THE TEXTILES, CLOTHING AND FOOTWEAR INDUSTRIES

VOLUME 2: APPENDICES

INDUSTRY COMMISSION

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A CONDUCT OF THE INQUIRY

A1 Introduction

This Appendix outlines the consultative processes of the inquiry.

Following receipt of the terms of reference, the Commission placed advertisements in national daily papers inviting public participation in the inquiry and released an issues paper to assist parties in preparing their submissions. The issues paper was circulated as widely as possible to people and organisations identified by the Commission as having an interest in the inquiry and upon request. Information circulars have been circulated widely to provide information on the progress of the inquiry.

The Commission received 163 submissions prior to the release of the draft report, and an additional 111 submissions following the draft report. A list of the parties which made submissions is provided in Attachment A1.

The Commission also held informal discussions with organisations, companies and individuals to gain background information and an understanding of issues facing these industries. More than 60 visits were undertaken in thirteen locations including Melbourne, Sydney, Adelaide, Perth, Brisbane, Hobart, Geelong, Wangaratta, Albury–Wodonga, Ballarat, Bendigo, Devonport and Launceston. Those visited by the Commission are listed in Attachment A2.

Public hearings were held in Sydney and Melbourne during February. Following the release of the draft report public hearings were held in Sydney, Melbourne and Brisbane during July and August. Discussions were held with participants to exchange views and gather information regarding industry issues. A transcript of the public hearings was made publicly available to maintain the transparency of the Commission's processes. Public hearing participants are listed in Attachment A3.

A workshop was held on 11 August 1997 to discuss modelling results. The workshop focussed on technical issues of modelling the economic impact of reductions in assistance to TCF industries. Given its technical nature, participation was by invitation only. The people who attended included industry representatives (TFIA, ACM); staff from State and Federal government Industry Departments; economic modellers from Econtech and Monash University; and Industry Commission staff (Attachment A4 lists the workshop participants). A

key outcome of the workshop was a better understanding of the reasons behind the differences between the projections of the MONASH model (used by the Commission) and the F4 model (used by the TFIA). This led to refinements in the modelling which are reflected in this report.

A2 Inquiry staff

Geraldine Gentle	Assistant Commissioner
Michael Jenkins	Inquiry Director
Paul D'Arcy	Inquiry Director
Leon Trethowan	Director
Anthea Goddard	Assistant Director
Lawrence McDonald	Assistant Director
Danny Forwood	Senior Research Officer
Sean Kennedy	Senior Research Officer
Julie Toth	Senior Research Officer
Kirsten Wren	Senior Research Officer
Adam Phillips	Senior Research Officer
Michael Smiddy	Research Officer
Ben Goodsir	Research Officer
Delwyn Rance	Administrative Officer
Justine Gorny	Administrative Officer
Kathy Abohaidar	Administrative Officer

Attachment A1: Submissions received

Participant	*Submission No.*
A H Willis (Vic) Pty Ltd	88
Aboud Apparel Pty Ltd	40
Action Benalla Inc	75
Allied Signal (Australia) Sales Ltd	53
Amoco Australia	209
Anna Flair	250
Apparel & Textile Federation of New Zealand Inc.	114
Asian Women at Work Inc	126
Association of Non-English Speaking Background Women of Australia	148, 173
Australian Alpine Valleys Agri-business Forum	73
Australian Association of Cotton System Spinners	49, 188
Australian Business Chamber	141, 247
Australian Chamber of Manufactures	87, 235
Australian Consumers' Association	153
Australian Dyeing Company	4, 168
Australian Hide Skin and Leather Exporters Association Ltd	100, 242
Australian Leather Holdings Ltd	36, 140
Australian Leather Industries Association (formerly Federated Tanners Association)	229
Australian Retailers Association	86
Australian Textile Printing Company	35
Australian Weaving Mills Pty Ltd	12, 233

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Participant	*Submission No.*
Australian Wool Processors Council	79, 224
Austrim Ltd/CDA Industries Pty Ltd	154, 183
Avery, Anthony	221
Baldwin, R W	263
Banksia Embroidery	23
Barrymores Pty Ltd	9
Bartex Fabrics Pty Ltd	54
Baxter MLC, The Hon W R	135
Benalla Spinners Pty Ltd and Barwon Spinners Pty Ltd	110
Blundstone Pty Ltd	65, 218
Bradmill Undare Group	47, 198
Bruck Textiles Pty Ltd	62, 151
BTR Kennon	91
Budd, Mary	165
Burgtec Australasia Pty Ltd	63
Burlon Hosiery Pty Ltd	20
Carpet Institute of Australia Ltd	120, 204
CDA Industries Pty Ltd	59
Centrotex (Aust) Pty Ltd	125
Chan, Dr Anita	32
Charles Parsons (Vic) Pty Ltd	67
Chaubal, Pinakin	78
Chemtex Pty Ltd	57
Ciba Specialty Chemicals	68, 203, 262, 266
Cities of Kingston, Greater Dandenong and Frankston	231
City of Darebin	178

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Participant	*Submission No.*
City of Greater Geelong and the Geelong Wool Industry and Manufacturing Industry Taskforces	105, 179
City of Whittlesea	240
City of Yarra	214
Clarecraft Industries Pty Ltd	106
Clarks Shoes Australia Ltd	80, 212
Classweave Industries Pty Ltd	166
Coles Myer Ltd	58
Commonwealth Department of Transport and Regional Development	269
Companies and community of North Eastern Victoria and Albury	37, 217
Consolidated Apparel Industries Pty Ltd	25, 239
Cooperative Research Centre for Advanced Composite Structures Ltd	246, 258
Corfu Jeans Pty Ltd	118
Cotton Australia Ltd	156
Council of Textile and Fashion Industries of Australia Ltd	66, 160, 200, 225
CSIRO Australia	131
D H K Manufacturing Pty Ltd	11
D R Manufacturing Pty Ltd	13, 245
Dale Street Women's Health Centre	48
Delatite Shire Council	74
Department of Commerce and Trade (Western Australia)	142
Department of Employment, Education, Training and Youth Affairs	264
Department of Foreign Affairs and Trade	261
Department of Immigration and Multicultural Affairs	189

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Participant	*Submission No.*
Department of Workplace Relations and Small Business	227
Devonport City Council	56, 244
Diamond Cut International Pty Ltd	7, 19
Diana Ferrari	85, 172
Domestic Textile Corporation	14
Done Art and Design	1
Driza Bone Pty Ltd	16
Du Pont (Australia) Ltd	99, 190
Electronik Fabric Makers (Vic) P/L	169
Ennio Pty Ltd	193
Enoch Taylor & Co Pty Ltd	90
Enterprise Skills Pty Ltd	10
Exclusive Fleece Pty Ltd	171
Far North Queensland Quilting Services Pty Ltd	15, 170
Federated Tanners' Association of Australia	92, 158
Federation of Hong Kong Industries	8
Field's Knitwear (Aust) Pty Ltd	81
Fiji Government	273
Fiji Government and the Textile Clothing and Footwear Council of Fiji	146
Filigree Textiles Pty Ltd	115
Flickers Australia Pty Limited	192
Florsheim Australia Ltd	34
Footwear Manufacturers' Association of Australia Inc	103, 186, 270
Furnishing Industry Association of Australia Ltd	96, 155
G H Michell (Wool)	138
Geelong and Region Trades and Labour Council	176

Submission list continues over page.

Participant	*Submission No.*
Geelong Chamber of Commerce	202
Geelong Congress of Business Associations	201
Geraldton Tannery Pty Ltd	2
Gercovich, Stephen	38
Gibbs Burge (Australia) Pty Ltd	26, 117, 256
Gloweave Consolidated Pty Ltd	27
Godfrey Hirst Australia Pty Ltd	113, 116, 226
Godfrey Hirst Wools Pty Ltd	111
Goulburn Ovens Institute of TAFE	71
Grey Power (SA) Inc	241
Grove, Charles	6
Hallmark Mitex Pty Ltd	18, 255
Hampshire, Don	139, 238
Hong Kong Government Trade Department	102, 215
Hume City Council	177
Hunter Douglas Ltd	130, 248
I & L Lynton	252
Impact Furniture Designs	107
J Robins & Sons Pty Ltd	98, 174, 260
Journee, Jacques	123
Keith Gamble Pty Ltd	150
L & L Direct (Australia)	274
La Trobe Shire	181
Lieberman MP, The Hon Lou, Federal Member for Indi	134
Lin, Dr Ian	143
Lowes-Manhattan Pty Ltd	124
Mark One Apparel	5

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Participant	*Submission No.*
Melbourne Institute of Textiles	30, 180
Melbourne Textile Knitting Company	22
Michell Leather	42
Mondrian Pty Ltd	230
Moreland City Council	184
Nairn, J B	39
National Farmers' Federation Australia	163, 196
National Textiles Ltd	129, 210
Norman Ritchie Fabrics	21, 220
NORTH Link, Melbournes Northern Economic Wedge Inc	195
NSW Adult Migrant English Service	187
NSW Government	162
NSW Working Women's Centre	61
P P Atkins & Co	127
Pacific Brands	44, 136, 199
Pacific Textiles Pty Ltd	191
Packer Associated Tanners Pty Ltd	109
Peter Sheppard Footwear	167, 249
Petersen Levy & Associates Pty Ltd	144, 253, 254
Petlee Pty Ltd	60
Plastics and Chemicals Industries Association	52
Plowman MP, The Hon Tony, State Member for Benambra	133
Powell MLC, The Hon (Elizabeth) Jeanette, State Member for North Eastern	70
Pratt T, Sohal A, and Schroder, R	3
Purnell Shoe Company	82
Queensland Government	149

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Participant	*Submission No.*
Raper, Hugh	43
Riverside Textiles Pty Ltd	112
Rocklea Spinning Mills	50, 182
Rural City of Wangaratta	69, 185
Sarlon Industries Pty Ltd	83
Scalisi Fine Upholstery	89
Scallywags Industries	55, 237
Scapa Filtration Asia Pacific	28
Senator John Watson - Liberal, Tasmania	219
Shaw Industries Australia Pty Ltd	93, 216
Sheridan Australia	51
Smolski, Margaret	205
Society for Balanced Trade	197
Soft Edges Pty Ltd	122
South Australia Labor Party	207
South Australian Employers' Chamber of Commerce & Industry Inc	267
South Australian Government	132, 232, 272
Specialty Coatings (Aust.) Pty Ltd	137
Sport Fashions Group	24
Standard Universal Textile Group	101
State Chamber of Commerce (NSW)	147
Supertex Industries Pty Ltd	17
Surfcoast Shire	222
Sycotex Pty Ltd	108
Tasmanian Government	64, 234
Tasmanian Federal Labor Members and Senators	164

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Participant	*Submission No.*
TCF Exporters' Forum	159, 259, 268, 271
Tecknowrag	46
Textile Clothing and Footwear Industry Network Centre	104
Textile Developments Pty Ltd	94
Textile Institute (Southern Australia Section) Inc	119
Textile, Clothing and Footwear Union of Australia	128, 228
Thomson MP, Kelvin - Member for Wills	206
Track N Field Pty Ltd	208
Traxtion Sports Pty Ltd	41
Tyrrell, Lance	243
Very Fine Fabric Knitters Pty Ltd	84
Victor Footwear Pty Ltd	97, 194
Victoria's Golden Regional Development Organisation Inc	223
Victorian ALP	175
Victorian Government	152, 265
Victorian Hide and Skin Producers Pty Ltd	29, 95, 161
Victorian Trades Hall Council	213
Vival Chemicals Pty Ltd	33
Wangaratta Chamber of Commerce Inc	76
Wangaratta Unlimited	72
Warrnambool City Council	211
WE Young and Co. Pty Ltd	31
Wellington Shire Council	77
Weston, Paul A.	251
WK Witt Pty Ltd	121
Wool Council of Australia	157, 236
Yakka (Aust) Pty Ltd	45, 145, 257

Attachment A2: Industry visits

Aboud Apparel/Gloster Shirts
Albury City Council
Amoco Australia
Australian Consumers' Association
Australian Country Spinners
Australian Customs Service
Australian Defence Apparel (ADA)
Australian Leather Holdings
Australian Retailers Association
Australian Vietnamese Women's Welfare Association
Australian Weaving Mills
Australian Wool Processors Council
Austrim Ltd/CDA Industries Pty Ltd
Ballarat City Council
Barrymores
Blundstone Pty Ltd
Bradmill Textiles
Bruck Textiles
Canning Vale Weaving Mills
Carpet Institute of Australia
Commonwealth Employment Service (Wangaratta)
Chamber of Commerce and Industry of Western Australia
City of Greater Geelong
Clarks Shoes Australia
Coats Paton Handcrafts
Coles Myer
Colly Cotton
Consolidated Apparel Industries
Corfu Jeans

Council of Textile and Fashion Industries of Australia Ltd

Country Road

Crompton & Sons

CSIRO Division of Wool Technology

Department of Employment, Education, Training and Youth Affairs, Industry Programs Branch

Department of Foreign Affairs and Trade

Development Albury–Wodonga

Diamond Cut International

Diana Ferrari

Department of Commerce and Trade (Western Australia)

Department of Industry, Science and Tourism

Department of State and Regional Development (NSW)

Done Art and Design

Douglas Mawson TAFE, TCF Department

Du Pont Australia

Economic Development Authority of South Australia

G H Michell

Gazal Corporation

Geelong Trades Hall Council

Geelong Wool Combing

Geofabrics Australasia

George Gross and Harry Who

Godfrey Hirst

Greater Bendigo City Council

Hartigan MLC, The Hon W, State Member for Geelong, Chairman Natural Fibres Institute Review Committee

Howe Leather

International Wool Secretariat

James Nelson (Launceston)

James Nelson Textile Group

La Trobe University, Department of Sociology
Leading Synthetics
Macquarie Textiles
Pacific Brands
Packer Tanning
Peter Law Australia
R M Williams
Rivers
Riverside Textiles
Rocklea Spinning Mills
Rossi Boots
Sara Lee Clothing
Sara Lee Intimates
Seekers Australia
Senate Economics Committee Secretariat
Shaw Industries Australia
Sheridan Australia
Shire of Delatite
Sloan, Professor Judith, National Institute of Labour Studies
Spinelli
Sport Fashions Group
Stafford Group Pty Ltd
Tasmania Development and Resources
TCF Exporters' Forum
Textile, Clothing and Footwear Union of Australia
Victorian Government
Wangaratta Rural City Council
Waverley Woollen Mills
Wodonga City Council
Yakka (Aust) Pty Ltd

Attachment A3: Public hearing participants

Sydney 12 February 1997

Supertex Industries Pty Ltd

University of New South Wales, Department of Textile Technology

Hallmark Mitex Pty Ltd

Far North Queensland Quilting Services Pty Ltd

Sport Fashion Group

Tecknowrag

Melbourne 18 February 1997

J Robins and Sons

Burlon Hosiery Pty Ltd

Consolidated Apparel Industries Pty Ltd

Melbourne Textile Knitting Co.

Sara Lee Clothing

Domestic Textile Corporation

Jaido Pty Ltd, trading as Scallywag Socks

Melbourne 19 February 1997

Melbourne Institute of Textiles

Scapa Filtration Asia Pacific

Victorian Hide and Skin Producers Pty Ltd

Gloweave Consolidated Pty Ltd

Australian Leather Holdings Ltd

Australian Dyeing Company

Gibbs Burge (Australia) Pty Ltd

Yakka (Aust) Pty Ltd

Footwear Manufacturers' Association of Australia

Melbourne 20 February 1997

Enterprise Skills Pty Ltd

Federated Tanners' Association of Australia

North East Victorian Regions (Represented by Development Albury–Wodonga 2000)

Bradmill Undare Group

Carpet Institute of Australia

Godfrey Hirst

Shaw Industries

Australian Wool Processors Council

Sasha Shoes

Melbourne 21 February 1997

Council of Textile and Fashion Industries of Australia (TFIA)

Pacific Brands

Rocklea Spinning Mills

Diana Ferrari

Sydney 28 July 1997

Bruck Textiles

Footwear Manufacturers' Association of Australia

Far North Queensland Quilting Services Pty Ltd

Australian Business Chamber Ltd

Association of Non-English Speaking Background Women of Australia

J Robins & Sons Pty Ltd

Sheridan Australia

TCF Exporters Forum

Melbourne 30 July 1997

Margaret Smolski

Moreland City Council

City of Yarra

City of Kingston

City of Casey

City of Whittlesea

City of Greater Dandenong

City of Darebin

City of Greater Geelong

Victorian Labor Party

National Farmers' Federation

Textile, Clothing and Footwear Union

Yakka in Wangaratta

Godfrey Hirst, Geelong

Yakka, Wodonga

Gloweave, Fitzroy

Gloster Apparel Production

Electorate of Wills - Kelvin Thomson

Melbourne 31 July 1997

Scallywags Industries

Australian Leather Industry Association

Australian Chamber of Manufactures

Heather Craig Pty Ltd

Melbourne Institute of Textiles

Diana Ferrari

Society for Balanced Trade

Council of Textile and Fashion Industries

Melbourne 4 August 1997

Shaw Industries Australia

Godfrey Hirst Australia

Carpet Institute

Pacific Brands

Wool Council of Australia

Economic Development Authority

Melbourne 6 August 1997

Flicker's Australia

Mondrian Pty Ltd

Rural City of Wangaratta

Turning Point (Australia) Pty Ltd

North Link

Nietl

Track n Field Sportswear Pty Ltd

Australian Dyeing Co

Electronik Fabric Makers (Vic) Pty Ltd

Exclusive Fleece Pty Ltd

Melbourne 7 August 1997

Peter Sheppard Footwear Pty Ltd

Bradmill Group of Companies

Hunter Douglas Ltd

Geelong Chamber of Commerce

Geelong Congress of Business Associations

Ciba Specialty Chemicals

Cooperative Research Centre for Advanced Composite Structures

Yakka Pty Ltd

Brisbane 8 August 1997

DR Manufacturing

Petersen Levy & Associates Pty Ltd

Anna Flair

Rixon Holdings

Hallmark

Attachment A4: Workshop participants

Mr Michael Baston
Director, Baston Consulting

Mr Chris Chan
Assistant Director, Economic Projects Branch, Industry Commission

Mr John Cosgrove
Commissioner, Industry Commission

Mr Lee Davis
Research Officer, Economic Projects Branch, Industry Commission

Professor Peter Dixon
Centre of Policy Studies, Department of Economics, Monash University

Mr Chris Geissler
Economic Conditions Section, DIST, Industry Policy Division

Dr Geraldine Gentle
Assistant Commissioner, Industry Commission

Ms Anthea Goddard
Assistant Director, TCF Inquiry, Industry Commission

Mr Tendai Gregan

Assistant Director, Economic Projects Branch, Industry Commission

Mr Allen Handberg

National Chief Executive, ACM

Mr Michael Jenkins

Director, TCF Inquiry, Industry Commission

Dr Patrick Jomini

Director, Economic Projects Branch, Industry Commission

Mr Tony Jowett

Director, Economic Conditions Section, DIST, Industry Policy Division

Mr Peter Kreitals

Executive Director, T F I A

Professor Peter Lloyd

Melbourne Institute of Applied Economics and Social Research

Mr Chris Murphy

Director, Econtech

Mr Pin Ng

Senior Research Officer, Economic Research & Analysis Unit, Department of State Development

Professor Brian Parmenter
Centre of Policy Studies, Department of Economics, Monash University

Dr Maureen Rimmer
Centre of Policy Studies, Department of Economics, Monash University

Dr John Salerian
Assistant Commissioner, Economic Projects Branch, Industry Commission

Ms Helen Silver
First Assistant Commissioner, Industry Commission

Mr Michael Smiddy
Research Officer, TCF Inquiry, Industry Commission

Professor Richard Snape
Associate Commissioner, Industry Commission

Dr Lynne Williams
Principal Adviser Research, Industry Commission

B THE TCF INDUSTRIES: DEFINITION, STRUCTURE AND PERFORMANCE

This appendix outlines the scope of Australian TCF activity and provides statistical information on the size, structure and performance of the industries.

B1 Definition

The TCF manufacturing industries cover all stages of production of textile, clothing, footwear and leather products, from processing of raw materials such as cotton, wool, leather and synthetics, through to the production of final goods such as clothes, shoes, household linen, carpets and industrial textiles.

Generally, textile manufacture covers the processing of raw materials, both natural and synthetic, into yarns, fabrics and textile products — including scouring, carbonising, top making, spinning, weaving, knitting and finishing — and cutting and sewing of fabrics into finished products other than apparel. In addition to woven and knitted textile products such as carpets and towels, there is also a non-woven textiles industry producing products such as felts, cleaning cloths, medical apparel and industrial textiles.

Clothing manufacture involves the conversion of fabrics into apparel through design, pattern-making, cutting and assembly. Australia produces a wide range of apparel and accessories, including hosiery, underwear, knitwear, outerwear and work wear.

Footwear manufacture involves the design, cutting and assembly of footwear. The industry is segmented into men's, women's, children's, sports and industrial footwear.

The leather industry involves salting, wet blueing (the first stage of tanning), leather finishing and fur dressing.

There are links between the TCF manufacturing industries and other parts of the economy. There are both upstream links with the producers of raw materials such as leather, cotton, wool and synthetic fibres, and downstream links with wholesalers and retailers of TCF products and industries such as furniture manufacturing, health services and accommodation that are major users of TCF products.

For the purposes of this report, the TCF manufacturing industries are defined according to the Australian and New Zealand Standard Industrial Classification (ANZSIC) (see Table B1). Summary statistics on the industries at the four-digit industry class are presented in Attachment B1 to this Appendix.

Table B1: ANZSIC Subdivision 22: Textiles, Clothing, Footwear and Leather Manufacturing

Group		*Class*	
221	Textile fibre, yarn and woven fabric manufacturing	2211	Wool scouring
		2212	Synthetic fibre textile manufacturing
		2213	Cotton textile manufacturing
		2214	Wool textile manufacturing
		2215	Textile finishing
222	Textile product manufacturing	2221	Made-up textile product manufacturing
		2222	Textile floor covering manufacturing
		2223	Rope, cordage and twine manufacturing
		2229	Textile product manufacturing nec
223	Knitting mills	2231	Hosiery manufacturing
		2232	Cardigan and pullover manufacturing
		2239	Knitting mill product manufacturing nec
224	Clothing manufacturing	2241	Men's and boys' wear manufacturing
		2242	Women's and girls' wear manufacturing
		2243	Sleepwear, underwear and infant clothing manufacturing
		2249	Clothing manufacturing nec
225	Footwear manufacturing	2250	Footwear manufacturing
226	Leather and leather product manufacturing	2261	Leather tanning and fur dressing
		2262	Leather and leather substitute product manufacturing

nec not elsewhere classified
Source: ABS 1993a

B2 General trends

The Australian TCF manufacturing industries are small when compared with those in many other countries. However, they are a significant component of the manufacturing sector in this country — in 1994-95, the TCF industries accounted for 5 per cent of total manufacturing gross product[1] and in 1997 accounted for 9 per cent of manufacturing employment. These are similar proportions to those of other OECD countries (see Table B2). In terms of overall Australian economic activity, the TCF industries are less significant,

[1] Gross product at factor cost is a proxy for value added (see Section B3).

accounting for 0.7 per cent of GDP in 1994-95 and about one per cent of total employment in 1997.

Table B2: TCF value added and employment shares in manufacturing, 1993

Country	*Value added*	*Employment*
	(%)	*(%)*
Portugal	25.9	34.7
Italy	16.4	23.5
France	5.8	9.1
Australia	5.5	8.8
United Kingdom	5.0	10.1
United States	4.8	9.7
Japan	4.3	10.2
Germany	3.2	5.3

Source: OECD 1995

The Australian TCF industries have not followed the general manufacturing trend over the last decade. Total manufacturing gross product increased by over 20 per cent in real terms over the ten years to 1994-95, while TCF gross product declined by 13 per cent. Manufacturing employment remained unchanged over the twelve years to 1997, while recorded employment in the TCF industries fell by 12 per cent. TCF employment and labour force characteristics are discussed in Appendix C.

Key statistics for the TCF industries are summarised in Table B3 and discussed in more detail later in this Appendix. This table also illustrates the difficulty of establishing a consistent time series for TCF data.

Many factors have affected these industries over the last decade, from phased reductions in protection from imports to changes in consumer demand. The share of the domestic market accounted for by imports increased from 27 per cent to 39 per cent between 1988-89 and 1994-95. The proportion of final consumption expenditure spent on clothing, fabric and footwear has fallen by more than one quarter between 1985 and 1995 (see Appendix E).

B3 Size and structure

The TCF industries encompass a diverse range of activities. Firms in these industries operate in a variety of different markets and with varying levels of 'vertical integration' (that is, links between the various stages of production — for example between spinning and weaving) and 'horizontal integration' (links across production of different types of TCF products — for example, making

both household and industrial textiles). Therefore, the trends in aggregate data do not always reflect the experience of particular industries or individual firms. Nevertheless, the aggregate data do provide an overview of the recent experience of the industries taken as a whole.

Table B3: TCF industry key statistics[a]

		1984-85	*1994-95*	*% change*
Gross product at factor cost	*($1994-95 m)*	3827.2	3315.2	-13.4
Proportion of total manufacturing	*(%)*	7	5	-27.9
		1984-85	*1994-95*	
Turnover	*($1994-95 m)*	10 236.0	9557.5	-6.6
% of total manufacturing turnover	*(%)*	7	5	-28.9
		June 1985	*June 1995*	
Establishments[b]	*(No.)*	3956	5509	39.3
% of total manufacturing establishments	*(%)*	14	12	-14.3
		May 1985	*May 1997*	
Labour force	*('000)*	116.9	103.5	-11.5
% of total manufacturing labour force	*(%)*	10	9	-11.5
		1988-89	*1994-95*	
Import share of domestic market[c]	*(%)*	27	39	44.0
Exports as proportion of turnover[c]	*(%)*	4	15	265.8

a Based on the 2-digit ANZSIC classification of TCF. Data pre-1989-90 (ASIC) is concorded with data post-1989-90 (ANZSIC).

b Years prior to 1989-90 do not include data for establishments with fewer than 4 employees. Sole traders and partnerships with no employees are excluded in all years.

c Total TCF excluding scoured wool, which distorts TCF trade data (see Chapter 1).

Source: ABS 1997f and estimates based on unpublished ABS *Manufacturing Industry*; and *Labour Force* data

Gross product at factor cost (value added)

There are different means of measuring the size of an industry. One of the most common is turnover. However, this measure is subject to some limitations, particularly in an industry experiencing ongoing structural change. For example, increasing specialisation and contracting out of activities previously undertaken in-house can affect turnover.

The ABS defines turnover as sales (exclusive of excise and sales tax), plus transfers out of goods to other establishments of the same business, plus bounties and subsidies on production, plus all other operating income from outside the establishment, plus capital work done by an establishment's own

employees for the business' use, or for rental or lease. Receipts from interest, royalties, dividends and the sale of fixed tangible assets are excluded (ABS 1997g).

There is a difference between 'turnover' and 'final demand'. 'Turnover' is the sum of all the sales by all domestic establishments in a particular industry. This includes sales to other enterprises in the same industry which use those goods as inputs to their own production. When that production is then sold it is counted as further 'turnover'. Therefore, there is scope for 'double counting' of the value of production sold as inputs to further production.

Measures of value added minimise these problems by attempting to identify purchased inputs at each stage of the production process. Value added includes the returns to labour (wages and salaries) and capital.

Gross product at factor cost is that part of producing the gross domestic product which consists of gross payments to the factors of production (land, labour, capital and enterprise). It represents the value added by these factors in the process of production and is equivalent to gross domestic product less indirect taxes and subsidies (ABS 1997g).[2]

Table B4: Gross product by TCF industry group, $1994-95

	Gross product[a]				*Proportion of TCF*	
ANZSIC industry	*1984-85*	*1989-90*	*1994-95*	*Change*	*1984-85*	*1994-95*
	($m)	*($m)*	*($m)*	*(%)*	*(%)*	*(%)*
Textile fibre, yarn & woven fabric mfg (221)	795.6	782.9	827.4	4.0	20.8	25.0
Textile product mfg (222)	587.7	639.7	535.5	-8.9	15.4	16.2
Knitting mills (223)	524.1	470.0	344.6	-34.2	13.7	10.4
Clothing mfg (224)	1409.9	1471.7	1236.2	-12.3	36.8	37.3
Footwear mfg (225)	390.3	315.9	237.4	-39.2	10.2	7.2
Leather & leather product mfg (226)	119.6	113.0	134.1	12.1	3.1	4.0
All TCF (22)	**3827.2**	**3793.2**	**3315.2**	**-13.4**	**100.0**	**100.0**
All manufacturing	**55 856.6**	**64 706.7**	**67 074.3**	**20.1**		

a Gross product at factor cost.

Source: Estimates based on unpublished ABS *Manufacturing Industry* data

[2] The ABS also publishes a separate 'value added' series. The main difference between the two involves the application of a stock valuation adjustment to value added to derive gross product at factor cost. The publication of value added is irregular (the most recent being 1992-93).

The TCF industries' share of total manufacturing gross product (valued at factor cost) declined from 7 per cent to 5 per cent between 1984-85 and 1994-95, as TCF gross product (in real terms) declined by around 13 per cent.

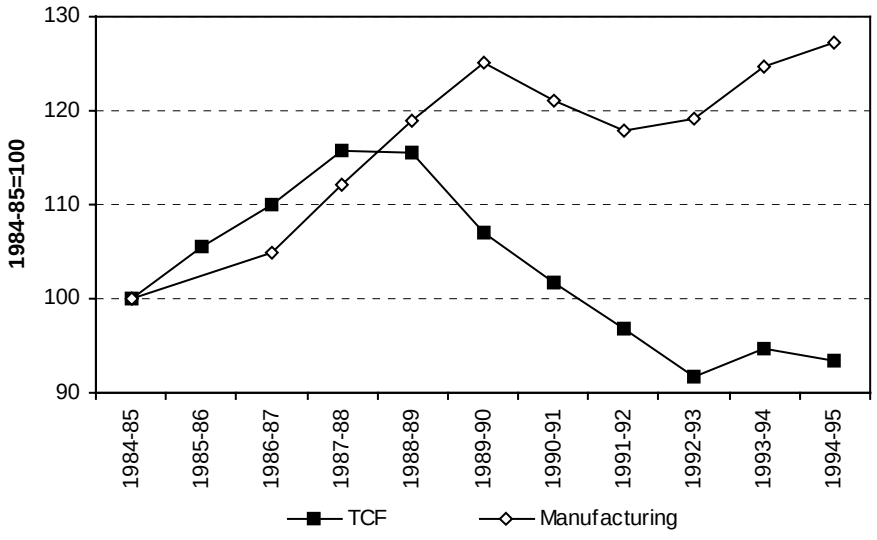
There have been quite divergent trends in gross product for the different TCF industry groups over the period under review (see Table B4). While in aggregate, gross product for the TCF industries declined, some industry groups experienced growth, including leather (up 12 per cent). Some textile products also experienced strong growth. The most significant declines were in footwear (down 39 per cent) and knitting mills (down 34 per cent).

Production turnover

The TCF industries' share of total manufacturing turnover declined from 7 per cent to 5 per cent between 1984-85 and 1994-95, as TCF turnover (in real terms) declined by around 7 per cent. The TCF industries' share of manufacturing value added remains greater than their share of turnover.

During this period there was a large increase and then a decline in turnover (Figure B1). In real terms, TCF turnover increased rapidly from $10.2 billion in 1984-85 to a peak of almost $12 billion in 1987-88.

Figure B1: TCF and total manufacturing turnover, index, $1994-95



Source: Estimates based on unpublished ABS *Manufacturing Industry* data

There was an equally rapid decline in TCF turnover between 1987-88 and 1992-93, before it stabilised at around $9.6 billion in the mid-1990s. In contrast, manufacturing turnover increased strongly until 1989-90 and fell much less sharply before recovering from the recession after 1991-92.

An increase in the number of establishments over the period under consideration (see Figure B2 and Table B6 below), if due to increasing specialisation of the production process, may have contributed to the observed increase in turnover by 'double counting' activities previously undertaken in a single establishment (and hence counted only once).

There have been quite divergent trends in turnover for the different TCF industry groups over the period under review (see Table B5). While aggregate turnover for the TCF industries declined by 7 per cent, some areas experienced strong growth, including leather and leather product manufacturing (up 61 per cent, from a low base). Some textile products also experienced strong growth.

Table B5: Turnover by TCF industry group, $1994-95

	Turnover				*Proportion of TCF*	
ANZSIC industry[a]	*1984-85*	*1988-89*	*1994-95*	*Change*[b]	*1984-85*	*1994-95*
	($m)	*($m)*	*($m)*	*(%)*	*(%)*	*(%)*
Textile fibre, yarn & woven fabric mfg (221)	2 501.3	2675.4	2 186.1	-12.6	24.4	22.9
Textile product mfg (222)	1 356.2	1974.7	1 596.9	17.7	13.2	16.7
Knitting mills (223)	1 299.2	1338.1	986.5	-24.1	12.7	10.3
Clothing mfg (224)	3 988.8	4207.8	3 316.1	-16.9	39.0	34.7
Footwear mfg (225)	538.8	919.6	584.6	8.5	5.3	6.1
Leather & leather product mfg (226)	551.6	713.6	887.3	60.9	5.4	9.3
All TCF (22)	**10 236.0**	**11829.3**	**9 557.5**	**-6.6**	**100.0**	**100.0**

a Data pre-1989-90 (ASIC) concorded with data post 1989-90 (ANZSIC).

b Percentage growth, 1984-85 to 1994-95.

Source: Estimates based on unpublished ABS *Manufacturing Industry* data

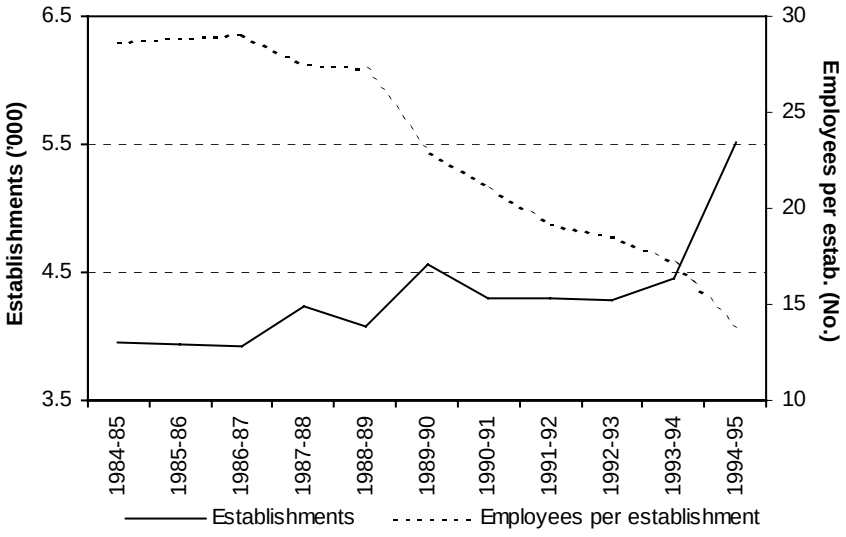
The most significant declines were in knitting mills (down 24 per cent) and clothing manufacturing (down 16 per cent). In large part, the decline in clothing manufacturing offset the gains in other industries, because of the large absolute size of the clothing industry.

Establishments and average employment size

The ABS has cautioned against the use of the number of establishments as an analytical tool, as, in recent years, year to year movements in numbers of establishments have borne little relationship to the changes in the economic performance of the industries involved.[3] With this reservation in mind, some general observations may be made about broad movements in the number of TCF establishments over the past decade.

The contraction in recorded TCF employment appears to have resulted in a marked fall in the average employment size of TCF establishments over the past decade (even if the increase in the number of establishments has not been as dramatic as suggested by the data) (see Figure B2). This may reflect increased specialisation in the production chain — for example, contracting out of design, making-up and finishing of clothing — rather than all stages being conducted in

Figure B2: TCF establishments and employees per establishment, 1984-85 to 1994-95



Note: Years prior to 1989-90 do not include data for establishments with fewer than 4 employees. Sole traders and partnerships with no employees are excluded in all years.

Source: Estimates based on unpublished ABS *Manufacturing Industry* data

[3] "Counts of the number of establishments have been subject to various and conflicting influences over the last three years. Users need to bear this in mind in attempting to analyse changes in counts over this period, especially if the focus of the analysis is on the number of small businesses" (ABS 1993b, p. 77).

a single establishment. Recorded employment data also exclude homeworking. Labour market issues such as homeworking are covered in more detail in Chapter 3 and Appendix D.

The increase in the number of TCF establishments has been experienced in all TCF industry groups except knitting mills and footwear manufacturing (see Table B6). Growth in the number of textile products establishments has been particularly strong.

Table B6: Establishments by TCF industry group

	Establishments			*Proportion of TCF*	
ANZSIC industry[a]	*30 June '85*[b]	*30 June '95*	*Change*	*30 June '85*[b]	*30 June '95*
	(No.)	*(No.)*	*(%)*	*(%)*	*(%)*
Textile fibre, yarn & woven fabric mfg (221)	293	313	6.8	7.5	5.7
Textile product mfg (222)	567	1012	78.5	14.3	18.4
Knitting mills (223)	328	227	-30.8	8.3	4.1
Clothing mfg (224)	2312	3515	52.0	58.4	63.8
Footwear mfg (225)	233	162	-30.5	5.9	2.9
Leather & leather product mfg (226)	222	280	26.1	5.6	5.1
All TCF (22)	**3956**	**5509**	**39.3**	**100.0**	**100.0**

a Data pre-1989-90 (ASIC) is concorded with data post 1989-90 (ANZSIC).

b Years prior to 1989-90 do not include data for establishments with fewer than 4 employees. Sole traders and partnerships with no employees are excluded in all years.

Source: Estimates based on unpublished ABS *Manufacturing Industry* data

The number of clothing manufacturing establishments also rose significantly, despite a fall in turnover, implying that more establishments are each producing less output. Anecdotal evidence suggests that the increase in the number of establishments in these sectors may reflect growing specialisation and outsourcing by manufacturers.

In contrast, there was a decline of about one third in the number of footwear manufacturing establishments, while turnover increased. An increase in the number of leather and leather product manufacturing establishments was accompanied by a much larger increase in turnover. In part, this appears to reflect some rationalisation among the large and medium-sized firms operating in these industries.

Concentration of TCF industries

Data on establishment size illustrate the diversity of TCF structures. In 1992-93, nearly two thirds of TCF establishments employed fewer than ten people, but these establishments accounted for less than 10 per cent of TCF turnover and 9 per cent of TCF value added. In contrast, the 5 per cent of establishments which employed more than 100 persons accounted for 47 per cent of TCF employment, 49 per cent of turnover and 52 per cent of value added (see Table B7). The proportion of Australian TCF establishments employing fewer than 20 people is similar to that of other developed countries, particularly Italy and the United Kingdom (OECD 1997).

Table B7: Summary of TCF operations by employment size,1992-93

Employment size group[a]	*Establishments*		*Employment*		*Turnover*		*Value added*	
	(No.)	*(%)*	*('000)*	*(%)*	*($m)*	*(%)*	*($m)*	*(%)*
0 to 3 persons	1138	31.4	2.4	3.2	200.0	2.3	82.4	2.2
4 to 9	1205	33.3	7.1	9.4	626.5	7.1	241.6	6.3
10 to 19	565	15.6	7.7	10.2	706.2	8.0	298.8	7.8
20 to 49	387	10.7	11.6	15.4	1328.0	15.1	549.5	14.4
50 to 99	165	4.6	11.3	15.0	1590.8	18.1	654.3	17.1
Total less than 100 persons	*3460*	*95.5*	*40.1*	*53.3*	*4451.5*	*50.6*	*1826.6*	*47.8*
100 to 199	105	2.9	14.5	19.3	1832.0	20.8	843.9	22.1
200 to 499	49	1.4	14.0	18.6	1740.4	19.8	793.3	20.8
500 or more	9	0.3	6.6	8.8	776.1	8.8	354.8	9.3
Total 100 or more persons	*163*	*4.5*	*35.1*	*46.7*	*4348.5*	*49.4*	*1992.0*	*52.2*
Total	**3623**	**100.0**	**75.2**	**100.0**	**8800.0**	**100.0**	**3818.7**	**100.0**

a Employment data in this table are drawn from the ABS *Manufacturing Survey*. Total TCF employment (75 200) therefore does not correspond to the *Labour Force Survey* data presented elsewhere in this report.

Source: ABS 1997g

In 1992-93 the top four TCF enterprises, ranked by turnover, accounted for 15 per cent of TCF turnover and value added. The top 20 TCF enterprises accounted for around 30 per cent of total TCF turnover and value added and 25 per cent of TCF employment (see Table B6 and Figure B3). These figures are the lowest of all manufacturing, with the exception of those industries allocated to the 'other manufacturing' classification.

In comparison with other areas of manufacturing, TCF industries are less dominated by large firms. However, this may reflect the diversity of activities aggregated under the TCF umbrella, rather than the level of concentration in

Table B8: TCF summary statistics and concentration ratios, 1992-93

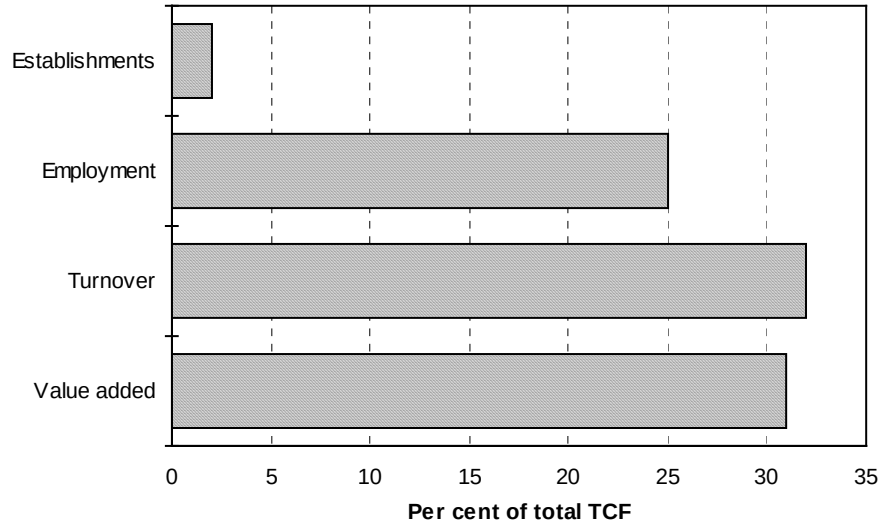
Enterprise groups ranked by turnover[a]	*Establishments*[b]		*Employment*		*Turnover*		*Value added*	
	(No.)	*(%)*	*('000s)*	*(%)*	*($m)*	*(%)*	*($m)*	*(%)*
First four	38	1.0	9.2	12.3	1360.3	15.4	584.9	15.3
Second four	17	0.5	3.2	4.3	517.0	5.8	193.2	5.0
Third four	10	0.3	2.7	3.6	378.8	4.3	199.5	5.2
Fourth four	12	0.3	2.5	3.3	302.0	3.4	123.9	3.2
Fifth four	5	0.1	0.9	1.2	254.1	2.9	75.3	2.0
Remainder (3 483 enterprises)	3541	97.7	56.7	75.4	6036.9	68.2	2652.3	69.3
Industry total (3 503 enterprises)	**3623**	**100.0**	**75.2**	**100.0**	**8849.1**	**100.0**	**3829.0**	**100.0**

a Enterprise group: A unit covering all the operations in Australia of one or more legal entities under common ownership and/or control.

b Establishment: The smallest accounting unit of a business. In general, all operations at a physical location.

Source: ABS 1997g

Figure B3: TCF concentration, top 20 enterprise groups, 1992-93



Note: Enterprise group: A unit covering all the operations in Australia of one or more legal entities under common ownership and/or control.
Establishment: The smallest accounting unit of a business. In general, all operations at a physical location.

