	5.00
China	5.20	5.23	5.31	5.69	5.57
New Zealand	0.06	0.05	0.06	0.13	0.09
Taiwan	8.08	8.40	6.89	6.83	5.93
Hong Kong	3.23	5.77	5.68	5.17	6.56
India	3.94	3.92	4.01	4.44	5.46
Fiji	–	0.02	0.01	0.02	–
Indonesia	8.89	9.51	7.31	6.92	7.52
South Korea	9.92	5.73	4.68	4.59	4.78
Pakistan	8.75	8.10	7.63	10.03	10.80
Thailand	3.23	3.46	4.80	6.42	6.31
Rest of the world	8.98	8.19	7.68	6.79	6.88
Total	6.13	5.92	5.49	5.45	5.47

a Calculated using value for duty. – Negligible. ~ Nil.

Source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

Table E.7 **Australia's average tariff rate on imports of knitting mill production (ANZSIC 223) from selected countries[a]**

Per cent

	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Bangladesh	26.87	26.27	23.12	19.18	20.84
Burma	29.00	26.00	23.00	20.04	21.51
Nepal	2.96	6.11	6.88	5.11	7.78
Cambodia	32.74	30.18	23.43	20.00	20.00
Other LDC	34.00	29.89	28.00	24.31	20.50
Total LDC	22.22	23.62	20.15	17.73	19.67
European Union	21.51	21.08	19.85	18.42	18.38
United States	19.25	18.24	16.51	17.41	17.08
China	26.34	25.39	24.48	23.42	24.54
New Zealand	0.20	0.15	0.14	0.07	0.23
Taiwan	16.91	14.46	14.49	14.11	14.24
Hong Kong	28.54	27.53	25.92	23.14	23.08
India	29.86	23.15	23.15	24.36	23.08
Fiji	0.22	0.24	0.26	0.29	0.72
Indonesia	25.24	24.00	21.59	21.92	21.41
South Korea	20.59	18.94	15.90	13.96	12.88
Pakistan	33.95	27.87	24.80	24.82	24.12
Thailand	23.14	24.25	16.67	14.83	14.61
Rest of the world	22.45	22.80	18.91	14.77	14.03
Total	21.55	20.85	20.06	19.98	20.55

a Calculated using value for duty.

Source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

Table E.8 **Australia's average tariff rate on imports of clothing (ANZSIC 224) from selected countries[a]**

Per cent

	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Bangladesh	30.41	27.19	22.29	19.24	19.99
Burma	24.69	23.95	21.96	19.99	20.11
Nepal	12.27	13.18	3.33	3.44	7.94
Cambodia	28.86	27.51	22.77	19.62	19.85
Other LDC	14.59	18.06	13.84	3.99	19.69
Total LDC	23.04	23.62	19.06	17.25	19.12
European Union	23.48	22.02	20.74	17.97	19.03
United States	18.97	16.32	15.69	14.29	12.02
China	24.29	23.61	22.56	21.69	22.73
New Zealand	1.09	2.14	2.92	2.39	0.34
Taiwan	7.94	7.99	8.29	7.85	7.97
Hong Kong	24.91	23.62	21.28	20.30	20.85
India	25.55	25.21	21.35	19.91	20.49
Fiji	0.06	0.07	0.10	0.06	0.06
Indonesia	27.57	26.74	24.89	22.67	21.49
South Korea	19.60	16.28	13.39	10.18	9.80
Pakistan	28.63	25.91	22.30	22.00	22.34
Thailand	28.29	24.62	22.50	20.06	21.59
Rest of the world	26.56	24.19	21.90	19.90	19.49
Total	20.67	19.88	19.06	19.08	20.20

a Calculated using value for duty.