Source: ABS 1997g

individual TCF activities. The level of concentration for particular activities, such as spinning, weaving and footwear is likely to be much higher than for TCF as a whole. Baston (1996) found that available evidence, although dated,

suggested that the closer an industry is to the raw material, the higher the level of concentration. In 1987-88, the top eight firms accounted for 95 per cent of wool scouring and top making turnover. For canvas products the top eight accounted for only 45 per cent of turnover. This may be related to the degree of capital intensity required by the various processes. Top making, yarn spinning and fabric weaving are highly capital-intensive operations requiring significant investment (Baston 1996, p. 10).

Geographical distribution of TCF industries

TCF activity is heavily concentrated in Victoria and New South Wales, with nearly 80 per cent of total turnover and value added occurring in these States (see Table B9). As a proportion of total manufacturing turnover and value added, the TCF industries are most significant in Victoria.

Table B9: Geographical dispersion of TCF turnover and value added

	Turnover, 1994-95			*Value added, 1992-93*		
	Value	*Proportion of TCF*	*Proportion of State's manuf.*	*Value*	*Proportion of TCF*	*Proportion of State's manuf.*
	($1994-95m)	*(%)*	*(%)*	*($1992-93m)*	*(%)*	*(%)*
NSW	3 284	33.6	5.0	1 127	29.4	4.7
Vic	4 478	45.8	7.2	1 927	50.3	8.9
Qld	638	6.5	2.2	237	6.2	3.0
SA	819	8.4	4.6	330	8.6	5.7
WA	345	3.5	2.4	118	3.1	2.5
Tas	210	2.1	4.8	86	2.2	5.6
NT	4	0.0	0.5	3	0.1	1.3
ACT	7	0.1	1.3	2	0.1	1.0
Australia	**9 786**	**100**	**5.0**	**3 829**	**100**	**5.8**

Source: ABS 1997g

TCF establishments also are heavily concentrated in Victoria and New South Wales (see Table B10).

TCF establishments are particularly concentrated in Victoria, which has a higher share of TCF establishments than its share of total manufacturing establishments. Victoria accounts for a particularly high proportion of textile fibre, yarn and woven fabric manufacturing, knitting mills and footwear manufacturing establishments. Between 1989-90 and 1993-94 there was a slight decline in Victoria's proportion of TCF establishments, from 45 per cent to 40 per cent. Over this period, Queensland increased its share of TCF establishments from 11 per cent to 14 per cent (see Table B11).

Table B10: Geographical dispersion of establishments, 1989-90 and 1993-94

	Proportion of total TCF establishments by State								
	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*NT*	*ACT*	*Australia*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(No.)*
1989-90									
Textile fibre, yarn & woven fabric mfg (221)	26.5	53.3	7.5	4.2	6.0	2.4	0.0	0.0	332
Textile product mfg (222)	31.1	34.8	15.6	8.4	7.6	1.5	0.2	0.0	787
Knitting mills (223)	15.7	73.5	4.0	4.0	2.2	0.3	0.3	0.0	322
Clothing mfg (224)	38.1	43.3	10.0	4.7	3.5	0.2	0.0	0.2	2 638
Footwear mfg (225)	23.8	55.9	7.4	7.0	5.1	0.8	0.0	0.0	256
Leather & leather product mfg (226)	38.4	29.0	17.6	6.8	5.4	2.3	0.0	0.5	221
All TCF (22)	**33.7**	**44.8**	**10.6**	**5.4**	**4.5**	**0.7**	**0.2**	**0.1**	**4 556**
All manufacturing	**33.9**	**32.0**	**15.1**	**7.8**	**8.3**	**2.0**	**0.4**	**0.5**	**40 586**
1993-94									
Textile fibre, yarn & woven fabric mfg (221)	26.0	55.9	8.1	2.2	6.2	2.6	0.0	0.0	273
Textile product mfg (222)	31.6	33.2	16.8	7.6	7.3	2.7	1.0	0.0	922
Knitting mills (223)	20.6	63.1	5.9	3.0	6.4	0.5	0.5	0.0	203
Clothing mfg (224)	37.6	39.7	13.8	4.3	3.6	0.3	0.2	0.5	2 564
Footwear mfg (225)	26.0	54.1	7.2	6.3	5.0	1.4	0.0	0.0	222
Leather & leather product mfg (226)	34.9	27.9	18.8	5.3	10.5	2.2	0.4	0.0	229
All TCF (22)	**34.1**	**40.4**	**13.6**	**5.0**	**5.1**	**1.1**	**0.4**	**0.3**	**4 414**
All manufacturing	**34.0**	**29.5**	**17.1**	**7.3**	**8.9**	**2.1**	**0.5**	**0.6**	**45 642**

Source: Estimates based on unpublished ABS *Manufacturing Industry* data

Table B11: Change in TCF establishments by State, 1989-90 to 1993-94

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*NT*	*ACT*	*Aust*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*
Textile fibre, yarn & woven fabric mfg (221)	-19.3	-15.3	-12.0	-15.0	-57.1	-12.5	nc	nc	-17.8
Textile product mfg (222)	18.8	11.3	26.0	11.7	7.7	108.3	28.6	0.0	17.2
Knitting mills (223)	-17.6	-46.0	-7.7	85.7	-53.8	0.0	0.0	nc	-37.0
Clothing mfg (224)	-4.1	-11.0	33.7	-1.1	-9.8	33.3	500.0	-250.0	-2.8
Footwear mfg (225)	-4.9	-16.1	-15.8	-15.4	-22.2	50.0	nc	nc	-13.3
Leather & leather product mfg (226)	-5.9	0.0	10.3	100.0	-20.0	0.0	nc	-100.0	3.6
All TCF (22)	**-1.9**	**-12.5**	**24.5**	**-9.8**	**-11.7**	**44.1**	**100.0**	**133.3**	**-3.1**
All manufacturing	**12.8**	**3.5**	**28.0**	**20.2**	**6.0**	**10.5**	**45.8**	**49.7**	**12.5**

nc Not calculable.

Source: Estimates based on unpublished ABS *Manufacturing Industry* data

TCF establishments in Victoria are concentrated in the metropolitan area, more so than manufacturing generally. While 81 per cent of all manufacturing establishments are located in the metropolitan area, the comparable figure for TCF establishments is 90 per cent (see Table B12).

TCF establishments in NSW are similarly concentrated in the metropolitan area, more so than manufacturing generally. Although total TCF establishments are not as concentrated in any other region, individual activities may be — such as clothing and footwear manufacturing in West Sydney, and leather and leather product manufacturing establishments in Tweed Heads and Mid-North Coast and Lithgow and Western NSW (see Table B13).

Table B12: Distribution of TCF establishments in Victoria, 1993-94

	Textile fibre, yarn & woven fabric mfg (221)	*Textile product mfg (222)*	*Knitting mills (223)*	*Clothing mfg (224)*	*Footwear mfg (225)*	*Leather & leather product mfg (226)*	***All TCF (22)***	***All mfg***
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	***(%)***	***(%)***
North & North-West Melbourne	56.8	38.4	66.9	61.6	70.8	51.6	**57.7**	**36.1**
East & South-East Melbourne	19.6	46.6	26.8	32.4	24.2	25.8	**32.5**	**44.8**
Metropolitan total	*76.4*	*85.0*	*93.7*	*94.0*	*95.0*	*77.4*	***90.2***	***80.9***
Geelong–Warrnambool	7.4	3.9	0.0	2.4	3.3	4.8	**3.1**	**4.6**
Ballarat	4.1	2.9	0.8	0.4	0.8	8.1	**1.5**	**3.2**
Bendigo	4.0	2.6	1.6	1.0	0.0	6.5	**1.7**	**3.8**
Wodonga–Wangaratta	5.4	2.6	2.4	1.5	0.8	1.6	**2.1**	**4.1**
Gippsland	2.7	2.9	1.6	0.9	0.0	1.6	**1.4**	**3.4**
Total Victoria (as per cent of Australia)	**55.9**	**33.2**	**63.1**	**39.7**	**54.1**	**27.9**	**40.4**	**29.5**

Source: Estimates based on unpublished ABS *Manufacturing Industry* data

Table B13: Distribution of TCF establishments in NSW, 1993-94

	Textile fibre, yarn & woven fabric mfg (221)	*Textile product mfg (222)*	*Knitting mills (223)*	*Clothing mfg (224)*	*Footwear mfg (225)*	*Leather & leather product mfg (226)*	***All TCF (22)***	***All mfg***
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	***(%)***	***(%)***
South Sydney–Wollongong	52.1	32.8	61.0	46.1	41.4	43.8	**43.8**	**27.9**
West Sydney–Blackheath	26.8	31.7	22.0	37.7	37.9	20.0	**34.7**	**32.6**
North Sydney–Newcastle	9.9	23.2	4.9	9.2	6.9	12.5	**11.9**	**21.8**
Metropolitan total	*88.8*	*87.7*	*87.9*	*93.0*	*86.2*	*76.3*	***90.4***	***82.3***
Taree–Tweed Heads & Mid-North Coast	0.0	7.2	7.3	5.2	5.2	12.5	**5.7**	**8.8**
Goulburn–Bega	5.6	1.4	0.0	0.5	1.7	1.3	**1.0**	**2.3**
Albury–Wagga & South-West NSW	2.8	1.4	2.4	0.3	5.2	1.3	**1.0**	**3.1**
Bathurst–Lithgow & Western NSW	2.8	2.4	2.4	1.0	1.7	8.8	**1.9**	**3.4**
Total NSW (as per cent of Australia)	**26.0**	**31.6**	**20.6**	**37.6**	**26.0**	**34.9**	**34.1**	**34.0**

Source: Estimates based on unpublished ABS *Manufacturing Industry* data

B4 Markets for TCF products

Most TCF output is sold as final consumer goods. However, a large proportion of textile and leather output is sold for use in production of other TCF products and for use in other areas of manufacturing, particularly furniture production.

Retail markets

As well as being significant employers and generators of activity in their own right, the wholesaling and retailing of TCF products has an important influence on the operations of the TCF industries.

The linkages between TCF production and retailing of final consumer goods are complex and varied. In some cases (such as R M Williams, the Dempsey group of companies and Ken Done Design), firms have integrated production and retail operations. In others, manufacturers have developed close relationships with particular retail outlets so that they can tailor their designs and price points to meet specific needs (for example, Diamond Cut and Target).

In other cases, the relationship between TCF manufacturing and retail is more removed and a wholesale sector still exists.

The retail sector exerts significant influence on TCF production activities. Retail activities are far more concentrated than the TCF manufacturing industries, with large players such as the Coles-Myer group, David Jones, Woolworths and a number of smaller national specialty chains such as Just Jeans. The Prices Surveillance Authority (PSA 1993) noted a marked reduction of store numbers over a number of years and a concentration of retail buying power through mergers and takeovers.

TCF-related retailing and wholesaling statistics for 1991-92 (the latest year available for most retailing and wholesaling data) are presented in Table B14. Not all establishments in the wholesaling and retailing industries listed in the table deal in only TCF products (department stores, for example). However, it is still apparent that TCF-related wholesaling and retailing employs significantly more people than TCF manufacturing (see Appendix C), comprises many more management units and has a greater gross product.

Table B14: TCF-related wholesaling and retailing, 1991-92

Industry	*Management units*	*Persons employed*	*Turnover*	*Gross product*
	(No.)	*('000)*	*($m)*	*($m)*
Wholesaling				
Textile products	763	6.3	1 945	329
Clothing	992	7.5	2 125	348
Footwear	137	1.0	473	90
Floor coverings	136	1.4	508	62
Total wholesaling	**2028**	**16.2**	**981**	**829**
Retailing				
Fabrics & other soft goods	1 599	10.7	988	212
Department stores	14	93.5	9 830	1 930
Clothing	5 257	53.2	5 731	1 076
Footwear	886	11.8	1 121	210
Floor coverings	787	4.2	871	130
Total retailing	**1673**	**173.4**	**871**	**340**
Total wholesaling and retailing	**10 571**	**189.6**	**23 592**	**4 387**

Source: ABS 1993c

More recent data indicates that over the period 1985 to 1995, department store turnover grew 6 per cent (and has grown 10 per cent since 1991). Turnover of the clothing and softgood retailing industry fell by 2 per cent over the same period (but has increased 3 per cent since 1991) (ABS, unpublished *Retail Trade* data).

Prices

Retail prices of clothing and footwear have risen less than the total CPI over the period 1984-85 to 1996-97 (Table B15). Clothing and footwear prices rose in line with the CPI average until 1988-89, but since then have increased more slowly than the CPI. Since 1990, clothing prices have changed only slightly.

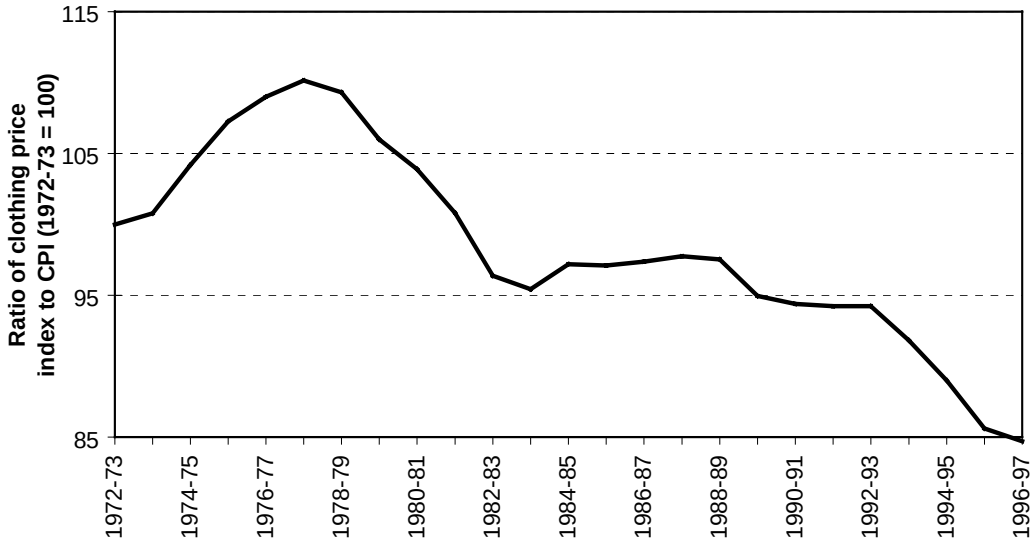
Table B15: Consumer Price Index and clothing and footwear price indices, 1984-85=100

	CPI: All groups	*CPI: Clothing*	*CPI: Footwear*
	(Index)	*(Index)*	*(Index)*
1984-85	100	100	100
1985-86	108	108	108
1986-87	119	119	119
1987-88	127	128	125
1988-89	137	137	134
1989-90	147	144	139
1990-91	155	151	144
1991-92	158	153	147
1992-93	160	155	145
1993-94	163	154	143
1994-95	168	154	139
1995-96	175	154	137
1996-97	177	155	138

Source: ABS 1997c

Over a longer period (see Figure B4) it can be seen that clothing and footwear prices rose more quickly than the total CPI between 1972-73 and 1978-79 before moving in line with the CPI in the early 1980s.

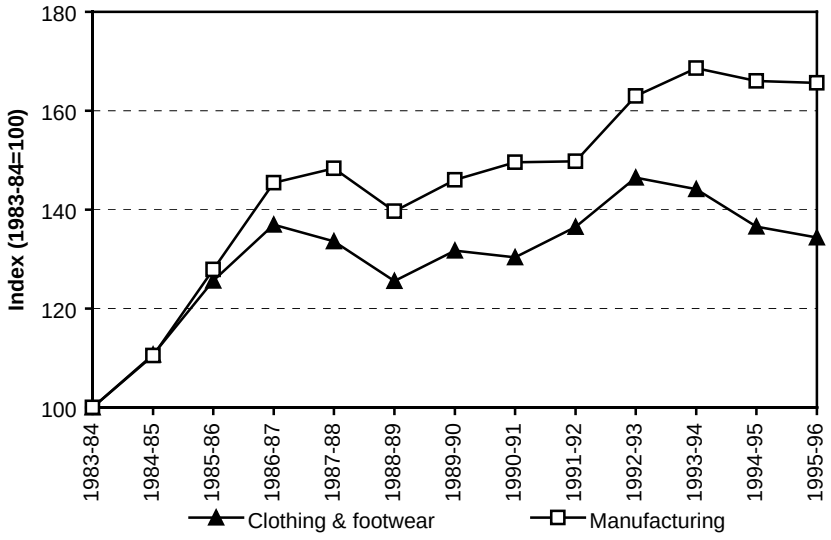
Figure B4: Movements in the price of clothing and footwear relative to consumer goods generally



Source: ABS 1997c

Imported clothing and footwear prices have grown slower than the prices of domestically produced clothing and footwear (Figures B4 and B5). This is not due to the reductions in tariffs because the import prices are 'free-on-board' (that is, exclude duty). The slower growth of import prices may be due to a change in the composition of local production, with cheaper, mass-produced items now manufactured off-shore. The difference between the two series may also reflect a lack of homogeneity between locally made and imported clothing and footwear products. That is, at this level of aggregation they are not highly substitutable (and may not be substitutable at a more disaggregated level because some items are no longer produced domestically).

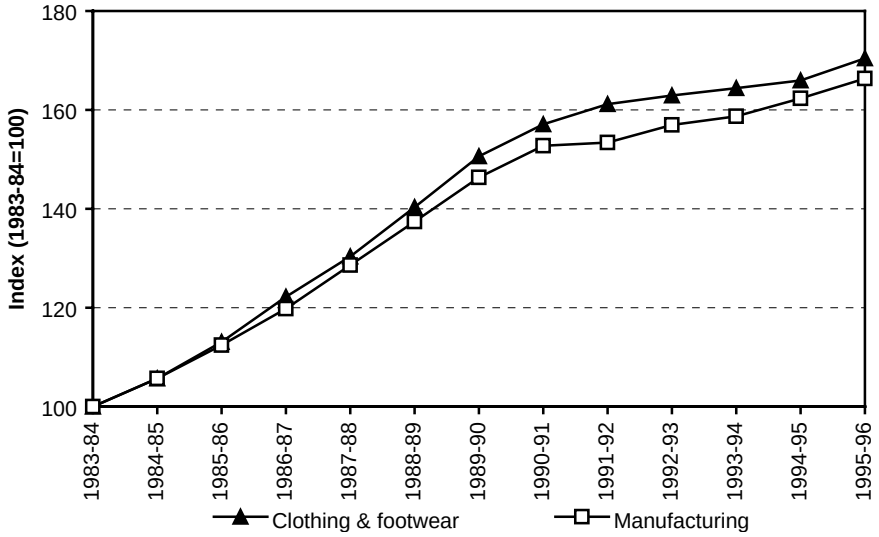
Figure B5: Import prices, wholesale (fob), 1983-84 to 1995-96



Source: ABS 1997d

Clothing and footwear import prices have also grown more slowly than those for manufacturing generally. The difference first occurred in 1986-87 and widened significantly after the abolition of quotas earlier this decade. The shift in the source of TCF imports to lower-cost countries (such as China) — more so than that for total manufacturing — may explain this trend. The price of locally produced clothing and footwear has increased largely in line with all manufacturing but in the early 1990s actually grew slightly faster.

Figure B6: Domestic production prices, wholesale, 1983-84 to 1995-96



Source: ABS 1997h

Demand for TCF products

Of the total 1992-93 TCF domestic production of $9.6 billion, $3.2 billion (one third) was used as intermediate inputs to further production, $4.9 billion (51 per cent) was purchased for domestic final consumption and $1.5 billion (16 per cent) was exported (Table B16).

This illustrates the highly interdependent nature of many sections of the TCF industries. A large part of TCF output is used as intermediate goods in the production of further TCF products. For example, raw materials such as cotton, wool and synthetic fibres are processed into yarns which are used in textiles, and textiles in turn are used in the manufacture of clothing and other products.

The largest user of TCF products as intermediate inputs was clothing manufacturing, which accounted for 11 per cent of total supply — 55 per cent of these inputs were produced domestically and 45 per cent imported. Other major users of TCF inputs include textile product manufacturing (3 per cent), textile fibre, yarn and woven fabric manufacturing (2 per cent) and knitting mills (2 per cent). In total, TCF industries absorbed at least 22 per cent of TCF output. Other important users of TCF production were accommodation, cafes and restaurants, and health services (1 per cent of total demand each).

Table B16: TCF demand structure, 1992-93

	Total product consumed					
	Domestic		*Imported*		*Total*	
	($m)	*(%)*	*($m)*	*(%)*	*($m)*	*(%)*
Use of intermediate TCF inputs						
Clothing	910.8	6.0	758.8	5.0	1 669.6	11.0
Textile products	259.2	1.7	246.3	1.6	505.5	3.3
Textile fibres, yarns and woven fabrics	222.0	1.5	185.1	1.2	407.1	2.7
Knitting mill products	181.1	1.2	165.9	1.1	347.0	2.3
Footwear	141.4	0.9	74.5	0.5	215.8	1.4
Accommodation, cafes and restaurants	111.6	0.7	88.9	0.6	200.5	1.3
Health services	90.9	0.6	100.6	0.7	191.5	1.3
Furniture	93.0	0.6	78.2	0.5	171.2	1.1
Leather and leather products	95.5	0.6	53.1	0.3	148.6	1.0
Defence	78.2	0.5	57.6	0.4	135.8	0.9
Other industries	1 001.0	6.6	847.8	5.6	1 848.8	12.2
Total intermediate use	**3 184.8**	**21.0**	**2 656.9**	**17.5**	**5 841.7**	**38.5**
Primary inputs						
Private final consumption expenditure	4 397.9	29.0	2 671.3	17.6	7 069.2	46.6
Government final consumption expenditure	0	0.0	0	0.0	0.0	0.0
Private gross fixed capital expenditure	87.5	0.6	17.8	0.1	105.4	0.7
Public enterprise gross fixed capital expenditure	29.4	0.2	6.8	0.0	36.2	0.2
General government gross fixed capital expenditure	43.1	0.3	10.2	0.1	53.2	0.4
Increase in stocks	327.0	2.2	231.4	1.5	558.4	3.7
Total domestic final demand	**4 884.9**	**32.2**	**2 937.5**	**19.3**	**7 822.3**	**51.5**
Exports	1 521.6	10.0	0	0.0	1 521.6	10.0
Total final demand	**6 406.5**	**42.2**	**2 937.5**	**19.3**	**9 343.9**	**61.5**
Total supply	**9 591.3**	**63.2**	**5 594.3**	**36.8**	**15 185.6**	**100.0**

Source: ABS 1996a

Private final consumption expenditure made up almost 47 per cent of total demand. Of this, 62 per cent was supplied from domestic production and 38 per cent imported. Final consumption trends are discussed in Appendix E.

B5 Inputs to TCF production

As discussed above, the most important intermediate inputs to TCF production come from within the TCF industries themselves. Of total intermediate inputs

to TCF production in 1992-93, over a third were sourced directly from domestic TCF producers and TCF imports. This emphasises the close intra-TCF linkages that exist — for example, between the textiles industries and the downstream clothing and footwear production industries. Fibre, yarn and woven fabrics provided $2.3 billion of inputs, or 25 per cent of total inputs into TCF production. These were supplied equally from domestic production and imports (see Table B17).

Table B17: TCF cost structure, 1992-93

	Inputs to industry production					
	Domestic		*Imported*		*Total*	
	($m)	*(%)*	*($m)*	*(%)*	*($m)*	*(%)*
Intermediate inputs						
Textile fibres, yarns and woven fabrics	1 151.8	12.0	1 197.9	12.5	2 349.7	24.5
Sheep	631.2	6.6	0.6	0.0	631.9	6.6
Wholesale trade	543.0	5.7	0.0	0.0	543.0	5.7
Services to agriculture, hunting and trapping	360.9	3.8	1.3	0.0	362.2	3.8
Leather and leather products	215.9	2.3	113.7	1.2	329.5	3.4
Knitting mill products	231.0	2.4	93.6	1.0	324.6	3.4
Wool scouring	174.9	1.8	47.5	0.5	222.4	2.3
Meat and meat products	181.5	1.9	3.1	0.0	184.6	1.9
Other basic chemicals	80.1	0.8	96.2	1.0	176.3	1.8
Other industries	1 330.7	13.9	209.5	2.2	1 540.2	16.1
Total intermediate inputs	**4 901.0**	**51.1**	**1 763.4**	**18.4**	**6 664.4**	**69.5**
Primary inputs						
Wages, salaries and supplements	2 074.4	21.6	0.0	0.0	2 074.4	21.6
Gross operating surplus	691.6	7.2	0.0	0.0	691.6	7.2
Other	160.9	1.6	0.0	0.0	160.9	1.6
Total primary inputs	**2 926.8**	**30.5**	**0.0**	**0.0**	**2 926.8**	**30.5**
Total cost of domestic production	**9 582.7**	**81.6**	**8.6**	**18.4**	**9 591.3**	**100.0**

	Imports of intermediate inputs	*Imports of final goods*	*Total imports*
Imports			
Competing imports cif	1 684.9	3 140.0	4 824.9
Duty on competing imports	78.6	690.9	769.4
Total competing imports (incl. duty)	**1 763.4**	**3 830.9**	**5 594.3**
Total use	**11 346.2**	**3 839.5**	**15 185.6**

cif Including cost, insurance and freight.

Source: ABS 1996a

Labour costs are a significant contributor to the total cost of producing TCF products, even in the relatively capital-intensive spinning and weaving sectors. Wages, salaries and supplements made up 21.6 per cent of the total cost of TCF production. Other costs such as indirect taxes made up 1.6 per cent of the total cost of domestic TCF production, leaving a gross operating surplus of 7.2 per cent.

Cost structures are similar across many of the TCF industry groups. For most groups, intermediate inputs make up between 60 and 70 per cent of the total cost of production. The only exception is leather and leather product manufacturing, where intermediate inputs account for 80 per cent of the total cost of production (see Table B18).

Table B18: Cost structure by TCF industry group, 1992-93, proportion of domestic production

	Textile fibre, yarn & woven fabric mfg (221)	*Textile product mfg (222)*	*Knitting mills (223)*	*Clothing mfg (224)*	*Footwear mfg (225)*	*Leather & leather product mfg (226)*	***All TCF (22)***
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*
Intermediate inputs							
Domestic	56.2	45.3	40.1	43.4	44.4	66.2	**51.1**
Imported	12.9	22.5	23.6	24.4	15.5	14.0	**18.4**
Total intermediate inputs	**69.1**	**67.8**	**63.8**	**67.8**	**59.9**	**80.1**	**69.5**
Primary inputs							
Wages, salaries & supplements	23.1	20.1	24.6	24.2	31.2	15.5	**21.6**
Gross operating surplus	6.0	9.8	10.9	7.7	7.3	2.6	**7.2**
Other	1.8	2.3	0.7	0.3	1.6	1.8	**1.6**
Total primary inputs	**30.9**	**32.2**	**36.2**	**32.2**	**40.1**	**19.9**	**30.5**
Total cost of domestic production	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note: Based on ABS Input-Output industry classifications concorded to 3 digit ANZSIC classifications.
Source: Estimates based on ABS 1996a

The proportions of intermediate inputs produced domestically and imported vary across the groups — for example, for fibre, yarn and fabric manufacturing, 56 per cent of total production is made up of domestically produced

intermediate inputs, and 13 per cent is made up of imported intermediates. In contrast, for clothing manufacturing, 43 per cent of total production is made up of domestically produced intermediate inputs, and 24 per cent is made up of imported intermediates. Leather and leather product manufacturing has a particularly high proportion of domestically produced intermediates — 66 per cent of the cost of total production.

Wages, salaries and supplements (labour costs) make up between 20 and 24 per cent of the cost of production for fibre, yarn and fabric manufacturing, textile product manufacturing, knitting mills and clothing manufacturing. Labour costs made up 31 per cent of the cost of production for footwear manufacturing, and only 15 per cent of the cost of production for leather and leather product manufacturing.

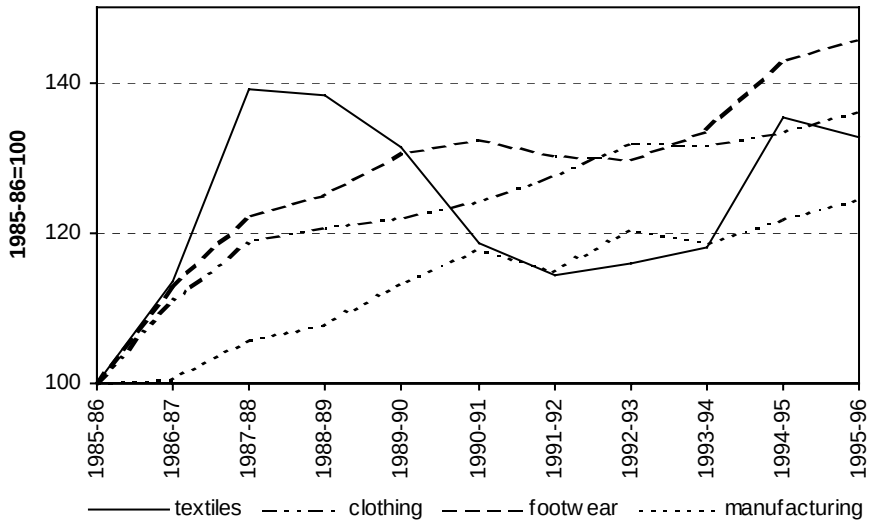
The figure for gross operating surplus is calculated as a residual — what is left from the total cost of domestic production after the cost of intermediate inputs, labour costs and other costs such as indirect taxes have been subtracted. It approximates earnings before interest and tax — and may be regarded as a rough indication of the return to capital in the various industry groups. The actual capital intensity of the various sectors is not measured here.

A higher proportion of the total cost of production is attributed to gross operating surplus in the knitting mills and textile product manufacturing industry groups than in fibre, yarn and fabric manufacturing. The gross operating surplus for leather and leather product manufacturing is particularly low, perhaps reflecting its relatively intensive use of intermediate inputs. It should be noted that the cost structure data are drawn from a single year (1992-93) and may reflect an abnormally poor year for returns in the leather and leather product manufacturing industry.

Input price indices

TCF input prices increased more sharply than those for manufacturing as a whole over the period from the mid to late 1980s. Since the late 1980s, TCF input prices have increased at a rate broadly similar to that of manufacturing as a whole, although there were some variations within individual industries (see Figure B7).

Figure B7: Input price indices



Source: ABS 1997i

B6 Performance

There are many different indicators with which to measure the performance of an industry sector. Indicative measures of relative performance, or competitiveness, include profitability and productivity of TCF firms, the rate of investment and the adoption of new technology and innovation. In addition, industries which can compete successfully on world markets with little assistance are generally regarded as being internationally competitive.

In the face of increased competition, different parts of the TCF industries have performed differently over the past decade. Although some sectors relying on the domestic market, particularly clothing, have contracted in the face of greater competition from imports, there has been expansion in some export-oriented activities such as wool and leather processing and in various niche markets.

Profitability

TCF pre-tax company profits have been quite variable over the period 1985-86 to 1995-96, but have tended to follow the manufacturing trend. The apparently close relationship between TCF profitability and total manufacturing profitability (prior to 1995-96) may imply that general economic conditions are a more important influence on TCF profitability than TCF-specific influences such as reductions in protection (ABS 1997b).

TCF profits appear to have taken a much sharper downturn than total manufacturing in 1995-96. Although the most recent ABS figures are often subject to revision, evidence suggests a nominal fall in total TCF profits between 1994-95 and 1996-97 of 38 per cent (see Chapter 1). Anecdotal evidence from major clothing retailers such as Country Road, David Jones and Just Jeans suggests that their first-half profits were less than half of the previous year's level because of a large fall in apparel spending (*Financial Review*, Wednesday 29 January 1997, p. 27). The experience of the retailers may well be true also of TCF manufacturers.

Productivity

The relative performance of an industry may be assessed through improvements in productivity. Partial measures of productivity, such as labour productivity, are often used. It should be noted that these measures provide an incomplete picture compared with measures which take account of all inputs to production. Also, if homeworking, which is not included in official employment data, has grown over the period, partial measures such as labour productivity growth will be overstated.

Significant improvements are indicated by measures of labour productivity for many of these industries. Gross product per hour of labour input increased by 26 per cent over the period 1984-85 to 1994-95 (see Chapter 1). However, labour productivity growth has lagged behind comparable figures for total manufacturing.

The labour productivity experience of individual TCF industries has varied over the period. The fibre, yarn and fabric manufacturing and clothing manufacturing industry groups have experienced the greatest growth in labour productivity (above the manufacturing average), while labour productivity has fallen in the textile product manufacturing and leather and leather product manufacturing industry groups. All TCF industry groups lag behind total manufacturing in terms of absolute labour productivity.

International competitiveness

Another indicator of the competitiveness of industries is whether they can compete successfully on world markets with little assistance.

As protection has been wound back, there has been a large increase in the exposure of the TCF industries to international competition both in terms of the

share of the local market accounted for by imports and in terms of export growth.

Table B19: TCF exports and imports, current dollars

		1988-89	*1992-93*	*1994-95*	*Change*[a]
Exports	*($m)*	1 545.8	1 950.9	2 702.1	74.8
Percent of manufacturing exports	*(%)*	6.3	5.2	6.2	-1.6
Percent of TCF gross product exported	*(%)*	43.8	60.7	81.4	85.8
Manufacturing exports as percent of gross product	*(%)*	44.6	62.1	70.9	58.9
Imports	*($m)*	3 526.2	4 365.5	5 183.5	47.0
Percent of manufacturing imports	*(%)*	8.1	7.8	7.3	-10.1
TCF import share of domestic market	*(%)*	29.4	37.6	42.7	45.2
Manufacturing import share of domestic market	*(%)*	25.6	28.8	32.2	25.8

a per cent change 1988-89 to 1994-95.

Source: ABS 1997e and estimates based on unpublished *Manufacturing Industry* data

Although there has been a large increase in TCF imports since 1988-89, they have declined as a proportion of total manufacturing imports. The proportion of TCF gross product exported has grown significantly, to a level above the manufacturing average in 1994-95 (see Table B19).

A very large proportion of TCF exports are from the relatively early stage processing end of the production process. Wool scouring exports make up 49 per cent of total TCF exports, while leather and leather product manufacturing accounts for a further 20 per cent of TCF exports (see Table B20). While total TCF exports have grown by 75 per cent, TCF exports (not including wool scouring) have more than tripled.

However, there has been very rapid growth in exports by producers of mainly finished apparel — for example, the knitting mills and clothing manufacturing industry groups, albeit from very low bases.

Imports have increased in all industry groups. Clothing imports rose particularly strongly — up 122 per cent over the period (see Table B21).

Export and import shares

Export intensity (exports as a proportion of gross product) and the share of the domestic market accounted for by imports for industry groups are detailed in Table B22. Export intensity has increased in all sectors, with particularly rapid growth (though from low bases) in knitting mills, clothing manufacturing and footwear manufacturing. The import share of the domestic market has increased

in all industry groups, particularly those producing final goods such as clothing manufacturing, footwear manufacturing and knitting mills.

Table B20: Exports by TCF industry group, current dollars

	Exports			*Proportion of TCF exports*		
ANZSIC industry	*1988-89*	*1994-95*	*Change*	*1988-89*	*1994-95*	*Change*
	($m)	*($m)*	*(%)*	*(%)*	*(%)*	*(%)*
Textile fibre, yarn & woven fabric mfg (221)	1 229	1 593	29.6	79	59	-25
Wool scouring (2211)[a]	*1 151*	*1 325*	*15.1*	*74*	*49*	*-34*
Textile product mfg (222)	75	164	118.7	5	6	20
Knitting mills (223)	19	83	336.8	1	3	200
Clothing mfg (224)	54	267	394.4	4	10	150
Footwear mfg (225)	16	56	250.0	1	2	100
Leather & leather product mfg (226)	154	533	246.1	10	20	100
All TCF (22)	**1 546**	**2 697**[b]	**74.5**	**100**	**100**	

a Wool scouring has been identified separately because of its tendency to dominate exports of the fibre, yarn and fabric manufacturing group. The figure for the Textile fibre, yarn and fabric manufacturing group still includes wool scouring.

b The TFIA estimated total TCF exports to be $1.3 billion in 1994-95 (*Advisor* vol. 8 no. 12). The difference between this figure and ABS data would appear to be wool scouring exports.

Source: ABS 1997e

Table B21: Imports by TCF industry group[a], current dollars

	Imports			*Proportion of TCF imports*		
ANZSIC Industry	*1988-89*	*1994-95*	*Change*	*1988-89*	*1994-95*	*Change*
	($m)	*($m)*	*(%)*	*(%)*	*(%)*	*(%)*
Textile fibre, yarn & woven fabric mfg (221)	1 634	1 948	19.2	46	38	-17
Textile product mfg (222)	449	544	21.2	13	11	-15
Knitting mills (223)	229	373	62.9	6	7	17
Clothing mfg (224)	567	1 261	122.4	16	25	56
Footwear mfg (225)	327	547	67.3	9	11	22
Leather & leather product mfg (226)	321	435	35.5	9	9	0
All TCF (22)	**3 526**	**5 110**	**44.9**	**100**	**100**	

a Based on 3 digit ANZSIC classifications.

Source: ABS 1997e

Intra-industry trade

The intra-industry trade (IIT) index is a measure of two-way trade within the same industrial or product classification. If a country exports and imports roughly equal quantities of a certain product, the IIT index is high. If it is mainly one way trade (whether exporting or importing) the IIT index is low. All other things being equal, a higher IIT ratio may imply a higher focus on areas of comparative advantage within the relevant product classification.

Table B22: Export intensity and import share by TCF industry group, $1994-95

	Export intensity[b]			*Import share*[c]		
ANZSIC industry[a]	*1988-89*	*1994-95*	*% change*	*1988-89*	*1994-95*	*% change*
Textile fibre, yarn & woven fabric mfg (221)	178	193	8	nc	nc	
Textile product mfg (222)	13	31	138	22	28	27
Knitting mills (223)	4	24	500	17	29	71
Clothing mfg (224)	4	22	450	14	29	107
Footwear mfg (225)	5	24	380	30	51	70
Leather & leather product mfg (226)	134	397	196	42	55	31
All TCF (22)	**44**	**81**	**84**	**29**	**43**	**48**

nc not calculable

a Based on 3 digit ANZSIC classifications.

b Exports as a proportion of gross product.

c Imports as a percentage of domestic sales (turnover plus imports less exports).

Source: Estimates based on ABS 1997e and unpublished ABS *Manufacturing Industry* data

Although there has been only a slight increase in overall TCF intra-industry trade (Table B23), this has been mainly due to the dominance of wool scouring exports. At the aggregate TCF level, the fall in wool scouring exports has diluted the impact of a marked increase in two way trade in all other industry groups. The increase in the IIT ratios for other TCF industries probably implies that Australian TCF manufacturers in all industry groups are restructuring to focus on areas of comparative advantage.

Exports to imports ratio

The ratio of exports to imports (Table B24) is another indicator of the degree of trade specialisation. Again, at the total TCF level, the sheer size of the wool scouring sector has hidden large relative moves in the ratio for other sectors. The ratio has increased for all sectors except Textile fibre, yarn and fabrics, which is unchanged.

Table B23: Intra-industry trade by TCF industry group

	IIT index	
ANZSIC industry[a]	*1988-89*	*1994-95*
Textile fibre, yarn & woven fabric mfg (221)	89.9	90.0
Textile product mfg (222)	30.7	46.4
Knitting mills (223)	16.3	36.4
Clothing mfg (224)	18.8	35.0
Footwear mfg (225)	9.9	18.7
Leather & leather product mfg (226)	68.4	89.9
All TCF (22)	**64.5**	**69.1**

a Based on 3 digit ANZSIC classifications.

Source: Estimates based on ABS 1997e and unpublished ABS *Manufacturing Industry* data

Table B24: Exports to imports ratios by TCF industry group

	Export to import ratio	
ANZSIC industry[a]	*1988-89*	*1994-95*
Textile fibre, yarn & woven fabric mfg (221)	0.82	0.82
Textile product mfg (222)	0.18	0.30
Knitting mills (223)	0.09	0.22
Clothing mfg (224)	0.10	0.21
Footwear mfg (225)	0.05	0.10
Leather & leather product mfg (226)	0.52	1.22
All TCF (22)	**0.48**	**0.53**

a Based on 3 digit ANZSIC classifications.

Source: Estimates based on ABS 1997e and unpublished ABS *Manufacturing Industry* data

International comparisons

A set of indicators compiled by the OECD illustrates the changing structure of industry and the evolving patterns of trade specialisation and export. These indicators include intra-industry trade (IIT), export specialisation (revealed comparative advantage), exports to imports ratios, indices of exposure to foreign competition and export market shares (see Table B25). The indicators show changes between 1980 and 1992.

These figures should be regarded with some caution, as the experience of different sectors of the TCF industries may have been quite different from that of the TCF aggregate. However, bearing this in mind, a few general observations can be made.

Australia's IIT index has increased from 56 to 80, toward the upper end for OECD countries. This implies greater specialisation within the TCF industries in Australia and reflects the growth in both exports and imports.

Export specialisation, also known as 'revealed comparative advantage', shows the extent to which a country's exports are specialised in a particular industry relative to the OECD average.[4] Australia's exports are specialised in TCF products relative to the OECD average and the index has increased significantly over the period under review.

Table B25: Measures of competitiveness of international TCF industries, 1980 and 1992

	Intra-industry trade		*Export specialisation*		*Export to import ratio*		*Exposure to foreign competition*		*Export market share*	
	1980	*1992*	*1980*	*1994*	*1980*	*1992*	*1980*	*1994*	*1980*	*1994*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*
United States	77.0	39.2	73	63	0.6	0.2	18.8	36.5	11.5	10.3
Canada	39.8	34.4	20	25	0.2	0.2	28.3	51.2	0.8	1.2
Japan	99.7	53.2	66	31	1.0	0.4	17.7	22.7	7.8	4.5
Australia	***55.6***	***80.4***	***79***	***158***	***0.4***	***0.7***	***34.7***	***63.6***	***0.9***	***1.5***
New Zealand	64.7	90.5	236	174	2.1	1.2	64.3	68.0	1.0	0.7
France	91.7	81.3	106	107	0.8	0.7	42.2	67.6	10.0	9.0
Germany	67.4	69.1	80	86	0.5	0.5	54.5	79.3	13.5	13.3
Italy	56.8	60.2	259	314	2.5	2.3	32.8	51.8	18.1	22.0
Sweden	49.2	41.8	45	31	0.3	0.3	77.3	95.6	1.2	0.7
United Kingdom	84.8	67.4	89	89	0.7	0.5	44.9	69.1	7.8	6.3

Note: Data in this table are based on the OECD STAN database and relate to the years 1980 and 1992. Export and import data elsewhere in this Appendix are based on ABS 1997e data for 1988-89 to 1994-95. Therefore 'total TCF' figures in other tables do not correspond to the TCF figure in this OECD table.

Source: OECD 1995

The ratio of exports to imports in a particular industry shows the extent to which, in a particular industry, a country specialises in exports or relies on imports. Australia's ratio has changed from 0.4 to 0.7, relatively high for

[4] 'Export specialisation' is defined as the share of the exports of the industry in the total manufacturing exports of the country divided by the share of total OECD-wide exports of the industry in total OECD manufacturing exports.

OECD countries, which typically do not have a comparative advantage in several areas of TCF activity.

According to the OECD figures, Australia's indicator of overall exposure to foreign competition increased from 35 to 64, reflecting both the increase in exports and the increasing share of the domestic market accounted for by imports.[5] However, on this measure, Australia's TCF industries still appeared to be less exposed to foreign competition than those of many other OECD countries in 1994.

Export market share is calculated as one country's share of total OECD exports. Australia's TCF export market share has grown from 0.9 to 1.5, implying that Australian TCF exports, which make up only a small proportion of total OECD TCF exports, are growing more rapidly than the OECD average.

Investment

An industry's propensity to invest in new capacity and new technology reflects its view of likely future competitiveness and profitability. Capital intensity is quite different in different industries of TCF. Table B26 divides the TCF industries into those that are relatively capital intensive (textiles and leather) and those that are relatively labour intensive (clothing and footwear).

For TCF as a whole, the pattern of new capital investment expenditure has followed closely that of total manufacturing over the decade to 1994-95 (Table B26). The growth in both TCF and total manufacturing investment expenditure prior to 1988-89 and the subsequent decline in the early 1990s closely matched the trend of the business cycle.

Investment expenditure in the textiles and leather industries has increased significantly since the recession, broadly in line with the increase in investment for manufacturing as a whole over this period. Over the decade to 1994-95, investment in textiles and leather, proportionally, has been consistently higher than in the clothing industry and has followed more closely the changes in the levels of investment of manufacturing as a whole. The proportion of total TCF investment accounted for by the relatively more capital intensive textile and leather industries has increased from about 58 per cent in 1985-86 to more than

[5] The 'exposure to foreign competition' indicator takes into account both export orientation and the import share of the domestic market. It assumes that the output of a certain industry is exposed to foreign competition in proportion to the share that is exported. For the part of the output that is not exported, the exposure of the industry is given by the import share of the domestic market.

78 per cent in 1994-95, reflecting the increasing share of total TCF manufacturing accounted for by these industries.

Table B26: Capital expenditure, $1989-90

	Textiles & leather[a]		*Clothing & footwear*[b]		*Total TCF*		*Manufacturing*	
	Investment	*Proportion of gross product*	*Investment*	*Proportion of gross product*	*Investment*	*Proportion of gross product*	*Investment*	*Proportion of gross product*
	($m)	*(%)*	*($m)*	*(%)*	*($m)*	*(%)*	*($m)*	*(%)*
1985-86	130.3	6.9	95.0	5.8	225.3	6.4	6 197.1	12.3
1986-87	138.1	7.0	87.0	5.2	225.1	6.2	6 287.5	12.3
1987-88	171.3	8.7	125.2	7.2	296.5	8.0	6 775.4	13.0
1988-89	273.2	14.0	99.6	5.5	372.8	9.9	7 586.1	13.7
1989-90	280.2	15.5	92.2	5.7	372.4	10.9	8 256.5	14.1
1990-91	150.5	8.6	50.5	3.3	201.0	6.1	7 133.0	12.2
1991-92	123.2	7.4	54.9	3.8	178.1	5.7	6 412.9	11.2
1992-93	166.2	10.2	68.2	5.0	234.3	7.8	6 111.0	11.0
1993-94	144.7	8.6	65.7	4.9	210.4	6.9	6 500.2	11.5
1994-95	235.8	14.1	66.8	5.0	302.7	10.1	8 305.0	14.1

a ANZSIC industry groups 221, 222, 223, and 226.

b ANZSIC industry groups 224 and 225.

Source: Unpublished ABS *Capital Expenditure Survey* data

Investment intensity, measured by expenditure on investment as a share of industry product, has risen significantly for the leather and textiles industries in recent years and is now at about the same level as for manufacturing as a whole (see Table B26).

An increasing share of this investment has been allocated to purchases of equipment, plant and machinery relative to spending on land and buildings. Over the decade to 1996-97, this category of investment expenditure increased by about 23 per cent — to above the average for manufacturing as a whole (see Table B27).

Research and development

As a proportion of turnover, the TCF industries' reported expenditure on research and development (R&D) is significantly lower than that for total manufacturing (see Table B28). Basic or applied TCF research appears to be undertaken largely by government organisations. Most R&D undertaken by the TCF industries seems to be in the form of experimental development, using existing knowledge gained from research or practical experience to develop new or improved products and processes.

Table B27: Private new capital expenditure, by asset type, $1989-90

	Textiles & leather[a,b]			*Clothing & footwear*[c]			*All TCF*			*All manufacturing*		
	Blds & struct.	*Equip plt & mach.*	*Total*	*Blds & struct.*	*Equip plt & mach.*	*Total*	*Blds & struct.*	*Equip plt & mach.*	*Total*	*Blds & struct.*	*Equip plt & mach.*	*Total*
	($m)	*($m)*	*($m)*	*($m)*	*($m)*	*($m)*	*($m)*	*($m)*	*($m)*	*($m)*	*($m)*	*($m)*
1985-86	20.8	103.7	124.5	20.4	70.5	90.9	41.3	174.2	215.4	970.4	5226.8	6197.1
1986-87	11.5	128.9	140.4	10.1	78.2	88.3	21.6	207.1	228.7	1038.9	5248.6	6287.5
1987-88	16.9	155.1	172.0	21.8	103.4	125.2	38.7	258.5	297.2	1105.6	5669.8	6775.4
1988-89	46.3	222.6	268.9	27.9	69.9	97.8	74.1	292.5	366.6	1326.4	6259.7	7586.1
1989-90	93.1	184.9	278.0	24.3	67.4	91.6	117.3	252.3	369.6	1337.0	6919.5	8256.5
1990-91	37.3	112.9	150.1	5.4	45.1	50.5	42.7	158.0	200.6	1103.1	6029.9	7133.0
1991-92	24.8	97.4	122.2	8.6	45.8	54.4	33.4	143.2	176.5	991.2	5421.8	6412.9
1992-93	20.6	141.5	162.1	11.7	54.8	66.6	32.3	196.3	228.6	971.1	5139.8	6111.0
1993-94	9.4	137.6	147.0	3.6	63.1	66.7	13.0	200.7	213.7	872.2	5628.0	6500.2
1994-95	22.5	205.9	228.4	5.2	59.5	64.7	27.7	265.4	293.1	960.3	7344.7	8305.0
1995-96	12.5	147.8	160.3	2.7	59.1	61.8	15.2	206.9	222.1	1001.0	7944.9	8945.8
1996-97	9.3	155.5	164.9	1.7	58.0	59.7	11.0	213.5	224.5	977.6	8562.1	9539.6

Note: Data for 1985-86 and 1986-87 are based on ASIC classification, data from 1987-88 are based on ANZSIC classifications.

Blds & struct. Buildings and structures.

Equip, plt & mach. Equipment, plant and machinery.

a Data for 1985-86 and 1986-87 do not include leather.

b ANZSIC industry groups 221, 222, 223, and 226.

c ANZSIC industry groups 224 and 225.

Source: Estimates based on unpublished ABS *Capital Expenditure Survey* data

TCF R&D has grown significantly since 1984-85, in both absolute terms and as a proportion of gross product, but it is well below the manufacturing average. Investment in R&D by the TCF industries has fluctuated over the period, but has shown strong growth since 1992-93, peaking at $27 million in 1994-95. While the TCF industries account for 5 per cent of manufacturing gross product, they account for less than 2 per cent of manufacturing R&D, perhaps reflecting the labour intensity of the industries.

Table B28: Proportional private R&D expenditure, $1994-95

	TCF		*Manufacturing*	
	R&D	*Proportion of gross product*	*R&D*	*Proportion of gross product*
	($m)	*(%)*	*($m)*	*(%)*
1984-85	8.73	0.23	685.94	1.23
1986-87	17.53	0.43	952.71	1.65
1988-89	9.12	0.22	1 074.52	1.65
1990-91	15.99	0.44	1 216.57	1.92
1991-92	18.04	0.52	1 392.15	2.26
1992-93	16.85	0.51	1 751.37	2.80
1993-94	17.35	0.52	1 734.18	2.64
1994-95	26.90	0.81	1 928.60	2.88
1995-96	20.47	na	2 370.66	na

Source: Estimates based on unpublished ABS Capital Expenditure data and ABS 1996d

Many parts of the industries, particularly textiles and apparel, place a great deal of emphasis on design. Generally, expenditure on design does not attract government assistance such as the 125 per cent (previously 150 per cent) R&D tax concession and is excluded from official estimates of R&D expenditure. R&D activity as defined by the ABS does include activity which results in new or improved products, but the work must be experimental and must involve innovation or technical risk.

Attachment B1: Statistical summary at the four digit ANZSIC industry level

Table B1.1: ANZSIC Group 221[a] —Textile fibre, yarn and woven fabric manufacturing statistical summary, $1994-95

	Establishments		*Employment*		*Turnover*		*Gross product*[b]		*Gross product*[b] *per employee*[c]		*Imports*[d]		*Exports*[d]	
	1984-85	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1988-89*	*1994-95*	*1988-89*	*1994-95*
	(No.)	*(No.)*	*(No.)*	*(No.)*	*($1994-95m)*		*($1994-95m)*		*($1994-95 '000)*		*($m)*	*($m)*	*($m)*	*($m)*
Wool scouring	27	33	1561	1800	528.3	398.6	77.0	87.5	49.3	48.6	71	65	1151	1325
Synthetic fibre textile manufacturing	88	71	8910	4936	824.8	800.6	329.5	335.0	37.0	67.9	876	1152	43	100
Cotton textile manufacturing	50	56	4557	2815	374.5	437.3	150.1	197.0	32.9	70.0	563	603	27	143
Wool textile manufacturing	40	25	4786	2474	435.4	258.1	161.7	85.9	33.8	34.7	113	111	7	23
Textile finishing	88	129	2011	2148	338.4	291.4	77.2	122.1	38.4	56.8	12	17	1	1
Textile fibre, yarn and woven fabric manufacturing	**293**	**313**	**21825**	**14172**	**2501.3**	**2186.1**	**795.6**	**827.4**	**36.5**	**58.4**	**1634**	**1949**	**1229**	**1593**

a Based on 4 digit ANZSIC classifications. Data pre-1989-90 (ASIC) concorded with data post 1989-90 (ANZSIC).

b Gross product at factor cost.

c Employment data derived from ABS *Manufacturing Survey*. Employment data presented elsewhere in this Report is from the ABS *Labour Force Survey*.

d The earliest available export and import data are for 1988-89.

Source: ABS 1997f and estimates based on unpublished ABS *Manufacturing Industry* data

Table B1.2: ANZSIC Group 222[a] — Textile product manufacturing statistical summary, $1994-95

	Establishments		*Employment*		*Turnover*		*Gross product*[b]		*Gross product*[b] *per employee*[c]		*Imports*[d]		*Exports*[d]	
	1984-85	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1988-89*	*1994-95*	*1988-89*	*1994-95*
	(No.)	*(No.)*	*(No.)*	*(No.)*	*($1994-95m)*		*($1994-95m)*		*($1994-95 '000)*		*($m)*	*($m)*	*($m)*	*($m)*
Made-up textile product manufacturing	370	727	4212	6234	177.9	666.7	153.9	217.9	36.6	34.9	68	78	11	24
Textile floor covering manufacturing	74	68	4364	3353	767.2	562.9	254.5	174.3	58.3	52.0	141	168	37	46
Rope, cordage and twine manufacturing	20	30	545	585	59.4	86.0	35.2	37.1	64.6	63.4	27	38	2	4
Textile product manufacturing nec	103	187	2364	2102	351.7	281.3	144.1	106.3	60.9	50.6	213	260	26	90
Textile product manufacturing	**567**	**1 012**	**11 485**	**12 274**	**1 356.2**	**1 596.9**	**587.7**	**535.5**	**51.2**	**43.6**	**449**	**544**	**75**	**164**

nec not elsewhere classified.

a Based on 4 digit ANZSIC classifications. Data pre-1989-90 (ASIC) concorded with data post 1989-90 (ANZSIC).

b Gross product at factor cost.

c Employment data derived from ABS *Manufacturing Survey*. Employment data presented elsewhere in this Report is from the ABS *Labour Force Survey*.

d The earliest available export and import data are for 1988-89.

Source: ABS 1997f and estimates based on unpublished ABS *Manufacturing Industry* data

Table B1.3: ANZSIC Group 223[a] — Knitting mills statistical summary, $1994-95

	Establishments		*Employment*		*Turnover*		*Gross product*[b]		*Gross product*[b] *per employee*[c]		*Imports*[d]		*Exports*[d]	
	1984-85	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1988-89*	*1994-95*	*1988-89*	*1994-95*
	(No.)	*(No.)*	*(No.)*	*(No.)*	*($1994-95m)*		*($1994-95m)*		*($1994-95 '000)*		*($m)*	*($m)*	*($m)*	*($m)*
Hosiery manufacturing	38	31	3087	2400	248.1	258.4	118.3	107.3	38.3	44.7	13	34	1	6
Cardigan and pullover manufacturing	160	112	4899	1771	352.6	146.6	152.9	54.6	31.2	30.8	140	204	6	41
Knitting mill product manufacturing nec	130	84	5957	2280	698.6	581.5	252.8	182.7	42.4	80.1	76	135	12	36
Knitting mills manufacturing	**328**	**227**	**13943**	**6451**	**1299.2**	**986.5**	**524.1**	**344.6**	**37.6**	**53.4**	**229**	**373**	**19**	**83**

nec not elsewhere classified.

a Based on 4 digit ANZSIC classifications. Data pre-1989-90 (ASIC) concorded with data post 1989-90 (ANZSIC).

b Gross product at factor cost.

c Employment data derived from ABS *Manufacturing Survey*. Employment data presented elsewhere in this Report is from the ABS *Labour Force Survey*.

d The earliest available export and import data are for 1988-89.

Source: ABS 1997f and estimates based on unpublished ABS *Manufacturing Industry* data

Table B1.4: ANZSIC Group 224[a] — Clothing manufacturing statistical summary, $1994-95

	Establishments		*Employment*		*Turnover*		*Gross product*[b]		*Gross product*[b] *per employee*[c]		*Imports*[d]		*Exports*[d]	
	1984-85	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1988-89*	*1994-95*	*1988-89*	*1994-95*
	(No.)	*(No.)*	*(No.)*	*(No.)*	*($1994-95m)*		*($1994-95m)*		*($1994-95 '000)*		*($m)*	*($m)*	*($m)*	*($m)*
Men's and boys' wear manufacturing	461	503	20424	9446	1364.9	842.8	579.0	370.5	28.3	39.2	178	470	17	58
Women's and girls' wear manufacturing	962	1552	16408	12120	1262.7	1391.8	450.1	440.2	27.4	36.3	148	288	12	86
Sleepwear, underwear and infant clothing manufacturing	71	122	4715	4300	487.8	459.5	212.4	204.2	45.1	47.5	72	249	4	32
Clothing manufacturing nec	802	1339	8535	7634	873.4	622.1	168.4	221.3	19.7	29.0	168	255	21	91
Clothing manufacturing	**2295**	**3515**	**50082**	**33500**	**3988.8**	**3316.1**	**1409.9**	**1236.2**	**28.2**	**36.9**	**567**	**1262**	**54**	**267**

a Based on 4 digit ANZSIC classifications. Data pre-1989-90 (ASIC) concorded with data post 1989-90 (ANZSIC).

b Gross product at factor cost.

c Employment data derived from ABS *Manufacturing Survey*. Employment data presented elsewhere in this Report is from the ABS *Labour Force Survey*.

d The earliest available export and import data are for 1988-89.

Source: ABS 1997f and estimates based on unpublished ABS *Manufacturing Industry* data

Table B1.5: ANZSIC Group 225[a] — Footwear manufacturing statistical summary, $1994-95

	Establishments		*Employment*		*Turnover*		*Gross product*[b]		*Gross product*[b] *per employee*[c]		*Imports*[d]		*Exports*[d]	
	1984-85	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1988-89*	*1994-95*	*1988-89*	*1994-95*
	(No.)	*(No.)*	*(No.)*	*(No.)*	*($1994-95m)*		*($1994-95m)*		*($1994-95 '000)*		*($m)*	*($m)*	*($m)*	*($m)*
Footwear manufacturing	**233**	**162**	**12444**	**5818**	**538.8**	**584.6**	**390.3**	**237.4**	**31.4**	**40.8**	**327**	**547**	**16**	**56**

a Based on 4 digit ANZSIC classifications. Data pre-1989-90 (ASIC) concorded with data post 1989-90 (ANZSIC).

b Gross product at factor cost.

c Employment data derived from ABS *Manufacturing Survey*. Employment data presented elsewhere in this Report is from the ABS *Labour Force Survey*.

d The earliest available export and import data are for 1988-89.

Source: ABS 1997f and estimates based on unpublished ABS *Manufacturing Industry* data

Table B1.6: ANZSIC Group[a] — Leather and leather substitute product manufacturing statistical summary, $1994-95

	Establishments		*Employment*		*Turnover*		*Gross product*[b]		*Gross product*[b] *per employee*[c]		*Imports*[d]		*Exports*[d]	
	1984-85	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1984-85*	*1994-95*	*1988-89*	*1994-95*	*1988-89*	*1994-95*
	(No.)	*(No.)*	*(No.)*	*(No.)*	*($1994-95m)*		*($1994-95m)*		*($1994-95 '000)*		*($m)*	*($m)*	*($m)*	*($m)*
Leather tanning and fur dressing	103	111	2400	3064	458.5	802.0	86.1	102.6	35.9	33.5	141	153	140	507
Leather and leather substitute product manufacturing	120	169	1000	1066	93.1	85.3	33.5	31.5	33.5	29.6	180	283	14	25
Leather and leather substitute product manufacturing	**222**	**280**	**3400**	**4130**	**551.6**	**887.3**	**119.6**	**134.1**	**35.2**	**32.5**	**321**	**435**	**154**	**533**

a Based on 4 digit ANZSIC classifications. Data pre-1989-90 (ASIC) concorded with data post 1989-90 (ANZSIC).

b Gross product at factor cost.

c Employment data derived from ABS *Manufacturing Survey*. Employment data presented elsewhere in this Report is from the ABS *Labour Force Survey*.

d The earliest available export and import data are for 1988-89.

Source: ABS 1997f and estimates based on unpublished ABS *Manufacturing Industry* data

C THE TCF WORKFORCE

C1 Introduction

This appendix examines trends in and the structure of TCF manufacturing employment over the last decade (see Section C2), and identifies workforce characteristics which may influence the industries' and the incumbent employees' abilities to adjust to a changing environment (see Section C3).

Data

The Australian Bureau of Statistics (ABS) compiles a number of data collections which provide estimates of TCF manufacturing employment. The most commonly referred to are the *Manufacturing Industry Survey* (MIS) and the *Labour Force Survey* (LFS).[1] However, employment estimates vary between these collections. For example, at June 1992, the ABS MIS estimated TCF manufacturing employment to be about 82 000 persons. The LFS estimate for May 1992, on the other hand, was 98 300. Such discrepancies arise from three main sources:

- different methodologies between collections;
- sampling error; and
- changes in industry structure.

One of the principal methodological differences between the MIS and the LFS is the collection base. The MIS is an employer-based survey, with survey forms being mailed to a stratified sample of about 21 000 firms from the Business Register. The LFS, on the other hand, is a household-based survey of about 29 000 dwellings, with data collected by interview.

Different methodologies influence the definition of employment for which data are collected. Conceptually, TCF manufacturing employment comprises three distinct groups of individuals:

- the traditional factory-based wage and salary earners;
- self-employed persons, such as sole proprietors and owner operators; and

[1] Other labour force collections used in this report include the Population Census and the Survey of Employee Earnings and Hours.

- homeworkers.

However, the Business Register excludes firms not registered for group tax (and thus sole-proprietors and owner operators) and excludes all persons working on commission, contract or as consultants (including homeworkers). This suggests that the MIS underestimates the true level of TCF manufacturing employment.

Although the LFS does not exclude sole-proprietors, it is still likely to under-estimate the number of homeworkers due to the reluctance of some individuals to identify their working arrangements.

Discrepancies between employment estimates also can arise from sampling error. Both the MIS and the LFS are sample surveys and thus subject to sampling error.[2] The LFS is generally less reliable because of sample size (see Table C1).

Table C1: Comparison of ABS survey methodologies and reliability

	Wage and salary earners	*Self employed sole-proprietors*	*Home-workers*	*RSE*[a]	*Sample size*
Employer-based:					
Manufacturing survey	Yes	No	No	0.8%	21 000[b]
Employee Earning and Hours	Yes	No	No	1.1%	7 000[b]
Employee-based:					
Population Census	Yes	Yes	Some	nil	All[c]
Labour Force Survey	Yes	Yes	Some	4.6%	29 000[c]

a Relative standard error for estimates of approximate 100 000 (or all TCF).
b Businesses.
c Households.
Source: ABS 6102.0, 6305.0, 8221.0 and information supplied by the ABS.

Changes in industry structure also affect the comparison of employment estimates over time. A key feature of restructuring over recent years has been a trend towards outsourcing (for example, contracting out of cleaning services). This has caused a reallocation of employment between the manufacturing and

[2] There is a 95 per cent probability that the true value of a variable will lie within an interval bounded by two standard errors above and below the estimate. For example the relative standard error (RSE) for the MIS measure of TCF manufacturing employment at the end of June 1992 was 0.8 per cent. This means that the ABS estimates, with 95 per cent certainty, that the MIS estimate of TCF manufacturing employment is between 80 700 and 83 300. On the other hand, the RSE for the LFS estimates of TCF manufacturing employment in May 1992 (98 300 persons) was 4.6 per cent, which implies a 95 per cent probability that the true level of employment is between 107 300 and 89 300.

service sectors. It also may cause respondents to the LFS to identify incorrectly their employer (and hence industry) as the places where they work rather than the businesses which directly employ them.

Although the LFS has greater sampling error than the MIS, it has a number of advantages when compared with the MIS. In particular:

- the LFS is more timely. MIS employment estimates are based on the last pay period in June and can take twelve months to be released at a detailed level; and
- the LFS has a greater range of variables (especially in conjunction with supplementary surveys). The MIS provides an estimate of total employment, but does not disaggregate this by employment type, gender or other variables of interest for policy analysis.

For these reasons, the Commission considers the LFS to be the more appropriate collection for detailed labour force analysis.

C2 TCF manufacturing employment

In May 1997, TCF manufacturing employed 103 500 persons. This represents about 9 per cent of total manufacturing employment and just over 1 per cent of employment in the economy as a whole. Within TCF, the clothing manufacturing industry is the most significant employer, accounting for 48 per cent of total TCF employment. This share would be larger if full account could be taken of homeworking (see Appendix D).

Trends in TCF manufacturing employment since 1985

Although there was some growth in total TCF employment between May 1985 and May 1989, employment declined by about 12 per cent, or around 13 400 jobs, between May 1985 and May 1997. Over the same period, despite some short-term volatility, manufacturing employment has not changed significantly. Employment in the economy as a whole has grown by about 26 per cent (or about 1.7 million jobs) (see Table C2).

Tthe economy generall grew 26 per cent despite some volatility. The decline in TCF employment was greatest between 1989 and 1992, when TCF production contracted significantly in response to a number of factors including the domestic recession, increased import competition and changes in consumer tastes (see Appendix B). Over this period alone, close to 21 000 jobs or 18 per cent of the TCF workforce were lost.

Table C2: Employed persons, May 1985 to May 1997

	Employment by ANZSIC industry					*Change*
ANZSIC industry	*1985*	*1988*	*1991*	*1994*	*1997*	*1985-97*
	('000)	*('000)*	*('000)*	*('000)*	*('000)*	*(%)*
Textile fibre, yarn and woven fabric mfg (221)	20.3	15.5	15.3	14.2	11.6	-42.9
Textile product mfg (222)	12.6	15.3	15.2	17.0	21.7	72.2
Knitting mills (223)	8.2	10.2	9.9	9.0	*3.7*	-54.9
Clothing mfg (224)	62.2	59.9	51.2	52.6	49.3	-20.7
Footwear mfg (225)	9.7	10.6	7.3	9.0	7.0	-27.8
Leather and leather product mfg (226)	*3.8*	5.5	*3.7*	7.3	10.2	168.4
All TCF (22)	**116.9**	**117.0**	**102.6**	**109.1**	**103.5**	**-11.5**
All manufacturing	**1 127.8**	**1 165.0**	**1 099.1**	**1 112.1**	**1 128.1**	**0.0**
All industries	**6 657.9**	**7 354.8**	**7 703.7**	**7 879.1**	**8 389.3**	**26.0**

Note: Figures in *italics* have relative standard errors greater than 25 per cent.

Source: Unpublished ABS *Labour Force Survey* data

ABS data show a stabilisation of TCF employment (with some volatility) since 1992. Nonetheless, anecdotal evidence from participants suggests that further employment rationalisation is likely under the existing policy environment.

The decline in total TCF employment since 1985 conceals varied experience among the main TCF industries. More than 96 per cent of the decline in employment in TCF industries over the period occurred in the clothing manufacturing industry. However, the largest proportionate decreases were in knitting mills, textile fibre, yarn and woven fabric manufacturing and footwear manufacturing. In contrast, there was strong employment growth in both the textile product manufacturing and leather and leather product manufacturing industries. Employment in each of these industries expanded by more than 70 per cent between 1985 and 1997.

Apart from homeworkers, employment contraction has generally been greater for female employees than for male employees. Female employment in TCF declined by more than 23 per cent between 1985 and 1997 compared with an increase of just over 14 per cent for male employment (see Table C3). This pattern is atypical when compared with trends in both total manufacturing and the economy as a whole which exhibited faster growth in female than male employment.

This disparity in the gender pattern of employment arises from three sources. First, in contracting industries such as footwear and clothing manufacturing, female employment has declined more significantly than male employment. (There has been net growth in male employment in clothing manufacturing.) Second, employment growth in expanding industries such as leather and leather

product manufacturing has generated more male than female employment (see Table C3). Although this gender bias may be explained, in part, by industry trends towards the use of mostly female homeworkers, the gender bias is not confined to clothing manufacturing (which is the main user of homeworkers in TCF).

Table C3: Change in employment by gender, May 1985 to May 1997

	Change in employment 1985–96		
ANZSIC industry	*Female*	*Male*	*Persons*
	(%)	*(%)*	*(%)*
Textile fibre, yarn and woven fabric mfg (221)	-43.4	-42.5	-42.9
Textile product mfg (222)	41.4	112.5	72.2
Knitting mills (223)	-51.9	-62.1	-54.9
Clothing mfg (224)	-29.0	17.1	-20.7
Footwear mfg (225)	-47.3	-2.4	-27.8
Leather and leather product mfg (226)	121.1	215.8	168.4
All TCF (22)	**-23.5**	**14.4**	**-11.5**
All manufacturing	**2.2**	**-0.7**	**0.0**
All industries	**42.0**	**16.0**	**26.0**

Source: Unpublished ABS *Labour Force Survey* data

Gender disparity has arisen also from the changing skill profile of the TCF workforce. Industry restructuring has led to the shedding of low-skilled jobs, in which females are over-represented, and growth in higher-skilled areas, in which females are under-represented.

For example, the number of textile sewing machine operator jobs in TCF fell, in total, by more than 8000 between May 1987 and May 1996. This aggregate lass was made up of a decline in female employment of 10 000 and an increase in male employment of 2000 (see Table C15). This does not take into consideration how many of these workers were employed subsequently as homeworkers (see Appendix D).

While there has been undoubtedly a significant decline in clothing manufacturing employment, the data presented in this Appendix may overstate this decline because they do not capture fully the contribution of homeworkers to total industry employment (see Appendix D). Clothing manufacturing is traditionally a high user of homeworkers, and anecdotal evidence suggests that homeworking has increased over the last decade. If this is the case, the falls in clothing manufacturing employment and in metropolitan relative to non-metropolitan TCF employment are likely to be overstated.

Geographic distribution of TCF manufacturing employment

State and regional distribution of total TCF employment

Victoria is the centre of TCF manufacturing in Australia. About 44 per cent of the 103 500 persons employed in TCF at May 1997 were employed in Victoria. New South Wales (35 per cent), and to a lesser extent Queensland (9 per cent), also account for a significant proportion of TCF employment and together with Victoria represent about 89 per cent of all TCF employment. TCF industries account for only about 1 and 2 per cent of total employment in New South Wales and Victoria, respectively (see Table C4).

Table C4: Relative significance of TCF employment, May 1997

	TCF employment as a proportion of:					
	Total manufacturing employment			*Total employment*		
	Metro	*Other*	*Total*	*Metro*	*Other*	*Total*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*
NSW	10.1	8.1	9.4	1.4	1.1	1.3
VIC	13.7	10.9	13.2	2.5	1.4	2.2
QLD	5.1	5.7	5.4	0.7	0.6	0.6
WA	4.0	0.5	3.4	0.4	0.0	0.3
SA	7.0	8.6	7.4	1.1	1.0	1.1
TAS	6.3	5.8	6.0	0.7	0.8	0.8
NT	..	..	3.1	..	..	0.1
ACT	..	..	2.3	..	..	0.1
Australia	9.9	7.5	9.2	1.5	0.8	1.2

.. Zero or insignificant numbers.

Source: Estimates based on unpublished ABS *Labour Force Survey* data

Although there is some variation between TCF industries, the majority of TCF employment by each industry is similarly concentrated in Victoria, New South Wales and Queensland (see Table C5). Although clothing manufacturing is the major employer in most States, textile product manufacturing, textile fibre, yarn and woven fabric manufacturing, and footwear manufacturing are relatively important in Western Australia, South Australia and Tasmania (see Table C6).

Table C5: Distribution of employment by State, May 1997

	NSW	*VIC*	*QLD*	*WA*	*SA*	*TAS*	*ACT*	*NT*	*Australia*
	('000)	*('000)*	*('000)*	*('000)*	*('000)*	*('000)*	*('000)*	*('000)*	*('000)*
Textile fibre, yarn and woven fabric mfg (221)	*2.8*	6.4	..	*0.5*	*1.2*	*0.6*	..	..	11.6
Textile product mfg (222)	6.3	10.7	*2.6*	*0.7*	*1.0*	*0.3*	..	*0.1*	21.7
Knitting mills (223)	*0.3*	*2.8*	*0.4*	..	*0.1*	..	..	..	*3.7*
Clothing mfg (224)	20.1	18.8	5.6	*1.1*	*3.4*	*0.2*	*0.1*	..	49.3
Footwear mfg (225)	*2.9*	*3.2*	..	*0.2*	*0.5*	*0.3*	..	..	7.0
Leather and leather product mfg (226)	*3.9*	*4.0*	*1.1*	*0.3*	*0.9*	..	..	..	10.2
All TCF (22)	**36.3**	**45.9**	**9.7**	***2.8***	**7.2**	***1.5***	***0.1***	***0.1***	**103.5**
All manufacturing	**386.0**	**348.7**	**180.5**	**83.3**	**97.1**	**24.9**	**3.2**	**4.3**	**1 128.1**
All industries	**2 804.0**	**2 090.8**	**1 543.7**	**850.0**	**659.2**	**195.9**	**85.8**	**160.0**	**8 389.3**
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*
Textile fibre, yarn and woven fabric mfg (221)	24.1	55.2	..	4.3	10.3	5.2	..	..	100.0
Textile product mfg (222)	29.0	49.3	12.0	3.2	4.6	1.4	..	0.5	100.0
Knitting mills (223)	8.1	75.7	10.8	..	2.7	..	..	..	100.0
Clothing mfg (224)	40.8	38.1	11.4	2.2	6.9	0.4	0.2	..	100.0
Footwear mfg (225)	41.4	45.7	..	2.9	7.1	4.3	..	..	100.0
Leather and leather product mfg (226)	38.2	39.2	10.8	2.9	8.8	..	..	..	100.0
All TCF (22)	**35.1**	**44.3**	**9.4**	**2.7**	**7.0**	**1.4**	**0.1**	**0.1**	**100.0**
All manufacturing	**34.2**	**30.9**	**16.0**	**7.4**	**8.6**	**2.2**	**0.3**	**0.4**	**100.0**
All industries	**33.4**	**24.9**	**18.4**	**10.1**	**7.9**	**2.3**	**1.0**	**1.9**	**100.0**

Note: Figures in *italics* have relative standard errors greater than 25 per cent.

.. Zero or insignificant numbers.

Source: Estimates based on unpublished ABS *Labour Force Survey* data

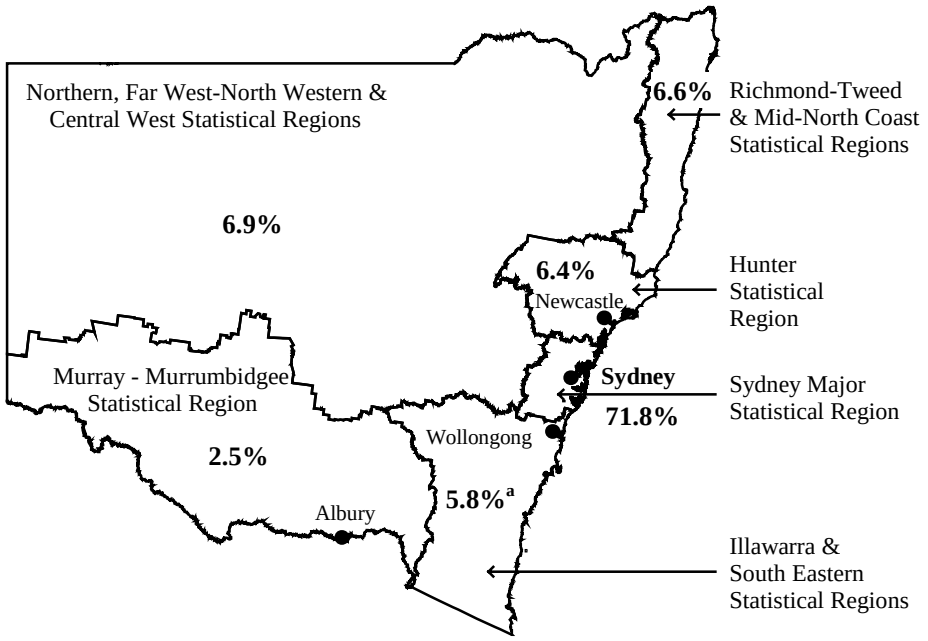
Table C6: TCF manufacturing employment as a proportion of State employment, May 1985 and May 1997

	Proportion of State TCF employment						
	Textile fibre, yarn and woven fabric mfg	*Textile product mfg*	*Knitting mills*	*Clothing mfg*	*Footwear mfg*	*Leather and leather pdt mfg*	*Total State TCF empl.*
1985	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*('000)*
NSW	13.6	9.4	3.8	60.5	9.1	3.8	33.9
VIC	15.9	10.6	10.6	50.8	9.8	2.2	60.2
QLD	10.3	17.9	..	62.8	2.6	5.1	7.8
WA	25.6	17.9	2.6	38.5	2.6	12.8	3.9
SA	35.2	7.7	3.3	49.5	3.3	1.1	9.1
TAS	66.7	11.1	5.6	11.1	5.6	5.6	1.8
NT	..	..	..	..	..	..	..
ACT	..	..	..	..	..	100.0	0.1
Aust.	17.4	10.8	7.0	53.2	8.3	3.3	116.9
1997							
NSW	7.7	17.4	0.8	55.4	8.0	10.7	36.3
VIC	13.9	23.3	6.1	41.0	7.0	8.7	45.9
QLD	..	26.8	4.1	57.7	..	11.3	9.7
WA	17.9	25.0	..	39.3	7.1	10.7	2.8
SA	16.7	13.9	1.4	47.2	6.9	12.5	7.2
TAS	40.0	20.0	..	13.3	20.0	..	1.5
NT	..	..	..	100.0	..	..	0.1
ACT	..	100.0	..	..	..	..	0.1
Aust.	11.2	21.0	3.6	47.6	6.8	9.9	103.5

.. Zero or insignificant numbers.

Source: Estimates based on unpublished ABS *Labour Force Survey* data

Figure C1: Distribution of TCF manufacturing employment in New South Wales, May 1997



Note: Regions are aggregates of Labour Force Regions as defined in ABS Cat. No. 1135.0. Regional labour force estimates are susceptible to high standard errors and should be treated with caution.

a Does not include TCF manufacturing employment in the ACT

Source: Estimates based on unpublished ABS *Labour Force Survey* data

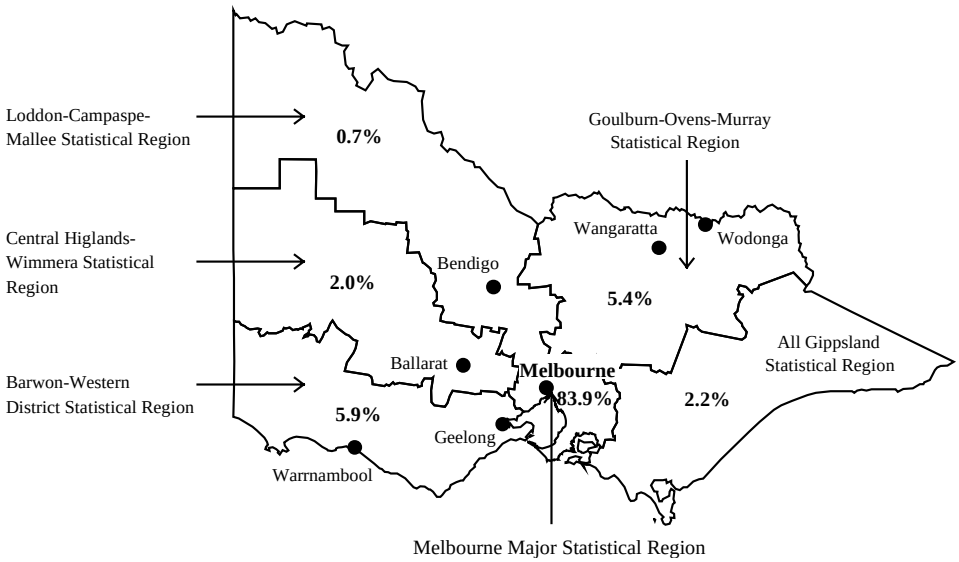
Of the 26 000 TCF workers employed in non-metropolitan areas in May 1997 about 10 000 were employed in NSW regional centres. A further 7000 were employed in Victorian regional centres.

About 72 per cent of TCF employment in NSW in May 1997 was in the Sydney greater metropolitan area (see Figure C1). Newcastle and Wollongong are also significant areas of TCF employment. For example, the Hunter statistical region accounts for 6.4 per cent of NSW TCF employment (however, about 5 per cent of this is in Newcastle). Similarly, although the Illawarra and Southern statistical regions account for 5.8 per cent of NSW TCF employment, more than half (3 per cent) of this is in Wollongong.

Non-metropolitan TCF employment in Victoria in May 1997 was concentrated in the Barwon–Western District and the Goulburn–Ovens–Murray statistical regions. Together, these regions accounted for about 11 per cent of TCF employment in Victoria (see Figure C2). As in the metropolitan regions, TCF

non-metropolitan employment is small compared with total employment. In the Barwon–Western District and the Goulburn–Ovens–Murray statistical regions (where regional TCF employment is greatest) TCF industries provide less than 2 per cent of total employment. Anecdotal evidence suggests that the contribution of TCF manufacturing employment may be more significant in some areas. For example, in their joint submission, the Companies and Community of North Eastern Victoria and Albury suggest that TCF contributes close to 15 per cent of total employment in Wangaratta itself (sub. 37, p. 9).

Figure C2: Distribution of TCF manufacturing employment in Victoria, May 1997



Note: Regions are aggregates of Labour Force Regions as defined in ABS Cat. No. 1135.0. Regional labour force estimates are susceptible to high standard errors and should be treated with caution.

Source: Estimates based on unpublished ABS *Labour Force Survey* Data

Change in geographical distribution of TCF manufacturing employment

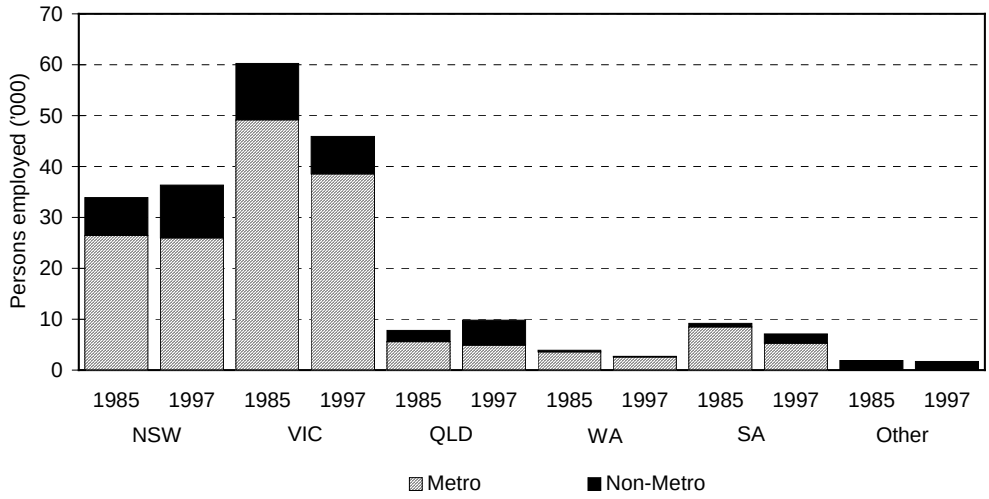
Figure C3 illustrates the geographical distribution of TCF employment in May 1985 and May 1997. Total TCF employment declined by about 13 400 jobs or 11.5 per cent over this period (see above).

Victoria experienced the greatest decline, with more than 14 000 TCF jobs lost over the period — the majority of these in clothing manufacturing. In total, Victorian employment in TCF in 1997 had fallen by about 24 per cent from its

1985 level. Most of these job losses occurred in metropolitan Melbourne (75 per cent of the total Victorian employment reduction).

The experiences of other States range from an overall decline of around 2000 jobs in South Australia to a growth in employment of close to 2500 jobs in New South Wales (see Table C7).

Figure C3: Geographical distribution of TCF manufacturing employment, May 1985 and May 1997



Note: Other includes Tasmania, the Northern Territory and the Australian Capital Territory. Regional labour force estimates are susceptible to high standard errors and should be treated with caution.

Source: Unpublished ABS *Labour Force Survey* data

Current employment patterns

In response to increasing competitive pressures from changing demand patterns and imports, firms have adopted more flexible sourcing strategies. Such strategies range from importing completed products, including offshore assembly, and the use of casual staff, subcontractors and homeworkers in response to demand fluctuations. Baston (1996) argued that:

> In some cases, firms use more than one method of sourcing. Some, with their own manufacturing facilities, limit capacity and make up any shortfall to meet demand by using contractors [who often use homeworkers]. In this way there is a buffer (the contractors) which can take the initial impact of any demand contraction, to protect the firm's plant, and its trained staff, from short-term fluctuations. (Baston 1996, p. 17)

Table C7: Change in employment by State, May 1985 to May 1997

	NSW	*VIC*	*QLD*	*WA*	*SA*	*TAS*	*NT*	*ACT*	*AUST*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*
Textile fibre, yarn and woven fabric mfg (221)	-39.1	-33.3	-100.0	-50.0	-62.5	-50.0	..	..	-42.9
Textile product mfg (222)	96.9	67.2	85.7	0.0	42.9	50.0	..	..	72.2
Knitting mills (223)	-76.9	-56.3	..	-100.0	-66.7	-100.0	..	..	-54.9
Clothing mfg (224)	-2.0	-38.6	14.3	-26.7	-24.4	0.0	..	..	-20.7
Footwear mfg (225)	-6.5	-45.8	-100.0	100.0	66.7	200.0	..	..	-27.8
Leather and leather product mfg (226)	200.0	207.7	175.0	-40.0	800.0	-100.0	..	-100.0	168.4
All TCF (22)	**7.1**	**-23.8**	**24.4**	**-28.2**	**-20.9**	**-16.7**	**..**	**0.0**	**-11.5**
All manufacturing	**-3.5**	**-10.2**	**44.3**	**9.5**	**-8.1**	**-3.5**	**68.4**	**-10.4**	**0.0**
All industries	**23.2**	**18.4**	**48.2**	**36.4**	**13.2**	**7.0**	**28.1**	**34.7**	**26.0**
	('000)	*('000)*	*('000)*	*('000)*	*('000)*	*('000)*	*('000)*	*('000)*	*('000)*
Textile fibre, yarn and woven fabric mfg (221)	- 1.8	- 3.2	- 0.8	- 0.5	- 2.0	- 0.6	..	..	- 8.7
Textile product mfg (222)	3.1	4.3	1.2	..	0.3	0.1	..	0.1	9.1
Knitting mills (223)	- 1.0	- 3.6	0.4	- 0.1	- 0.2	- 0.1	..	..	- 4.5
Clothing mfg (224)	- 0.4	- 11.8	0.7	- 0.4	- 1.1	..	0.1	..	- 12.9
Footwear mfg (225)	- 0.2	- 2.7	- 0.2	0.1	0.2	0.2	..	..	- 2.7
Leather and leather product mfg (226)	2.6	2.7	0.7	- 0.2	0.8	- 0.1	..	- 0.1	6.4
All TCF (22)	**2.4**	**- 14.3**	**1.9**	**- 1.1**	**- 1.9**	**- 0.3**	**0.1**	**..**	**- 13.4**
All manufacturing	**- 14.2**	**- 39.5**	**55.4**	**7.2**	**- 8.6**	**- 0.9**	**1.3**	**- 0.5**	**0.3**
All industries	**528.1**	**325.0**	**501.8**	**227.0**	**76.8**	**12.8**	**18.8**	**41.2**	**1 731.4**

.. Zero or insignificant numbers.