Source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

Table E.9 **Australia's average tariff rate on imports of footwear (ANZSIC 225) from selected countries[a]**

Per cent

	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Bangladesh	19.00	21.00	5.05	6.17	10.00
Burma	19.00	~	13.00	10.00	10.00
Nepal	19.04	16.00	13.00	8.26	10.00
Cambodia	~	4.63	14.76	11.14	10.00
Other LDC	19.00	~	18.00	15.00	~
Total LDC	19.00	5.86	6.26	10.28	10.00
European Union	21.44	19.14	17.14	14.36	14.39
United States	20.41	18.31	16.41	13.41	14.04
China	18.71	17.03	14.80	13.04	14.27
New Zealand	–	0.03	0.01	0.06	0.11
Taiwan	18.24	16.70	15.04	12.93	13.09
Hong Kong	22.98	18.79	17.14	14.71	14.52
India	10.12	9.58	9.74	10.05	10.67
Fiji	–	0.11	0.01	0.06	0.27
Indonesia	19.14	16.11	14.66	11.94	12.19
South Korea	23.29	14.02	12.87	14.48	14.92
Pakistan	23.19	19.34	17.03	14.05	14.28
Thailand	19.29	18.69	16.61	13.79	14.11
Rest of the world	20.42	18.43	16.54	13.83	14.33
Total	18.36	16.33	14.31	12.69	13.56

a Calculated using value for duty. – Negligible. ~ Nil.

Source: Extracted from ABS (*International Trade, Australia*, Cat. No. 5465.0; Information Consultancy Subscription Service).

Table E.10 **Australia's average tariff rate on imports of leather and leather products (ANZSIC 226) from selected countries[a]**

Per cent

	1997-98	*1998-99*	*1999-00*	*2000-01*	*2001-02*
Bangladesh	–	0.03	0.11	–	0.10
Burma	4.98	~	–	–	–
Nepal	0.35	0.03	0.35	0.30	0.19
Cambodia	–	–	–	–	–
Other LDC	0.34	5.00	4.12	0.37	0.16
Total LDC	0.26	0.04	0.15	0.02	0.10
European Union	4.62	4.70	4.79	4.69	4.54
United States	4.28	3.95	4.09	3.94	3.79
China	3.90	3.76	3.61	3.42	3.11
New Zealand	0.01	–	0.01	0.01	0.02
Taiwan	4.43	4.36	4.08	4.03	3.97
Hong Kong	4.13	4.18	4.00	4.30	4.11
India	4.48	4.48	4.53	4.63	4.39
Fiji	0.11	0.09	0.55	0.93	0.07
Indonesia	4.35	4.10	4.12	3.91	3.92
South Korea	4.06	4.84	3.85	3.79	3.69
Pakistan	4.82	4.76	4.50	4.53	4.39
Thailand	4.45	4.11	3.88	4.47	4.53
Rest of the world	3.20	3.04	2.72	1.96	1.77
Total	3.61	3.61	3.49	3.30	3.04

a Calculated using value for duty. – Negligible. ~ Nil.

Source: Extracted from ABS (International Trade, Australia, Cat. No. 5465.0; Information Consultancy Subscription Service).

F CGE modelling

This appendix outlines the computable general equilibrium (CGE) model used to analyse the effect of eliminating tariffs on LDC exports to Australia. Attachment F1 contains relevant concordance and input tables.

F.1 Computable general equilibrium modelling

General equilibrium analysis accounts for the inter-sectoral reallocation of resources associated with trade reform. It accounts for the effects on the input-output structure of the economy and on terms of trade changes — two effects that cannot be analysed with partial equilibrium analysis. A general equilibrium is appropriate when the policy experiment to be modelled simultaneously affects many countries and many sectors and is likely to affect terms of trade, factor prices and incomes.

The CGE approach has been used to model a wide variety of trade policy scenarios. It has the advantage of being able to identify the costs and benefits policy scenarios including their magnitude and distribution.

International trade theory shows that trade liberalisation affects resource allocation within countries and the terms of trade.[1] A reallocation of resources toward the more efficient sectors results in efficiency gains. However, as it increases its production in these sectors, it increases its exports, which may result in a fall in the revenue for its exports. The net effect of the efficiency gains and potential adverse terms of trade effects may result in a country losing from liberalisation when gauged in terms of income changes. When barriers to trade are large and are all removed simultaneously, the chances of gains are improved as this results in large allocative gains and these gains tend to dominate the terms of trade effects.

[1] The terms of trade indicate the rate at which a country's exports and imports are traded. The price a country receives for its exports is a function of the size of the market it faces. If the country is a significant supplier then it is considered to be a 'large' country and the price of its exports may need to decrease in order for it to increase its supply to world markets. Often, the 'small country' assumption is used to simplify an analysis. Under this assumption, a country is assumed to be able to sell any volume of their exports at a given price, without affecting the world price for their exports. In contrast to this, under the 'large country' assumption, the demand for a country's exports and the supply of imports it faces are assumed to be sloped.