Source: Estimates based on unpublished ABS *Labour Force Survey* data

Table C8: Casual employment, August 1986 to August 1996

	Casual employees as a proportion of total				*Change*
	1986	*1992*	*1995*	*1996*	*1986-96*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*
Textile fibre, yarn and woven fabric mfg (221)	1.6	1.3	4.7	3.6	128.7
Textile product mfg (222)	7.7	8.1	20.1	22.7	196.5
Knitting mills (223)	2.0	8.1	2.4	5.7	190.3
Clothing mfg (224)	15.3	19.3	19.5	26.4	72.6
Footwear mfg (225)	2.7	2.7	0.0	8.8	232.6
Leather and leather product mfg (226)	13.0	5.8	13.8	1.8	-86.5
All TCF (22)	**9.2**	**11.9**	**14.5**	**18.5**	**101.6**
All manufacturing	**8.8**	**11.8**	**14.6**	**15.0**	**70.7**
All industries	**17.2**	**22.3**	**24.0**	**26.1**	**51.3**

Source: Unpublished ABS *Trade Union Members, Australia* data

Between 1986 and 1996, casual employment in TCF (as a proportion of total employment) has more than doubled. This is a more significant increase than those which occurred in total manufacturing (about 71 per cent) and the economy as a whole (about 51 per cent). However, there were considerable differences between TCF industries. For example, casual employment in the textile product manufacturing and knitting mills industries increased by 197 per cent and 190 per cent, respectively. Casual employment in clothing manufacturing, on the other hand, increased by less than 73 per cent, while casual employment in leather and leather product manufacturing declined (see Table C8). The smaller increase in casual employment in clothing manufacturing is likely to reflect greater use of homeworkers in industries which do not have high fixed capital (see Appendix D).[3]

Notwithstanding the increase in casual employment in TCF, in August 1996 less than 19 per cent of TCF employees were employed on a casual basis. Although this is considerably less than in the economy as a whole (which had 26 per cent of the workforce employed on a casual basis), it is above the total manufacturing average.

[3] Knitting mills, footwear manufacturing and leather and leather product manufacturing also showed a lower than average increase in casual employment. However, as these industries have relatively small workforces, the survey data on casual employment may not be reliable.

C3 Workforce characteristics

Workforce characteristics provide an indication of the ability of incumbent employees to adjust to structural change. For example, younger, single employees are generally more geographically mobile than older, married employees. Similarly, employees with good general (including English language) and vocational skills are usually more mobile than those without such skills (IC 1993).

Workforce characteristics are in part a product of the characteristics of jobs. That is, low-paying, low-skilled jobs do not attract highly skilled workers. Likewise, young workers may be reluctant to enter an industry in which they see poor future prospects (or prestige). On the other hand, jobs with hours which can be adjusted may be very attractive to workers with other commitments (such as family or study).

In general, TCF workers are more likely to be older, female and born overseas than the workforce in manufacturing or the economy in general. They also tend to be lower-paid, have less formal education and work longer hours than employees in general. However, there are some differences across TCF industries.

Age profile

The contraction of employment in most TCF industries and the use of 'last-in-first-out' labour-shedding practices to retain skills and minimise redundancy costs (Webber 1995) have left TCF with a relatively old workforce. Even expanding industries have found it difficult to attract young people with suitable skills.

In May 1997, 65 per cent of persons employed in TCF were 35 years of age or older, compared with around 57 per cent for total manufacturing and the economy as a whole (see Table C9). There is, however, significant variation in this profile across TCF industries. For example, male employees are generally younger in the clothing, footwear and leather & leather products manufacturing industries. However, female employees are generally younger in the textiles and knitting mills industries. Similarly, the leather and leather products manufacturing industry stands out as having a relatively young age profile when compared with other TCF industries. The data suggest that the knitting mills industry, on the other hand, has a relatively old workforce with 92 per cent of

Table C9: Age profile of employed persons, May 1997

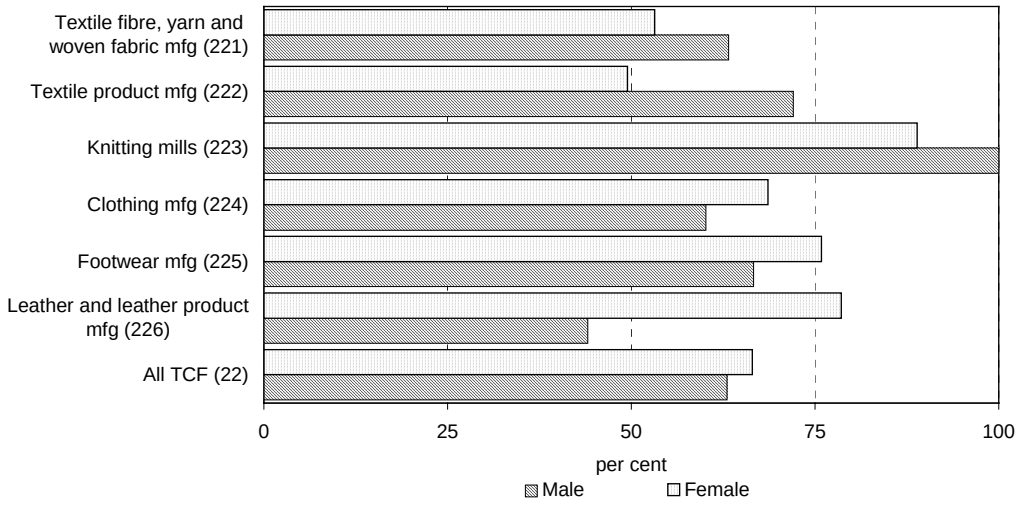
	Employment distribution by age				*Total*
ANZSIC industry	*15–19*	*20–34*	*35–54*	*55 +*	*employees*
	(%)	*(%)*	*(%)*	*(%)*	*('000)*
Textile fibre, yarn and woven fabric mfg (221)	0.0	41.4	48.3	10.3	11.6
Textile product mfg (222)	0.0	38.2	49.8	12.0	21.7
Knitting mills (223)	0.0	8.1	67.6	24.3	3.7
Clothing mfg (224)	3.4	30.2	58.4	7.7	49.3
Footwear mfg (225)	1.4	27.1	62.9	8.6	7.0
Leather and leather product mfg (226)	0.0	41.2	58.8	0.0	10.2
All TCF (22)	**1.7**	**33.2**	**56.1**	**8.8**	**103.5**
All manufacturing	**4.2**	**39.1**	**47.1**	**9.6**	**1 128.1**
All industries	**6.9**	**36.7**	**46.7**	**9.6**	**8 389.3**

Source: Unpublished ABS *Labour Force Survey* data

employees aged 35 years or older (see Figure C4). (However, due to the small size and consequent large standard errors associated with these estimates, any conclusions should be treated with caution.)

An older workforce is not in itself a restriction to adjustment. Older workers, however, tend to be less mobile, especially where working partners and families are involved. Furthermore, many firms argue that rationalisation is becoming more difficult because they have shed short-term employees already and now

Figure C4: TCF workforce aged 35 or more by industry, May 1997



Source: Unpublished ABS *Labour Force Survey* data

face high redundancy payouts, in part because of the length of tenure of remaining staff. Finally, the age profile of the industry may be indicative of the pessimism with which young skilled workers view the industry. Difficulty in attracting such skilled staff reduces the potential for productivity growth and thus the ability of the industry to compete in an open market.

Gender profile

Notwithstanding the decline in the female share of total TCF manufacturing employment between 1985 and 1997 (see above), the TCF workforce remains significantly more female than either total manufacturing or the economy as a whole. In May 1997, 59 per cent of TCF employees were female compared with around 26 per cent for total manufacturing and 43 per cent for the economy as a whole (see Table C10).

Table C10: Employment by gender, May 1985 and May 1997

	1985			*1997*		
ANZSIC industry	*Female*	*Male*	*Persons*	*Female*	*Male*	*Persons*
	(%)	*(%)*	*('000)*	*(%)*	*(%)*	*('000)*
Textile fibre, yarn and woven fabric mfg (221)	40.9	59.1	20.3	40.5	59.5	11.6
Textile product mfg (222)	55.6	44.4	12.6	45.6	54.8	21.7
Knitting mills (223)	65.1	34.9	8.2	70.3	29.7	3.7
Clothing mfg (224)	82.2	17.8	62.2	73.6	26.4	49.3
Footwear mfg (225)	56.7	43.3	9.7	41.4	58.6	7.0
Leather and leather product mfg (226)	50.0	50.0	3.8	41.2	58.8	10.2
All TCF (22)	**67.8**	**32.2**	**116.9**	**58.6**	**41.5**	**103.5**
All manufacturing	**25.7**	**74.3**	**1 127.8**	**26.3**	**73.7**	**1 128.1**
All industries	**38.4**	**61.6**	**6 657.9**	**43.3**	**56.7**	**8 389.3**

Source: Unpublished ABS *Labour Force Survey* data

Female dominance of TCF employment is particularly evident in the knitting mills and clothing industries, where around 70 per cent of all employees in May 1997 were female. Close to 60 per cent of employment in the other (generally more capital-intensive) TCF industries is male.

Ethnic background

TCF industries usually are seen as relying heavily on immigrants, many of whom are relatively low-skilled (including in English). For example, close to half of the TCF workforce in May 1997 was not born in Australia, compared

with less than a third of employees in total manufacturing and less than one quarter of all employees (see Table C11). Furthermore, of TCF employees born overseas, only a small proportion come from a main English-speaking (MES) country.[4] Although, 49 per cent of TCF employees were born overseas, less than 8 per cent were born in a MES country. Figure C5 illustrates the distribution of origins for TCF employees who were born in non-MES countries.

Table C11: Employment distribution by country of birth, May 1997

ANZSIC industry	*Employment distribution by birthplace*			*Total employees*
	Australia	*MES country*[a]	*Other country*	
	(%)	*(%)*	*(%)*	*('000)*
Textile fibre, yarn and woven fabric mfg (221)	33.6	14.7	51.7	11.6
Textile product mfg (222)	66.4	13.8	19.8	21.7
Knitting mills (223)	32.4	8.1	59.5	3.7
Clothing mfg (224)	49.9	3.9	46.2	49.3
Footwear mfg (225)	37.1	5.7	57.1	7.0
Leather and leather product mfg (226)	59.8	6.9	33.3	10.2
All TCF (22)	**51.0**	**7.7**	**41.3**	**103.5**
All manufacturing	**66.0**	**10.9**	**23.1**	**1 128.1**
All industries	**75.7**	**10.6**	**13.7**	**8 389.3**

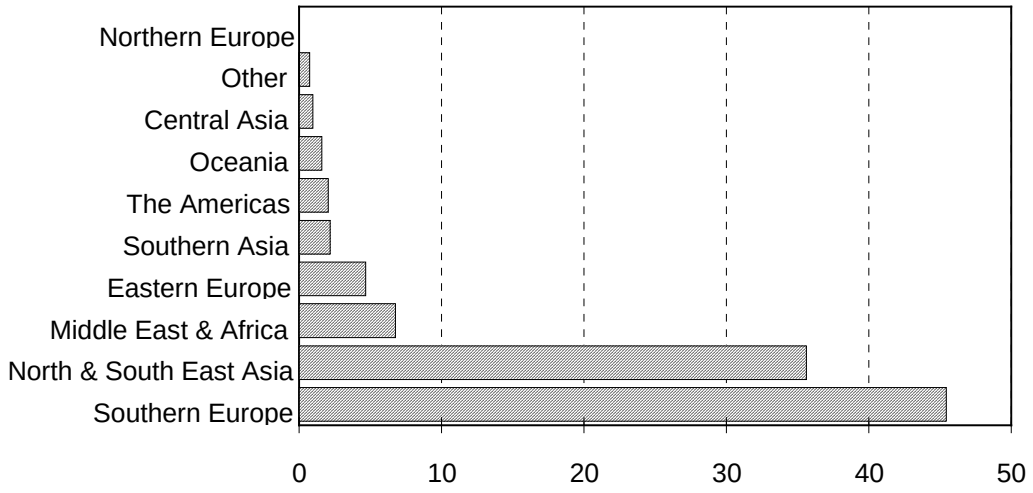
a The ABS defines MES – main English-speaking countries as Canada, New Zealand, South Africa, the United Kingdom, Ireland and the United States.

Source: Unpublished ABS *Labour Force Survey* data

Although comprehensive data are not available, anecdotal evidence suggests that the reliance on immigrants is less pronounced outside metropolitan areas and outside clothing manufacturing and knitting mills.

[4] The ABS defines the main English-speaking countries as Canada, New Zealand, South Africa, the United Kingdom, Ireland and the United States.

Figure C5: Distribution of non-MES-born TCF employees, 1991



Note: The ABS defines MES – main English-speaking countries as Canada, New Zealand, South Africa, the United Kingdom, Ireland and the United States.

Source: Unpublished ABS *1991 Population Census* data

Marital status

In its submission to the Industry Commission's inquiry into *Impediments to Regional Industry Adjustment*, the Albury-Wodonga Development Corporation suggested the following workforce characteristics as influences on labour mobility:

- age and marital status. Young, single people are more prepared to move to other locations for employment — older, more committed people with children, less so;
- employment status of spouse. A further consideration often is that both partners have jobs. A shift elsewhere may mean that a second income is not available;
- commitments — particularly house mortgages and children in secondary education ...;
- preferred lifestyle. Many people have strong views about where they want to live for a variety of social reasons — availability of services, climate, physical environment, community involvement, nearness to friends and/or extended family. (IC 1993, p. 52)

It has been argued that married women are less able to move to new jobs (especially in regional areas). Overall, the proportion of married employees, (both female and male), in TCF manufacturing is not significantly different

from that in either total manufacturing or the economy as a whole. However, TCF has a significantly larger proportion of married females. In May 1997, more than 41 per cent of TCF employees were married women compared with about 17 per cent for manufacturing and about 26 per cent for the economy as a whole (see Table C12).

More than half of all employees in the knitting mills and clothing manufacturing industries were married female employees. (The proportion may be even larger in clothing if homeworkers are included.) In contrast, the footwear manufacturing and leather and leather product manufacturing industries have a relatively low proportion of married female employees (see Table C12).

Table C12: Marital status of employed persons, May 1997

	Proportion of employees who are married		
ANZSIC industry	*Female*	*Male*	*Person*
	(%)	*(%)*	*(%)*
Textile fibre, yarn and woven fabric mfg (221)	29.3	44.8	75.0
Textile product mfg (222)	39.6	42.4	82.0
Knitting mills (223)	59.5	21.6	81.1
Clothing mfg (224)	46.7	17.6	64.3
Footwear mfg (225)	34.3	35.7	68.6
Leather and leather product mfg (226)	29.4	37.3	65.7
All TCF (22)	**41.2**	**29.2**	**70.2**
All manufacturing	**17.3**	**48.9**	**66.2**
All industries	**26.2**	**36.6**	**62.8**

Source: Unpublished ABS *Labour Force Survey* data

Occupation and skill level

The occupational profile of the industries and the educational attainment of the employees provide insights into the overall level of skills of the workforce. The industries' occupational profile reveals the skill levels which employees need to perform the tasks associated with TCF jobs. This has implications for what employees can expect to be paid, the size of the pool from which TCF employers can recruit and the amount of resources which TCF employers need to expend on training and skills development. Educational attainment, on the other hand, provides an indicator of the skill level inherent in the individuals employed in the industry. This has implications for the employees' likelihood of finding employment of an equal or better standard should they change jobs within, or leave, the TCF industries.

Occupational profile of TCF manufacturing

The Australian Standard Classification of Occupations

The Australian Standard Classification of Occupations (ASCO) is a skill-based classification of occupations developed by the ABS for the collection and analysis of labour force statistics. The concept of skill within the ASCO structure is represented by two distinct criteria: skill level and skill specialisation.

> The skill level of an occupation is a function of the amount of **formal education**, **on-the-job training** and **previous experience** usually necessary before an individual can satisfactorily perform the set of tasks involved. The skill specialisation of an occupation is a function of the **field of knowledge required**, **tools or equipment used**, **materials worked on** and **goods and services produced** in relation to the tasks performed. (ABS 1986, p. 3)

Table C13 presents the skill requirements which are generally associated with the major ASCO classifications. There is likely to be some variation, however, in skills associated with the 1079 occupational categories within these major groups. For example, a tailor (ASCO 4911-11) is generally required to hold a trade certificate, whereas a supervisor of tailors (ASCO 4911-01) is generally required to hold a trade certificate and have five to ten years of experience. Furthermore, the ASCO framework does not take into consideration personal proficiency — that is, it does not distinguish between good and bad tailors.

Notwithstanding this, occupations in ASCO Group 1, managers and administrators, have higher skill requirements than ASCO Group 8, labourers and related workers — especially in terms of formal education (see Table C13).

Table C13: The skill level of ASCO major groups

Major ASCO group	*Secondary education*[a]	*Tertiary education*	*On-the-job training*	*Relevant experience*
Managers and administrators (1)	12	Degree/diploma	na	7 years
Professionals (2)	12	Degree/diploma	na	na
Para-professionals (3)	12	Associate diploma	6 months	na
Tradespersons (4)	10	Apprenticeship	na	na
Clerks (5)	11	na	6 months	na
Salespersons and personal service workers (6)	10	na	3 months	na
Plant and machine operators, and drivers (7)	na	na	1 year[a]	na
Labourers and related workers (8)	na	na	3 months	na

a Refers to the final year of secondary education generally required for the relevant ASCO group.

na Not applicable.

Source: ABS 1986, *Australian Standard Classification of Occupations (First Edition): Statistical Classification,*

Table C14: Workforce occupational composition, May 1987 and May 1996

	All TCF				*All manufacturing*				*All industries*			
ASCO occupation[a]	*1987*		*1996*		*1987*		*1996*		*1987*		*1996*	
	('000)	*(%)*	*('000)*	*(%)*	*('000)*	*(%)*	*('000)*	*(%)*	*('000)*	*(%)*	*('000)*	*(%)*
Managers and administrators (1)	8.2	6.9	8.5	8.9	83.4	7.3	91.0	8.2	790.7	11.1	880.7	10.6
Professionals (2)	*2.9*	*2.4*	*1.7*	*1.8*	65.0	5.7	72.1	6.5	880.9	12.4	1 178.4	14.1
Para-professionals (3)	*0.9*	*0.8*	*0.8*	*0.8*	26.8	2.4	34.7	3.1	420.6	5.9	486.2	5.8
Tradespersons (4)	18.1	15.2	18.7	19.5	335.0	29.5	299.4	27.1	1 130.8	15.9	1 193.1	14.3
Clerks (5)	10.6	8.9	7.4	7.7	131.3	11.5	127.1	11.5	1 240.3	17.5	1 359.6	16.3
Salespersons and personal service workers (6)	*2.8*	*2.4*	4.3	4.5	38.6	3.4	54.4	4.9	969.0	13.6	1 439.5	17.3
Plant and machine operators, and drivers (7)	54.1	45.5	39.2	40.9	200.2	17.6	172.3	15.6	562.9	7.9	569.7	6.8
Labourers and related workers (8)	21.4	18.0	15.3	16.0	256.4	22.6	252.7	22.9	1 108.4	15.6	1 229.9	14.8
All occupations	**118.9**	**100.0**	**95.9**	**100.0**	**1 136.8**	**100.0**	**1 103.8**	**100.0**	**7 103.5**	**100.0**	**8 337.1**	**100.0**

Note: Numbers in italics have (or are based on) estimates with relative standard errors greater than 25 per cent.

a Bracketed figures (#) correspond to occupational categories defined in the *Australian Standard Occupation Classification (ASCO)*, First Edition, ABS Cat. No. 1222.0 and 1223.0.

Source: Unpublished ABS *Labour Force Survey* data

Table C15: TCF employed persons by occupation, May 1987 and May 1996

ASCO occupation[a]	*1987*			*1996*		
	Fem.	*Male*	*Pers.*	*Fem.*	*Male*	*Pers.*
	('000)	*('000)*	*('000)*	*('000)*	*('000)*	*('000)*
Managers and administrators (1)	*1.9*	6.3	8.2	*2.5*	6.0	8.5
Professionals (2)	*1.3*	*1.6*	*2.9*	*1.0*	*0.7*	*1.7*
Para-professionals (3)	*0.1*	*0.8*	*0.9*	*0.8*	*0.0*	*0.8*
Tradespersons						
Miscellaneous tradespersons (49)						
Garment tradespersons (4911)	4.4	*1.5*	5.9	6.0	*2.7*	8.7
Upholsterers and bedding tradespersons (4913)	..	*0.1*	*0.1*	*0.3*	*0.2*	*0.4*
Shoemaking and repairing tradespersons (4915)	*0.8*	*1.5*	*2.3*	*0.3*	*1.5*	*1.8*
Other leather and canvas tradespersons (4917)	*0.9*	*1.8*	*2.7*	*1.3*	*1.5*	*2.8*
Total miscellaneous tradespersons (49)	7.0	5.6	12.6	8.7	6.2	14.8
Other tradespersons	*0.5*	*5.0*	*5.5*	*0.3*	*3.5*	*3.9*
Total tradespersons (4)	7.5	10.6	18.1	9.0	9.7	18.7
Clerks (5)	8.8	*1.8*	10.6	5.6	*1.8*	7.4
Salespersons and personal service workers (6)	*0.8*	*1.9*	*2.8*	*2.4*	*1.9*	4.3
Plant and machine operators and drivers						
Machine operators (74)						
Yarn production machine operators (7421)	*1.8*	*1.8*	3.6	*1.2*	*0.6*	*1.9*
Hide and skin processing machine operators (7423)	*0.1*	*0.3*	*0.5*	..	*0.3*	*0.3*
Fabric production machine operators (7425)	4.7	8.5	13.2	*3.1*	5.5	8.6
Textile sewing machinists (7427)	30.4	*1.3*	31.7	20.6	*3.1*	23.6
Shoemaking machine operators (7429)	*1.5*	*0.8*	*2.3*	*1.4*	*0.7*	*2.1*
Total machine operators (74)	39.2	13.5	52.7	27.1	10.7	37.8
Other plant and machine operators and drivers	..	*1.4*	*1.4*	..	*1.4*	*1.4*
Total plant and machine operators, and drivers (7)	39.2	14.9	54.1	27.1	12.1	39.2
Labourers and related workers						
Trades assistants and factory hands (81)	9.9	4.3	14.2	7.9	*3.5*	11.4
Other labourers and related workers	*2.4*	*4.8*	*7.2*	*1.3*	*2.6*	*3.9*
Total labourers and related workers (8)	12.3	9.1	21.4	9.2	6.1	15.3
All occupations	**71.8**	**47.1**	**118.9**	**57.5**	**38.4**	**95.9**

Note: Numbers in italics have relative standard errors greater than 25 per cent.

a Bracketed figures (#) correspond to occupational categories defined in the *Australian Standard Classification of Occupations (ASCO)*, First Edition, ABS Cat. No. 1222.0

.. indicates zero or insignificant values.

Source: Unpublished ABS *Labour Force Survey* data

The occupational profile of the TCF industry

In May 1996, about 59 000 persons, or more than 61 per cent of the TCF workforce, were employed in occupations in ASCO groups 6 to 8 (more than 41 per cent in ASCO 7 alone) — the relatively lower-skilled occupational groups (see Table C14). This compares with just over 43 per cent for total manufacturing and around 39 per cent for the economy as a whole (see Table C14). However, TCF employees in these groups comprise less than 13 per cent and less than 2 per cent of manufacturing employment and total employment in these occupations, respectively.

All TCF industries (other than leather and leather product manufacturing) exhibit a lower-skilled occupational profile than either total manufacturing or the economy as a whole. For example, 75 per cent of jobs in the knitting mills industry were in ASCO groups 6 to 8. Similarly, jobs in ASCO groups 6 to 8 for the textile fibre, yarn and woven fabric manufacturing and textile product manufacturing industries accounted for 69 and 63 per cent of total industry jobs, respectively. However, only 36 per cent of jobs in leather and leather product manufacturing were in ASCO groups 6 to 8.

The proportion of TCF jobs in ASCO groups 6 to 8 fell from around 66 per cent in May 1987 to just over 61 per cent in May 1996, a net reduction of around 19 500 jobs. However, there was some variation between TCF industries. For example, while jobs in these ASCO groups declined in the knitting mills and textile fibre, yarn and woven fabric manufacturing industries by 8500 and 8000, respectively, they increased in the textile product manufacturing industry by about 4000.

Jobs in all TCF industries (with the exception of textile product manufacturing) have become relatively more skilled between May 1987 and May 1996.

Table C15 shows that the reduction in TCF plant and machine operators and drivers was concentrated in yarn production machine operators (1700 jobs), fabric production machine operators (about 4500 jobs) and textile sewing machine operators (more than 8000 jobs). The decline in jobs in these occupations was greater for those filled by female employees. The greatest disparity was in textile sewing machine operators, where jobs filled by females declined by close to 10 000 while jobs filled by males increased by about 2000.

The decline in low-skilled TCF jobs was greatest for female textile sewing machine operators. It is probable that some of these moved to homeworking.

Qualification profile of TCF manufacturing

Relatively few TCF workers possess a high level of formal education. In May 1996, only 31 per cent of TCF employees had formal post-school qualifications, compared with 46 per cent for total manufacturing and 50 per cent for the economy as a whole (see Table C16). This supports the discussion above that about 70 per cent of TCF jobs do not require post-school qualifications.[5]

Table C16: Educational attainment of employees, May 1996

	All TCF		*All mfg*		*All industries*	
	('000)	*(%)*	*('000)*	*(%)*	*('000)*	*(%)*
With post-school qualifications						
Bachelor degree or higher	6.7	7.5	87.2	8.0	1 307.2	15.9
Undergraduate diploma	2.6	2.9	18.4	1.7	262.0	3.2
Associate diploma	3.8	4.3	73.9	6.8	582.6	7.1
Skilled vocational qualifications	11.0	12.5	268.4	24.6	1 400.8	17.1
Basic vocational qualifications	3.7	4.1	51.1	4.7	543.3	6.6
Total with post-school qualifications	**27.8**	**31.4**	**4 99.0**	**45.8**	**4 095.9**	**49.9**
Without post-school qualifications	60.3	68.1	585.1	53.7	3 921.6	47.8
Still at school	0.5	0.5	6.2	0.6	193.4	2.4
Total	**88.5**	**100.0**	**1 090.3**	**100.0**	**8 210.9**	**100.0**

Note: Totals may differ from other tables in this appendix because of different sampling methodology.

Source: Unpublished ABS *Labour Force Supplementary Survey* data

Hours of work

Average weekly total hours (AWTH) worked by TCF employees between 1985 and 1996 have been broadly consistent with those in total manufacturing, and slightly higher than in the economy as a whole. AWTH do not appear to have changed significantly over the period. However, such judgements must be treated with caution because of breaks in the data series.

There are significant differences between TCF industries. For example, in May 1996, AWTH worked in all TCF industries other than the clothing manufacturing were about 38–44 hours (see Table C17). AWTH for the clothing manufacturing industry, on the other hand, were less than 37 hours. This suggests a larger proportion of part-time or casual employees in this industry.

[5] That is, the proportion of jobs that fall into ASCO groups 6 to 8.

AWTH for female TCF employees were consistently less than those for male employees. However, the gender disparity for TCF was generally less than for total manufacturing and always less than for the economy as a whole.

Table C17: Average weekly total hours, May 1985 to May 1996

	ASIC data				*ANZSIC data*		
	1985	*1989*	*1992*	*1994*	*1994*	*1995*	*1996*
	(hrs)	*(hrs)*	*(hrs)*	*(hrs)*	*(hrs)*	*(hrs)*	*(hrs)*
Textile fibre, yarn and woven fabric mfg (221)	42.2	43.4	44.9	44.9	44.9	39.9	41.1
Textile product mfg (222)	40.6	41.6	40.5	38.3	38.2	40.8	38.3
Knitting mills (223)	38.3	39.1	36.7	46.9	46.9	46.0	41.8
Clothing mfg (224)	37.3	36.8	35.8	34.9	35.4	35.4	36.8
Footwear mfg (225)	na	na	na	na	38.6	38.5	38.9
Leather and leather product mfg (226)	40.7	39.1	47.7	45.4	46.9	42.2	44.1
Total textiles (ASIC 23)	**41.3**	**42.8**	**42.6**	**42.1**	na	na	na
All TCF (22)	nc	nc	nc	nc	**39.4**	**38.4**	**39.1**
Total clothing and footwear (ASIC 24)	**37.8**	**37.4**	**36.2**	**36.6**	na	na	na
All manufacturing	**39.7**	**40.0**	**39.3**	**39.6**	**39.6**	**39.5**	**39.5**
All industries (excluding agriculture)	**35.2**	**34.6**	**33.9**	**33.7**	**33.7**	**33.5**	**33.2**

Note: ANZSIC data are not available from the ABS prior to 1993. The concordance used for the ASIC data presented for 1985 to 1994 is ASIC 234 to ANZSIC 221, ASIC 235 to ANZSIC 222, ASIC 244 to ANZSIC 223, ASIC 245 to ANZSIC 224, ASIC 246 to ANZSIC 225, ASIC 345 to ANZSIC 226. However, because of slight inconsistencies in this concordance, care should be taken when using data for time-series analysis.

na Not available.

nc Not collected.

Source: Estimates based on unpublished ABS *Employee Earnings and Hours Survey* data

Average weekly earnings

Average weekly earnings are closely linked to the total number of hours worked and the skill level of employees. Although, on average, TCF employees have tended to work longer hours than employees in either manufacturing in general or the economy as a whole, they are, on average, less skilled.

Between May 1985 and May 1996 real average hourly total earnings for TCF workers in all TCF industries were consistently lower than those for total manufacturing and the economy as a whole (see Table C18). Within TCF, employees in the textiles and leather industries have generally been paid more than those in the clothing and footwear (and knitting mills) industries. This is not surprising — as discussed above, the textiles and leather industries

workforces are more skilled than those in clothing and footwear manufacturing.[6]

Table C18: Real average hourly total earnings ($1996)[a], May 1985 to May 1996

	ASIC data				*ANZSIC data*		
	1985	*1989*	*1992*	*1994*	*1994*	*1995*	*1996*
	($)	*($)*	*($)*	*($)*	*($)*	*($)*	*($)*
Textile fibre, yarn and woven fabric mfg (221)	13.28	13.43	14.28	15.70	15.70	13.37	14.29
Textile product mfg (222)	13.49	13.98	14.42	12.94	12.91	15.15	15.72
Knitting mills (223)	12.35	12.21	12.21	13.79	13.79	13.95	12.83
Clothing mfg (224)	12.13	11.42	12.40	12.75	12.74	12.32	12.73
Footwear mfg (225)	na	na	na	na	13.51	12.57	13.26
Leather and leather product mfg (226)	13.07	12.83	13.59	13.71	14.35	13.50	12.47
Total textiles (ASIC 23)	**13.39**	**13.61**	**14.35**	**14.64**	na	na	na
All TCF (22)	na	na	na	na	**13.74**	**13.13**	**13.53**
Total clothing and footwear (ASIC 24)	**12.18**	**11.64**	**12.47**	**12.95**	na	na	na
All manufacturing	**15.41**	**14.89**	**15.27**	**15.77**	**15.80**	**15.98**	**16.25**
All industries (excluding agriculture)	**16.48**	**15.79**	**16.32**	**16.66**	**16.66**	**16.68**	**16.87**

Note: ANZSIC data are not available from the ABS prior to 1993. The concordance used for the ASIC data present for 1985 to 1994 is; ASIC 234 to ANZSIC 221, ASIC 235 to ANZSIC 222, ASIC 244 to ANZSIC 223, ASIC 245 to ANZSIC 224, ASIC 246 to ANZSIC 225, ASIC 345 to ANZSIC 226. However, because of slight inconsistencies in this concordance, care should be taken when using data for time-series analysis.

a Hourly earnings are expressed in constant 1996 dollars using changes in the CPI.

na Not available.

nc Not collected.

Source: Estimates based on unpublished ABS *Employee Earnings and Hours Survey* data

Real average hourly total earnings for TCF workers appear to have increased more than for total manufacturing and the economy as a whole between 1985 and 1996 (see Table C18).[7] However, as discussed above, the skill level of the workforce has risen between 1987 and 1996. Overall, this suggests a relative decline in the return to skill in TCF. The use of homeworkers, whom, according to anecdotal evidence, are willing to accept below-award wages and conditions (see Appendix D), may be placing downward pressure on real wages for lower-skilled occupations.

6 There is some decline in the final period for employees in leather and leather product munufacturing which is not supported by anecdotal evidence. This discrepancy may arise from sampling error due to the small size of the industry.

7 However, due to changes in ABS classifications in 1993, care should be taken when making such judgements over time.

Labour mobility

The mobility of the TCF workforce can be considered from two perspectives: first, the experience of people displaced from TCF industries; and second, the experience of those currently employed in these industries.

Information about the experience of those displaced from TCF jobs is important in assessing adjustment costs of policy and other changes. This type of information is difficult to obtain as it generally requires tracking of individuals over time (see Chapter 4). Information about the mobility of those currently employed in the TCF sector is more readily available.

Mobility of existing TCF workforce

TCF employees appear to be less mobile than employees in either total manufacturing or the economy as a whole. ABS survey results show that between 1988 and 1996, between 10 and 14 per cent of people employed in TCF firms had changed either their employer or job location, compared with 14 to 19 per cent for manufacturing and 18 to 25 per cent for the economy as a whole (see Table C19).

Table C19: Employees who changed employer, business or locality in previous 12 months, February 1988 to February 1996

	Number of employees			*Proportion of total*		
Industry of employment at time of survey	*1988*	*1992*	*1996*	*1988*	*1992*	*1996*
	('000)	*('000)*	*('000)*	*(%)*	*(%)*	*(%)*
Textile fibre, yarn and woven fabric mfg (221)	*2.5*	*1.6*	*1.6*	*14.1*	*11.5*	*12.3*
Textile product mfg (222)	*1.6*	*1.3*	*1.6*	*17.7*	*10.8*	*10.0*
Knitting mills (223)	*2.5*	*0.1*	*0.0*	*22.0*	*2.5*	*0.0*
Clothing mfg (224)	5.8	5.7	8.1	12.0	10.6	15.8
Footwear mfg (225)	*1.3*	*0.9*	*0.4*	*14.9*	*15.4*	*5.4*
Leather and leather product mfg (226)	*0.3*	*0.4*	*0.0*	*5.0*	*9.1*	*0.0*
All TCF (22)	**14.0**	**9.9**	**11.7**	**13.9**	**10.7**	**12.6**
All manufacturing	**175.3**	**139.5**	**193.1**	**16.4**	**13.7**	**18.7**
All industries	**1 200.9**	**1 393.0**	**1 844.9**	**18.3**	**19.8**	**24.6**

Note: Figures in *italics* have relative standard errors greater then 25 per cent.

Source: Estimates based on unpublished ABS *Labour Mobility, Australia* data

Table C20 shows that of the people employed in TCF in 1987 who changed employer or location in the 12 months prior to the survey, more than half moved into employment outside the TCF industry. Notwithstanding a fall in intra-industry mobility (that is, mobility within the same TCF industry), between

1991 and 1992 (which may be associated with the recession), this pattern of inter-industry mobility appears to have continued in 1996.

As discussed above, the ABS data relate only to the incumbent TCF workforce at the time of survey, and do not include TCF employees who moved out of the industry completely. Given that there has been considerable rationalisation in the TCF industry, this is likely to underestimate the degree of labour mobility. The ABS data do not capture the mobility of homeworkers.

Table C20: Destination of TCF employees who changed employer, business or location, February 1988 to February 1996

	Employees who worked in TCF 12 months prior to survey and changed employer/business or location					
Industry of employment at time of survey	*1988*	*1992*	*1996*	*1988*	*1992*	*1996*
	(No.)	*(No.)*	*(No.)*	*(%)*	*(%)*	*(%)*
TCF	5 427	6 336	6 440	33.1	61.7	47.1
Manufacturing (excl. TCF)	*2 588*	*518*	*1 713*	*15.8*	*5.0*	*12.5*
Total Manufacturing	**8 015**	**6 854**	**8 153**	**48.9**	**66.7**	**59.7**
Other industries	8 369	3 420	5 514	51.1	33.3	40.3
All industries	**16 385**	**10 275**	**13 667**	**100.0**	**100.0**	**100.0**

Note: Figures in *italics* have relative standard errors greater then 25 per cent.

Source: Estimates based on unpublished ABS *Labour Mobility, Australia* data

Notwithstanding the limitations discussed above, the data also indicate a fall in mobility between TCF industries. Table C21 shows that the proportion of new employees recruited from within the same TCF industry has generally increased between 1988 and 1996.

Table C21: Proportion of new employees who worked in same TCF industry 12 months prior, February 1988 to February 1996

	Proportion of employees who worked in same industry 12 months prior			*Indexes 1988=100.0*		
Industry of employment at time of survey	*1988*	*1992*	*1996*	*1988*	*1992*	*1996*
	(%)	*(%)*	*(%)*	*(Index)*	*(Index)*	*(Index)*
Textile fibre, yarn and woven fabric mfg (221)	84.7	85.2	90.5	100.0	100.6	106.8
Textile product mfg (222)	74.7	88.4	94.1	100.0	118.4	125.9
Knitting mills (223)	79.6	93.1	100.0	100.0	117.0	125.6
Clothing mfg (224)	91.1	96.4	94.8	100.0	105.8	104.0
Footwear mfg (225)	89.2	86.9	94.6	100.0	97.4	106.0
Leather and leather product mfg (226)	88.8	84.9	100.0	100.0	95.6	112.6

Source: Estimates based on unpublished ABS *Labour Mobility, Australia* data

D Homeworking in Australia

D1 Definition of homework

Homework, sometimes called 'outwork', has been defined by the International Labour Organisation (ILO) as:

> Work carried out by a person, to be referred to as a homeworker, in his or her own home or in premises he or she has chosen; for remuneration; which results in a product or service as specified by the employer, whether the equipment, materials or other inputs used are provided by this person, the employer, or the intermediary, as long as this person does not have the degree of autonomy and does not fulfil other conditions necessary to be considered an independent worker under national laws, regulations or court decisions. (ILO 1995b, p. 160)

In Australia, the TCF industry has simplified this to the production of garments or other products "... in a private dwelling or in premises other than a registered factory ..." (Homeworkers Code of Practice, TCFUA, unpublished). Homeworkers are not the same as self-employed crafts-people because they do not have direct control over production methods they use or work scheduling, they do not market their services directly to the public or to other businesses (as would, for example, a self-employed dressmaker) and importantly, they are not economically independent of the employer or subcontractor for whom they work. In practice, this distinction is not always clear, particularly where a homeworker undertakes work for more than one subcontractor or manufacturer or is employed through contract arrangements which are similar to those used by self-employed workers.

D2 Structure of TCF homework

Industry concentration

Internationally, TCF homework is most commonly found in clothing 'making up' (sewing), trimming and finishing and in machining and assembling shoe uppers (ILO 1996b, p. 65). The Textiles Clothing and Footwear Union of Australia (TCFUA) and others have stated that homeworking in Australia also follows this pattern, being most often found in the clothing sector and particularly in women's fashion outerwear (sub. 128, p. 22). This concentration

is due to a number of factors, discussed in Section D3 below. They include the labour-intensive nature of production, mobile machinery, intermittent demand, short production runs and quick response demands.

The Senate Economics References Committee 1996 inquiry into 'outworking in the Garment Industry' (Collins Report 1996a) found that homeworking occurs also in men's and children's clothing, footwear, knitted textiles (operating knitting machines), soft furnishings, manchester and outdoor wear, but that it was used less extensively for these products than for women's apparel (Collins Report 1996a, p. 9). Homeworking is also used occasionally in footwear manufacture. The Footwear Manufacturers Association of Australia stated that:

> Outworking is not very widely used in the Footwear Industry. ... it is usually availed of only to sew uppers which are then returned to the factory for the making and finishing processes. However, it is believed that less than 5 per cent of the sewing operations in the total industry is performed by outworkers. (sub. 103, p. 6)

Inquiry participants stated that other common TCF products such as socks, hosiery, most underwear and all textiles and fabrics are not made by homeworkers, being better suited to large-scale, capital-intensive production. (Burlon Hosiery, sub. 20, SCAPA Filtration, sub. 28, Pacific Brands, trans., p. 525)

Geographic concentration

TCF homeworking primarily occurs in the larger cities where the clothing industry is concentrated. The majority of TCF homeworkers are located in Melbourne and Sydney, but homeworking is known to occur also in Adelaide, Brisbane, Perth and larger regional TCF centres such as Newcastle, Wollongong and Geelong. Within the larger cities, homework tends to be concentrated in particular suburbs such as the inner north, west and outer south-east of Melbourne and the outer west and south-west suburbs of Sydney. (TCFUA, sub. 128, NSW Working Women's Centre, sub. 61, Dale Street Women's Health Centre, sub. 48, Barrymore's, sub. 9)

This concentration is related to the structure of homework, whereby close proximity is important for minimising the time and cost of transporting materials and output between workers and subcontractors. It is related also to the way homeworkers are recruited, which is often through word of mouth within local and migrant communities or through local ethnic newspapers. (Association of Non English Speaking Women of Australia, sub. 148, Asian Women at Work, sub. 126, Dale St Women's Health Centre, sub. 48)

Tasks and skills

The variety of tasks and skill levels required of homeworkers varies across the full range of clothing and other TCF production, including cutting, sewing, finishing, pressing and labelling. Clothing homeworkers often perform only one or two tasks such as sewing darts and seams, overlocking and pressing seams, attaching collars, cuffs, buttons, trims and linings or operating knitting machines for jumpers and cardigans. Cutting appears to be less commonly done as homework due to the widespread use of large-scale, automated machinery and the need for strict quality control. In manchester and other textile production, homeworkers can be engaged to sew and overlock seams and to attach ruffles, fastenings, piping and other trims.

Work tasks can be divided also by specialisation in a particular type of product, for example, swimwear, stretch fabrics, fashion knitwear or suits and jackets (which generally require more tailoring skills). In Adelaide, for example:

> Some garment homeworkers have specialised skills in leather and bridal wear, while others produce women's and children's fashion garments and manchester. (Dale St Women's Health Centre, sub. 48, p. 2)

The subcontracting network

The manufacture of clothing and other TCF products can be divided into a number of discrete stages of production: designing, cutting, sewing, finishing, pressing, labelling, packaging and distribution. Contracting can occur at any of these stages, but it is more common for the sewing components of the cut-make-trim (CMT) stage.

It has been claimed that up to 10 parties can be involved in the manufacture of a single garment, with items being transported between homeworkers for each task in the production sequence (TCFUA in Collins Report 1996b). While any number of workers and subcontractors can be involved, the chain of activity flows through four broad levels of responsibility (TCFUA sub. 128):

1. The principal manufacturer (sometimes a retailer), who designs the garment, purchases the materials and arranges production and final distribution.
2. The manufacturing contractor, sometimes called a 'maker-up' or CMT contractor, who is contracted by the principal to manufacture the garment. CMT contractors can have a factory and do the work in house or they can act as a clearing house, contracting some or all stages of the process to one or more subcontractors.

3. The subcontractor, who undertakes to do all or part of the making-up for the manufacturing contractor and distributes the work to each homeworker.
4. The homeworker, who undertakes to do all or some of the production tasks, as specified by the subcontractor. Homeworkers usually own or lease their own machinery and equipment but sometimes the machinery is provided by the subcontractor (for example, for specialist applications).

The contracting chain can be complicated further by variations on this structure:

> In some cases outworkers work directly to a principal, in other cases they work to more than one principal or to both a principal and an intermediary. In some cases they undertake work directly for a principal and act as an intermediary themselves by giving work out to others. They sometimes gain work through word of mouth, receive payments in cash and often do not have accurate information about the person who engages or pays them. (Department of Industrial Relations in Collins Report 1996b, p. 652)

This complex system is often an informal one. ANESBWA stated that the homeworker may not always know the identity of the principal manufacturer and that there is "... usually no contract ..." between the homeworker and the subcontractor (sub. 148, p. 3). Similarly, the principal manufacturer may not always know whether the contractor or subcontractor uses homeworkers. Where they are a signatory to the industry's voluntary Code of Practice, the manufacturer would be obliged to ensure that any homeworkers used by their subcontractors are employed under legal terms and conditions.

D3 Significance of TCF homework

Homework always has existed in clothing manufacture in Australia and other countries. Indeed, it is often regarded as a typical production characteristic of the industry, reflecting the relatively low-cost, mobile technology and methods, the historical predominance of small, family-based firms and the fact that in many cultures, sewing is seen as a traditionally 'female' domestic skill (ILO 1996b, Greig 1991, Centre for Working Women 1986).

It is notoriously difficult to obtain reliable data of the number or employment trends of homeworkers, a problem noted by the ILO as common to many countries (ILO 1996b). For example, the Collins Report was presented with estimates ranging from 50 000 full time homeworkers to a supply pool of 330 000 homeworkers in the Australian clothing sector in 1996. The Collins Report was not able to reach a conclusion on the likely total number of homeworkers in clothing production, but it found that anecdotal evidence

strongly suggested that it had increased significantly over decade to 1996 (Collins Report 1996a).

However, in the clothing manufacturing sector, where homework is thought to be concentrated, total real turnover fell by 17 percent and real gross product fell by 12 per cent between 1984-85 and 1994-95 (see Appendix B). For the same sector, official employment fell by 18 per cent between 1985 and 1996 (Commission estimates based on unpublished Australian Bureau of Statistics (ABS) *Labour Force Survey* data). Any increase in clothing homework has therefore been in the context of an otherwise shrinking industry.

Demand Factors

Despite the decline in overall TCF manufacturing activity and clothing manufacturing in particular, there are a number of reasons why demand for homeworkers may have increased over the last decade. Price competition pressures on Australian clothing (and other TCF) manufacturers increased during the late 1980s and early 1990s for a number of reasons. They include trade liberalisation in the industry, increased international competition, gradual shifts in retail spending patterns away from clothing (reducing average demand as a proportion of household income) and, earlier this decade, the effects of the recession on general retail demand.

Contracting some or all of their production to casually engaged homeworkers (through subcontractors) can save manufacturers many of the normal labour on-costs of full-time direct employment and can allow firms to avoid "... some of the most restrictive award provisions ..." (ACM sub. 87, p. 19). For example, the manufacturer is not responsible for superannuation, workers' compensation or leave entitlements for self-employed contractors, and payments calculated by the piece rather than by the hour can reduce the need to pay additional penalty rates for overtime or non-standard hours of work.

Significant savings can be made also on plant and machinery costs as the manufacturer's own production facilities can be reduced or even eliminated. These costs are effectively transferred to the homeworkers, who will generally own or lease their own equipment (sometimes the machines are owned by the subcontractor), work from their own home and be responsible for maintenance, ancillary materials and equipment, power and other associated costs.

Other factors leading to an increase in the demand for homeworkers have arisen from developments in the structure of the fashion apparel sector's supply chain. Increasing importance is now placed on quick response times, product differentiation and flexibility in supply (TCFUA, sub. 128, p. 22). For the local

manufacturer, this translates into smaller production runs and shorter lead times for filling orders. As one member of the Australian Chamber of Manufacturers (ACM) summarised the situation:

> Many manufacturers are under extreme pressure from retailers to meet specific price points and also to meet delivery schedules...Outworkers provide the flexibility to achieve this. I believe the demands made on suppliers by retailers, plus the competition of imports, creates the need to work with outworkers. (ACM sub. 87, p. 19)

This flexibility "has allowed many firms to tailor their production needs more closely with fluctuating demand while reducing labour costs and overheads" (Grieg 1991). Even for manufacturers who have chosen to move the bulk of their production offshore, contracted homeworking can supplement the imported products, enabling them to fill repeat orders quickly or to add new items to a seasonal range as required.

On the other hand, homework-based subcontracting can carry disadvantages for the manufacturer and may not suit all firms. Companies operating in market niches, with a strong brand image and public profile, tend to be selective with subcontracting, due to concerns over quality, consistency and public relations repercussions. Industry consultant Harold Scruby has observed that:

> Quality cannot be controlled when a garment is being driven from house to house; from cutting room to kitchen to lounge room to laundry and back. Manufacturers are going to have to spend money on top quality machinery and be prepared to sophisticate (sic) their planning and budgeting process. (Scruby 1989, p. 4)

Methods are available to address these problems (for example, EDI and other inventory control systems) but some companies have chosen to avoid them by not using homeworkers. For example, the high profile company, Country Road, announced a ban on the use of home-based workers by its subcontractors and suppliers, largely due to concerns about the effects of homework on quality control and on its reputation (Country Road Press Release 22 August 1996). Elsewhere in the clothing sector, some firms producing large runs of standard items such as jeans or shirts have found it cheaper to manufacture in automated factories either in Australia or offshore. These trends are not unique to Australia but can be seen in TCF industries around the world (Collins Report 1996a, ILO 1995b and ILO 1996b).

D4 Evidence on extent of TCF homework in Australia

A range of estimates is available for the number of TCF homeworkers employed in Australia. Unfortunately, all are of limited reliability and must be treated

with caution. Comparisons between estimates can also be problematic due to the different methodologies used. In addition, the intermittent, casual nature of most homework and the seasonal demand patterns of the clothing industry mean that the number of TCF homeworkers employed is likely to fluctuate significantly, even over relatively short periods of time.

Australian Bureau of Statistics

The ABS has several data series which can potentially identify TCF and other homeworkers. However, the ABS believes that these data are likely to give underestimates of the number of homeworkers employed at any one time. This is due in part to the casual nature of homework, which causes employment status to fluctuate more than for permanent employment, and in part to the informal, underground aspects of homework, which may cause homeworkers to be reluctant to identify themselves in government surveys.

In the 1991 *Census of Population and Housing*, 88 105 people identified themselves as employed in the TCF industries. About 8 per cent of these said they worked in their own home (see Table D1). This is a significantly higher proportion of identified homeworkers than for total manufacturing or all industries. Data from the 1996 Census are not yet available for comparison.

Table D1: 1991 Census of Population & Housing

ASIC Industry[a]	*Work at home*		*Total employed*
	(No.)	*(%)*	*(No.)*
Textile fibre, yarn & woven fabrics (234)	279	2.0	13 592
Other textile products (235)	374	3.6	10 398
Knitting mills (244)	208	3.6	5 760
Clothing (245)	2 483	8.2	30 278
Footwear (246)	240	3.2	7 420
Leather & leather products (345)	281	7.7	3 617
Total TCF	**7 021**	**7.9**	**88 105**
Total manufacturing	**26 872**	**2.8**	**932 995**
All industries	**386 177**	**5.4**	**7 109 336**

a 1991 Census Industry data is classified according to the 1983 edition of ASIC.

Source: ABS 1991 *Census of Population and Housing*, unpublished data

Although everyone is required to respond to the Census and it should hence identify all home-based workers, the data are likely to underestimate TCF home-workers for a number of reasons:

- it is recorded only for each employed person's main job. It does not include people's second jobs, or people who identified themselves elsewhere in the Census as currently unemployed or not in the workforce (for example, home duties) but who could be sometimes sewing at home;
- it included only those who worked in their own home and not those who may have worked in someone else's home; and
- some homeworkers may have been reluctant to identify themselves in an official government data instrument such as the Census.

The ABS 'Persons Employed at Home' supplement to the Monthly Population Survey was conducted in April 1989, March 1992 and September 1995. Unfortunately, the very small sample size for this supplement means that data for individual industries have very high sampling errors and are unreliable. For example, the 1995 figure of 4531 home workers is derived from just 15 survey respondents. In addition, the ABS has identified some other problems with using this survey to identify TCF homeworkers:

- it defines people employed in their own home as those who worked more hours at home than elsewhere in their main or second job, so homeworkers who worked mainly in someone else's home would be excluded; and
- it takes its sample from all statistical divisions in Australia, whereas homeworkers are concentrated in certain geographic areas and so will be under-represented in the sample.

Other ABS surveys were investigated during this inquiry for their potential to provide data on homeworkers. One approach was to compare TCF employment data from the *Manufacturing Survey* , which is factory-based, with data from the *Labour Force Survey*, which is household-based. It has been argued that the difference between the two provides an indicator of non-factory-based TCF employment (TCFUA 1995).

The reported difference in TCF employment between the two surveys appears to have increased from 4000 (3.3 per cent of the *Labour Force Survey* figure) in 1985 to 20 000 (20.5 per cent of the *Labour Force Survey* figure) in 1996, implying an increase of 16 000 in non-factory based TCF employment. However, when tested on other industry sectors, this methodology produces some very inconsistent results. For example, a comparison of the differential for 'all manufacturing' with that for 'TCF industries' prior to 1992 appears to

indicate that the proportion of non-factory-based employment was higher in manufacturing industries other than TCF (12.2 per cent for all manufacturing compared with 6.4 per cent for TCF in 1989) which is inconsistent with other evidence on homeworking trends.

The ABS does not endorse this methodology and in a letter to the Commission, explained the main reasons for discrepancies between the *Manufacturing Survey* and the *Labour Force Survey*:

- the MIS relies on employers completing business questionnaires and returning them by mail, whereas the LFS uses interviews with a 'responsible adult' in selected households. Neither survey directly questions all individual employees;
- MIS data are for June while the LFS data are for mid-May and mid-August;
- 'industry of employment' coding in the LFS relies on the 'business activity' of the employer as described by the respondent and is more subjective than that used in the MIS. The MIS industry coding is based on Business Register information and is far more accurate;
- undercoverage has been detected in the MIS due to delays in updating the Business Register. Data is being adjusted to compensate for this but is not yet complete;
- MIS is a survey of establishments listed with a manufacturing industry code in the Business Register. Many manufacturing sites include employees undertaking activities which are not strictly manufacturing (such as warehousing, transport and wholesaling). These people are not included in the MIS employment data. They may be listed, however, as working in manufacturing in the LFS; and
- increased outsourcing of many services means LFS data are higher than MIS data across a range of industries and occupations. It is now common to outsource cleaning, accounting, transport and distribution. These people may still be identified as manufacturing workers in the LFS but would not be included as such in the MIS because they are not employees of the company being surveyed, even if they work on site.

Australian Taxation Office

Before introducing the Reportable Payments System (RPS) in 1994, the Australian Tax Office (ATO) developed estimates of turnover and employment at various levels of the clothing industry (see Table D2). The estimates were used to gain an insight into the potential number of RPS 'payees'

(subcontractors and homeworkers) and 'payers' (firms who use subcontractors) in the clothing industry who may be avoiding their tax obligations.

Using clothing company audits, known industry profit margins, reported total value of sales (from ABS data) and estimates of contract payments and profit margins for each level of activity, the ATO produced estimates for the number 'major makers-up' (contractor businesses engaged directly by the manufacturers), 'subcontractor makers-up' (businesses operated by one person or more such as 'mum and dad' partnerships who either manufacture clothing themselves or further distribute work to individual homeworkers) and 'homeworkers' (full time or part time employed individuals).

These estimates imply an average annual net profit of $12 950 for each 'subcontractor maker-up' business and $7300 for each individual homeworker (in 1990-91 dollars). This implies that this work does not constitute a full time activity for all people at either of these levels, a situation substantiated by community groups who reported that homeworkers regularly "... complained of an inadequate and irregular supply of work ..." (ANESBWA, sub. 148, p. 5).

Table D.2: ATO estimates of activity in the clothing industry, 1990-91

Clothing Industry level	*Businesses*	*Turnover*	*Estimated net profit*
ABS data:	*(No.)*	*($m)*	*($m)*
Retailers	13 549	11 035	220
Wholesalers	1 739	2 495	125
Major manufacturers	405	3 472	172
Minor manufacturers	1 539	465	28
ATO estimates:			
Major Makers-up	1 500	706	71
Subcontractor Makers-up	20 000	398	259
Homeworkers	50 000[a]	406	365

a Number of individual workers.

Source: Australian Taxation Office

As of May 1996, the ATO had registered 5798 RPS payers (subcontracting companies) and identified 20 561 payees (individual subcontractors and homeworkers), 34 per cent of whom had outstanding income tax returns (see Section D5).

Industry estimates

The TCFUA has made several attempts to quantify the extent of TCF homeworking in Australia. In its response to an ILO questionnaire in 1992, the TCFUA estimated that there were 60 000 homeworkers in the clothing sector (not equivalent full time) Australia wide. This was based on their own observation of the industry and was not intended to be a definitive figure.

The TCFUA undertook further research to estimate the extent of homework as part of its 'National Outwork Information Campaign' in 1994. A key component of the campaign was a national, multi-lingual phone-in for homeworkers. This phone-in received 3000 calls over eight weeks and provided a large, though somewhat disjointed information source for research and advocacy purposes (TCFUA 1995).

The TCFUA estimate of the number of homeworkers is shown in Table D3. It was derived from the results of the phone-in and other sources including lists of companies who supplied large retailers, were registered as clothing manufacturers, were respondent to the federal Clothing Trades Award or were reported to the TCFUA by homeworkers. A small study of clothing contractors and subcontractors in Melbourne was also undertaken (TCFUA sub. 28).

Table D3: TCFUA estimate of total supply of TCF homeworkers, 1995

State	*Homeworkers*
	(No.)
Victoria	144 000
New South Wales	120 000
Queensland	25 000
South Australia	25 000
Western Australia	15 000
Australia	**329 000**

Source: TCFUA sub. 128 p. 32

The TCFUA has emphasised that this estimate is "... the approximate pool of homeworkers ... it does not assume that all 329 000 workers would be full time employed and working every day ..." (sub. 128, p. 33).

The TCFUA estimate of the supply of homeworkers has been much debated in the industry. In the Collins Report, both the TFIA and the Retailers Council of Australia (RCA) gave reasons for believing that it was far too high, but declined to give their own estimates of homeworker supply or employment:

> We would dispute the 329 000. If you multiplied that number with any reasonable amount of money per year, you would come up with telephone numbers for the supposed added value in Australia ... There is just no way, if you look at total output of the industry and the total sales of TCF, that you could get any realistic relativity ... Whether it is 30 000 or 40 000 or 100 000 we are not sure. (TFIA in Collins Report 1996b, p. 392)

And:

> we really do not know how many homeworkers there are ... given that the whole retail industry — that is every retailer in Australia — only employs about one million people and the clothing sector of the retail industry probably only employs about 100 000. It does seem to us that 300 000 people involved in a manufacturing process which is a relatively small part of the manufacturing industry, is a very large number, and it would not have that many people involved. (Retailers Council of Australia in Collins Report 1996b, p. 708)

To put the TCFUA's 1995 estimate into a broader perspective, it is useful to compare it to national Australian workforce data. From 1990 to 1995, there was an average of approximately 850 000 unemployed people (9 per cent of the Australian workforce) at any given time (approximate averages for 1990-95, ABS 1997e). The TCFUA stresses that its estimate assumes that many TCF homeworkers are casual rather than full-time homeworkers. If it were assumed that about half of the TCFUA's estimated pool of 330 000 homeworkers were unemployed for ABS survey purposes (that is, they were actively seeking work) while the other half were either employed or not seeking work, this would imply that around 20 per cent of all unemployed people in Australia were undertaking TCF homework at any given time, which seems improbably high.

Derived estimates

In both this Inquiry and the Collins Report, few TCF companies were able to discuss how many homeworkers their subcontractors used, or the terms and conditions of their employment. This has made it difficult to derive estimates of the extent of homeworking from industry data.

Some local clothing manufacturers (some of whom use homeworkers) were able to provide information to the current inquiry about their employment and production patterns on a confidential basis. This made it possible to derive an estimate of average turnover per full-time worker (including employees and contracted homeworkers) for local clothing production of $60 440. The total turnover for the local clothing manufacturing industry in 1994-95 was $3.3 billion (unpublished ABS *Manufacturing Survey* data). Dividing this by the estimated turnover per employee ($60 440) gives a total full-time employment estimate of 54 860. Known local factory employment was approximately equal

to 31 210 full-time workers for 1994-95 (Industry Commission estimate based on unpublished ABS *Manufacturing Survey* data). The difference between the derived estimate of total full-time employment and known full-time factory employment is 23 650, which represents an approximate indicator of non-factory full-time employment in the local clothing manufacturing industry. That is, the total amount of non-factory work undertaken in clothing manufacturing is estimated to be equal to approximately 23 650 people working standard full time hours.

This estimate should be treated as an approximation of the minimum number of homeworkers in the Australian TCF industries because:

- it is only for the clothing manufacturing industry, not all TCF industries;
- it is for equivalent full time employment (38 hours per week), not total employment. Depending on the proportion of homeworkers working fewer than full time hours, the work could be drawn from a pool of people many times this size; and
- it assumes that the productivity (in terms of turnover per employee) of homeworkers is approximately equal to the productivity of equivalent factory-based employees. Where the productivity of homeworkers is in fact lower, the number of hours (or the number of individual homeworkers) required to produce the same output will be higher.

This estimate of homework in the clothing sector does not enable the Commission to estimate with confidence the total number of people undertaking TCF homework in Australia. Many homeworkers do not work full time hours, so the total pool of homeworkers could much higher than this derived estimate of full time equivalent clothing homeworkers. Given these qualifications, it appears likely that the total pool is somewhat less than 330 000 but probably greater than the ATO's estimate of 50 000 individuals.

D5 Remuneration and conditions

Legal status and entitlements

There has been long-standing confusion over the employment status of homeworkers on the part of manufacturers, subcontractors and homeworkers. Often it has been assumed that homeworkers are self-employed contractors and not employees, because they rarely are employed permanently and directly by the manufacturer and because they are paid for their output rather than for their

labour. (NSW Department of Industrial Relations and Employment, 1987 and TCFUA 1995). However, the Collins Report argued that:

> ... because of the nature of the work undertaken and the circumstances of their employment, most outworkers in the garment industry should be considered to be employees. (Collins Report 1996a, p. xiii)

The 1991 *Census of Population and Housing* provides some clues about how homeworkers themselves view their employment status. Alhough the number of identified home-based TCF workers in the 1991 Census was relatively small, over half said they were self-employed, as did homeworkers across all industries. However, TCF homeworkers were more likely to be wage or salary earners (that is, employees) and less likely to be employers or unpaid workers than homeworkers in other industries (see Table D4).

Table D4: 1991 Census of Population and Housing: employment status of people working at home

Industry group	*Wage/salary*	*Self-employed*	*Employer*	*Unpaid*	*Total*
	(%)	*(%)*	*(%)*	*(%)*	*(No.)*
All TCF	33.9	53.6	10.9	1.5	7 021
All manufacturing	24.5	58.6	14.4	2.6	26 872
All industries	21.9	55.1	18.2	4.8	386 177

Source: ABS 1991, *Census of Population and Housing*, unpublished data

Clothing homeworkers who are not self-employed are covered by the federal Clothing Trades Award 1982, which is mirrored closely by State awards in each State. The awards set out minimum wage rates and conditions of employment for all clothing workers, including subcontractors and homeworkers (called 'outworkers' in the text of the Award).

Under clauses 26 and 27, companies respondent to the award who employ homeworkers or subcontractors are required to register with the Australian Industrial Relations Commission (AIRC) or the relevant State's Industrial Registrar. However, this requirement has been largely ignored, with only 79 companies registering with the AIRC to November 1995 (ACM in Collins Report 1996b, p. 324). In South Australia, only 5 premises were registered with the State Industrial Registrar in 1996, even though at least 435 clothing manufacturing sites are estimated to be located in the State (South Australian Government, sub. 132, p. 5).

Clause 27(B)(v) of the federal award specifies that registered employers may "... not employ more than 10 outworkers at any one time ...". The standard

weekly hours for full time homeworkers under the award is 38 hours (the same as for other workers) but for part-time homeworkers the award sets a minimum of 20 hours per week rather than the normal 15 hours. These hours are to be determined by "providing sufficient work ... in the ordinary working week where the outworker is ready, willing and able to perform such work" [Clause[27](B)(ix)]. Where no work is available, the homeworker can be stood down without pay for up to 10 days [Clause 27(B)(x)(c)].

Federal award wage rates for clothing workers (including homeworkers) are set according to a skill based classification structure (see Table D5). Unless the homeworker is self-employed, the employer is responsible also for all normal labour on-costs including superannuation, workers compensation insurance, payroll tax and leave entitlements. As of 28 March 1996, award rates for weekly employer superannuation contributions ranged from $10.70 for juniors, apprentices and casual employees (working up to 30 hours per week) to $14.30 for full time adult employees (TCFUA 1997).

Table D5: Full-time wage rates, Federal Clothing Trades Award, Clause 7A (payable from 28 March 1996)

Skill Level	*Base Rate*	*Supplementary Payment*	*Arbitrated Safety Net*	*Award Rate*
	($)	*($)*	*($)*	*($)*
trainee	299.50	25.90	24.00	349.40
1	314.30	27.80	24.00	366.10
2	334.00	30.60	24.00	388.60
3	345.70	39.80	24.00	409.50
4	358.30	58.90	24.00	441.20
5	376.30	82.60	24.00	482.90

Source: TCFUA, NSW Branch (1997), *Clothing Division Union News*, Vol 1, No 18. p. 47

Piece rates are the most common method of payment for TCF homeworkers and are allowable under Australian industrial relations legislation. Clause 27 of the federal award sets out how these rates are to be calculated:

> Working time allowed for work to be performed shall be fair and reasonable and the time standards set for the work to be performed by outworkers will in every case be longer than the time standards that would be set for the same work if done in the factory to include a reasonable component to cover time spent on ancillary tasks such as bundling and unbundling, sorting, packing and the like. ... A factory undertaking the same or comparable work shall be used for the purpose of setting the time standards. [27 (B) (vi)]

> Pay for outwork performed in the ordinary working week at the minute rate of: (a) 1.2280 of the weekly award rate for the classification in which the outworker is employed for the first 38 hours of work; and (b) the minute rate ... multiplied by 1.5 ... for each hour thereafter. [27 (B) (vii)

Thus piece rates are officially to be calculated at a higher minute rate than is paid to ordinary factory employees to allow for additional time spent on ancillary tasks such as sorting, trimming and packing. Double time penalties are due for hours worked on weekends and public holidays, but are payable only where the homeworker and employer agreed on the hours prior to performance of the work [Clause 27 (B) (viii)].

The *Workplace Relations and Other Legislation Amendment Act* of 1996 came into effect in January 1997. Under this Act, all awards are due for review by July 1998 and any remaining clauses outside the 20 'Allowable Matters' will cease to be enforceable after that date. Conditions of employment for homeworkers are included in the 'allowable matters' for awards registered with the AIRC after January 1997.

However, where the current Clothing Award implies that homeworkers must be employed effectively under the same terms and conditions as factory employees, the 1996 Act requires only that their pay and conditions are 'fair and reasonable' relative to factory employees:

> [Awards can include] pay and conditions for outworkers, but only to the extent necessary to ensure that their overall pay and conditions of employment are fair and reasonable in comparison with the pay and conditions of employment specified in a relevant award or awards for employees who perform the same kind of work at an employer's business or commercial premises. [s89A (2) (t)]

The new Act also curtails the rights of unions to inspect premises and to be third party participants in workplace agreements. Any potentially negative effects on conditions resulting from this are mitigated to some extent by the 'no disadvantage' test, which theoretically applies to all employees, including homeworkers, though not to genuinely self-employed sub-contractors.

Evidence on remuneration

Even where all legal obligations are met (for example, by companies abiding by the Homeworker Code of Practice), casual homeworkers are generally cheaper to employ than permanent full-time factory workers (see Section D3 above).

The TCFUA, community groups and others believe that the majority of Australia's TCF homeworkers do not receive their entitlements as specified in the awards. In its submission to this Inquiry, the ACM said that homeworking

"... is seen by some as a means of avoiding some of the most restrictive award provisions" and cited the example of one of its members:

> As a company that uses contractors to perform work, I know that the majority of contractors employ outworkers to do work. Most of these would be paid on a piece-work rate and would work outside the award in many areas such as overtime, span of hours etc. If these operators were to be paid strictly by the award, the cost of labour would have to be greater. (ACM, sub. 87, p. 19)

Examples of actual pay rates for TCF homeworkers are shown in Box D1.

Box D1: Examples of pay rates received by clothing homeworkers

1. NSW 1988: "... Vietnamese women are working for less — maybe 60 cents per dress whereas I get two dollars ..." (ANESBWA sub. 148, p. 5). At the industry standard of 30 minutes to make a dress of medium level difficulty, this implies hourly rates of $1.20 and $4 in 1988 dollars.
2. Victoria 1994: "... One contractor showed us two garments being made by outworkers. One was a vest for which he/she received $21. Of this the outworker was paid nine dollars. The contractor also told the union that it took the outworker two hours to complete the garment. ... The second garment was a shirt for which the contractor received $17 and paid the outworker $6. This shirt he/she estimated could be completed within an hour, and would retail for up to $100." (TCFUA 1995, p. 16)
3. Victoria 1997: A Melbourne company manufacturing knitted women's apparel employs 50 homeworkers on a regular basis and many more as casuals for larger orders. The company pays piece rates equivalent to around $7 per hour in cash or cash cheques. Through their homeworkers, they have heard of others being paid the equivalent of $3 per hour (Industry Commission community consultations, 1997).
4. WA 1997: A Perth manufacturer of children's clothing stated that its home-based contractors "... work to a cost structure based on $12 per hour minimum and in many instances, the highly efficient workers can earn very much more ..." (Barrymore's, sub. 9, p. 4)

Source: sub. 148 p. 5, sub. 9, p. 4, TCFUA 1995, p. 16, Industry Commission community consultations.

Submissions stated that many homeworkers are paid in cash which, according to community groups, is rarely declared as income for taxation or social security purposes. Other common concerns included very late payments, under-payment and non-payment for completed work (TCFUA sub. 128, ANESBWA sub. 148, community consultations). Payments for holidays and other award entitlements were said to be a rarity, although it seems that some employers do attempt to create the appearance of providing paid leave:

> Two months before every holiday they reduce the price per piece, and then they say they are giving me paid holidays but actually it's all paid through my work. If I have a day sick leave, then they take 260 dresses instead of 240, and this is how they pay sick leave. (O'Donell 1988 in ANESBWA, sub. 148, p. 5)

Homework costs

Homeworkers normally cover the costs of obtaining and maintaining standard sewing and overlocking machinery themselves. Occasionally, machines are supplied by the subcontractor or manufacturer along with the fabrics and other components. This would be more common with specialist machinery such as cuff and collar attachers, buttonholers and piping machinery.

The costs of premises, machinery, power, thread and sewing accessories are not intended to be covered by award rates. Legally, homeworkers are entitled to claim all of these costs as deductions against personal income for taxation purposes. However, many homeworkers are on low incomes or are working outside the tax system, so it is likely that knowledge of how such deductions can be made — and the ability to make use of the deductions — is not widespread.

In its evidence to the Collins Report, the ACM argued that these costs should be seen in the context of the savings made by the homeworker in not having to travel to work, buy work clothes or pay for childcare:

> There is an expense in coming to work ... Some are paying for childminding ... these people do not have the expense in getting to work which is an offset of sorts to what these people do and the need for work type clothing. These types of things need to be considered. (ACM in Collins Report 1996b, p. 345)

However, others argued that the idea of childcare savings can be misleading:

> A lot of women hope to be able to combine the work of parenting and domestic labour and caring for kids with their work ... it is a nice idea but in reality it is very difficult to look after kids and do your work at the same time. (Dale St Women's Health Centre in Collins Report 1996b, p. 523)

Occupational health and safety

Workers' Compensation Issues

Legislation covering workers' compensation varies slightly from state to state, but unless a homeworker is self-employed, the employer (manufacturer or subcontractor) is responsible for workers' compensation insurance and for enforcing occupational health and safety (OH&S) standards for homeworkers.

As in all industries, genuinely self-employed workers are responsible for their own workers' compensation insurance and OH&S arrangements. For OH&S purposes, self-employment is defined as involving a contract of service rather than a contract of employment. Worksafe Australia believes since homeworkers are paid a piece-rate (that is, paid according to their output) this can enable "... those who employ outworkers ... [to] actively seek to obscure this relationship by pressing individual outworkers to present themselves as self-employed ..." (Worksafe Australia in Collins Report 1996b, p. 87).

Comprehensive data are not available on the number of TCF workers' compensation claims which come from homeworkers, but they are considered to be rare. Worksafe Australia has stated that nationally, the clothing and footwear industries have low rates of reported work-related injuries, at 12.4 incidents per 1000 workers (and only 3.7 per 1000 for women's outerwear) in 1992-93 compared with the national average of 25.2 per 1000 workers. However, Worksafe Australia has noted that "it is possible that the lower incident rates evident in some industry classes are connected with higher relative use of [unrecorded] outworkers" (Worksafe Australia in Collins Report 1996b, p. 88).

Previous research by the Industry Commission has found that on average, around a third of work-related injury and illness costs are borne by the employer with the remainder picked up by government (through health care and social security costs) and by individuals (IC 1994). The Collins Report found that few homeworkers are covered by workers' compensation insurance and that their awareness of potential OH&S hazards is low (Collins Report 1996a). The consequences of this situation are that the full health costs of these uninsured workers must be met by the public sector:

> Most employers of outworkers do not even provide workers' compensation insurance coverage for their workers or take any responsibility for the provision of a safe and healthy working environment. Outworkers have no choice but to resort to the Social Security system for assistance when they are injured, ... In this way, the public sector becomes responsible for what is essentially a private employer responsibility. (TCFUA sub. 128 p. 31)

Occupational health and safety issues

After pay rates, the concentration of hours worked by homeworkers is one of the greatest areas of concern for community and welfare groups. Although many homeworkers are not employed full-time, it appears that tight deadlines mean that very long hours are often worked to complete a job on time — 12 hour days and longer are said to be common, albeit for short periods of time. Submissions stated that homeworkers who miss a deadline or attempt to spread their workload over a longer period run the risk of losing future work. Where it

occurs frequently, this pattern of intermittent but concentrated hours of work can lead to a number of health and social problems for homeworkers and their families (TCFUA, sub. 128, ANESBWA, sub. 148).

Community groups working with TCF homeworkers reported a number of OH&S concerns to this inquiry. Health problems were more likely to arise where homeworkers operating in their own homes had not provided themselves with appropriate work equipment, space and facilities (Dale St Women's Health Centre, sub. 48, ANESBWA sub. 148, Industry Commission Community consultations). Some of the OH&S problems identified were:

- respiratory problems, including bronchitis and asthma, caused by airborne dust and textile fibres and lack of adequate ventilation. This can also affect other members of the household, including children;
- physical and mental fatigue and overuse injuries such as Repetitive Strain Injury (RSI) due to working in concentrated shifts;
- back and neck strain caused by long periods of sitting at machinery and by inadequate furniture and space;
- eye strain caused by long work periods and by inadequate lighting;
- stress caused by social isolation, deadline pressures and unreliable work and income flows; and
- injuries from inadequately maintained and installed machinery including machinery unsuited to standard domestic electrical systems.

Worksafe Australia made several OH&S recommendations to the Collins Report which were supported in its final recommendations (see Box D3):

- continue to extend industry initiated cooperation to improve the enforcement of OH&S regulations for homeworkers;
- retailers and contractors continue to extend coverage of agreed minimum OH&S standards to homeworkers; and
- the TCFDA (now discontinued) to consider incorporating OH&S criteria when determining funding for industry restructuring and training projects and in allocating funds under its 'Best Practice' program (Worksafe Australia in Collins Report 1996b, p. 95).

Underground economy issues

TCF homework has gained a widespread reputation as an illicit and exploitative form of work. This is due in part to the industrial relations and OH&S issues discussed above, but also to its association with taxation evasion and social

security irregularities. It has been claimed that these irregularites are made possible by the cash-based operations of parts of the subcontracting network.

The actual extent of tax evasion in the TCF subcontracting sector is difficult to determine, but the ATO has acknowledged that is potentially widespread. The ATO has estimated that the value of tax evasion in the TCF industries was between $80 and $100 million in 1996, with much of this loss arising from cash-based subcontracting and homeworking in the clothing industry (ATO in Collins Report 1996b, p. 595).

The ATO moved to address the problem by introducing the Reportable Payments System (RPS) for TCF subcontractors in 1994. This is a self-reporting compliance system for tracking all contracted payments and incomes. As at May 1996, the ATO had registered 5798 RPS payers (contracting companies) and had identified 20 561 RPS payees (subcontractors and individual homeworkers) in the clothing industry who had reporting obligations under the RPS. Around 35 per cent of the TCF payees so far identified by the ATO have had outstanding income tax returns.

The reporting requirements for RPS payers includes identification of the payees for each transaction (that is, the parties in receipt of each contract payment). The ATO is therefore expecting participation in the scheme to continue to grow as more and more payers and payees are identified and brought into the system (ATO in Collins Report 1996b). In separate actions, the ATO has also successfully prosecuted clothing companies attempting to evade their taxation obligations by using unreported cash and cash cheque payments.

There has been some debate within the industry and among community groups over how much TCF homeworkers and subcontractors understand about their obligations under the Australian taxation system, and how much information is needed in addition to that already provided by the ATO.

On the one hand, it is argued that because many homeworkers are recently arrived migrants, they may not understand the system or may even be fearful of it due to negative experiences with government agencies in other countries. On the other hand, some community and industry people argue that homeworkers understand the legal requirements, but choose to remain outside the tax system so as to increase their earnings (made necessary, some add, because homeworker earnings can be very low).

D6 Supply issues

Although little data is available about the total employment, hours and incomes of homeworkers in Australia, a number of studies have been conducted on why individuals engage in homework and what the effects can be for individual workers and their families. In Australia as in other developed countries, there appears to be two overlapping groups of TCF homeworkers — recently arrived migrants and former TCF factory workers.

In both groups, the majority of homeworkers are believed to be women. While some men are engaged in TCF homework, most are thought to be involved casually, typically assisting their wives or other family members with ancillary tasks such as sorting, packaging and deliveries (ANESBWA, sub. 148, Collins Report 1996a Asian Women at Work, sub 126).

Homework as a lifestyle choice

Some homeworkers view their work arrangements as a lifestyle choice, offering income, flexibility and independence. This is more likely to be the case for former TCF factory workers – particularly those with specialised skills – who have industry contacts, knowledge and skills to negotiate contracts with TCF manufacturers. One submission to this inquiry included a statement from a former homeworker outlining the benefits she had gained from homeworking:

> As an outworker myself for many years in the past, I would like to point out the advantages:
>
> - Being able to choose working the hours suited to my lifestyle and earn a satisfactory income;
> - To care for my children, to take them to and from school and to care for them when ill;
> - Not worrying about travelling arrangements to and from work, also to afford a second motor vehicle;
> - Being able to claim all my expenses related to working needs at home;
> - To have the opportunity to take time off if I need it;
> - Being fairly paid for the work that I do;
> - To work comfortably in my own home without the pressures of supervision. (Barrymore's, sub. 9, pp. 3–4)

Homework for other reasons

Social research in Australia and overseas, as well as evidence presented to this inquiry, indicates that the potential benefits of homeworking are not enjoyed by the majority of TCF homeworkers. In Australia as in other countries, TCF homeworking appears to be most often undertaken due to a lack of immediately available alternative employment options (ILO 1996).

As discussed at D2 above, TCF homework tends to be concentrated in particular suburbs of Sydney and Melbourne. These locations often coincide with areas of high unemployment. For example, in Sydney, the statistical regions of Fairfield—Liverpool and Canterbury—Bankstown had average unemployment rates of around 16 per cent and 12 per cent respectively from 1992 to 1997. In Melbourne, the statistical regions of North—West Melbourne and Outer—West Melbourne averaged around 14 per cent from 1992 to 1997 (ABS *Labour Force Survey*, unpublished data).

Another important factor for many homeworkers is access to suitable childcare. For some homeworkers, childcare represents a lifestyle choice, but for others it can become barrier to regular employment:

> A significant motivation for women to undertake outwork is lack of suitable, free or affordable childcare. Many outworkers would happily work in a factory if factory work was available. (Asian Women at Work, sub. 126, p. 1)

Industry and community groups have stated that TCF homeworking is often undertaken by recently arrived migrants of non-English speaking background. Community groups believes that up to 95 per cent of TCF homeworkers are non-English speaking background women, including women of Asian, Middle Eastern, South American and Eastern European origin (Australian Catholic Social Justice Council in Collins Report 1996b, ANESBWA, sub. 148). The TCFUA has estimates that up to 80 per cent may be of South East Asian or Chinese origin (Industry Commission community consultations). Asian Women at Work similarly reported that:

> the largest groups of clothing outworkers in Sydney are Chinese-speaking women from Vietnam, mainland China, Hong Kong and Taiwan, as well as Korea and the Philippines. (sub. 126, p. 1)

A number of studies have documented the settlement experiences of recently arrived migrants in Australia. Some of the factors which may lead recently arrived migrants to engage in TCF homework are:

- higher than average unemployment rates for non-English speaking background migrants, often with higher rates again for women, although for most groups these rates have fallen during the 1990's (see Table D6);

Table D6: Selected unemployment rates by birthplace, 1993-1997

Country of Birth	*February 1993*	*February 1995*	*February 1997*
Australia	12.2	9.0	9.7
Mainly English speaking countries[a]	11.2	9.3	7.6
Other countries	16.0	13.7	11.9
Middle East & North Africa			
Males	30.0	26.3	19.3
Females	31.7	19.2	23.5
Total Middle East & North Africa	**30.6**	**23.9**	**20.6**
South East Asia[b]			
Males (Vietnam males)	22.8 (37.6)	19.8 (30.7)	14.6 (17.6)
Females (Vietnam females)	17.8 (25.5)	18.4 (33.0)	15.8 (27.6)
Total South East Asia (Vietnam total)	**20.4 (32.8)**	**19.1 (31.7)**	**15.2 (21.7)**
North East Asia[c]			
Males (China males)	11.6 (11.2)	8.7 (10.1)	10.7 (15.0)
Females (China females)	15.1 (15.4)	14.4 (16.4)	11.3 (16.2)
Total North East Asia (China total)	**13.2 (12.9)**	**11.0 (12.4)**	**11.0 (15.5)**

a Mainly English Speaking Countries are Cananda, Ireland, New Zealand, South Africa, UK and USA.

b South East Asia comprises Brunei, Burma, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam

c North East Asia comprises China, Hong Kong, Japan, DPR Korea, Rep. Korea, Macau, Mongolia and Taiwan.

Source: ABS 1997f, Table 14

- higher than average unemployment rates for recently arrived migrants compared to migrants resident in Australia for longer periods. For South East Asian born migrants for example, unemployment rates at February 1997 were 21.9 per cent for those who arrived during 1991-95, 15.5 per cent for those who arrived during 1986-90 and 12.9 per cent for those who arrived during 1981-85 (ABS 1997e, Table 15);
- people migrating to Australia as refugees (or as family of refugees) rather than as skilled or business migrants generally have little capital and few possessions on arrival, limiting their ability to move into self-employment or business ownership;
- low levels of English language proficiency, which reduces general employment options;
- unfamiliarity with the Australian labour market and industrial relations systems;

- difficulties obtaining recognition for overseas qualifications and pre-migration employment experience; and
- strong desires to become established in Australia through employment and assets acquisition (primarily housing) as quickly as possible.

Other TCF homeworkers include former TCF factory workers, who have traditionally been of Southern European origin and who find TCF homework through community networks or established industry contacts (Australian Catholic Social Justice Council, in Collins Report 1996b, ANESBWA, sub. 148, Asian Women at Work, sub. 126, Dale St Women's Health Centre, sub. 48). While some of these workers may have chosen TCF homework for lifestyle reasons, it is likely that a lack of alternative employment options may also be a factor given the difficulties faced by some former TCF workers in transfering their TCF skills and experience to other industries (see Chapter 4).

Interaction with social security services

It has been suggested by industry and community groups that many TCF homeworkers in Australia have access to social security payments to which they are not entitled. The cash based nature of much of the TCF subcontracting network and the intermittent nature of the work are factors in this.

Although the Department of Social Security (DSS) "... has no substantive data ..." on the number of TCF homeworkers illegally claiming social security benefits (DSS Submission to Collins Report 1996b, p. 630), it has recognised that this may be occurring on a potentially large scale.

The DSS has responded to the problem by seeking to improve its data matching with other government agencies, most notably through a new Data Matching Program linked to the ATO's Reportable Payments System (see Section D5). However, this may still miss those who are operating wholly in cash and successfully avoiding both agencies. Based on 1996 data matching, the DSS:

> ... tentatively thought that for the 1996-97 financial year data matching would generate 2 000 reviews, resulting in 150 customers having their payments either cancelled or reduced. (DSS in Collins Report 1996b, p. 630)

In 1995, as part of its groundwork for introducing the Data Matching Program, the DSS organised an amnesty for cash economy homeworkers in 1995. Initially, the amnesty was open from 1 December 1995 to 31 May 1996, but, due to an exceptionally poor response, it was extended beyond this closing date. At the Collins Report hearings in June 1996, the DSS reported that they had received only 63 amnesty applications to date, and only 33 of these were from TCF homeworkers (DSS in Collins Report 1996b).

Community groups have claimed that the unreliable nature of homework as an income source encourages homeworkers to stay registered for social security benefits even for weeks where they should not be entitled to income payments (Industry Commission community consultations and TCFUA sub. 128). This would indicate that some homeworkers may have income levels which puts them in the 'poverty trap' bracket. That is, the potential income from available employment is not high enough to provide an incentive to cease social security benefits. This situation can be exacerbated if workers do not know that certain benefits (such as Healthcare cards and child support subsidies) are available to employed low income earners as well as to social security recipients.

Community groups told this inquiry of cases where the complexity of the paperwork and calculations required of both clients and DSS officers may also be acting as a disincentive to declaring intermittent income for those receiving benefits (Industry Commission community consultations). This situation was also commented upon by the Collins Report (Collins Report 1996a). It also has been alleged that intermediary subcontractors have been known to coerce homeworkers into fraudulently claiming benefits (ANESBWA sub. 148, TCFUA, sub. 128).

As with the incidence of tax evasion in TCF subcontracting and homeworking, a number of questions arise from the occurrence of homeworkers receiving social security benefits to which they are not entitled. It can be argued that these payments act as a *de facto* subsidy to TCF homework production costs. If this is the case, who is receiving the benefit — homeworkers, subcontractors, manufacturers, retailers or consumers? And what would be the effects if this 'subsidy' were no longer available (for example, if improved data matching leads to stricter eligibility enforcement) — would the rates paid to homeworkers increase and would the demand for homeworkers fall as a result? The Commission is not able to provide answers to these questions.

Community groups consulted for this inquiry and the Collins Report also raised concern over proposals to remove eligibility to social security, employment assistance and other government services for some categories of newly arrived migrants (including family category migrants but not refugees) for up to two years after arrival. They believe that this will decrease income options for new arrivals, increase their incentive to undertake TCF homework and render them vulnerable to coercive homework practices. On the other hand, such a change would also increase the incentive to undertake any type of employment (not only homework employment) and so may encourage people into regular employment rather than homework.