Compared with non-preferential liberalisation, preferential arrangements may or may not improve allocative efficiency at the world level.[2] Results depend on the complex interaction between countries' characteristics, the existing pattern of protection, and the design of the trade arrangements to be evaluated. In order to simultaneously take into account all these determinants, a sufficiently rich representation of the status quo should be compared with an ex-post scenario in which all trade flows and patterns of production adjust to the simulated policy change. CGE modelling permits carrying out such an analysis. Despite its usefulness in obtaining insights into the direction and magnitude of the impact of trade policy changes, it is important to remember that the methodology has weaknesses. One of these is the assumption of smooth and automatic adjustment processes. CGE analyses ignore, in some cases, significant supply capacity problems that may exist in LDCs.

The GTAP model

The model adopted for this study is the GTAP model version 6.1.[3] The GTAP model is comparative static in which all markets are assumed to be perfectly competitive and production technologies exhibit constant returns to scale. The sector/country aggregation has been chosen to isolate the most sensitive sectors and world regions to the simulated policy experiments.

The world is divided into geographical regions. Within each region, consumers are assumed to have identical preferences. They allocate income between private consumption, public consumption and savings, while demands for different private goods have constant difference of elasticities (CDE) functional forms.[4] Each product is perceived to be differentiated according to the country in which it was produced (referred to as Armington differentiation or Armington assumption).[5] The elasticity of substitution between any pair of domestic and imported goods is

2 See for example Vousden (1990) on the theoretical analysis of general equilibrium effects of preferential trade liberalisation. On CGE analysis of non-reciprocal preferential trade arrangements, see Brown (1988, 1989).

3 The model is available at http://www.agecon.purdue.edu/GTAP/. The model is documented in Hertel (1997).

4 This function produces a demand system that is close to a Stone-Geary demand system. In this system a consumer is assumed to satisfy a minimum level of need for a set of goods and allocates the remainder of its income by maintaining a constant proportion of expenditure on each good.

5 The Armington assumption means that all regions in a CGE model are considered to be 'large' countries and may experience adverse terms of trade effects. This is especially the case for low values of the Armington parameters. To the extent that a country such as Australia does not fit the 'large country assumption, projected terms of trade effects may be exaggerated. Also see footnote 1 in this appendix.

constant within each sector and the elasticity of substitution between each pair of imported goods originating from different countries is twice that between domestic and foreign goods.

The production side of the model assumes fixed production coefficients between primary and intermediate inputs (Leontief aggregation). This means that substitution is not allowed in production between intermediate and primary factor inputs. Intermediate inputs are assumed to be 'Armington differentiated', with constant substitution elasticities (between domestic and foreign inputs, and between inputs of different foreign origin) that are the same as those used for final demand. Production factors are fully employed. Skilled labour, unskilled labour and capital, are mobile across sectors, while agricultural land natural resources are not mobile across sectors. All primary factors are immobile internationally.

Returns to factors of production accrue to households in the form of income which, in turn, feeds into consumption demand and savings. Household savings can either finance domestic or foreign investment. Total world savings equals investment and expected rates of returns on investments are equalized across all regions (neoclassical closure). [6]

Data, aggregation and policy simulations

The database employed in simulations is GTAP version 5 (Dimaranan and McDougall 2002), where 1997 is the base year. This describes the world economy by detailing 66 regional economies, each of which consists of 57 industries. Trade data are combined with protection and transportation cost data to represent the fundamental international trade linkage across world regions. Detailed input-output databases account for the inter-sectoral linkages and other economic relationships within each regional economy.[7]

For the purposes of this study, the database is aggregated into 39 regional groups and 43 industries. Tables F1.1and F1.2[8] indicate the mapping from the 66 regions and 57 industries in the original GTAP 5 to the aggregated database containing 39 regions and 43 industries.

Within the 39 aggregated regions, 13 regions represent LDCs. Of these 13 regions, six represent single LDCs (Bangladesh, Malawi, Mozambique, United Republic of

6 See Hertel (1997, pp. 54-60), for a discussion of the equations governing the international allocation of investment in GTAP.