Socio-economic issues

Community concerns about socio-economic effects of TCF homework (as documented in inquiry submissions, evidence and previous studies) generally relate to access to and equity of services provision for homeworking migrants. Specific homework concerns raised by community groups during this inquiry include:

- social isolation and marginalisation from mainstream career paths;
- vulnerability to exploitation and abuse;
- use of other family members (including children) as unpaid assistants;
- family stress and conflict; and
- impeded access to English language, vocational and other training.

(ANESBWA sub. 148, Asian Women at Work sub. 126, TCFUA sub. 128, Dale St Women's' Health Centre, sub. 48, Industry Commission community consultations)

Of these, the issue of lack of access to English training is of particular concern, due to the well documented nexus between English language proficiency and labour market outcomes. Adequate English language skills are essential to securing access to training, education and the wider labour market (Wooden, Holton, Hugo and Sloan 1994, and Kipp, Clyne and Pauwels, 1995).

Community groups consulted for this inquiry and for the Collins Report were concerned that although TCF homework provides many newly arrived migrants with the ability to begin earning an income almost immediately, it can also hinder their ability to attend English and other training necessary to securing more mainstream types of employment.

These effects were illustrated by research conducted into participation rates for the Adult Migrant English Program (AMEP) in 1996 by the language training arm of the Department of Immigration and Multicultural Affairs (DIMA), the Adult Migrant English Service (AMES).

The AMES was concerned that participation by eligible migrants has been particularly low for Vietnamese women (58 per cent compared to 70 per cent for Vietnamese men, 71 per cent for all eligible migrants and up to 90 per cent for some other nationalities in Victoria, October 1993 to September 1995). In addition, "... a higher proportion of Vietnamese women failed to complete the course than other groups and they were less likely to reach functional English within their entitlement ..." (Edwards 1996, p. 2). The 1996 research found that the reasons for these poor outcomes were economic necessity (that is, the need to work), lack of information about the program, family responsibilities,

childcare difficulties, transport difficulties and cultural and gender-related factors. With regards to homework, the study found that:

> Outworkers in particular have difficulty accessing classes because time for study is dependent on the highs and lows of the contracts with the clothing manufacturers. They are also often tired because they assume the burden of child rearing as well. (Edwards 1996, p. 13)

The study recommended improvements to the flexibility of delivery of the AMEP, including after hours and weekend classes, mobile classes, and, in consultation with the relevant training board and the TCFUA, "... a variety of models for AMEP delivery to outworkers ..." (Edwards 1996, p. 14).

Where homeworkers are registered as unemployed with the CES, they can be eligible for English and other training provided through the Department of Employment, Education, Training and Youth Affairs (DEETYA). Homeworkers were eligible for up to 52 weeks of full time English and other training under the TCF Labour Adjustment Package (LAP) (now discontinued), but the actual number of homeworkers who participated in TCF LAP programs was believed to be very small (see Chapter 4).

D7 Responses to homework

Industry and union initiatives

Industry efforts have been concentrated on improving employment conditions for homeworkers, not at eliminating it as a form of employment. Industry associations and the TCFUA have drafted a number of voluntary codes and agreements, but relatively few individual manufacturers and retailers have become involved in the process so far.

TCFUA: National Outworker Information Campaign

This campaign began in earnest in 1994 (leading to the publication of the TCFUA's 1995 report, *The Hidden Cost of Fashion*). It includes dedicated outworker liaison and education officers, multilingual media information provision and direct information, advocacy and assistance services for TCF homeworkers.

TCFUA: Workplace English Language and Literacy (WELL) program

The TCFUA is utilising DEETYA's WELL program to provide specialist English language training classes for non-English speaking homeworkers who

might not otherwise have access to English training (see Chapter 4 for a description of the WELL program). These courses are being conducted currently in several suburbs of Melbourne and Sydney. They operate in a similar way to WELL courses run at factory-based workplaces.

'Deeds of Cooperation'

Voluntary agreements known as 'Deeds of Cooperation' have been negotiated between the TCFUA and individual companies, including Ken Done, Target, Country Road, Just Jeans, Australia Post and Witchery. These agreements require the companies to ensure that all homeworkers employed by them directly or indirectly (that is, through subcontractors) are employed under award conditions (TCFUA sub. 128). The terms of the agreement also apply to suppliers to these companies through merchandise sourcing provisions.

An example of how these agreements work is the Deed of Cooperation between the TCFUA and Target, which has been in force since July 1995. Target is a retailer and not a manufacturer. Around half of its apparel is supplied by Australian manufacturers, including three quarters of its womenswear and childrenswear. Target provides its suppliers with a 'Supplier Information Booklet' which sets out the terms and conditions to which they must agree. These conditions include full compliance with the legal requirements of the country in which they operate. For Australian suppliers, Target sends details of the company to the TCFUA for verification of award compliance. If the TCFUA finds evidence of non compliance by a supplier, it notifies Target, who then takes action — initially by writing to the company requesting it remedy the non-compliance, but with the option of terminating sourcing contracts if breaches of the award continue (Target in Collins Report 1996b, pp. 437–57).

The 'Homeworker Code of Practice'

The 'Homeworker Code of Practice' was drafted during 1996 by the TCFUA, TFIA, ACM, and Australian Retailers' Association (ARA) as an agreement of principles and practices regarding homeworkers (see Box D2). The Code has not been implemented widely due to a breakdown in negotiations. In particular, the ARA disagreed with the proposed clause requiring individual retailers to provide the TCFUA with the names and addresses of their suppliers (clause 5). The ARA has instead released a 'Statement of Principles and a revised version of the Code of Practice (see below).

Notwithstanding this, the TCFUA and TFIA are continuing the process of negotiating agreements with individual companies. So far, only two companies — Just Jeans and Witchery — have signed Code (TCFUA, sub. 28).

The only company to voluntarily implement an outright ban on the use of homeworkers in Australia has been Country Road. In August 1996, Country Road announced that it would require all its suppliers and subcontractors to cease using home-based workers within a year. During the transition year, compliance with the TCFUA's Code of Conduct has been required of all suppliers and financial assistance was to be made available to regular suppliers wishing to establish factory-based local manufacturing operations (Country Road, Press Release 22 August 1996).

The Australian Retailers Association 'Statement of Principles' and 'Code of Practice'

In April 1996, the ARA released the following Statement of Principles regarding Supplier Compliance in the Clothing Industry "... to make our position clear to all — manufacturers, consumers, outworkers and governments ...":

> Members of the Australian Retailers Association will not tolerate exploitation.
>
> They will choose suppliers which they believe share that commitment.
>
> In their purchase contracts, they will require suppliers to undertake to comply with all laws and regulations relevant to the engagement or employment of persons in the manufacturing process.
>
> If it is proven that a supplier producing their merchandise has breached that undertaking, appropriate action will be taken which may include cancelling the affected purchase contract and/or terminating the relationship with the supplier. (sub. 86, p. 9)

In late 1996, the ARA supplemented this Statement with a 'Code of Practice' for its members. This Code differs to that used by the TCFUA and TFIA (Box D2) by requiring individual retailers to provide details of their suppliers to the ARA rather than the to TCFUA. The ARA would then aggregate the retailers' information and pass it on to the TCFUA with the aim of preserving the confidentiality of commercially sensitive retail supply details.

Box D2: Homeworker Code of Practice, 1996

1. The parties ... believe that homeworkers in the TCF Industry should not be exploited in the wages and conditions they are entitled to by their employer.
2. ... employees should not get paid less than the appropriate award rate or the product rate calculated on the loaded award rate in the Clothing Trades Award as of October 1996 and as amended by the changes in the wage rates.
3. ... the appropriate award rate will be the level 3 Award rate.
4. The parties wish to promote the public view that manufacturers conform with these standards. Manufacturers who conform may be entitled to place on each product manufactured an indication of their compliance.
5. Retailers will require their suppliers in their purchase contracts, to undertake to comply with all the laws and regulations, including the payment rate specified in 2, relevant to the engagement of homeworkers. Further, the retailers who are signatories to this agreement will provide quarterly to the TCFUA in writing the names and addresses of all suppliers given orders to make products consistent with this statement for sale by retailers.
6. ... the Union shall have the responsibility of enforcing compliance. ... Where the Union has cause to believe that there is a case of exploited homeworkers they will inform the manufacturer and relevant retailer.
7. The retailer will investigate the case with its supplier, giving a fair opportunity for the manufacturer to demonstrate that it is complying with this statement. If it is proven that the supplier has not complied, the retailer will act in accordance with its commitment not to sell products which have been produced by exploited labour. This will include cancelling the affected purchase contract and/or terminating the relationship with the supplier.
8. ... retailers and manufacturers will contribute to a public campaign to tell manufacturers, suppliers and homeworkers the terms of this statement, the obligations of the award and the code of practice. The ARA on behalf of its members shall contribute $200 000 per annum for appropriate advertising ... and activities.
9. Nothing in this agreement shall be construed to take away any legal rights of the parties or any employees and shall not be the basis for discriminating unfairly against any employer which conforms with the agreement.
10. This agreement will be for an initial two year period of operation.

Source: TCFUA unpublished, *Homeworkers Code of Practice.*

Community

Some ethnic community and welfare groups have been very active in providing information, advocacy and support services to TCF homeworkers, often as part of the services generally provided to their community. In the Vietnamese and Chinese communities, there has been strong activity in the area of information provision, English language services, welfare services and a pilot project to investigate establishing a clothing subcontracting cooperative for local homeworkers. These services often have been provided in conjunction with the TCFUA or with relevant government agencies (Community consultations). Involvement by other groups has been patchy due to a reluctance by some communities to be associated publicly with the so-called 'exploitative' practices of homework.

Box D3: Collins Report 1996. Summary of recommendations.

The Committee:

- endorses the OH&S recommendations of Worksafe Australia;
- will review the government's position on the ILO convention and progress on industry voluntary mechanisms in 12 months.

The government should:

- examine ways to clarify the employment status of homeworkers;
- require government agencies involved in procuring TCF products to enter Deeds of Cooperation with the TCFUA and to enforce these with their suppliers;
- take advantage of the Reportable Payments System to fully investigate and minimise taxation avoidance;
- consider reinstating the amnesty for homeworkers;
- consider extending the cut-off date for prior employment of the TCF LAP;
- consider funding homeworker projects under the TCF 2000 development package and establishing a National Outworker Committee to oversee the projects;
- encourage voluntary industry mechanisms including the Code of Practice and garment labelling;
- direct the ABS to undertake a national survey of TCF homeworking; and
- increase access to English language and other training for TCF homeworkers.

Source: Collins Report 1996a.

Government

Senate Economics References Committee Inquiry, 1996.

On 31 August 1995, the Senate Economics References Committee commenced an inquiry into 'Outworkers in the Garment Industry' (Collins Report 1996a). The Committee's main recommendations are summarised in Box D3.

Several of the Collins Report's recommendations to government have been superseded by the cessation of the TCF Development Authority and the TCF Labour Adjustment Package in 1996 and by subsequent modifications to the TCF 2000 Development Strategy. The recommendation to reinstate the homeworker amnesty has not been acted upon, largely due to the poor success rate of the first amnesty. Negotiations to introduce the recommended voluntary mechanisms for industry commenced during the Collins Report and are continuing as outlined above.

Other government initiatives

A number of government agencies at both State and federal level have undertaken various initiative aimed at TCF homeworkers. The most notable of these has been the DSS amnesty and data matching exercise and the ATO's Reportable Payments System (see above).

At the State level, industrial relations and ethnic affairs departments have undertaken research projects and assisted with information campaigns for TCF homeworkers. In 1997, the NSW government announced the establishment of a new homeworker information and advocacy and program to supplement the work of the TCFUA in that state. This is to be reinforced with a state 'Code of Practice' based on the Code drafted by the TCFUA and TFIA (NSW Government, sub 162).

International

International Labour Organisation Convention 1996

On 20 June 1996, the International Labour Organisation Conference voted to adopt Convention No 177 and Recommendation No 184 on Homework. These apply to all industries utilising homeworkers rather than only TCF. The minimum requirements for governments signatory to the Convention are to:

- develop a national policy on the status and conditions of homework; and
- collect reliable data on homeworkers for a number of variables, including number of people, hours worked, incomes and demographic data.

Beyond these two requirements, government and industry commitment to action is voluntary and flexible.

The Australian Government abstained from voting on this Convention and has not adopted it. The Collins Report found that Australian TCF industry organisations had opposed the vote because the definitions used for 'homeworker', 'employer' and 'intermediary' were too broad and potentially ambiguous, and because the administrative costs of data collection were likely to be borne by employers (Collins Report 1996a, p. 69).

International 'Workplace Code of Conduct', US 1997

In April 1997, the President of the US announced that an internationally applicable 'Workplace Code of Conduct' had been successfully negotiated by the 'Apparel Industry Partnership' (comprising American apparel manufacturers). This Code is separate to, but builds upon, the existing American 'ethical sourcing' code of principles.

By the end of 1997, the Partnership aims to set up an international apparel industry association, membership of which will require adherence to the Code of Conduct. The association will be directly responsible for publicising the Code and will supervise its monitoring and enforcement by 'independent external monitors' (expected to consist of unions, welfare agencies, church groups and other community organisations). Several large American fashion apparel and sportswear companies have already agreed to participate in the association, giving them the right to use the association's 'No Sweat' labelling.

The 'Code of Conduct' applies in all countries in which member companies, their subsidiaries, their subcontractors and their suppliers operate. It prohibits forced labour, child labour (defined as the legal working age in each country or 15 where there is no legal minimum), harassment, abuse and discrimination in employment or conditions. It promotes health and safety standards, freedom of association and collective bargaining and adherence to the legal minimum wages, hours and conditions of work in each country of operation (minimum standards are set out in the code for countries without such minimum standards).

E DEMAND MEASUREMENT

This Appendix examines the pattern of demand for clothing and footwear products. Specifically, it examines how changes in the prices of these products and in consumers' income levels affect the level of demand for TCF products — that is, the 'price' and 'income' elasticity of demand.

The analysis in this Appendix is limited in two main ways. First, the focus is on final goods and does not directly consider intermediate textile products. The nature of demand for clothing and footwear, however, does have implications for the pattern of demand for intermediate products given that they are the major consumers of textile industries' output (see Appendix B). Second, the analysis examines demand for clothing and footwear at an aggregated level. Clearly, the nature of demand in individual footwear and clothing markets will vary considerably — demand might be more responsive to changes in the prices of women's luxury shoes than, say, motorbike boots.

Section E1 briefly outlines the aggregate evidence of the pattern of clothing and footwear demand. Estimates of price and income demand elasticities are presented in Section E2.

E1 The pattern of demand for clothing and footwear

Australians currently allocate, on average, about five per cent of their total final consumption expenditure to clothing and footwear, a significantly lower proportion than at any time over the last few decades. This trend is common to all developed countries (see Table E1) and has emerged also in some developing countries such as Thailand and Sri Lanka.

While Australian consumers are spending proportionally less on clothing and footwear, they are spending more on other goods and services, such as entertainment and household appliances. Services (including health and finance) and entertainment now account for over 29 per cent of Australian private final consumption expenditure, up from 23 per cent in 1980. This trend is likely to continue in Australia (and in other countries) as the relative price of clothing and footwear continues to decline and as the population becomes older. In general, as the population ages, consumption patterns change. Children and teenagers have historically been large buyers of clothing. The middle aged and retired tend to spend more on travel, health and entertainment.

Table E1: Clothing and footwear consumption: percent of total private final consumption expenditure (current prices)

Country	*1980*	*1985*	*1990*	*1995*	*Change 1980 to 1995*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*
Australia	7.2	6.8	5.8	5.1	-29
Italy	11.4	10.1	10.0	9.1	-20
United Kingdom	7.2	6.9	6.0	5.8	-19
Japan	6.9	6.7	6.7	5.5[a]	-20
France	6.7	7.0	6.6	5.4	-19
United States	6.3	5.6	5.4	5.2	-17

Note: Differences in statistical collection and definition create difficulties in drawing inter-country comparisons.

a Latest data for Japan is 1994.

Source: OECD Quarterly National Accounts, various.

The role of changes in prices and incomes in causing these observed trends is examined in the following sections.

Evidence of changes in consumer prices

The clothing and footwear consumer price index relative to the 'all-groups' Consumer Price Index (CPI) is depicted in Appendix B (Figure B4). Following the introduction of quotas in 1974-75, clothing and footwear prices grew faster than the CPI average. Other factors which contributed to this disparity included rapid growth in the general level of wages, and in female wages in particular, as a result of government policy decisions. However, since the late 1970s, clothing and footwear prices generally have grown more slowly than the CPI average, especially since 1992-93 — that is, the relative price of clothing and footwear products has fallen.

Because clothing and footwear products have become relatively cheaper, a smaller proportion of consumption expenditure is required to purchase the same physical quantity. That is, at least some part of the decline in proportional clothing and footwear consumption can be attributed to the fall in relative prices. While the proportion of total consumption allocated to clothing and footwear has fallen by 29 per cent (as illustrated in Table E.1), nearly half of this (14 per cent) can be attributed to declining relative prices alone, without any changes in the quantity demanded.

If price were the only determining factor, this would imply that demand for clothing and footwear is price-inelastic. Price elasticity measures the responsiveness of demand for a commodity to changes in its price. If demand is price-inelastic a 1 per cent increase in price will result in an decrease of less than 1 per cent in the quantity demanded (all other things being equal).

Evidence of changes in consumer incomes

Incomes, as well as prices, have a significant influence of the pattern of demand. Average household income has grown faster than households' expenditure on clothing and footwear in recent years, but not as fast as expenditure on other consumer goods and services (see Table E2).

If income were the only determining factor, this would imply that demand for clothing and footwear is income-inelastic. Income elasticity measures the responsiveness of demand for a commodity to changes in its price. If demand is income-inelastic a 1 per cent increase in income will result in an increase of less than 1 per cent in the quantity demanded (all other things being equal).

Table E2: Average household income and expenditure, 1984 to 1993-94, ($1994-95)

Average annual	*1984*	*1988-89*	*1993-94*	*Change 1984 to 1993-94*
	($)	*($)*	*($)*	*(%)*
Clothing and footwear expenditure	1 731	1 854	1 785	3.2
Total household expenditure	26 689	30 326	31 884	19.5
Household income	33 457	38 623	38 297	14.5

Source: Commission estimates based on ABS Household Expenditure Survey Cat. No. 6531.0 and 6533.0.

E2 TCF demand elasticities

Changes in tariff rates and non-tariff barriers will cause price and income changes. These price and income changes will flow on to affect output and employment in particular sectors and industries according to the associated elasticities.

A consumer's demand for each final product will be a function of the price of the good, the prices of all other goods, the income of the consumer and the

personal preferences of the consumer. This is the basis for elasticity measures of consumer demand.

Table E3: Estimates of clothing and footwear price and income elasticities

Source	*Price elasticity*	*Income elasticity*
Jomini *et al.* 1994	-0.59	0.96
Garner 1993	na	1.32
Tran-Nam and Podder 1992	-0.77	1.39
Selvanathan 1991	-0.52	0.69
Theil *et al.* 1989	na	0.96
Selvanathan 1988	-0.37	0.97
IAC 1986	-0.89	0.93
Bewley 1982	na	0.91
Lee 1979	-1.29	0.84
Phlips 1974	-0.51 to -0.61	1.12
Weiserbs 1973	-0.42 to -0.52	1.11
Sanz-Ferrer 1972	-0.38 to -0.46	0.86

Price and income elasticity estimates

Because of the complexities involved in estimating elasticities, the majority of analytical and policy work concerning demand relationships make use of elasticities derived from specialist demand studies. This section summarises a number of studies.

Various studies of the demand for clothing and footwear have attempted to isolate the effects of price and income changes from other influences to estimate price and income elasticities. The results, which are summarised in Table E3, vary according to the form of the model employed. However, some studies are more thorough than others.

While the elasticities presented in Table E3 vary, they do have a common theme. In general, the clothing and footwear price elasticities tend to -0.5 and the income elasticities tend to unity.

Based on the estimates of Selvanathan (1988 and 1991) and Theil *et al.* (1989), this report assumes Australian clothing and footwear demand to have a price elasticity of -0.55 and an income elasticity of 0.96. Selvanathan uses a system-

wide approach to estimate elasticities. As a result, this modelling covers interactions in the economy more thoroughly than some simpler studies (such as IAC 1986) and the estimates are expected to represent actual consumer behaviour more closely. The Theil *et al.* estimate is based on a much larger sample than many other studies.

These estimates suggest that price elasticity is numerically less than one. That is, demand for clothing and footwear is said to be price-inelastic. Intuitively, if there was a price increase for clothing and footwear, the quantity demanded would not fall proportionately as much and, therefore, total expenditure on the good would increase.

The estimates in Table E3 indicate that demand increases almost proportionally with income. However, this alone does not explain the real decline in the relative consumption of clothing and footwear. Other factors such as changing lifestyles and tastes also have influenced this pattern of demand.

Consumption patterns differ between income groups. Tables E4 and E5 present the results of studies which have estimated elasticities over different income ranges. It is apparent that income elasticity falls as income rises. That is, clothing and footwear form a larger part of expenditure from additional income of the relatively poor than of the relatively rich. The relatively rich, with relatively high expenditure on clothing and footwear, tend to spend more of their additional income on other goods and services.

Price elasticity of demand rises as income rises. Price changes have less impact on consumption of clothing and footwear by the relatively poor than on that by the relatively rich.

Table E4: Australian clothing and footwear income elasticity at different levels of total household expenditure, 1984

Total household expenditure per person	*Income elasticity*
$72.00 per week	1.37
$96.00 per week	1.12
$144.18[a] per week	0.96
$216.00 per week	0.88
$288 per week	0.86

a $144.18 chosen because it represents the mean level of total household expenditure per person.

Source: Podder and Tran-nam (1994).

Other demand elasticities

Import demand elasticity is similar to own-price demand elasticity. It measures the responsiveness of the demand for imports of a good to changes in the price of imports of the good. That is, it can be thought of as a sub-set of the total own-price elasticity of the good.

Table E5: Clothing and footwear elasticities at different sample points, 1984

	Australia		*New Zealand*	
Sample point[a]	*Price elasticity*	*Income elasticity*	*Price elasticity*	*Income elasticity*
2	-0.10	1.33	-0.88	1.11
10	-0.61	1.09	-1.01	1.06
20	-0.73	0.94	-1.15	1.00

a According to the authors: "2, 10 and 20 refer to the 2nd, 10th and 20th sample points, where the sample points, representing household incomes, are at intervals of 5 per cent."

Source: Chatterjee *et al.* 1994.

Estimates of import demand elasticity show that the demand for imports of clothing and footwear is highly price elastic (elasticity between -2 and -3), while the demand for imported textiles is somewhat less price-elastic (between -1 and -2). These estimates indicate that, compared to other commodities, clothing demand is very import price-sensitive, footwear demand is highly import price-sensitive and textiles demand is moderately import price-sensitive.

The elasticity of substitution between imports and domestically produced goods measures the responsiveness of demand for imports and their direct domestic substitutes to changes in import prices relative to the prices of the domestic substitutes. The elasticity of import substitution is defined simply as the percentage change in relative imported and domestically produced quantities demanded divided by the percentage change in relative prices.

Estimates of the elasticity of substitution between domestic and imported commodities show that a 1 per cent increase in the relative price of domestically produced clothing results in an increase in the ratio of imported to domestically produced quantities of clothing demanded of between 4 and 7 per cent. Import substitution for clothing is therefore quite price-elastic (more so than textiles at between 1 and 4 per cent). This indicates that clothing wholesalers and retailers will supply readily from overseas in the face of an adverse domestic price change.

F THE WTO TEXTILES AND CLOTHING AGREEMENT AND ITS EFFECTS

One of the most significant decisions of the General Agreement on Tariffs and Trade (GATT) Uruguay Round was to phase out progressively the quantitative restrictions which had been in place under the Multifibre Arrangement (MFA). The phase-out details are contained in the World Trade Organisation (WTO) Textiles and Clothing Agreement (TCA), signed in 1994 at the conclusion of the Uruguay Round.

The MFA no longer exists but it has had a profound effect in restricting world trade in textiles and clothing — its influence is still being felt by means of the quantitative restrictions which have been carried over into the TCA. While no Australian exports or imports are affected directly by quantitative restrictions, indirectly some are. Under the TCA, which commenced operation on 1 January 1995, all quantitative restrictions are scheduled to be phased out over a ten year period ending on 1 January 2005.

The MFA was a framework arrangement which outlined the processes for quantitative restrictions on textile and clothing exports from developing countries. These (product-specific) quantitative restrictions were governed by means of a complex set of bilateral arrangements between countries.[1]

Australia was a signatory of the first MFA, which came into force on 1 January 1974 for a period of four years (MFA-I). In 1977, it was extended for a further period of four years (MFA-II). It was extended again in 1982 (MFA-III) and 1986 (MFA-IV). Although Australia was a signatory of MFA-I, it did not sign any of the extensions. This has been attributed to 'the inability of the MFA to provide for a roll back of imports following a large increase in textile and clothing imports in 1973-74' and the fact that 'the MFA was having an adverse effect on Australia's relations with Asian countries' (IAC 1986, pp. I.34–35). Quotas were imposed unilaterally by Australia early in 1975 and remained in place until 1993.

[1] If agreement could not be reached bilaterally, unilateral restraints could be imposed.

F1 Global shifts in production underlying the MFA

The MFA had its origins in the shift in production of textiles and clothing from developed to developing countries and the rising flow of TCF exports from developing countries. The changing pattern of production and exports was particularly evident in East Asia:

> The changing pattern of production and international trade in fibres, textiles and clothing provides a classic study of the dynamics of our interdependent world economy. Nowhere has that pattern changed more dramatically than in East Asia during the past few decades. For centuries before that, Asia supplied the textile manufacturers of Europe with natural fibres, including silk from East Asia along the route known as the Silk Road. Today East Asia exports virtually no natural fibres and instead has become the most important region of the world both as an importer of raw cotton and wool and as an exporter of manufactured textile products and clothing. (Anderson 1992, p. xix)

The shift of production from developed to developing countries was particularly marked after 1955 (see Table F1).

Table F1: Major countries' share in world exports of textiles and clothing, 1899 to 1988, per cent

	Japan	*United Kingdom*	*France*	*Other Western Europe*	*United States*	*Others*[a]	***Total***
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	***(%)***
1899	2	47	15	29	2	5	**100**
1913	4	43	15	29	3	6	**100**
1929	9	43	14	23	5	6	**100**
1937	22	37	6	23	3	9	**100**
1955	15	21	11	30	12	10	**100**
1965	13	8	8	38	6	27	**100**
1975	8	5	7	42	5	33	**100**
1988	3	3	4	39	3	48	**100**

a Since Canadian and Australasian exports were minimal, and East European exports are not included for the postwar period because of lack of data, from 1955 the 'Others' column refers almost entirely to developing countries.

Source: Park and Anderson (1992) in Anderson (ed.) (1992).

A number of developing countries began to acquire comparative advantage in basic textile and clothing products during the 1950s because these products involve labour-intensive and relatively low-technology activities. Domestic industries in high-wage countries came under pressure from cheap imports and lobbied for trade restrictions. This lobbying, which was a direct challenge to

trade liberalisation under the GATT, eventually led to the establishment of the first MFA in 1974, this following Short and Long-Term Cotton Textile Arrangements in 1961 and 1962 respectively.

F2 GATT and the MFA

Although the GATT's aim was trade liberalisation and it curtailed the freedom of member countries to impose trade barriers, it also included safeguards. Article XIX provided that:

> If, as a result of unforseen developments and of the effect of the obligations incurred by a contracting party under this Agreement, including tariff concessions, any product is being imported into the territory of that contracting party in such increased quantities and under such conditions as to cause or threaten serious injury to domestic producers in that territory of like or directly competitive products, the contracting party shall be free, in respect of such product, and to the extent and for such time as may be necessary to prevent or remedy such injury, to suspend the obligation in whole or in part or to withdraw or modify the concession. (GATT 1973, Article XIX)

During the 1950s, there was much discussion of 'market disruption' within the GATT. The discussion included, but was not confined to, textiles. As the concept of market disruption was discussed and refined, some developed countries argued that the tariff modifications available under Article XIX were inadequate to protect their textile and clothing industries sufficiently from low cost imports. Consequently, a number of quantitative bilateral restrictions began to emerge (Blokker 1989, Chapter 3).

The US began to impose restrictions against Japan in the 1950s. These restrictions were the precursors of the Short and Long-Term Cotton Textile Arrangements in 1961 and 1962 respectively, which emerged largely at the instigation of the US. These in turn led to a succession of four MFAs with broader coverage of fibres and exporting countries, from 1974 to 1994. The MFA largely exempted textiles and clothing from the GATT trade liberalisation process, and by the early 1990s there was a global web of quantitative restrictions in place.

One of the features of the MFA was its complexity. It involved a large number of countries, a large number of product categories subject to restraint and an extensive monitoring effort to report on and control the filling of quota. The then Director-General of the GATT remarked in 1984:

> The systems of intervention that have evolved under the MFA are so complex that they can only be understood by experts. And these experts communicate

> with one another in a language which others cannot understand. (Dunkel 1984, p. 367)

This made evaluation of the effects of the MFA extremely difficult:

> Because of the intentional complexity and nontransparency with which importing countries have formulated the MFA, there has always been considerable difficulty estimating and evaluating the effects of the arrangements. (Hamilton and Martin 1990, p. 2)

The complexity of the MFA and the quantitative restrictions which carried over into the TCA present a challenge also for the Textiles Monitoring Body (TMB), established under the TCA to monitor the phase-out of quantitative restrictions.

Coverage of the MFA

Under the Short and then Long-Term Cotton Textile Arrangements and then under the twenty years duration of the MFAs, bilateral quantitative restrictions in textiles and clothing were progressively expanded in terms of both product and country coverage. Product coverage expanded to include not only cotton fabrics but wool, man-made fibres, all vegetable fibres and silk blends (Hoekman and Kostecki 1995, p. 207).

In 1994, the last year of the MFA, it covered eight importing countries, including the European Union (EU) as one country, and 29 exporting countries (all developing countries, but including Hong Kong, Singapore and Korea). Among the eight importing countries, the United States (US), the EU, Canada and Norway currently apply restrictions, while Japan, Switzerland, Austria and Finland do not. (Austria, Sweden and Finland are now members of the EU and are embraced by restrictions on exports to the EU.) Of these importing countries, the US accounts for more than 57 per cent of total TCF imports, and together with the EU accounts for 90 per cent (Yang 1994).[2] However, not all TCF imports are subject to quantitative restrictions. Estimates based on 1990 data indicate that, excluding intra-EU trade, approximately 15 per cent of actual world trade in textiles and 44 per cent in clothing was subject to restraint under MFA agreements (GATT 1994b, p. 16). These figures on actual trade under restriction underestimate the effects of the MFA, which occur not only because of the effects of the restrictions themselves, but because the mere threat of quantitative restrictions would have discouraged trade that might otherwise have occurred.

[2] Hoekman and Kostecki (1995) make the further point that, as textiles account for 45 per cent of total OECD imports from developing countries, the MFA has been a cornerstone in the institutional framework for North-South trade (p. 207).

In 1993, the US had restraint agreements with 42 countries (including some non-MFA members) and, in 1992, it sourced 87 per cent of its textile and apparel imports (by quantity) from MFA signatories. Of these countries, the leading TCF suppliers to the US were China, Taiwan, Hong Kong and Korea, which together accounted for 35 per cent of US textile and apparel imports (GATT 1994a).

In 1993, the top three suppliers of textiles (by quantity) to the EU from MFA signatories were India, Pakistan and China, which together accounted for 27 per cent of imports. The top three suppliers for clothing were China, Turkey and Hong Kong, collectively accounting for 32 per cent of imports (Khanna 1994).

By the early 1990s, the US had established 147 categories for the purpose of setting restraint levels under bilateral agreements on US textile and apparel imports (GATT 1994a). These categories comprise groupings of numbers in the US tariff schedule covering textile yarns (11), fabrics (34), apparel (86) and made-up articles and miscellaneous textiles (16). The number of categories under restraint varied between exporting countries, from as many as 141 of the possible 147 for large suppliers, to as few as one category for new suppliers.

The MFA as a departure from GATT principles

Article XI of the GATT contains a general prohibition on quantitative restrictions such as those that were employed under the MFA. Another cornerstone of the GATT is the prohibition of discrimination between contracting parties contained in Article I (unconditional most-favoured nation treatment). At the same time, however, the GATT contains safeguard clauses which enable a member to escape these general obligations in certain circumstances without acting illegally. As noted above, Article XIX permits safeguard measures (tariffs or quotas) when domestic producers in the importing country face serious injury from increased imports. However, Article XIX envisages that these measures should be for a temporary period only, whereas MFA quotas developed a semi-permanent character. The decision in the Uruguay Round to phase out quantitative restrictions on textiles and clothing is significant, because it represents an unequivocal decision to draw these products into the mainstream of GATT/WTO trade liberalisation processes.

F3 Economic effects of quantitative restrictions under the MFA

Article I of the MFA described the objectives of the Arrangement as follows:

> The basic objectives shall be to achieve the expansion of trade, the reduction of barriers to such trade and the progressive liberalisation of world trade in textile products, while at the same time ensuring the orderly and equitable development of this trade and avoidance of disruptive effects in individual markets and on individual lines of production in both importing and exporting countries. (GATT 1973, p. 4)

However, the twin objectives of achieving both trade liberalisation and the management of trade, as outlined above, are contradictory. Over more than two decades now, numerous studies have argued that the MFA has had a major effect in restricting world trade in textile and apparel products. However, single country studies have suggested that these effects differed between developed and developing countries, and that, more particularly, the effects on developing countries were not all negative.

Effects on developing countries

Some economists (Trela and Whalley 1990) have concluded that almost all developing countries suffered from quantitative restrictions under the MFA. However, others have claimed that some developing countries benefited from the MFA because they could take advantage of higher prices in restricted importing countries while quotas were not really binding on their exports (Cable 1990).[3]

Between 1975 and 1986, the share of clothing exports destined for MFA-restricted markets varied markedly between developing and newly industrialised countries (see Table F2). It has been suggested that the larger the proportion of any one exporting country's sales to quota-restricted markets, the more likely that country would have benefited from MFA restrictions (Suphachalasai 1992). However, for developing countries, economic impact studies have noted that the net effect of quantitative restrictions under the MFA depends on not just the share of exports to quota-restricted markets, but on whether quota rent transfers can compensate fully for the welfare losses resulting from the reduction in export volumes due to quotas (Yang 1994, p. 893).

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[3] Trela and Whalley (1990) note that quotas were not binding because successful exporters such as Hong Kong, Korea and Taiwan have consistently shown growth rates of textile and clothing exports considerably in excess of their quota growth allowed under the MFA. They attribute this to entrepreneurial skill in circumventing quota restrictions.

The more established TCF producer countries, such as Hong Kong, Korea and Taiwan, maintained their share of exports to restricted markets at between 73 per cent and 86 per cent, based on past export performance. In contrast, newer producing countries saw their share of exports to restricted markets increase significantly (see Table F2). In the period 1975 to 1986, the share increased rapidly, for example, for countries such as Indonesia, the Philippines, China, India and Pakistan (but it declined for Thailand). Based on this market share criterion only, some of the newer exporting countries could have been expected to support retention of the restrictions. For an established exporting country such as Hong Kong, the quota premium earned in excess of the export value of its products may be such that it could lose from the phase-out — it could lose market share to lower cost suppliers as well as losing quota rent, so that it too could be expected to support retention of the restrictions.

Table F2: Shares of clothing[a] exports from developing countries destined for MFA-restricted markets[b], per cent[c]

	1975	*1986*
	(%)	*(%)*
Association of South East Asian Nations:		
Indonesia	33	94
Philippines	58	63
Thailand	80	63
North East Asian Newly Industrialised Economies:		
Hong Kong	80	86
Korea	77	73
Taiwan	80	73
Other Asia:		
China	25	48
India	67	89
Pakistan	51	72
Latin America:		
Brazil	49	96
Mexico	92	99

a Clothing includes all items in the Standard International Trade Classification 84.

b Austria, Canada, European Community (12 members), Finland, Norway, Sweden and the United States.

c Percentage shares based on the value rather than the volume of exports.

Source: Suphachalasai (1992) in Anderson (ed.) (1992).

Differing views about the effects of the MFA have in the past led to varying levels of support among countries for the phase-out of the MFA. Peltzman notes that:

> Had the MFA not been able to build a constituency among developing country holders of export rights ... it would have long been discarded. (Peltzman 1989, p. 3)

Notwithstanding their conclusion that almost all developing countries suffered from quantitative restrictions under the MFA, Trela and Whalley also concluded that an explanation for the different stance by various countries with respect to the MFA phase-out can be found not simply in the judgements about of individual country outcomes, but in the broader desire of smaller countries to return to a clear rules-based system of international trade for textiles and clothing, as well as all other sectors (Trela and Whalley 1990).

Distortions Caused by the MFA

There has been some debate about how restrictive the MFA was, because imports from some countries grew by considerably more than the 6 per cent allowed under the MFA, leading to doubts as to whether the quantitative restrictions under the MFA quotas really were binding. Quantitative restrictions under the MFA were circumvented by a number of practices, including transhipment and falsification of country of origin documentation:

> The United States Trade Representative (USTR) also recently announced the formation of an interagency task force to address 'the growing problem of circumvention of textile and apparel agreements'. Transhipment, which in practice consists of labelling the goods to confer origin to another country whose quota is not full, is illegal under the country-specific quota system of the MFA. According to the USTR, over $2 billion of imports from China are being transhipped into the United States, 'preventing US workers from competing on fair terms with other countries'. (GATT 1994a, p. 167)

Circumvention of quotas is but one of many distortions caused by the MFA. In a review for the OECD, Whalley listed the following effects in relation to MFA quotas:

- limitation of trade;
- variation in quota utilisation rates;
- transfer of quota rents;
- quality upgrading and product and market diversification;
- quota hopping and foreign investment; and
- inefficiencies arising from internal quota allocation rules (Whalley 1994).

Of the effects listed above, the one to receive most attention by analysts has been the limitation of trade. Global trade analysis models have been used to estimate the impact of the planned phase-out of MFA quotas. For example, a 1990 study by Trela and Whalley estimated that if all developed country textile and clothing restrictions were removed, exports from a range of developing countries would increase significantly — between 35 per cent for Korea and 332 per cent for China (Trela and Whalley 1990, p. 24). For world clothing and textile markets as a whole, Yang estimated that, following quota abolition, exports from MFA exporters to MFA importers would increase by 26 per cent for clothing and 10 per cent for textiles (Yang 1990, Table 3). A study by the US International Trade Commission (USITC) estimated that liberalisation of all US quotas on textiles and apparel would result in a rise in annual import volumes of $US 8 billion (21 per cent) for apparel and $US 0.6 billion (19 per cent) for broadwoven fabrics (USITC 1995).

Effects on the flow of imports to Australia

A number of participants claimed that, to the extent that exports are restricted to MFA importers, some exports will be re-directed to Australia:

> Because we are the only western country that has totally removed quotas, overseas suppliers who have exhausted their quotas to other countries often lower their prices below cost to export excess garments to quota free Australia. (Gloweave, sub. 27, p. 1)

and:

> If I could add something on that MFA situation. Of course we're not subject to the quotas but what happens is that the countries like India and China who have overstepped their quota into the MFA countries find Australia a very useful dumping ground. I don't mean dumping in the customs sense.
>
> ... They run out of quota at the peak of their markets in the northern hemisphere and that's when the southern hemisphere markets open up. You'll find that the traditional winter imports coming here coincide with the times that they reach their quota limits. (Australian Wool Processors Council, trans., pp. 450-1)

In discussing the effect of MFA quotas, it is necessary to distinguish between global trade distortions and those that affect Australia. It is also useful to distinguish between direct and indirect effects — while quantitative restrictions may not affect Australia's pattern of imports directly, they do indirectly by causing changes to global trade patterns.

The models reviewed in the previous section have concluded that MFA quotas have large trade-diverting effects. However, these studies refer to the restrictive effect of quotas on global trade as a whole (or the US in the case of the USITC

study) and not necessarily the direct effect on Australia. Indeed, Australia is not a sufficiently large player in world textile and clothing markets for the effects on Australia to be identified separately in such studies. Quantification of the trade-diverting effect of quotas on Australia is difficult.

Inquiry participants also provided examples of MFA quotas having indirect effects on Australian companies operating overseas. The Stafford Group established a clothing plant in China to supply the US market, but were unable to obtain a sufficiently large allocation of MFA quota from the Chinese with which to supply Stafford's outlets in the US. Pacific Brands reported similar difficulties in exporting from its factories in China when it was unable to obtain enough quota for its export of socks and other products from China to Europe and North America (trans., p. 113).

The effect on the demand for Australian wool

Quantitative restrictions in other countries have an indirect effect on the demand for Australian wool. Australia produces a high proportion of the world's apparel wool and the markets for raw wool are relatively free from trade restrictions. Tariffs on early stage processed wool are generally low. On wool tops, the tariff is 2 per cent in the EU; 5 per cent plus 6.6 cents per kg in the US; and 15 per cent in China (see Chapter 7). However, as textiles and clothing exports from developing countries face major trade barriers in the form of quotas, Australia's exports of wool are restrained indirectly.

An Australian study by Leu estimated that in 1987, removal of US and EU quotas would have increased apparel imports by 11.3 per cent to the US and 5 per cent to the EU (Leu 1991). Using elasticities reported in the US literature, Leu estimated that these additional imports would cause the average import prices of woollen apparel to fall by 11.7 per cent in the US and 5.9 per cent in the EU, and that the volume of woollen apparel imported by the US and EU would increase by 15 per cent and 10 per cent, respectively. He estimated that, in 1987-88 prices, this increase in demand would have benefited Australian wool producers by $A 125 million per annum, while the consequential higher import prices for woollen clothing would have cost Australian consumers $A 15.6 million per annum.

F4 The WTO Textiles and Clothing Agreement

A major development arising from the Uruguay Round was the decision to phase out quotas under the MFA; this decision is embodied in the WTO Textiles and Clothing Agreement (TCA), which took effect from 1 January 1995.

The MFA covered quantitative restrictions (or quotas) only and not tariffs. Under the terms of the TCA, the existing provisions of the MFA were carried over to apply from 1 January 1995, but subject to a phase-out schedule over a ten year period. Under the TCA, all quantitative restrictions on textile and clothing exports from members of the WTO are to cease from 1 January 2005.

The TCA provides for the gradual integration of textiles and clothing into the mainstream of WTO processes.[4] The MFA restrictions which were in place on 31 December 1994, and which were carried over into the new TCA, are to be phased out through the integration program in four stages.[5] At the start of each stage, importing countries must integrate a specified minimum proportion of their textile and apparel imports. The proportion is based on the total volume of imports during 1990 of the items listed in the Annex to the TCA. Not all the items in the Annex to the TCA are under restriction and, for those that are, there is scope under the TCA to integrate them last. The timetable for integration is as follows:

- on 1 January 1995, each party was required to integrate, from the list in the Annex to the TCA, products accounting for not less than 16 per cent of its total volume of textile and clothing imports in 1990;
- on 1 January 1998, products accounting for not less than a further 17 per cent of 1990 imports are to be integrated;
- on 1 January 2002, products accounting for not less than a further 18 per cent of 1990 imports are to be integrated; and
- on 1 January 2005, the remaining 49 per cent of products are to be integrated.

For each tranche, importing countries must select products from each of the four TCA categories — tops and yarns; fabrics; made-up textile products; and clothing. Within these four categories, however, there is considerable discretion

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4 'Integration' means returning to the situation where, in a trade policy sense, textiles and clothing are no longer treated as an exception under specially negotiated rules as was the case with the MFA, but are subject to the full force of WTO rules. In particular, textiles and clothing will not be subject to quantitative restrictions.

5 The four stages take effect from 1 January in the years 1995, 1998, 2002 and 2005. At the final date all remaining quantitative restrictions are to be terminated.

in selecting from the several hundred products identified at the six digit Harmonised Schedule (HS) level in the Annex to the TCA.

Under Article 2.11 of the TCA, countries must announce their integration plans not less than 12 months before each of the relevant dates under the phase-out timetable.

There are two mechanisms by which quantitative restrictions can be phased out. The first mechanism is via integration, which in the case of restricted products amounts to complete removal of quota. The second mechanism applies to those products which were under restraint in 1994 and have not yet been integrated. The TCA lays down a formula for increasing the growth rates in these remaining quotas which were carried over from the MFA.[6] Under this second mechanism, quotas are expanded rather than abolished, but only as an interim measure prior to their complete abolition not later than 1 January 2005. This quota expansion formula has been termed the growth-on-growth formula. Its operation is such that during Stage 1 (1995 to 1997 inclusive) annual quota growth should be not less than 16 per cent higher than the growth rate established under the MFA restriction (that is, the MFA quota expansion rate existing on 1 January 1995). For Stage 2 (1998 to 2001 inclusive), annual growth rates should be 25 per cent higher than the Stage 1 rates. For Stage 3 (2002 to 2004 inclusive), annual growth rates should be 27 per cent higher than the Stage 2 rates.

It has been estimated that by adding the growth-on-growth quota expansion during the transition period of the TCA to the MFA expansion rates existing on 1 January 1995, quotas will increase between 1995 and 2005 by 64.7 per cent in the EU and 95.6 per cent in the US (Abreu 1995, p. 61).

The Textiles Monitoring Body (TMB) oversees the detailed implementation of commitments and must prepare reports for the WTO Council on Trade in Goods, which reviews the operation of the TCA before the end of each stage of the integration process. Moreover, disputes may be brought to the Dispute Settlement Body if matters remain unresolved after the TMB has made recommendations.

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[6] In 1994, existing annual MFA quota growth rates ranged from zero to 6 per cent. The MFA provided for 6 per cent annual growth for products under restraint, subject to the following condition: 'In exceptional cases where there are clear grounds for holding that the situation of market disruption will recur if the above [6 per cent] growth rate is implemented, a lower positive growth rate may be decided upon after consultation with the exporting country or countries concerned' (MFA Annex B, para 2). In practice, many bilateral agreements under the MFA provided for quota growth rates substantially less than 6 per cent.

The TCA also contains a so-called 'standstill' provision, which is designed to prevent the imposition of new restrictions. However, this standstill arrangement is subject to a transitional safeguard mechanism contained in Article 6 of the TCA, which has already been used to introduce new restrictions in a number of instances.

The transitional safeguard mechanism allows members to impose restrictions against individual exporting countries if the importing country can show that overall imports of a product or imports from individual countries are entering the country in such increased quantities as to cause, or to threaten, serious damage to the relevant domestic industry. Action under the safeguard mechanism can be taken by mutual agreement following consultations, or unilaterally, but subject to certain conditions and review by the TMB.

The TCA also includes provisions to cope with possible circumvention of commitments through transhipment, re-routing, false declaration concerning country or place of origin and falsification of official documents.

Progress in implementing the TCA

Both the US and the EU integrated relatively low value and less sensitive items in the first stage from 1 January 1995. The 16 per cent by volume of 1990 imports integrated into the GATT in the first step covered only 7 per cent of the value of US imports and 9 per cent of the value of EU imports (Martin 1996, p. 14). Further, the choice of products for integration was biased away from 'sensitive' products so that in the first integration phase by the US and EU no products were integrated which were already subject to quantitative restrictions (Martin 1996).

Even though the TCA has not yet reached stage two of the four stage integration process, and despite the lack of progress to date, it is useful to review the planned integration schedules of the US and the EU.

On 26 April 1995, the US announced its integration plans for all four stages (see Table F3).

Table F3: Textile and apparel products in US second, third and fourth stage integration

Product	*Stage 2*	*Stage 3*	*Stage 4*
	(%)[a]	*(%)*[a]	*(%)*[a]
Apparel	1.98	2.55	31.27
Fabric	2.51	3.91	12.19
Made-up textile products	4.54	8.40	2.55
Tops and Yarns	8.00	3.26	2.64
Total	**17.03**	**18.11**	**48.65**

a Expressed as the proportion of the total US imports during 1990 of the products listed in the Annex to the TCA. (In the US, product categories are converted to square metre equivalents as the volume measure for reporting on integration. In the EU they are converted to tonnes.)

Source: Office of Textiles and Apparel, US Department of Commerce, US Federal Register (60 FR 21075), 1 May 1995.

On 16 December 1996, the EU announced its second stage integration plan for 17.99 per cent by volume of 1990 imports (see Table F4). Unlike the US, the EU has not yet revealed details of its third and fourth stages and is not expected to reveal its third stage integration plan until just before the relevant deadline (Hughes 1997).

Table F4: Textile and apparel products in EU second stage integration

Product	*Volume*[a]	*Proportion*[b]
	(Tonnes)	*(%)*
Apparel	82 792	2.09
Fabric	87 645	2.22
Made-up textile products	81 527	2.06
Tops and Yarns	460 011	11.63
Total	**711 975**	**17.99**

a In the EU, product categories are converted to tonnes as the volume measure for reporting on integration. In the US they are converted to square metre equivalents.

b Expressed as the proportion of the total EU imports during 1990 of the products listed in the Annex to the TCA.

Source: Advice from the European Commission to the Chairman of the Textile Monitoring Body of the WTO pursuant to Article 2 of the TCA, 16 December 1996.

It is important to note that the integration schedules in Tables F3 and F4 relate only to WTO members and therefore do not include remaining quantitative restrictions on non-members such as China and Taiwan. In 1994, for example, 17 per cent of US textile imports and 23 per cent of its clothing imports were from China and Taiwan. The result is that a significant proportion of imports

into the US and EU will be excluded from the integration process (The possibility of special provisions relating to China and Taiwan is discussed in below.)

Even in the second stage of the integration program (from 1 January 1998) the announced US plan involves the liberalisation of few restrictions (Martin 1996). The EU second stage integration will result in a limited range of quotas being dropped for Macau, South Korea, Brazil and Argentina, but again, most quota categories will remain unaffected by integration until at least the third stage (from 1 January 2002) (Hughes 1997).[7]

Only in the third stage of the US plan, seven years after the commencement of the TCA, will a significant number of quota-restricted categories be integrated (Martin 1996, p. 14).

A feature that emerges from Tables F3 and F4 is that apparel accounts for only about 2 per cent of the 17 per cent and 18 per cent by volume of products to be integrated in the EU and US in the second stage and, in the case of the US, the third stage. It is apparel products where quotas are most restricting, where the adjustment consequences of integration will generally be greatest, and where most backloading of integration is occurring for both the US and the EU. In this context, it is relevant to note that many of the forces that led to the MFA in the first place are still likely to be in existence when the time for the eventual complete phase out of quantitative restrictions arrives with the dawn of 2005.

The special cases of China and Taiwan

Any discussion of world trade and quotas for TCF products should give special recognition to the importance of China as the world's leading clothing and footwear supplier. China and Taiwan have faced import quota restrictions imposed by the US and EU under the MFA. However, China and Taiwan are not yet members of the WTO (Hong Kong is a member) and therefore will not benefit from the phase-out of bilateral MFA import quotas according to the schedule established under the TCA. Further, China and Taiwan are being disadvantaged currently by their exclusion from the quota growth provisions operating under the TCA.

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[7] The EU and US each have more than one hundred MFA quota categories. The EU categories are different from those of the US. However, like the US, the EU publishes a complete description of the quota categories and the Harmonised Schedule tariff lines which correspond to each category.

China is already a large exporter of TCF products to the US and the EU. Accordingly, there has been speculation that the US and EU will insist that, as part of China's ticket of admission to the WTO, some form of quota controls be retained on their TCF imports from China (Smeets 1995 and Pacific Brands, sub. 136, Attachment 2). If special quotas for China were to eventuate, the adjustment pressure on the domestic TCF industries in the US and EU would be reduced, and quota abolition by 2005 (for countries other than China from which the US and EU import) would be made easier.

The prospect of special US quotas on imports from China has arisen recently in the context of a four year bilateral agreement between the US and China concerning trade in textiles and clothing. Although the agreement, which was signed early in 1997, is due to expire on 31 December 2000, it contains the unusual feature of safeguard provisions which, depending on the conditions of China's accession to the WTO, have the potential to operate up until 2009. In the context of ongoing negotiations concerning China's accession to the WTO, the status of these provisions and the likelihood of their coming to fruition is unclear at this stage.

G AUSTRALIA'S INTERNATIONAL TRADING COMMITMENTS

Under the terms of reference for this inquiry, the Commission is asked to ensure that its recommendations are consistent with Australia's obligations under existing international trade agreements. Australia has been a strong advocate of trade liberalisation as a means of facilitating increased trade flows and is a signatory to a number of international trade agreements. Australia's trade commitments are embodied prescriptively in the agreements which it has signed and, more generally, in its long-standing support for multilateral trade liberalisation and the community benefits that result from a freer trade regime. The most important trade-liberalising agreement in the context of this inquiry is the General Agreement on Tariffs and Trade (GATT), now one of the agreements embraced by the World Trade Organisation (WTO).

G1 The World Trade Organisation and the General Agreement on Tariffs and Trade

Over the second half of the twentieth century there have been concerted efforts at the international level to liberalise world trade. The protectionism of the 1930s and the resulting disruption to world trade flows were major factors behind the conclusion of the GATT in 1947. Since then, there have been a series of Multilateral Trade Negotiations (MTN) under GATT auspices. The most recent and most significant of these 'rounds' of negotiations was the Uruguay Round, which commenced in 1986 and concluded in 1994. The significance of the Uruguay Round lies in the extent of market-opening measures agreed to during the Round.[1]

The World Trade Organisation Agreement

A major achievement of the Uruguay Round was the establishment of the WTO as a single institutional framework to facilitate implementation of the Uruguay Round Agreements. The WTO has 129 member countries, including Australia. It commenced operations on 1 January 1995.

[1] The Round achieved a 39 per cent trade-weighted reduction in tariffs by developing countries and a 20 per cent reduction for developing countries (OECD 1994a, pp. 47–50).

A number of Agreements are included in the Annexes to the WTO Agreement. They are an integral part of the WTO Agreement, establishing the WTO as an institution, and are binding on all members. Examples include the Agreements on Agriculture, on Textiles and Clothing and on Subsidies and Countervailing Measures.

The WTO Agreement includes Plurilateral Agreements that are also part of the Agreement for those members which have accepted them, and are binding on those members only. Examples of these Plurilateral Agreements include those on Trade in Civil Aircraft and on Government Procurement.

GATT 1994

GATT 1994, as specified in Annex 1A of the WTO Agreement, is also an integral part of the WTO Agreement. It is legally distinct from GATT 1947, which contains the original set of multilateral rules and obligations as subsequently amended or modified. GATT 1994 includes the modified provisions of GATT 1947, as well as agreed understandings on the interpretation of several Articles of the General Agreement 1994, together with the schedules of tariff reductions agreed to as part of the Uruguay Round.

The GATT's main objective is the liberalisation of trade and to this end the GATT curtails the freedom of members to impose barriers to international trade.

The GATT is based on two fundamental principles. The first of these is the 'most-favoured nation' (MFN) or non-discrimination principle, under which members are bound to grant to the products of all other members no less favourable treatment than that accorded to the products of any particular member country. Exceptions are allowed for customs unions, free trade areas, and preferences for developing countries. The second is the 'national treatment' principle, which requires that once goods have entered a market, they must be treated no less favourably than similar domestically-produced goods.

Agreement on Subsidies and Countervailing Measures

The GATT seeks to constrain the use of trade-distorting subsidies. The Agreement on Subsidies and Countervailing Measures (ASCM) refers to three categories of subsidy and contains a number of criteria by which to judge its applicability. A subsidy is defined in the Agreement to include direct or indirect transfers of funds, payments in kind (by means of providing goods and services not normally provided by governments) and government revenue that is otherwise due, which is forgone or not collected.

A subsidy also must pass a test of 'specificity' for it to be constrained by the ASCM. Specificity requires that the subsidy is not generally available to enterprises throughout the economy. That is, it is restricted to a particular enterprise, industry or group of enterprises. Export subsidies and subsidies contingent on using domestic rather than imported goods are deemed to be specific.

The three categories of subsidy distinguished in the ASCM are prohibited, actionable and non-actionable subsidies:

- Prohibited subsidies include all subsidies contingent upon export performance or upon the use of domestic rather than imported goods. Under the ASCM there are established procedures and remedies for resolving disputes in relation to prohibited subsidies. The dispute settlement procedures of the WTO are considerably more effective and timely than was the case with the GATT prior to the Uruguay Round;
- Actionable subsidies are subsidies that are not prohibited, but against which action may be taken subject to a test of injury to a domestic industry, or of 'serious prejudice', or 'nullification or impairment' of negotiated benefits; and
- Non-actionable subsidies include all non-specific subsidies that do not target sectors selectively and therefore do not benefit primarily a particular firm, industry or group of industries. These non-actionable subsidies are not prohibited under the ASCM and action may not be taken against them — for example, a general research and development tax concession.

Under Article 28 of the ASCM, all existing (specific) subsidy programmes were to be notified to the WTO within 90 days after the agreement came into force and brought into conformity with the provisions of the Agreement within three years (by 1 January 1998).

Action was taken against Australia recently when US leather companies alleged that Howe Leather was the recipient of WTO-prohibited subsidies obtained under Australia's TCF Import Credit Scheme (ICS) and also under provisions of its Export Facilitation Scheme (EFS) for motor vehicles. Agreement was reached subsequently to excise automotive leather from eligibility under the schemes (see Chapter 10 for further details).

Agreement on Safeguards

'Safeguards' is a generic term used to describe measures which allow governments to suspend trade-liberalising commitments in defined circumstances. They include anti-dumping and countervailing duties, as well as

provisions to guard against a balance of payments crisis. Hoekman and Kostecki (1995) describe at least eight different GATT 1994 safeguard provisions, which allow the suspension of normal obligations under the GATT.

Agreement on Rules of Origin

A rule of origin is a criterion used to determine the nationality of a product or a producer. Rules of origin are necessary when there is a desire to discriminate between sources of supply, for example, under preferential trading agreements. Under the auspices of the WTO, a technical committee (chaired by Australia) is currently working on developing rules of origin that are consistent with the principles outlined in the Uruguay Round Agreement on Rules of Origin. Examples of the application of rules of origin in the TCF industries are discussed in Chapter 6.

Agreement on Textiles and Clothing

This agreement phases out the Multifibre Arrangement (MFA) over a ten year period from 1995. Details of the agreement and its potential effects on the world and Australian textile and clothing industries are contained in Appendix F. Australia was a party to an MFA for a short period in the mid-1970s but then withdrew.

Tariff bindings

Tariff reductions agreed as part of the Uruguay Round are to be implemented in five equal steps, which commenced on 1 January 1995.

The term ‘tariff binding’ refers to the rate above which a country guarantees not to increase its tariff for a particular tariff item. For all of Australia’s bound rate TCF items, for all years from 1995 to 1999 inclusive, the bound rate is higher than the applied rate. Some examples of Australia’s TCF bound rates and anticipated applied rates are listed in Table G1.

An indication of the gap between bound rates and applied rates can be obtained by comparing Table G1 with Table G2 on tariff phasing arrangements for Australia’s TCF industries. There has been an attempt to bring divergent bound rates for particular product categories more into line. For example, although the bound rates for different items of footwear have a different starting value in 1995, the schedule of bound rates agreed as part of the Uruguay Round negotiations brings the bound rate to a uniform level of 27 per cent by the year 1999 (see Table G1).

Table G1: Australian tariff bindings for selected TCF items, 1995 to 1999

HS Code[b]	*Description*	*Applied Rate Jan 1997*	*Anticipated Applied Rate July 2000*	*Bound Rates*[a]				
				1995	*1996*	*1997*	*1998*	*1999*
		(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*
420310	Leather apparel	37.0	25.0	47.4	44.8	42.2	39.6	37.0
510710	Yarn of 85% combed wool, not retail packed	5.0	5.0	8.2	7.4	6.6	5.8	5.0
510910	Yarn of 85% combed wool, retail packed	5.0	5.0	17.0	14.0	11.0	8.0	5.0
511220	Woven fabrics of combed wool	23.0	15.0	40.6	36.2	31.8	27.4	23.0
540784	Woven fabrics, synthetic, printed	25.0	15.0	72.0	64.0	56.0	48.0	40.0
570310	Carpets etc, tufted of wool or animal hair	23.0	15.0	36.6	33.2	29.8	26.4	23.0
610311	Men's/boys' knitted suits of wool etc	37.0	25.0	74.6	65.2	55.8	46.4	37.0
610341	Men's/boys' knitted trousers/shorts etc of wool	37.0	25.0	51.4	47.8	44.2	40.6	37.0
611010	Knitted pullovers, cardigans etc of wool	37.0	25.0	83.8	76.6	69.4	62.2	55.0
640391	Other footwear with leather uppers covering ankle	27.0	15.0	37.4	34.8	32.2	29.6	27.0
640510	Other footwear with uppers of leather	27.0	15.0	45.4	40.8	36.2	31.6	27.0
640520	Other footwear with uppers of textile materials	27.0	15.0	53.4	46.8	40.2	33.6	27.0

a Bound Rates applying from 1 July in each of the years shown.
b Harmonised Schedule Code.
Source: Department of Foreign Affairs and Trade.

Table G2: Maximum tariff rates for Australia's TCF industries, 1996 to 2000

	1996	*1997*	*1998*	*1999*	*2000*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*
Apparel and certain finished textiles	37	34	31	28	25
Footwear	27	24	21	18	15
Cotton sheeting and woven fabric	25	22	19	17	15
Footwear parts	23	21	19	17	15

Note: Rates applying from 1 July in each of the years shown.
Source: IC 1995a.

G2 Asia Pacific Economic Cooperation

Since its inception in 1989, the Asia Pacific Economic Cooperation (APEC) forum has become an important vehicle for economic cooperation between its (now) 18 member economies — Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, Philippines, Singapore, South Korea, Chinese Taipei, Thailand and the United States. APEC accounts for 40 per cent of world trade (APEC 1995) and nearly 70 per cent of Australia's trade (BIE 1995).

APEC has maintained a commitment to non-discrimination, or what APEC documents sometimes refer to as 'open regionalism'. As put by APEC Leaders:

> We wish to emphasise our strong opposition to the creation of an inward-looking trading bloc that would divert from the pursuit of global free trade. We are determined to pursue free and open trade and investment in Asia Pacific in a manner that will encourage and strengthen trade and investment liberalisation in the world as a whole. Thus, the outcome of trade and investment liberalisation in Asia Pacific will not only be the actual reduction of barriers among APEC economies but also between APEC economies and non-APEC economies. In this respect we will give particular attention to our trade with non-APEC developing countries to ensure that they will also benefit from our trade and investment liberalisation, in conformity with GATT/WTO provisions. (APEC 1994, Article 6)

Whereas the WTO is a rules-based system, with scope for sanctions by members against non-complying members, APEC is based on the voluntary commitments of its member nations.

A significant milestone in APEC's development was the Bogor Declaration made by the APEC Leaders in November 1994. It commits APEC economies to

achieving free and open trade and investment no later than 2020, with industrialised APEC members to do so by 2010.

In Australia, maximum tariff rates on dutiable goods (other than for passenger motor vehicles (PMV) and TCF products) were reduced to five per cent on 1 July 1996 . In its Individual Action Plan presented to the APEC Leaders' meeting in Manila in November 1996, Australia, like other countries, focused on specific commitments prior to the year 2000 and more general commitments beyond 2000. Nevertheless, Australia did make two quite specific commitments in relation to the post-2000 period when it undertook to:

- examine post-2000 tariff arrangements for the PMV and TCF industries following the 1996 and 1997 Productivity Commission reviews; and
- review post-2000 general tariff levels (0 to 5 per cent) in 2000 or earlier (DFAT 1996, p. 17).

The second of these undertakings was identified in the Individual Action Plan as a new liberalisation measure which goes beyond Australia's Uruguay Round commitments.

In addition to the traditional tariff-based approaches to trade liberalisation, APEC has been the catalyst for measures aimed at trade facilitation and the reduction of non-tariff barriers to trade. 'Trade liberalisation' refers to barriers such as tariffs that have been purposefully erected to restrain trade, whereas 'trade facilitation' is aimed at reducing other impediments. The Pacific Business Forum (established by the APEC Leaders) has made a number of recommendations in areas such as visa requirements for business travellers, harmonisation of customs procedures and of standards requirements and the adoption of greater transparency in administrative and regulatory systems.

G3 Regional trade agreements

Australia has international trade obligations under a number of regional trade agreements including agreements with New Zealand (ANZCERTA) and the Forum Islands (SPARTECA).

The Australia New Zealand Closer Economic Trade Relations Agreement

The Australia New Zealand Closer Economic Trade Relations Agreement (ANZCERTA) came into effect in 1983 with the objective of liberalising bilateral trade between Australia and New Zealand. Initially, progress in freeing

trade in TCF products was slow because the industries were subject to industry-specific plans in both countries. However, in 1988, following a review of ANZCERTA, both governments decided to accelerate the move of all products to free trade by 1 July 1990, five years ahead of the original timetable. Free trade now applies to all goods traded across the Tasman for products deemed to originate in Australia or New Zealand (DFAT 1991).

The rules of origin specify that for preferential treatment, a product must have at least 50 per cent Australian and/or New Zealand content and the last process of manufacture must take place in either Australia or New Zealand. The Customs Services of the two countries administer jointly this 50 per cent rule.

In 1995-96, Australia imported $433 million worth of TCF products from New Zealand, representing a fairly broad spread of products, and exported $321 million worth of TCF products across a similar spread of products.

Disputes have arisen in relation to this trade and, more particularly, the associated rules of origin. As a result, the Textiles Clothing and Footwear Council of Australia, the Textile Federation of New Zealand and the two Customs Services jointly developed a protocol for lodging complaints and resolving disputes.

As part of the 1988 Review, an Agreed Minute on Industry Assistance was signed in which it was agreed that from 1 January 1989, the two governments would avoid adoption of industry specific measures which had adverse effects on competition between industries in the ANZCERTA Free Trade Area. This undertaking does not apply to measures to support research and development, industry extension services and export promotion measures other than those specifically designated for elimination (DFAT 1991).

South Pacific Regional Trade and Economic Cooperation Agreement

Australia has signed a preferential trade agreement, the South Pacific Regional Trade and Economic Cooperation Agreement (SPARTECA), which gives non-reciprocal benefits to the Forum Island countries.[2] Under this agreement, TCF exports from Forum Island countries to Australia receive duty-free entry into Australia.

[2] The Forum Islands comprise the Cook Islands, the Federated States of Micronesia, Fiji, Kiribati, the Republic of the Marshall Islands, Nauru, Niue, Papua New Guinea, the Solomon Islands, Tonga, Tuvalu, Vanuatu and Western Samoa.

Fiji is the main source of TCF trade with Australia under this agreement. In 1995-96, Australia exported $92 million of TCF (mainly textile) products to Fiji and imported $122 million of TCF products (mainly re-exports of apparel).

The rule of origin for preferential treatment under SPARTECA is similar to the 50 per cent rule used under ANZCERTA. The Customs Services of Australia and Fiji administer jointly this 50 per cent rule.

Other preference agreements

In addition to its free trade agreements with New Zealand and the Forum Islands, Australia maintains preferential trade agreements with Papua New Guinea (PATCRA) and Canada (CANATA). Australia also grants trade preferences on a unilateral, non-reciprocal basis under the Australian System of Tariff Preferences for Developing Countries (ASTP) (see Chapter 6 on Concessional Entry Arrangements).

The agreement with Canada dates back to 1932. Canada is given preferential treatment with tariffs applied to Canada less than those applied to developing countries for some items. For example, rates for felt products are:

Felt (Harmonised Schedule 5602)

Applied rate	5 per cent
Developing country rate	5 per cent
CANATA rate	free

The tariffs applied to Canadian carpets and knitted or crocheted fabrics are also less than those applied to developing countries. Canada receives preferential treatment for approximately 20 TCF products within a number of four digit Harmonised Schedule categories (5705, 5810, 5911, 6002, 6115, 6306 and 6307) with the extent of the preference varying across these items.

H COMMONWEALTH FUNDED ADJUSTMENT ASSISTANCE SCHEMES

H1 Introduction

This Appendix describes all Commonwealth government TCF-specific grant programs that have operated since the inception of the TCF Plan in 1987-88.

In 1987, the then Minister for Industry, Trade and Commerce, Senator Button, announced a program of reductions in barrier protection, coupled with a range of adjustment assistance measures. Over the ensuing decade, significant changes in the types of programs offered have occurred and the total size of the assistance package has been reduced. Some programs were terminated, others amalgamated and some new initiatives have been implemented. While some programs ran for extended periods, others operated for only a short time. These changes occurred against the backdrop of declining barrier assistance for these industries. Some assistance programs remain in operation. In aggregate the Commonwealth Government has spent or has allocated budgets for around $420 million on these industry-specific programs.[1] This appendix outlines current and past adjustment measures, their rules, participants and recorded outcomes.

H2 Overview

The first package of adjustment programs, the Industries Development Strategy (IDS) and Labour Adjustment Package (LAP), formed part of the broader TCF Plan which also set in place a regime for the steady reduction of government barrier assistance to the TCF industries — in the form of elimination of import quotas, and the reductions of bounties, and tariffs. The IDS aimed to help the TCF industries restructure to survive in an environment of decreased government assistance. The LAP was designed to assist employees who had become displaced from the TCF industries gain employment elsewhere.

[1] This figure does not include the cost of revenue forgone under the Import Credit Scheme or the Overseas Assembly Provisions programs. The cost of this revenue forgone for these programs is estimated at $480 million and $20 million respectively.

However, before the IDS was fully implemented, it underwent many changes. Most significantly, it was restructured in the March 1991 Industry Statement. In this statement, several programs were disbanded and some of their elements were amalgamated with strengthened programs.

Other significant changes were made during the course of the TCF Plan. For example, the Import Credit Scheme was introduced on 1 July 1991, the Overseas Assembly Provision Program in 1992, and a Further Wool Processing Program was established from 30 June 1992.

The current package of reforms, the TCF 2000 Development Strategy, was announced in the 1995-96 Commonwealth Budget and was designed to build on the redevelopment of the TCF industries achieved under the previous program. However, before its full implementation, the TCF 2000 Development Strategy also was altered significantly and the amount of funding available under it was reduced by the newly elected Commonwealth Government in that budget. Some of these programs are extensions of the previous IDS. For example, the current package involves a Supply Chain Program, which is an extension of the Quick Response Program developed under the Industries Infrastructure Support Program of the IDS.

Annual Government expenditure on TCF-specific programs has decreased from a peak of around $88 million, including the LAP program, in 1992-93 to an estimated $5.4 million in 1996-97. Over the duration of the IDS around $398 million was allocated (excluding the Import Credit Scheme and Overseas Assembly Provisions Program). The TCF 2000 Development Strategy (as revised) is budgeted to cost $22 million (McGauran 1996).

H3 Current adjustment assistance programs

The TCF 2000 Development Strategy was based on the recommendations of the Future Strategies Committee (FSC), which was commissioned in May 1994 by the Commonwealth Government to examine the TCF industries and make recommendations on future programs. The Committee presented its report in December 1994.

To coordinate and oversee the implementation of the TCF 2000 Development Strategy, a TCF Branch was established within the then Commonwealth Department of Industry Science and Technology (DIST), located in Melbourne.

Programs in the TCF 2000 Development Strategy were budgeted to cost $33 million over the five years (Cook 1995). The original suite of programs as announced was:

- AusIndustry TCF Outreach Program ($14.9 million):
  - TCF Best Practice Project,
  - TCF Quick Response Program and
  - TCF Handbook and On-line Access Project;
- AusIndustry Quality Program ($8.4 million);
- TCF International Information Project ($1.3 million); and
- TCF Infrastructure Program ($8.4 million):
  - Investment Promotion Project,
  - Investment Attraction Project,
  - Training Project, and
  - Outworker Entitlement Project.

In addition, a TCF Advisory Panel was to be set up to advise the Minister on international agreements such as GATT, APEC, ANZCERTA, and SPARTECA which have a heavy impact on the TCF industries. It was also to consult with industry on the effect of such agreements.

However, with the newly elected Commonwealth government in March 1996 there was a loss of the first year's funding resulting in the overall budget being reduced with some activities such as the TCF International Information Program and the Investment Promotion Project put on hold. Funds to initiatives regarding an outworker entitlement project and a training project were still available within the Program and are currently under development.

The modified program is budgeted to cost $22 million (McGauran, 1996) and consists of:

- Best Practice Program;
- Supply Chain Partnership Program (Quick Response Program);
- TCF Handbook and On-line Access Project;
- Quality and Business Improvement Program; and
- TCF 2000 Benchmarking Project.

In addition the Commonwealth Government, in February 1997, approved a package of up to $25 million in loan assistance for Australian Leather Holdings. This is in response to removing automotive leather from the eligibility of the TCF Import Credit Scheme (see Chapter 9 for further information).

Finally, a TCF Advisory Board has been established to be the primary source of advice to the Government on the issues confronting the TCF industries. The members of the Board were announced by the Minister in July 1996.

This package of reforms is intended to:

> ... ensure that the structural change achieved over the past seven years is consolidated and that the industries will be able to meet the challenges arising from APEC. (Cook 1995, p. 3)

The revised TCF 2000 package is currently in its early implementation phase.

Best Practice Program

Background

The Best Practice Program was instituted in recognition of the fact that the TCF industries had not benefited from previous general government assistance best practice programs.

Objectives

The overall objective of the program is to increase firms' competitiveness by improving their business management skills and operations.

The stated objectives of the program are:

- to stimulate Australian TCF firms to pursue international best practice;
- to identify new directions of organisational innovation and best practice; and
- to promote a wider understanding and awareness of international best practice and benefits of its adoption by Australian TCF firms. (AusIndustry 1996a, p. 4)

The aim is to have firms involved from all areas of TCF who are undertaking best practice projects across a range of areas.

Funding

The Best Practice Program is budgeted to cost $7.7 million over the period from 1996-97 to 1999-2000 and will be applied to all aspects of business. Table H1 shows the budget for each financial year to 2000.

Firms receiving funds will be required to match the funding received on a dollar for dollar basis. Matching payments can be either cash or in kind.

Table H1: Budget for the Best Practice Program, 1996-97 to 1999-2000

	Budget
	($m)
1996-97	3.0
1997-98	2.0
1998-99	1.5
1999-2000	1.2

Source: DIST Correspondence, 11 June 1997

How it works

Grants of between $50 000 and $250 000 will be allocated to approved firms. A short list of proposals is to be made and passed on to the TCF Advisory Board for its consideration before being submitted to DIST. Once projects are approved, organisations will be required to enter into an agreement with DIST.

In return, recipient firms or organisations will be required to demonstrate the information learned to the rest of the TCF industries through open days, presentations, seminars and articles.

Eligibility criteria

This program is aimed primarily at small and medium sized businesses within the TCF industries. Typically, firms which have at least five employees and have an annual turnover of up to $50 million will be targeted. However, large firms, especially those with strong demonstration strategies, are not discouraged from applying for grants. Multi-firms or groups also are able to apply.

Specifically, project proposals by firms are required to:

- be part of the firm's aim for continuous improvement;
- be capable of leading to significant results in the workplace and/or industry;
- achieve a major milestone within 18 months of commencement; and
- provide a tangible benefit to the firm and/or industry.

Other conditions include:

- the firm having a goal or vision for achieving first class performance coupled with a plan for continuous improvement;
- a commitment to share with peers the information learned;

- a demonstration of sound business and financial management; and
- having been established for at least three years.

Administrators

The Best Practice Program will be implemented by DIST and overseen by the TCF Advisory Board.

Monitoring

The achievement of the Best Practice Program objectives will be measured by the following key performance indicators:

- number of proposals received;
- number of projects approved;
- project dollars allocated;
- the performance of individual projects (on the basis of specific performance indicators);
- the nature of projects approved; and
- issues presented at dissemination activities.

Additional individual performance indicators for each project also will be agreed on when project contracts are finalised.

Supply Chain Partnership Program

Background

This program builds on the pilot Quick Response Project initiated under the previous the IDS. The FSC (1994) argued that an important element of building successful and competitive domestic businesses is to create strong networks between them.

Objectives

The objectives of the Supply Chain Partnership Program are to:

- encourage the widespread adoption of supply chain partnerships in the TCF industries;
- provide Australian manufacturers with a quantifiable advantage over imports; and
- disseminate information on supply chain management principles and the benefits of cooperation and collaboration projects to the TCF industries

> through industry bodies, other Government Program providers, training centres and other industry networks. (AusIndustry 1996b, p. 1)

Funding

The Supply Chain Partnership Program is budgeted to cost $2.5 million over the period from 1996-97 to 1999-2000. Table H2 shows the budget for each financial year to 2000.

At this stage, it is proposed by DIST that each participant, excluding retailers, receive up to a maximum of $30 000 under the scheme.

Table H2: Budget for the Supply Chain Partnership Program, 1996-97 to 1999-2000

	Budget
	($m)
1996-97	0.9
1997-98	0.8
1998-99	0.6
1999-2000	0.2

Source: DIST Correspondence, 11 June 1997

How it works

The Supply Chain Partnership Program will provide funding for a broker to facilitate a partnership between a number of firms to form a vertical supply chain. Non-TCF manufacturing firms, such as retailers and transport operators, are encouraged to be part of the partnership but will not receive funding.

It is proposed that implementation will involve two stages. First, once suitable partners have been established, improvement activities will be identified. This may involve undertaking a 'partnership-ready audit' and/or a 'business performance diagnosis'. At this stage the audit and diagnostic costs are to be funded fully by the program. However, the formation and development of the plan would require participating firms to contribute 25 per cent of the funds. The second stage is the implementation of the improvement activities. If specialist technical skills are required for implementation, funding for additional consultants may be approved. Firms will be required to contribute 50 per cent of the funding.

Administrators

The Supply Chain Partnership Program will be implemented by the State branches of AusIndustry as an adjunct to the current AusIndustry bilateral agreements.

Eligibility criteria

This program is aimed primarily at small and medium-sized businesses within the TCF industries. Specifically, firms which have at least five employees and have an annual turnover of up to $50 million will be targeted. Although not mandatory, retailer participation will be encouraged.

Monitoring

The achievement of the Supply Chain Partnership Program objectives will be measured by the following key performance indicators:

- number of proposals received;
- number of projects approved;
- project dollars allocated; and
- the performance of individual projects (on the basis of specific performance indicators).

Additional individual performance indicators for each project also will be agreed on as the project contracts are finalised.

Individual State agencies will be required to provide six monthly monitoring reports on program delivery.

TCF Handbook and On-line Access Project

Background

TCF industries traditionally have not participated in general assistance programs as much as the rest of the manufacturing sector. One reason put forward by the FSC included the fact that the TCF industries have had programs tailored to their specific needs for some time. The Handbook and On-line Access Project was designed to address this issue by improving information flows regarding generally available programs.

Objectives

The TCF Handbook and On-line Access Project aims:

> ... to help TCF firms gain access to generally available measures. (Cook 1995, pp. 3-4)

Funding

Around $1 million was allocated to this project.

How it works

There are two parts to the project — the TCF Handbook and On-line Access. Both are a collation of information about generally available assistance measures, in printed and computer-accessible form, distributed to predominantly small and medium-sized TCF firms, government and relevant individuals and groups. The On-line facility has been created in conjunction with the Bizlink package, which is a generally available assistance measure, to provide further information to the industries on generally available measures.

Eligibility criteria

The Handbook will be disseminated to small and medium-sized TCF businesses, individual entrepreneurs, other governments and industry associations. The On-line Access facility is available to everyone.

Administrators

The TCF Handbook was completed by DIST, while the On-line Access facility has been implemented by AusIndustry.

Quality and Business Improvement Program

Background

The impetus for this program came from the findings of the Werner consultancy. Werner found that Australian firms do not have a strong commitment to attaining a satisfactory level of quality — considered an essential factor for TCF firms' success.

Objective

The purpose of this program is to encourage TCF firms to develop a culture for producing quality products which in turn will change customers' perception of the industries' quality performance. Specifically, the program's objectives are:

- to promote a wider understanding and awareness of quality management and the benefits of its adoption by TCF firms;

- to encourage TCF firms to take a holistic approach to enterprise improvement; and
- To contribute toward the international competitiveness of TCF companies. (AusIndustry 1996c, p. 1)

Funding

The Quality and Business Improvement Program is budgeted to cost $6.5 million over the period from 1996-97 to 1999-2000. Table H3 shows the budget for each financial year to 2000.

The program will fully subsidise individual firm diagnostic services, subject to a maximum of $5000. Firms are expected to contribute 20 per cent of the costs of any additional, specialised diagnostic services. Three quarters of the cost of any other non-diagnostic services required after the completion of the diagnosis would be provided by the government, to an overall limit of $20 000 per enterprise development activity.

Table H3: Budget for the Quality and Business Improvement Program, 1996-97 to 1999-2000

Year	*Budget*
	($m)
1996-97	1.5
1997-98	1.5
1998-99	2.0
1999-2000	1.5

Source: DIST Correspondence, 11 June 1997.

How it works

This program recognises that each business will already possess varying degrees of knowledge in the area of quality management. Therefore, the proposal for implementation of this program involves two entry points — an awareness level and the business diagnostic level.

The awareness level is aimed at companies with little or no knowledge of quality management. These firms would participate in workshops and be directed to relevant publications. Workshops could be delivered by qualified organisations and determined by competitive tender. Firms would not incur an expense at this stage and would be encouraged to continue to the next level.

The business diagnostic would be applicable for firms assessing their overall improvement needs. Firms would have access to a business diagnostic service and the services of a specialised client manager. The diagnostic process will determine the most appropriate steps for the firm to undertake improvements.

Once the diagnostic stage is completed, where appropriate, companies would be encouraged to undertake one or more enterprise improvement activities which meet their needs.

Administrators

The Quality and Business Improvement Program will be implemented by the State branches of AusIndustry as an adjunct to the current AusIndustry bilateral Agreements.

Monitoring

The achievement of the Quality and Business Improvement Program objectives will be measured against the following key performance indicators:

- number of proposals received;
- number of projects approved;
- project dollars allocated; and
- the performance of individual projects (on the basis of specific performance indicators).

TCF 2000 Benchmarking Project

The TCF 2000 Benchmarking Project arose from the Werner consultancy, commissioned by the FSC, which argued that the most effective tool for initiating change within the TCF industries is benchmarking. Werner found that only ten per cent of the companies reviewed during the study met Italian industry standards.

The project involves benchmarking Australian firms against overseas companies. It has been contracted out to Arthur Andersen. Originally it was intended that three benchmarking surveys would be conducted in 1996, 1998 and 2000, but funding for the 1998 and 2000 surveys has yet to be confirmed by the present government. The 1996 data gathered on more than 70 performance indicators was collated into an electronic database, from which participants can assess their performance against their peers and world best practice. Participants will not be able to obtain confidential data regarding other

individual companies. An aggregated version, revealing no individual company data, is also available for the industry, Government and other bodies.

H4 Past schemes (assistance measures completed since 1987)

The original TCF Plan grant based schemes have ceased, the last concluding on 29 February 1996 (although some firms are still completing projects under these programs). During the course of the TCF Plan several modifications were made to the IDS which involved the termination and amalgamation of several other programs.

The IDS contained programs designed to promote modernisation, rationalisation and capital investment through the provision of grants ('capital grants') and programs aimed at improving TCF infrastructure (such as training) and business management skills, including exporting skills ('infrastructure and management programs'). The IDS originally comprised the following programs:

- the Raw Materials Program (capital grants);
- the Industries Efficiency Program, which included:
  - Textiles Industry Modernisation Scheme, available to yarn bounty recipients (capital grants),
  - Incentives for International Competitiveness Scheme (capital grants) and
  - Management Business Skills Scheme (infrastructure and management);
- the Industries Infrastructure Program (infrastructure and management); and
- the Export Development Program (infrastructure and management).

In addition, the LAP (see Chapter 4) was also included to assist those who have become unemployed find employment outside the TCF industries.

Several changes were made to these programs during the course of the IDS:

- the Textiles Industry Modernisation Scheme ceased in June 1990 and was replaced by the Capitalisation Grants Program, which capitalised the expected value of future yarn bounties (capital);
- the March 1991 Industry Statement, which:
  - strengthened the Incentives for International Competitiveness Scheme, making it a program in its own right,

  - terminated the Raw Materials Program (no projects having been funded under this scheme) and replaced it with the Further Wool Processing Program (capital),
  - merged the Management Business Skills, Export Development and Industries Infrastructure programs to form the Industries Infrastructure Support Program (infrastructure and management) and
  - introduced the Import Credit Scheme (discussed in Chapter 9); and
- the Overseas Assembly Provisions Program was introduced in 1993 (see Chapter 6).

Raw Materials Program

Background

The Raw materials Program was introduced to encourage domestic producers to increase the value of their exports by encouraging the further processing of raw materials in Australia. The program commenced in 1987-88 and was terminated in the 1991 March Industry Statement.

Objective

The objective of the program was:

> to facilitate greater domestic processing of Australian wool, cotton and skins and hides and to increase exports of processed goods. (Button 1987, Attachment B, p. 3)

Funding

No funds were ever allocated under this program.

Industries Efficiency Program

Background

The Industries Efficiency Program sought to enhance TCF firms' prospects by addressing those internal factors which have limited their ability to compete with imports and to develop exports.

The program consisted of three sub-programs:

- Incentives for International Competitiveness Program;
- Management and Business Skills Scheme; and

- Textiles Industry Modernisation Program.

Due to perceived delays in restructuring, the 1991 March Industry Statement dismantled the Industries Efficiency Program, amalgamating it with the strengthened Industries Infrastructure Support Program and establishing the Incentives for International Competitiveness Scheme as the major source of restructuring funding.

Objective

The overall objective of the Industries Efficiency Program was:

> ... to encourage firms to assess their current position, including strengths and weaknesses and to formulate and implement long-term business strategies which capitalise on identified strengths and developing market opportunities. (Button 1987, Attachment B, p. 4)

Textiles Industry Modernisation Scheme

Background

The Textiles Industry Modernisation Program commenced in 1988-89 and ceased on 30 June 1990.

Objective

The objective of the Textile Industries Modernisation Scheme was:

> ... to encourage and facilitate investment in modern plant and equipment in TCF industries by providing financial assistance to producers of bountiable yarn for that purpose . (*Textiles, Clothing and Footwear Act 1988*, s7(b)(i))

Funding

Grant payments of $2.05 million were made under this program.

How it worked

The program provided assistance to yarn bounty recipients, to modernise plant and equipment. This was because the yarn bounty provided no incentive to reduce costs, thereby inhibiting desirable modernisation and re-investment.

Assistance was financial and was allocated by the TCFDA and in some instances funding was available from the AIDC,[2] either with or without a guarantee from the relevant Minister.

To assess the worthiness of assistance, the TCFDA required TCF firms to:

- submit an application in writing;
- provide details of the plant and equipment which the applicant intended to purchase; and
- include a business plan on the financial improvement or development which the purchase would produce.

The maximum assistance offered by the TCFDA was 50 per cent of the firm's expected bounty receipts over the following three years. Firms applying for assistance were obliged to provide the TCFDA, on request, with information required so that the assistance entitled to them could be calculated.

Administrators

The TCFDA administered this program.

Eligibility criteria

The scheme was open to companies which were eligible for yarn bounty payments in excess of $50 000 but less than $5 million per year. Other criteria stated that:

- the investment must be in the acquisition or upgrading of plant and equipment;
- the company must make a significant financial commitment to the project;
- the project must be commercially viable and based on the company's sound financial performance; and
- a commitment must be made to results that would lead to measurable improvements in efficiency and international competitiveness.

Priority for assistance was given to TCF firms which reduced the costs of production and increased exports or replaced imports.

In addition, projects needed to have been approved as financially viable by a mutually agreed financial consultant and companies were required to enter into a contract agreement with the Authority before receiving assistance.