7 Further details on GTAP databases are found on the GTAP website: http://www.agecon.purdue.edu/gtap.

8 See Attachment F1.

Tanzania, Uganda and Zambia) and seven are regional groups aggregating some LDCs with other countries (Rest of South Asia, Central America and the Caribbean, Rest of Middle East, Rest of South African Customs Union, Rest of Southern Africa, Rest of Sub-Saharan Africa and the Rest of World).

As the focus of this study is on commodity trade, the services industries in the original database are aggregated into a single sector to reduce the size of the model. The descriptions of the industries are presented in table F1.2.

The original GTAP database contains 1997 import tariff rates on Australian commodity imports originating from LDCs. These rates do not account for the ASTP. The database was therefore updated and made consistent with the tariffs reported by the ABS trade statistics (2002). This was done using the procedure ALTERTAX outlined in Malcolm (1998). The adjusted tariff rates are presented in table F.1.

Table F.1 **Average tariff rates on Australian imports originating from LDC regions, 1997**

per cent

Commodity abbreviations	*Region abbreviations*												
	BGD	*XSA*	*XCM*	*XME*	*XSC*	*MWI*	*MOZ*	*TZA*	*ZMB*	*XSF*	*UGA*	*XSS*	*XRW*
Texiles	0.1	10.5	18.9	5.4	5.9	0.0	0.0	0.0	0.0	4.6	0.0	6.2	3.8
Wearing ap.	33.4	23.2	28.6	37.1	26.8	0.0	0.0	31.9	0.0	31.1	34.2	9.5	1.3
Leath, footwe.	1.4	18.2	11.3	18.7	11.2	0.0	0.0	0.0	0.0	4.4	0.0	3.4	1.9

Note: See table F1.1 for list of LDCs included in each regional aggregate and abbreviations.

The policy experiment consisted in removing all tariffs on Australian imports originating from LDCs, using the database with the adjusted tariff rates. For the 6 regions representing individual LDC countries the removal of all tariffs on imports into Australia is relatively straightforward, with all tariffs being reduced to zero. For the seven regions that include LDCs non-LDCs countries, the experiment required the partial removal of tariffs on imports into Australia. The amount of the tariff removed was based on ABS data indicating the share of LDC duties in total duties from the aggregated region. The aggregate amount of tariff removed is about $A2.3 million.

The experiment was implemented using the GEMPACK software suite (Harrison and Pearson 1996). The macroeconomic closure adopted for this simulation was the standard one for GTAP version 6.1. On the supply side, all factors of production are fixed and fully employed in each region. Two factors of production, land and natural resources, are specific to the agricultural and mining industries and do not move between industries. The other factors, capital, unskilled and skilled labour, are perfectly mobile between industries.

At the macroeconomic level, household consumption, government consumption and net (of depreciation) savings in each region are a variable share of regional income. These aggregates vary in response to changes in regional income and prices. It is assumed that net investment will be reallocated across regions to equalise the expected rate of return on regional investments. All changes are evaluated relative to a price index for the world endowment of factors.[9]

Post-solution simulation

A post-solution simulation was devised to analyse the impacts on countries that are not identified separately in the database. This simulation is based on a simulation model which describes the Australian demand for imports originating from LDCs and other countries included in the seven aggregate regions in the database. The import demand functions are derived from the same CES functions used in the GTAP model. As in GTAP model, it is also assumed in the post-solution simulation model that, for Australian users, imports of commodities from different countries are substitutable with each other.

The simulated response in the Australian demand for imports of clothing from Cambodia is therefore a function of the change in the price and quantity of imports of clothing from the aggregate that incorporates Cambodia — obtained from the CGE experiment. As most of the economies are small relative to the group to which they belong and the rest of the economies in the model, they are assumed to be price-takers in the world market for their exports. The Australian domestic market price of an import is equal to the world prices plus the tariff rates. When tariffs are removed from imports originating from LDCs, the simulation model assumes that Australian consumers respond by shifting from imports from other countries to those from LDCs.

The data on Australian imports used in the micro-simulation model are obtained from the ABS. They include the values of imports from all sources at the HS 4-digit level and the values of duties paid on relevant imports. The HS trade data are aggregated into the 42 GTAP traded commodity groups. The ad valorem tariff rates are calculated as the value of duties paid divided by the cif value of imports. The policy scenario simulated in the post-solution simulation is the same as that in the CGE analysis. The 42 LDCs that exported to Australia in 1997 and are included in the post-simulation analysis are listed in table F1.3.

9 This price index is the numeraire.

Attachment F1: Concordances and tables

This attachment includes details of the commodity and regional aggregations used in this study.

Table F1.1 **Mapping of original GTAP 5 database 66 regions to 39 aggregated regions**

GTAP 5 database region	*Aggregated region and abbreviation*
1. Australia	1. Australia (AUS)
2. New Zealand	2. New Zealand (NZL)
3. China	3. China (CHN)
4. Hong Kong	4. Hong Kong (HKG)
5. Japan	5. Japan (JPN)
6. Korea	6. Korea (KOR)
7. Taiwan	7. Taiwan (TWN)
8. Indonesia	8. Indonesia (IDN)
9. Malaysia	9. Malaysia (MYS)
10. Philippines	10. Philippines (PHL)
11. Singapore	11. Singapore (SGP)
12. Thailand	12. Thailand (THA)
13. Vietnam	13. Vietnam (VNM)
14. Bangladesh	14. Bangladesh (BGD)
15. India	15. India (IND)
16. Sri Lanka	16. Sri Lanka (LKA)
17. Rest of South Asia	17. Rest of South Asia (XSA)
18. Canada	18. Canada (CAN)
19. United States	19. United States (USA)
20. Mexico	20. Rest of Latin America (OthLatAmer)
21. Central America and the Caribbean	21. Central America and the Caribbean (XCM)
22. Colombia	20. Rest of Latin America (OthLatAmer)
23. Peru	20. Rest of Latin America (OthLatAmer)
24. Venezuela	20. Rest of Latin America (OthLatAmer)
25. Rest of Andean Pact	20. Rest of Latin America (OthLatAmer)
26. Argentina	20. Rest of Latin America (OthLatAmer)
27. Brazil	20. Rest of Latin America (OthLatAmer)
28. Chile	20. Rest of Latin America (OthLatAmer)
29. Uruguay	20. Rest of Latin America (OthLatAmer)
30. Rest of South America	20. Rest of Latin America (OthLatAmer)
31. Austria	22. European Union (EUN)
32. Belgium	22. European Union (EUN)
33. Denmark	22. European Union (EUN)
34. Finland	22. European Union (EUN)
35. France	22. European Union (EUN)
36. Germany	22. European Union (EUN)
37. United Kingdom	22. European Union (EUN)
38. Greece	22. European Union (EUN)
39. Ireland	22. European Union (EUN)
40. Italy	22. European Union (EUN)
41. Luxembourg	22. European Union (EUN)
42. Netherlands	22. European Union (EUN)
43. Portugal	22. European Union (EUN)

(Continued next page)

Table F1.1 **(continued)**

GTAP 5 database region	*Aggregated region and abbreviation*
44. Spain	22. European Union (EUN)
45. Sweden	22. European Union (EUN)
46. Switzerland	23. Rest of Western Europe (OthWestEur)
47. Rest of EFTA	23. Rest of Western Europe (OthWestEur)
48. Hungary	24. Eastern Europe (EastEur)
49. Poland	24. Eastern Europe (EastEur)
50. Rest of Central European Associates	24. Eastern Europe (EastEur)
51. Former Soviet Union	24. Eastern Europe (EastEur)
52. Turkey	25. Turkey (TUR)
53. Rest of Middle East	26. Rest of Middle East (XME)
54. Morocco	27. Morocco (MAR)
55. Rest of North Africa	28. Rest of North Africa (XNF)
56. Botswana	29. Botswana (BWA)
57. Rest of South African Customs Union	30. Rest of South African Customs Union (XSC)
58. Malawi	31. Malawi (MWI)
59. Mozambique	32. Mozambique (MOZ)
60. Tanzania	33. Tanzania (TZA)
61. Zambia	34. Zambia (ZMB)
62. Zimbabwe	35. Zimbabwe (ZWE)
63. Other Southern Africa	36. Rest of Southern Africa (XSF)
64. Uganda	37. Uganda (UGA)
65. Rest of Sub-Saharan Africa	38. Rest of Sub-Saharan Africa (XSS)
66. Rest of World	39. Rest of World (XRW)

Table F1.2 **Mapping of GTAP 5 database commodities to 43 aggregated commodities**

GTAP 5 database commodity	*Aggregated commodity and abbreviation*
1. Paddy rice	1. Paddy rice (pdr)
2. Wheat	2. Wheat (wht)
3. Cereal grains n.e.c.	3. Cereal grains n.e.c. (gro)
4. Vegetables, fruit, nuts	4. Vegetables, fruit, nuts (v_f)
5. Oil seeds	5. Oil seeds (osd)
6. Sugar cane, sugar beet	6. Sugar cane, sugar beet (c_b)
7. Plant-based fibers	7. Plant-based fibers (pfb)
8. Crops n.e.c.	8. Crops n.e.c. (ocr)
9. Bovine cattle, sheep and goats, horses	9. Bovine cattle, sheep and goats, horses (ctl)
10. Animal products n.e.c.	10. Animal products n.e.c. (oap)
11. Raw milk	11. Raw milk (rmk)
12. Wool, silk-worm cocoons	12. Wool, silk-worm cocoons (wol)
13. Forestry	13. Forestry (for)
14. Fishing	14. Fishing (fsh)
15. Coal	15. Coal (col)
16. Oil	16. Oil (oil)
17. Gas	17. Gas (gas)
18. Minerals n.e.c.	18. Minerals n.e.c. (omn)
19. Bovine cattle, sheep and goat meat prods	19. Bovine cattle, sheep and goat meat (cmt)
20. Meat products n.e.c.	20. Meat products n.e.c. (omt)
21. Vegetable oils and fats	21. Vegetable oils and fats (vol)
22. Dairy products	22. Dairy products (mil)
23. Processed rice	23. Processed rice (pcr)
24. Sugar	24. Sugar (sgr)
25. Food products n.e.c.	25. Food products n.e.c. (ofd)
26. Beverages and tobacco products	26. Beverages and tobacco products (b_t)
27. Textiles	27. Textiles (tex)
28. Wearing apparel	28. Wearing apparel (wap)
29. Leather products	29. Leather products (lea)
30. Wood products	30. Wood products (lum)
31. Paper products, publishing	31. Paper products, publishing (ppp)
32. Petroleum, coal products	32. Petroleum, coal products (p_c)
33. Chemical, rubber, plastic products	33. Chemical, rubber, plastic products (crp)
34. Mineral products n.e.c.	34. Mineral products n.e.c. (nmm)
35. Ferrous metals	35. Ferrous metals (I_s)
36. Metals n.e.c.	36. Metals n.e.c. (nfm)
37. Metal products	37. Metal products (fmp)
38. Motor vehicles and parts	38. Motor vehicles and parts (mvh)
39. Transport equipment n.e.c.	39. Transport equipment n.e.c. (otn)
40. Electronic equipment	40. Electronic equipment (ele)
41. Machinery and equipment n.e.c.	41. Machinery and equipment n.e.c. (ome)
42. Manufactures n.e.c.	42. Manufactures n.e.c. (omf)

(Continued next page)

Table F1.2 **(continued)**

GTAP 5 database commodity	*Aggregated commodity and abbreviation*
43. Electricity	43. Services (ser)
44. Gas manufacture, distribution	43. Services (ser)
45. Water	43. Services (ser)
46. Construction	43. Services (ser)
47. Trade	43. Services (ser)
48. Transport n.e.c.	43. Services (ser)
49. Water transport	43. Services (ser)
50. Air Transport	43. Services (ser)
51. Communication	43. Services (ser)
52. Financial services n.e.c.	43. Services (ser)
53. Insurance	43. Services (ser)
54. Business services n.e.c.	43. Services (ser)
55. Recreational and other services	43. Services (ser)
56. Public Admin., Defense, Education, Health	43. Services (ser)
57. Dwellings	43. Services (ser)

Note: n.e.c.: not elsewhere classified.

Table F1.3 **LDCs included in the post-solution simulation model**

GTAP region/ country code	*Micro-simulation model country code*	*Description*
BGD	BADE	**Bangladesh**
MWI	MLWI	Malawi
MOZ	MOZA	Mozambique
TZA	TANZ	Tanzania
ZMB	ZMBA	Zambia
UGA	UGAN	Uganda
XCM	HAIT	Haiti
XME	YEMN	Yemen
XRW	AFGH	Afghanistan
XRW	CMBD	**Cambodia**
XRW	LAOS	**Laos People's Democratic Republic**
XRW	BURM	**Burma**
XRW	KIRI	Kiribati (SPARTECA)
XRW	WSAM	Samoa (SPARTECA)
XRW	SOLO	Solomon Islands (SPARTECA)
XRW	TUVA	Tuvalu (SPARTECA)
XRW	VANU	Vanuatu (SPARTECA)
XSA	BHUT	Bhutan
XSA	MLDV	Maldives
XSA	NEPA	**Nepal**
XSC	LESO	Lesotho
XSF	ANGO	Angola
XSS	BRND	Burundi
XSS	CVER	Cape Verde
XSS	CEAR	Central Africa Republic
XSS	CHAD	Chad
XSS	CMRO	Comoros, Republic
XSS	BENR	Benin
XSS	EGUI	Equatorial Guinea
XSS	ZAIR	Democratic Republic of Congo
XSS	ETHI	Ethiopia
XSS	DJIB	Djibouti
XSS	GAMB	Gambia
XSS	GUIN	Guinea
XSS	LIBE	Liberia
XSS	MASY	Madagascar
XSS	MALI	Mali
XSS	MRTN	Mauritania
XSS	NIGE	Niger
XSS	BGUI	Guinea Bissau
XSS	RWAN	Rwanda
XSS	SAOT	Sao Tome PR
XSS	SENE	Senegal
XSS	SLEO	Sierra Leone
XSS	SOML	Somalia
XSS	SUDA	Sudan
XSS	TOGO	Togo
XSS	BURK	Burkina Faso
XSS	ERIT	Eritrea

Note: Countries referred to in model results indicated in bold.

G Proposed changes to the ASTP

This appendix is based on material from the Australian Customs Service and outlines proposed modifications to the ASTP and relevant legislation required to put into effect the reduction to 'Free' of the rate of duty[1] for goods that are the produce or manufacture of LDCs.

Under the proposal:

- the ASTP would be modified to remove the duty on all goods the produce or manufacture of LDCs;
- The across-the-board 5 per cent margin of preference would continue to apply to goods the produce or manufacture of other developing countries and places currently receiving such treatment under the ASTP;
- There would be no change to the ASTP preferential duty rates applied to goods the produce or manufacture of developing countries and places that do not currently receive the across-the-board 5 pere cent margin of preference;
- Goods the produce or manufacture of LDC Forum Island countries would be entitled to duty free entry under the modified ASTP or under the conditions specified in SPARTECA;
- Goods the produce or manufacture of non-LDC Forum Island countries would continue to receive the ASTP 5 per cent margin of preference where they do not meet the rules of origin for duty free entry under SPARTECA;
- There would be no change to the rules of origin for any goods entered under the ASTP. In particular, all goods claiming to be the produce or manufacture of a developing country would maintain the same qualifying area;
- Manufacturers in LDCs could use materials made in more advanced developing countries to achieve the 50 per cent minimum area content and still receive duty free entry under the ASTP.

[1] See definition below.

Definition of duty

For the purposes of this proposal, 'duty' excludes charges such as Government cost recovery charges, excise equivalent duties, Product Stewardship Oil Levy, GST, Luxury Car Tax and Wine Equalisation Tax. These charges will remain payable on entry into Australia.

Definition of LDCs

For the purpose of this proposal, LDCs are the countries set out in table G.1, being those countries that are:

- currently listed in Division 1 of Part 3 of Schedule 1 to the *Customs Tariff Act 1995* (Customs Tariff); and
- Forum Island countries that are listed in Part 1 of Schedule 1 to the Customs Tariff and that have been determined by the UN to be LDCs.

Other developing countries

The developing countries that will continue to receive the across-the-board 5 per cent margin of preference are set out in table G.2, being those countries and places that are:

- currently listed in Division 2 of Part 3 of Schedule 1 to the Customs Tariff;
- Forum Island countries that are listed in Part 1 of Schedule 1 to the Customs Tariff and that have not been determined by the UN to be LDCs; and
- Papua New Guinea (PNG)[2].

The developing countries and places that currently do not receive the across-the-board 5 per cent margin of preference remain unchanged under the proposal and are set out in Appendix C, being those countries and places that are currently listed in Part 2 of Schedule 1 to the Customs Tariff.

[2] While PNG is a non-LDC Forum Island country, it is currently treated separately from other Forum Island countries in the Customs Tariff, as it is also the recipient of preferences under another agreement — the Papua New Guinea Australia Trade and Commercial Relations Agreement, or PATCRA.

Implementation

To give effect to the proposal, the countries currently listed in Division 1 of Part 3 of Schedule 1 to the Customs Tariff would be removed from that Part and placed in a new Part of that Schedule, along with the LDC Forum Island Countries. The new Part will be titled 'Developing Countries subject to LDC rates of duty.'

The places that are currently listed in Division 2 of Part 3 of Schedule 1 to the Customs Tariff would remain in that Part. The non-LDC Forum Island Countries (including PNG) would be added to this Part.

Parts 1 and 2 of Schedule 1 to the Customs Tariff would remain unchanged, as would the rules of origin set out in Division 1A of Part VIII of the *Customs Act 1901*.

Table G.1 **LDCs to receive duty free access**

Schedule 1
Division 1 of Part 3
Least Developed Country

Afghanistan	Lesotho
Angola	Liberia
Bangladesh	Madagascar
Benin	Malawi
Bhutan	Maldives
Botswana	Mali
Burkina Faso	Mauritania
Burundi	Mozambique
Cambodia	Myanmar, Union of
Cape Verde	Namibia
Central African Republic	Nepal
Chad	Niger
Comoros	Rwanda
Congo, Democratic Republic of	Sao Tome and Principe
Djibouti	Senegal
Equatorial Guinea	Sierra Leone
Eritrea	Somalia
Ethiopia	Sudan
Gambia	Tanzania, United Republic of
Guinea	Togo
Guinea-Bissau	Uganda
Haiti	Yemen, Republic of
Lao People's Democratic Republic	Zambia

Schedule 1 Part 1
Least Developed
Forum Island Country

Kiribati	Tuvalu
Samoa, The Independent State of (formerly Western Samoa)	Vanuatu
Solomon Islands	

Table G.2 **Developing countries to continue to receive a 5 per cent preference margin for all goods**

Schedule 1 Division 2 of Part 3 Developing Place	*Schedule 1 Part 1 Developing Forum Island Country*
American Samoa	Cook Islands
French Polynesia	Fiji
Guam	Marshall Islands, Republic of
Mariana Islands	Micronesia, Federated States of
New Caledonia	Nauru
Palau[a]	Niue
Pitcairn Island	Papua New Guinea
Tokelau Islands	Tonga
Wallis and Futuna Islands	

[a]The Minister for Justice and Customs has yet to be officially notified by the Ministers for Foreign Affairs and Trade that Palau is a Forum Island country. Should such notification be received, Palau would continue to receive the 5 per cent margin of preference under the ASTP as a non-LDC Forum Island country, and would also receive the duty free rate available under SPARTECA.

H Ministerial correspondence

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27 JUN 2002

RECEIVED
27 JUN 2002
CHAIRMAN'S OFFICE

Mr Gary Banks
Chairman
Productivity Commission
PO Box 80
BELCONNEN ACT 2616

Dear Mr Banks

I am writing regarding the Government's proposal to consider removing tariffs on goods that originate in least developed countries (LDCs). As part of the Government's consideration of this matter, I request that the Productivity Commission undertake a technical study examining the effects of the proposal.

To this end, please find attached terms of reference for the study. The results of the study are requested within two months of receipt of these terms of reference.

On 26 April 2002, the Treasurer initiated Government consideration of this proposal which is consistent with the Doha Ministerial Declaration which stated World Trade Organisation members are committed to the objective of duty-free, quota-free market access for products originating from LDCs.

As it is the Government's general practice to publish the results of Commission studies, I will advise you in writing of the Government's publication requirements closer to the reporting date.

Yours sincerely

IAN CAMPBELL

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