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[2] Provisions were made in the TCF Act 1988, s34, for the AIDC in some cases to provide assistance to firms under the program if the TCFDA deemed a project worthwhile but did not have funds available for it at that time.

Participants

Five firms were granted assistance. Table H4 contains information on these recipients and the grants which they received.

Table H4: Grants made to firms under the Textile Industries Modernisation Scheme

Company	*Amount*	*Purpose*
	($)	
Actil Ltd.	684 000	Spinning and associated equipment
Homfray Carpets Aust. Pty Ltd.	244 600	Carding spinning and twisting machinery
Norwellan Textiles Pty Ltd.	152 789	Warping and associated machinery
Rocklea Spinning Mills Pty Ltd.	720 000	Spinning and associated equipment
Pacific Consolidated (International) Pty Ltd.	250 200	Acquisition of blending equipment
Total	**2 051 589**	

Source: TCFDA 1991

Incentives for International Competitiveness Scheme

Background

The Incentives for International Competitiveness Scheme was introduced to help the TCF industries restructure and become viable in the long term. Following the March 1991 Industry Statement, this program, which was formerly a sub-program of the Industries Efficiency Program, was strengthened substantially and became the main program for delivering assistance to TCF firms in the restructured Industries Development Strategy. The scheme closed to new applicants on 4 October 1993.

Objective

The Incentives for International Competitiveness Scheme:

> .... aims to provide grant assistance to financially viable TCF manufacturing companies that are striving to become internationally competitive. (TCFDA 1992, p. 12)

Funding

From 1988-89 to 1994-95 more than $91 million of grants were provided to 112 projects. Of this total, about $2 million was spent by the TCFDA on obtaining

professional and independent financial and market analysis. Table H5 shows the payments made under this program.

Table H5: Payments and approvals under the Incentives for International Competitiveness Scheme, 1988-89 to 1994-95

	Payments	*Approvals*
	($m)	*(No.)*
1988-89	0.0	6
1989-90	2.2	4
1990-91	2.5	13
1991-92	12.4	20
1992-93	42.8	38
1993-94	17.8	27
1994-95	13.5	4

Source: TCFDA 1995

How it worked

Financial assistance was provided to firms by the TCFDA for restructuring. Priority was given to projects that focused on:

- export development;
- raw materials processing;
- greenfield development; and
- investment still at the committal stage (that is, prior to initiation of capital expenditure programs).

TCF firms were required to submit applications for funding to the TCFDA. The application process generally consisted of two stages. Initially, firms would submit in writing their proposal together with a business plan, feasibility study and/or a project outline. Upon successful completion of the first stage, firms would be required to supply further information for an evaluation of the proposal. Specifically, the information required included information on the firm's financial position — such as balance sheets, profit and loss statements, financial forecasts, business structure and tax returns.

The TCFDA was able to approve grants of up to $1 million. Ministerial approval was required for amounts greater than $1 million dollars. The agreement that was signed between the company and TCFDA included a requirement that the companies would provide quarterly reports to the TCFDA.

The size of the grant would determine the rigour of the evaluation. For example, those grants for under $50 000 would be evaluated internally by the TCFDA, while those above this amount would require independent consultants.

Administrators

The TCFDA administered the program.

Eligibility criteria

In the original Incentives for International Competitiveness Scheme companies could only apply for grants if the project was aimed at increasing exports or substantially replacing imports. The March 1991 Industry Statement broadened the criteria for funding to include projects which aimed to:

- enhance the level of exports;
- replace imports;
- improve quality;
- reduce costs; or
- introduce any other measure that in the opinion of the Authority increase the international competitiveness of the company.

Project proposals put forward by the companies also needed to:

- be investments or cover the development costs in, amongst other things, plant equipment, manufacturing systems development, structural re-organisation and/or major retraining programs;
- involve a significant financial commitment by that company (usually at least 70 per cent of the project investment cost);
- present projects that were commercially viable;
- show that the company was an advanced business, as evidenced by, for example, a strategic or business plan; and
- be prepared to provide all relevant financial and technical data.

Participants

See Table H5 for the number of project approvals for the program.

The largest 14 recipients of this program are listed in Table H6.

Management and Business Skills Scheme

Background

The Management and Business Skills Scheme was a joint Commonwealth–State initiative introduced to improve standards of management and business skills to enhance the international competitiveness of the industries.

The 1991 March Industry Statement announced the amalgamation of the Management and Business Skills Scheme with the Industries Infrastructure Support Program.

Objective

The Management and Business Skills Scheme aimed to:

> ... encourage improved business efficiency through assistance and advice on business management strategies. (TCFDA 1989, p. 22)

Funding

In total, about $10 million was allocated under this program.

How it worked

This program offered a wide range of services to TCF firms. These included:

- information and referral services;
- subsidised diagnostic services;
- business planning;
- assistance for a wide variety of specialist extension services; and
- encouraging group, sectoral and industry-wide initiatives.

Commonwealth funds were distributed on the basis of factors including the number of TCF companies in the State or Territory, industry employment levels, the demand for NIES services and the State or Territory's own industry programs.

Table H6: Largest 14 grants under the Incentives for International Competitiveness Program

Firm	*Date*	*Purpose*	*Amount*
			($m)
Macquarie Textiles Holdings Pty Ltd	1992-93	Acquisition and relocation of plant and equipment	13.0
Undare (Aust) Pty Ltd	1993-94	Acquisition of equipment and rationalisation costs	8.1
Leading Synthetics Pty Ltd	1994-95	Establishment of polyester filament, fibre and chip production facility	6.0
Capital Carpet Industries Pty Ltd and Invicta Group Industries Pty Ltd	1993-94	Rationalisation of the Carpet group and equipment purchases	5.3
Pacific Dunlop (trading as Holeproof)	1991-92	Rationalisation and restructuring of hosiery and underwear operations	4.0
Hilton Hosiery Company (a division of Sara Lee Personal Products (Australia) Pty Ltd)	1992-93	Equipment replacement program including QR/EDI equipment	3.9
Yarra Falls Pty Ltd	1992-93	Acquisition of plant and equipment	3.5
Calum textiles Group Pty Ltd	1992-93	Upgrade of plant and equipment	2.8
Pacific Dunlop Ltd (T/A Tontine Industries)	1992-93	Acquisition of plant and equipment and rationalisation costs	2.5
King Gee Clothing Company Pty Ltd	1993-94	Implementation of quick response and plant replacement program	2.3
Canning Vale Weaving Mills Limited	1992-93	Acquisition of jacquard loom and other equipment	2.1
Godfrey Hirst Australia Pty Ltd	1993-94	Acquisition of plant and equipment for wool-based carpet	2.0
Leading Spinning Pty Ltd	1992-93	Establishment of cotton spinning plant	2.0
Schaffer Corporation Ltd	1992-93	Establishment of new bovine tannery	2.0

Source: TCFDA 1989 1990 1991c 1992b 1993 1994a 1995

Administrators

The program was operated on behalf of the TCFDA through the National Industry Extension Service (NIES). The TCFDA provided NIES in each State with funds for the program's implementation. The contractual arrangements were reviewed annually.

Eligibility criteria

Key characteristics of the firm would be examined before assistance was offered, specifically in relation to the firm's:

- willingness to make a contribution to the cost of assistance under the scheme;
- commitment to effective participation in the program and willingness to implement plans;
- efforts in the recent past to improve the efficiency of performance; and
- ability to increase exports, replace imports and/or undertake value-adding manufacturing.

Participants

Table H7 shows the number of recipients of assistance under the Management and Business Skills Scheme.

Table H.7: Number of recipient firms for the Management and Business Skills Scheme, 1987-88 to 1994-95

	Recipients
	(No.)
1987-88	42
1988-89	76
1989-90	93
1990-91	133
1991-92	135
1992-93	126
1993-94	128
1994-95	100[a]

Note: NIES in each state or territory provided the services under the Management and Business Skills Scheme and later the Industries Infrastructure Support Program.

a This figure is approximate

Source: TCFDA 1993, 1994a, 1995

Industries Infrastructure Program and the Infrastructure Support Program

Background

The Industries Infrastructure Program was introduced as part of the original IDS announced in 1987–88. In the March 1991 Industry Statement (Hawke *et al*, 1991), this program was restructured so that it included the Management and Business Skills Scheme and Export Development Program and became known as the Infrastructure Support Program. The program ran the full course of the IDS, concluding in 1995.

Objective

The objective of the Industries Infrastructure Program and the Infrastructure Support Program was to improve and coordinate the use of TCF industries' infrastructure, which included improving the skills of the workforce.

At its broadest level, the Program aimed:

> ... to improve and coordinate the infrastructure support available to the TCF industries as they endeavour to become more internationally competitive. (TCFDA 1991b, p. 2)

Funding

In total, $21 million of grants for infrastructure improvements were approved. This includes more than $10 million of the TCFDA's funds allocated to NIES as part of the Management and Business Skills Scheme (see Table H8).

Projects in this program required a financial commitment by the grant applicants. The government's maximum contribution was up to 75 per cent for marketing and management services and up to 50 per cent for other projects.

How it worked

Subsequent to the Industry Statement in March 1991, the Infrastructure Support Program was implemented by two methods. First, funding was provided to NIES to continue the services provided by the previous Management and Business Skills Scheme (see previous section). Second, funding was provided for direct grants to approved projects.

Table H8: Industries Infrastructure Support Program spending, 1987-88 to 1994-95

	Recipients
	($m)
1987-88	2.4
1988-89	4.4
1989-90	2.8
1990-91	0.9
1991-92	3.0
1992-93	2.8
1993-94	1.3
1994-95	3.0

Note: These figures include NIES payments under the former Management and Business Skills Scheme
Source: TCFDA 1995

Proposals for grants were submitted to the TCFDA. The application process generally consisted of two stages. Initially, proponents would submit in writing their proposal together with a business plan, feasibility study and/or a project outline. Further information for an evaluation of the proposal would be sought if necessary.

The size of the grant would determine the rigour of the evaluation. For example, grants of less than $50 000 would be evaluated internally by the TCFDA, while those above this amount would require independent consultants.

Approved grants were provided for a number of projects, the largest being for:

- Enterprise Development (this is discussed above as part of the Management and Business Skills Scheme);
- the Quick Response Program. The Victorian Department of Business and Employment developed this project to improve the relationships between retailers, TCF suppliers and manufacturers so that domestic products could compete more effectively against imports. More than 50 companies participated in the scheme, with 30 manufacturers receiving financial assistance; and
- Hide improvement: It was envisaged that by improving the quality of hides produced the reputation of Australian leather and leather products would be improved substantially. The TCFDA operated this project in conjunction with the Meat Research Corporation, the Federated Tanners' Association of Australia and the Australian Meat and Livestock Corporation.

Administrators

The TCFDA provided funds to the NIES for their services and for direct grants to the successful applicants for other projects.

Eligibility criteria

Projects which were eligible for this program were those which, in the opinion of the TCFDA complied with the objectives of the program. That is:

> ... projects, directed or applied to the industries' infrastructure level, which contribute to improvements in the international competitiveness of TCF firms. (TCFDA 1991b, p. 2)

In addition, projects must have been:

- of national value;
- of strategic importance;
- not duplicative of government programs or facilities; and
- supported by industry.

Participants

Table H9 shows the participants in the program, excluding the recipients of the NIES services (under the Management and Business Skills Scheme and subsequent Industries Infrastructure Support Program) covered in the previous section.

Export Development Program

Background

The Export Development Program was introduced to overcome perceived negative perceptions about exporting within the TCF industries. In 1991 elements of the program were amalgamated into the strengthened Industries Infrastructure Support Program.

Objective

The Export Development Program aimed:

> ... to improve the export orientation and performance of the TCF industries through targeted assistance delivered by the Australian Trade Commission ('Austrade') and to foster overseas interest in export oriented Australian raw materials processing projects. (TCFDA 1991c, p. 11)

Table H9: Direct grant funding under the Industries Infrastructure Support Program

Firm / Project	*Purpose*	*Grant approval*
		($)
1987-88		
No direct grants were made.		
1988-89		
Management training centres	The TCFDA sponsored three individual management training seminars.	na
Footwear Skills Centre	Establish a National Footwear Skills Centre at Collingwood TAFE in Victoria.	250 000
Award Restructuring	A Joint Working Party was formed to examine award restructuring. $135300 was provided to the JWP for skill analysis and $14000 to the Carpet Institute of Australia for skills analysis of the carpet industry	na
Promoting Australian Textiles and Garments	Contribution towards the international promotion of Australian textile and garment design.	na
Wrinkle Recovery of Wool Project	Approved funding over three years to assist in the research of this project.	50 000
1989-90		
Sharlea UltraFmi Society of Australia Ltd	Feasibility study for the marketing of value-added fine wool products.	9 500
Special Broadcasting Services (SBS TV)	Sponsor episode in English at Work series	50 000
Victorian TCF Industry Training Board	TCF Careers and Information Package	30 000
Quilted Products Manufacturers' Assoc. of Aust. Inc.	Development of quilted products of quality standards	60 000
TCF Council of Australia Ltd	Assistance with the 1989 Young Australian Expo careers exhibition.	6 000

Table continues over page

Table H9: (Continued)

Firm / Project	*Purpose*	*Grant approval*
		($)
1990-91		
Apparel Robotics Ltd	Development of conveyor fast feeder	90 000
Australian TCF Industry Training Council	Funding of conference to examine the future of skills development in the TCF industries	10 000
Clothing and Allied Trades of Australia and Amalgamated Footwear and Textiles Workers' Union of Australia	Funding for education program	255 437
Commonwealth Scientific and Industrial Research Organisation	Sponsor purchase of hide processing equipment for the relocated Leather Research Centre	402 100
Fashion Industries of Australia	Sponsorship of 1991 Top of the Class Award	30 000
Melbourne College of Textiles	Sponsorship of Textile and Fibre Research Institute	50 000
Merryn Investments Pty Ltd	Sponsorship of feasibility study into textile manufacturing.	38 750
Quilted Products Manufacturers' Association	Development of quilted products quality standards	60 000
Street Ryan & Associates Pty Ltd	Business plan for a national spinning centre	19 500
TCF Council of Australia Limited	Sponsorship of TCF Industries stand at Young Australian Expo	7 870
TCF Skills & Resource Centre SA	Establishment of a Skills and Resources Centre for the TCF industries	233 000
1991-92		
The Committee of the Footwear Manufacturers' Association of Australia	Sponsorship of apprentice and student awards as part of the Shoe awards	26 000
The Commonwealth Scientific and Industrial Research Organisation	Sponsor purchase of hide processing equipment for relocated Leather Research Centre	402 100

Table continues over page

Table H9: (Continued)

Firm / Project	*Purpose*	*Grant approval*
		($)
The Council of the Melbourne College of Textiles	Sponsorship of Textile and Fibre Research Institute	50 000
The Fashion Industries of Australia	Sponsorship of 1992 Top of the Class Award	50 000
J Robins & Sons Pty Ltd	Sponsorship of a lecture tour by a footwear manufacturing consultant.	10 000
The Textile Clothing and Footwear Council of Australia limited	Series of demonstrations to the TCF industry on QR software	30 000
The Textile Clothing and Footwear Council of Australia Limited	Consolidation of an industry database	55 000
The Textile Clothing and Footwear Skills & Resource Centre of South Australia Incorporated	Establishment of Skills and Resources Centre for the TCF industries	261 989
Texskill Limited	Establishment of spinning skills centre	741 000
The Victorian Fashion Design Corporation	Support program for FDC Shop and fashion related training	96 250
The Victorian Textile Clothing and Footwear Industry Training Board	Development of a series of training kits and manuals for the TCF industries.	25 000
1992-93		
Macquarie Textiles Holdings Pty Ltd	Preparation of a business plan incorporating assessment of major restructuring proposal	225 000
NIES: Victoria	QR/EDI project	1 095 000
Textiles Clothing and Footwear Union of Australia	1992/93 program for employee education about the TCF plan	120 000
The Commonwealth Scientific and Industrial Research Organisation	Development of carding technology	60 000
The Committee of the Footwear Manufacturers' Association of Australia	Sponsorship of apprentice and student awards as part of the Shoe Awards	30 000
The Fashion Industries of Australia	Sponsorship of 1993 Top of the Class Award	50 000

Table continues over page

Table H9: (Continued)

Firm / Project	*Purpose*	*Grant approval*
		($)
1993-94		
Murgon Leather Co Limited	Demonstration site for hide quality feedback	45 000
Northern Co-Operative Meat Co Ltd and Casino Hide Traders Pty Ltd	Demonstration site for hide quality feedback	125 900
Textiles Clothing and Footwear Union of Australia	1992-93 program for employee education about the TCF plan	120 000
Textiles Clothing and Footwear Union of Australia	1993-94 and 1994-95 program for employee education about the TCF plan	250 000
The Fashion Industries of Australia	Sponsorship of 1993 Top of the Class Award	50 000
The Victoria Fashion Design Corporation	Support program for FDC Shop and fashion related training	25 000
1994-95		
Australian Leather Holdings Ltd and Darkan Wet Blue Tanning Pty Ltd	Hide quality improvement project	102 500
G H Mitchell & Sons (Aust) Pty Ltd and New England Leather Pty Ltd	Hide quality improvement project	110 000
Texskill limited	Sponsorship of APEC-HURDIT conference	3 500
Textile Clothing and Footwear Council of Australia Limited	National quick response project	160 000
Textile Clothing and Footwear Council of Australia Limited	Presentation on progress made in TCF industries	20 000
Textile Clothing and Footwear Union of Australia Limited	Program for employee education about the TCF plan	250 000
The Australian Wool Processors Council	Production of video on wool processing	20 000
The Commonwealth Scientific and Industrial Research Organisation	Development of carding technology	60 000
The Council of Textile & Fashion Industries of Australia	Sponsorship of the 1995 Top of the Class and Innovator awards	97 000
The Fashion Industries of Australia	Sponsorship of 1994 Top of the Class Award	50 000

Note: All payments for NIES services, except for the Quick Response project, have been excluded.
Source: TCFDA 1989 1990 1991c 1992b 1993 1994a 1995.

Funding

In total, $2.4 million was allocated to the Export Development Program (see Table H10).

Table H10: Funds allocated to Austrade for the Export Development Program

	1987-88	*1988-89*	*1989-90*[a]	*1990-91*
	($'000)	*($'000)*	*($'000)*	*($'000)*
Grants to Austrade	700	1 500	0	243

Note: sufficient funds were left over from the previous year's allocation.
Source: TCFDA 1991c

How it worked

Strategic studies were carried out on behalf of the TCFDA which found that there was considerable export potential in the areas of wool tops and yarns, cotton yarns, tanned bovine and sheepskin leather, as well as cotton and woollen fabrics. The carpet industry was already seen to be fully exploiting its export opportunities.

Consequently, the priority areas for the program were determined as:

- firstly, early stage processing of wool, cotton and bovine hides;
- secondly, intermediate and some finished products, such as carpets and linen; and
- thirdly, clothing and footwear.

A number of projects were aimed at helping firms to find and establish export markets. Specific projects included:

- the export marketing skills program;
- market research programs;
- overseas buyer visits;
- seminars and workshops;
- exhibitions and trade fairs;
- publications of market research and costing handbooks;
- consultancies to develop market plans; and
- investments.

Administrators

A TCF Unit was established within Austrade to administer the program on behalf of the TCFDA. In addition, other bodies such as the TCFCA, the Australian Chamber of Manufacturers, relevant industry associations, NIES and State government departments of industrial development were consulted to develop export market strategies and implement the program.

Austrade, the TCFCA and the relevant industry association also set up export working groups to establish and monitor the efficient use of resources of the export servicing needs in each sector.

Participants

In total, the Export Development Program assisted 35 firms — 17 textile, 5 carpet, and 6 apparel companies. Table H11 lists these firms.

Table H11: Firms assisted under the Export Development Program

Firm		
A.I. Tooper & Co. Pty Ltd.	Geraldton Merino Tannery Pty Ltd	Norwellan Textiles Pty Ltd
Aust. Chamber of Manufacturers	Godfrey Hirst Aust. Pty Ltd	Outgear Int. Pty Ltd
Australian Dyeing Co.	Halcyon Lake Carpets Pty Ltd	Rheem Australia Ltd
Blundstone Pty Ltd	Hilton Hosiery Co. Ltd	Salco Manufact. Co Pty Ltd
Bonds Industries Ltd	Invicta Group Industries Pty Ltd	Seafolly Pty Ltd
Bradmill Textiles Ltd	J.L. MacTaggart Industries	Shepards of the Strand Pty Ltd
Bradsal Pty Ltd	Laine Furnishings Pty Ltd	Spectrum Leather Pty Ltd
Brintons Pty Ltd	Macquarie Textiles Pty Ltd	Waverly Woollen Mills Pty Ltd
BTR Kennon	Melded Fabrics Pty Ltd	Wooltech Ltd
Collins & Weston Pty Ltd	Minster Carpets Pty Ltd	Woven Image Pty Ltd
Fed. Tanners Assoc. of Aust.	Mitchell Lorraway Pty Ltd	
Fulop Australia Pty Ltd	Mont Adventure Equip. Pty Ltd	

Source: TCFDA 1991c

Further Wool Processing

Background

In December 1991 the TCFDA Act was amended to introduce the Further Wool Processing Program. The program ran from June 1992 to June 1993 and set out to promote and revitalise industries adding value to Australia's wool clip.

Objective

The aim of the program was:

> ... to encourage new investments in post-scouring wool processing and add value to Australia's wool clip before it is exported. (TCFDA 1992b, p16)

The program also aimed:

> ... to encourage the Australian marketing of a differentiated quality Australian wool product. (TCFDA 1992a)

Funding

In total, $35 million in grants and loans was allocated — $20 million in grants and a further $15 million of loans were approved. Financial assistance was limited to a maximum of 50 per cent of the post-scouring and equipment costs.

How it worked

Applications for project proposals were made to the TCFDA and needed to be accompanied with detailed business, marketing and employee management plans. The TCFDA considered the project applications and sought approval from the Minister for projects it thought were appropriate. The exact form of assistance was dependent on each individual case.

The Further Wool Processing Program was orientated towards projects which, amongst other things, were commercially and financially sound, involved major new investments, brought access to and knowledge of new markets for a quality Australian wool product, and added to Australia's ability to market independently sophisticated products and service customer needs and develop closer relationships between wool processors and wool producers.

Administrators

The TCFDA administered this program.

Eligibility criteria

To be eligible, companies needed to prove that they had:

- a financially viable business plan which would lead to the creation of at least 6 000 tonnes per annum of combing capacity and adding value of at least $12 million per annum on project completion;
- a marketing plan which incorporate an Australian-based marketing plan for a differentiated quality Australian wool product and the development of new markets;

- a human resource management plan which involved unions and employees to address the requirements for the successful implementation of the project; and
- an agreement with the unions and employees to allow international best practice to be met (TCFDA 1991a).

In addition, newly established companies were required to provide a higher level of equity (both capital and management) in the project to reflect the higher risk involved.

Participants

In total, $35 million in grants and loans were given to four companies which invested in new state-of-the-art processing capacity. Table H12 summarises the participants, the purpose of the funding and the size of the grants and loans.

Table H12: Funding provided for the Further Wool Processing Program

Firm	*Purpose*	*Grant*	*Loan*
1992-93		*($m)*	*($m)*
Chargeurs Textiles Pty Ltd	Expanded wool topmaking capacity	6.5 [a]	..
Geelong Wool Combing Ltd	Establish a commission wool combing plant	5.0 [a]	15
1993-94			
Australian Topmaking Services Ltd and A Top Pty Ltd	Establish greenfield commission plants	5.0	..
Fletcher International Exports Pty Ltd	Establish a greenfield topmaking plant	3.5	..
Total		**20**	**15**

a Grant paid over the period 1992-93 to 1993-94

Source: TCFDA 1994a and DIST Correspondence, 17 April 1997

Results

Total investment funded under this program was $153 million. All four participants are still completing their program of activity and are being monitored by DIST.

Capitalisation Grants Program

Background

The Capitalisation Grants Program arose from the 1989 Review of Yarn Bounty Administration that was undertaken by the TCFDA. The program replaced the

Textiles Industry Modernisation Scheme (see above) and ran from 1990 until 1993.

Objective

The Capitalisation Grants Program was designed to:

> ... encourage rationalisation and new capital investment by allowing bounty recipients to capitalise their expected future bounty payments. (TCFDA 1995, p. 8)

The scheme also sought to reduce long-term Commonwealth budgetary outlays under the Textile Yarn Bounty Scheme.

Funding

The program provided a total of $141 million to 18 companies (see Table H13).

Table H.13: Capitalisation Grant Payments to TCF firms

	Payments	*Recipients*
	($m)	*(No.)*
1989-90	59.3	1
1990-91	15.5	6
1991-92	51.4	7
1992-93	14.5	4

Source: TCFDA 1995

How it worked

The Capitalisation Grants Program allowed eligible yarn bounty recipients to apply for a single up-front payment for projects to restructure. These payments were intended to help firms to provide capital required for restructuring in order to become more competitive.

Applications for the grants were made to the TCFDA and were required to include details on the yarn bounty received, a business plan, a business strategy and an estimate of the grant sought to enable the implementation of the business plan. To assess the company's financial position, the TCFDA, in consultation with the company, may have referred the application to an independent consultant for appraisal. Essential details were passed on also to the Department of Finance for assessment of the amount to be granted and the savings to the Commonwealth. In addition, early in the application process a joint meeting with the TCFDA, senior management and consultants would be

held to assist in undertaking an assessment of the proposal — extra financial information normally would be requested. The TCFDA's consultant was then required to report to the TCFDA on the financial soundness of the proposal. A draft of the report was made to the company for comment. Finally, the TCFDA made its recommendations for Ministerial approval.

The recommendations made to the Minister would have considered, amongst other things, the financial viability of the firm, the cost saving to the Government (at least 15 per cent in net present value) and whether such assistance was consistent with Australia's international trade obligations. Once the grant was made, firms were not entitled to receive any future bounty payments.

Administrators

The TCFDA administered the program.

Eligibility criteria

Firms which received yarn bounties were eligible for this program.

Applicants were required to support their application with business plans. Key criteria used by the TCFDA to decide whether the grants should be allocated were whether the:

- project was financially viable;
- the business would contribute to the TCF objectives of restructuring and revitalisation; and
- the proposed grant would not prove more expensive to the Government than paying the ongoing bounty.

Participants

Table H14 lists those firms which utilised the Capitalisation Grants Program.

Table H14: Recipients of the Capitalisation Grants Program

Firm	*Purpose*	*Payment date*	*Grant*
			($'000)
Du Pont (Australia) Ltd	Restructure and capital investment in the synthetic yarn industry	1989-90	59 340.0
Birkmyre Pty Ltd	Purchase of weaving, rolling and packaging technology	31/12/90	640.0
Bonds Industries Ltd	Retirement of debt associated with spinning plant purchase	30/6/91	7 417.5
Capital Carpets Industries Pty Ltd for and on behalf of: - Minister Carpets Pty Ltd - Pacific Carpets International Pty Ltd - Polygold Industries Pty Ltd	Yarn and carpet manufacturing plant purchase	15/6/91	7 481.5
Daytex Fabrics Pty Ltd	Acquisition of weaving looms	1/7/91	159.0
Geofabrics Australasia Pty Ltd	Acquisition of plant and equipment	15/4/92	918.4
Godfrey Hirst Australia Pty Ltd	Acquisition of plant and equipment	15/11/91	2 025.2
Guthrie Corporation of Australia Pty Ltd	Restructuring of towelling manufacture operations and reduction of external debt	15/11/91	2 929.6
Industrial Yarns Pty Ltd	Acquisition of twisting equipment	1/7/91	109.5
Rocklea Spinning Mills Pty Ltd	Acquisition of spinning plant and reduction of external debt	1/7/91	12 315.0
Sara Lee Personal Products (Australia) Pty Ltd - Hilton Hosiery Company Ltd	Acquisition of knitting machines	1/11/91	1 357.1
Textiles Industries Australia Ltd - Bulli Spinners Pty Ltd - Bruck Textiles Pty Ltd - Actil Ltd	Capital expenditure and reduction of external debt associated with capital expenditure	24/4/92	15 145.9
Thomas Carr (Australia) Pty Ltd	Reduction of external debt incurred for capital expenditure	15/10/91	489.6
YTM Pty Ltd	Restructuring of cotton textile operations	1/11/91	15 965.2
AW Spinning Mills Pty Ltd	Debt retirement and acquisition of spinning machines	15/11/92	1 802.0
Barwon Spinners Pty Ltd	Acquisition of blending bins and twisting frame	1/12/92	3 289.5
Bradmill Textiles Pty Ltd	Debt retirement	29/9/92	7 538.0
Calum Textile group	Debt retirement	15/8/92	1 871.1
Total			**140 794.0**

Source: TCFDA 1990 1991c 1992b 1993

TCF Labour Adjustment Program

Background

The TCF Labour Adjustment Program (LAP) was introduced in January 1988 to address concerns about the anticipated adverse impact on employment associated with reducing barrier assistance. The LAP assisted displaced workers to gain employment outside the TCF industries (Button 1987).

The TCF LAP was abolished in the 1996 Budget.

Objective

At the broadest level the TCF LAP was designed to:

> ... assist workers to become re-employed in jobs outside of the TCF industries. (Button 1987, p. 11)

Although the TCF LAP was available to all displaced TCF workers, it was aimed primarily at obtaining alternative employment for clothing sector workers, who were expected to suffer higher rates of job loss and unemployment during industry restructuring. The program therefore was designed with the predominant demographic characteristics of this group in mind; namely, older, non-English-speaking background (NESB) women with low formal education levels who were largely concentrated in the metropolitan areas of Melbourne, Sydney and Adelaide.

Funding

The annual budget for TCF LAP peaked in 1993-94, but the cost per commencement continued to increase, reaching $4755 in 1995-96. It is likely that this reflected the increasing use of full-time formal training courses, particularly English language courses.

Table H15 summarises the funding of the LAP.

Table H15: Funding of the TCF LAP, 1990-91 to 1996-97

	Funding	*Commencements*	*Funding per Commencement*
	($m)	*(No.)*	*($)*
1990-91	3.9	1 458	2 688
1991-92	10.3	3 548	2 908
1992-93	21.0	7 313	2 871
1993-94	30.0	6 727	4 456
1994-95	25.4	5 397	4 706
1995-96	16.8	3 541	4 755
1996-97[a]	1.1	780	1 410

a To December 1996

Source: DEETYA unpublished data

How it worked

A number of assistance measures were offered to eligible displaced workers. These included:

- up to 52 weeks of language, vocational or preparatory training. DEET (now DEETYA) had the capacity to give LAP recipients priority on waiting lists for accredited courses for Jobclub, Skillshare programs, and other job search assistance. This time could be used also to complete one year of a higher education course (ie. TAFE or university) but could not be used for TCF-related training;
- up to 26 weeks additional English language or basic preparatory training (for example, literacy) for those assessed as needing it;
- a non-means-tested training allowance payable whilst in the LAP;
- relocation assistance to move permanently away from an area of high unemployment or to assist with fares to and from job interviews. Depending upon individual circumstances this could be up $8000; and
- a wage subsidy of $200 per week for 16 weeks payable to employers taking on eligible displaced TCF workers. Employers needed to be in an industry other than TCF.

Administrators

The TCF LAP was administered nationally by the Office of Labour Market Adjustment (OLMA) in the Department of Employment Education and Training

(DEET, now DEETYA). At the local level, LAP programs were delivered to clients through DEET's Commonwealth Employment Service (CES) network.

Eligibility criteria

When the LAP commenced, retrenched workers who had been employed for at least 24 of the previous 36 months in TCF industries (including homeworkers) were eligible for the program. LAP assistance needed to commence within 12 months from the date of retrenchment.

On 1 July 1994 eligibility rules were tightened. A sunset clause was introduced for the program stating that TCF workers who joined TCF firms after 1 July 1994 were excluded from assistance.

Participants

The LAP program assisted almost 25 000 former TCF employees (more than 22 000 of those with formal training). Only 122 LAP participants utilised relocation assistance. Table H16 summarises the use of the LAP to 1994-95.

Table H16: Summary statistics of the LAP to 1994-95

	Recipients	*Take-up*[a]
	(No.)	*(%)*
1988-89	99	3
1989-90	353	8
1990-91	1 458	26
1991-92	3 548	70
1992-93	7 313	199
1993-94	6 723	na
1994-95	5 405	na
Total	24 899	na

a Take-up rate based on number of former TCF workers registered as unemployed with DEET.

Source: TCFDA 1993, p. 34, TCFDA 1995, p. 13, DEET 1993, 1994b, 1995

Results

DEET commissioned an evaluation of participation in the TCF LAP from the University of Melbourne (completed in 1995). This evaluation concluded that around three quarters of eligible, former TCF workers registered with the CES used the LAP program. However, participation varied across the country:

> ... location is the decisive factor in determining the participation of retrenched TCF workers in this assistance package (Webber et al 1995, p. 1)

This was primarily because of differences in how the program was promoted and delivered, with resources and programs varying between CES offices. Labour market outcomes for the TCF LAP varied over time and for different groups, but were generally lower than for comparable training programs in operation at the same time (see Chapter 4).

There were a number of other issues associated with the operation of the LAP:

- *Eligibility for non-means-tested allowance:* under general rules for DEETYA sponsored training, the Formal Training Allowance (FTA) payable to all unemployed people undertaking full-time accredited training is means-tested (as are all unemployment benefits) against the recipient's personal and household income (including spouse income). Since many displaced TCF workers were married women (often NESB), a TCF Special Allowance (TCFSA) was introduced as a further incentive for these women to stay in the workforce and re-train. The TCFSA was equal in amount to the FTA but was not means-tested. This raised an anomaly in the TCF LAP whereby unmarried participants were means-tested but married participants were not;
- *Funding to return to TCF industries was excluded under LAP:* The LAP precluded training or wage subsidy assistance to help displaced workers return to TCF industries. Thus displaced workers were prevented from re-entering expanding firms and market segments within TCF industries; and
- *Homeworkers:* Displaced TCF homeworkers were formally eligible under the scheme. In practice, proving their eligibility was difficult.

I THE HISTORY AND STRUCTURE OF TCF BARRIER ASSISTANCE IN AUSTRALIA

I1 Introduction

There is a long history of government support for TCF production in Australia. The origins of TCF industry-specific assistance occurred in 1908, when protective tariffs were introduced to encourage local manufacturers. Certain parts of the TCF industries were targeted to receive these protective tariffs, in particular woollen goods. An expansion of TCF industry-specific assistance occurred in the 1926 *Prattern Tariff*. Under these changes to the customs tariff, duties were increased for parts of the textile industry.

Since the establishment of the Tariff Board in the 1920s, there have been some 500 separate reports to Australian governments on assistance to TCF industries. The numerous government decisions that followed these reviews generally provided continuing and increasing support for various areas of TCF production. The various forms of barrier protection for these industries, from Federation until the late 1980's, involved a mixture of quantitative import restrictions and tariffs. Budgetary assistance in the form of production subsidies (bounties) were also common.

The early rationale for protection of TCF industries, as for other parts of the manufacturing sector, was related to employment creation. The 1929 *Report on the Australian Tariff* argued that industry assistance was needed to create employment (at existing real wages) for a growing population, although the Committee thought the assistance at that time was adequate (Brigden *et al.* 1929). This supported high assistance for labour-intensive industries, such as parts of TCF.

Tariff protection was the major form of assistance to the TCF industries until the beginning of the Second World War; the war itself provided an effective barrier to trade until 1945. Import licensing was introduced in 1952, primarily as a means of dealing with the foreign exchange crisis. Import licensing was abolished in 1960 and the tariff again became the major instrument for protection of these industries (Capling and Galligan 1992).

Table I1: Timeline of TCF assistance, 1969-1995

Year	*Event*
1969	Temporary quantitative restrictions on all knitted shirts and outer garments. They were removed after one month, but re-applied two years later for 18 months.
1971	Negotiations with foreign low-cost suppliers of clothing for 'voluntary' export restrictions.
1972	Tariff quotas introduced on a selection of intermediate and final goods.
1974	Import licensing re-introduced on imports from Taiwan. Voluntary Restraint Arrangements negotiated with Hong Kong, South Korea, India and China. Australia became member of first Multifibre Arrangement.
1975	Country-specific quotas imposed.
1976	Non-discriminatory global quotas imposed.
1977	IAC TCF Inquiry. Three year industry program announced.
1978	Tariff quotas introduced on a range of hosiery, knitted underwear and sleepwear.
1979	Tariff quotas introduced on certain fabrics. One-year extension to the three-year assistance program for TCF industries announced.
1980	IAC TCF Inquiry. Seven-year program of assistance for TCF industries announced. Sale of quota entitlements above base quota announced.
1981	The TCF Advisory Committee (replacing TCF Review Committee) established.
1982	Bounty assistance to local production of most yarns commenced. Start of seven year plan.
1986	IAC TCF Inquiry.
1987	TCF Industry Plan — the Button Plan — announced in response to IAC Report.
1988	Textile Clothing and Footwear Development Authority (TCFDA) established. Changes to 1987 Plan announced as part of May Economic Statement. Changes included: the sunset for quotas brought forward by six months to 1995; and a five percentage point reduction in previously announced 1996 tariff levels.
1991	Changes to the 1987 TCF Plan announced as part of May Industry Statement. Import Credit Scheme introduced. Further changes in tariff cuts, quota elimination brought forward to 1993.
1992	Further changes to the 1987 TCF Plan announced in the July Industry Statement.
1993	TCF quotas abolished. Overseas Assembly Provisions Program introduced.
1995	Remaining bounties phased out.

Source: IAC 1986a and various issues of the Textiles, Clothing and Footwear Development Authority's Annual Report

Industry protection for most of the manufacturing sector has declined since the early 1970s. In contrast, the level of assistance to TCF industries increased and did not peak until the 1980s (see Table I6). At their peak, effective rates of assistance for the footwear and clothing industries were more than 12 times the manufacturing sector average. Within the TCF sector, assistance has always been higher for the more labour-intensive activities of clothing and footwear production.

The watershed for protection of the TCF industries came in 1987, when the Government announced a major new Industry Plan. This Plan commenced in 1989, and resulted in the first systematic reduction in protection faced by these industries. The effect has been to reduce TCF assistance to levels closer to those prevailing elsewhere in the manufacturing sector. However, large disparities in assistance still exist between TCF and other industries and within the TCF industries themselves.

I2 Increases in protection: the 1970s and 1980s

In 1973, a combination of factors, including an undervalued dollar and large current account surplus, saw Australia's first major tariff reform. Following a revaluation of the dollar, tariffs, including those on TCF products, were reduced by 25 per cent. However, for the remainder of that decade and well into the 1980s, the level of protection for TCF industries increased substantially, and the range of available measures broadened. Despite this, the share of imports in domestic sales rose and employment in the sector fell (see Chapter 1).

In general, TCF assistance was designed to escalate, with higher levels of protection afforded to those activities further along the production chain. Within this general structure, there were exceptions which had the effect of adding to this escalation. For example, duty-free imports under by-law of intermediate inputs raise the level of assistance to end users (see Appendix J).

A combination of quotas and bounties — in addition to the tariff — added layers of complexity. This 'made to measure' protective regime created significant intra-industry distortions, as close production or consumption substitutes could attract very different levels of protection. For example, in 1980, the quota for knitted or woven men's suits was less than 40 000 items. The quota for knitted or woven women's shirts was over 4 million items. Although the relative size of the two markets differed, if this difference was less than 1:100, then men's suits would have received a much higher level of assistance, all other things being equal. Adding to the complexity, the out-of-

quota duty for women's shirts varied depending on whether the items were knitted or woven (see Table I2).

Table I2: Assistance measures for selected TCF products, 1980

Item	*Annual level of quota*	*Additional duty on imports above quota*	*Bounty payment (per annum)*
	(units)		*($'000)*
Bedsheeting	660 000 + tariff	20c per sq metre of sheeting	600
Knitted or woven suits for men, youths and boys.	38 500 + tariff	$25.00 per suit	na
Knitted or woven blouses and shirts for women, girls and infants.	4 275 000 + tariff	$20.00 per kg (knitted); $10.00 per kg (woven)	na

Source: IAC 1984a

Quotas and production subsidies (bounties) were largely responsible for the high levels of assistance in the 1980s.

Production subsidies (bounties)

A production bounty operates by subsidising the cost of domestic production. Domestic producers are able to sell at the import parity price, while their underlying cost structure remains higher (to the extent of the subsidy). The effect of a bounty for domestic producers is similar to a tariff, but it does not increase the price to consumers. The cost of the bounty is borne by taxpayers.

TCF bounties were restricted to a small number of TCF product groups which were predominantly intermediate goods. The two forms of bounty assistance provided to TCF products were specific output and value-added bounties. Specific output bounties were paid as a fixed dollar amount per unit of physical output. Value-added bounties were paid as some proportion of value-added in production.

However, the so-called value-added bounties were actually calculated on a factory cost basis. That is, the bounty payment was calculated by applying the relevant rate of bounty to certain eligible expenses (that is, factory costs less costs of material inputs and other specified expenses). Bounties calculated on a factory cost basis were considered problematic for a number of reasons. First, bounty payments based on factory cost, rather than ex-factory selling price, may create disparities in effective rates of assistance within an industry (as the relationship between factory cost and ex-factory selling price varies for manufacturers). Second, every item of the manufacturer's factory cost must be accounted for and the proportion of Australian value-added in each component

traced. Third, factory costs are open to manipulation and are difficult to administer. For example, if a firm produces bountiable and non-bountiable products, factory overheads must be apportioned between each, and costs can be manipulated to maximise bounty payments.

The value added bounty also may distort effective rates of assistance within an industry if producers' materials-to-output ratios vary. As this ratio increases, other things being equal, the total bounty payment received becomes progressively smaller, while the absolute cost of any duties on inputs used in the bountiable activities increases. The converse is the case as the ratio decreases.

The use of factory costs means that costs incurred outside the factory are not included. This may have undesirable effects on industry structure, by encouraging manufacturers to undertake activities in-house that might be performed more economically elsewhere, in order to maximise bounty payments.[1]

Bounties on production were an important source of assistance for the textile industries for much of the past 20 years. From 1976, certain textile products were afforded bounties calculated as a flat rate per unit of output.[2] Bounty assistance was limited to products which were used, or sold for use in the production of other textile and clothing products. Any products destined for export or retail sale were ineligible.

As part of the 1980 Industry Plan, value-added production bounties were introduced on a wide range of fabrics and yarns. For different textile yarns, the bounty rates were highly variable, and maintained widely disparate levels of assistance for yarn production. By 1982, bounty assistance was provided to printed fabric, polyester and cotton yarns, and bed sheeting. In 1983, textiles received the highest amount of bounty payments of any manufacturing industry sector.

Variable levels of bounty assistance altered the relative prices of yarns which were close substitutes, altering production and consumption patterns. In 1986, in addition to bounties on printed fabrics and bed-sheeting, there were bounties on ten different yarns (see Table I3).

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1 These issues are discussed more fully in IAC (1984b).

2 The specific output bounty afforded to certain textile products was calculated on physical output quantities, such as per kilogram or square metre.

Table I3: Yarn bounties, 1986

Product	*Rate of bounty*
	(%)
Continuous polyamide and polyester yarn	59
Other continuous man-made fibre yarn	33
Discontinuous coarse acrylic yarn	33
Discontinuous fine acrylic yarn	49
Other discontinuous man-made fibre yarn	43
Worsted wool yarn	49
Man-made fibre and wool blend yarn other than yarn used or for use in the production of carpet	49
Polyester-cotton	52
Cotton yarn	43
Other spun yarn	33

Source: IAC 1986a

In the context of the current inquiry, Rocklea Spinning Mills submitted that the yarn bounty scheme had unintended negative effects, including subsidising inefficiencies and discouraging investment (sub. 50).

The structure of the bounties on similar products also affected production incentives. For example, bounties based on output meant that activities with different levels of value-added attracted different levels of assistance. The bed sheeting bounty was an example of this. In this case, lower priced bed sheeting (with lower levels of value-added) attracted relatively higher levels of assistance — the incentive structure was biased toward the production at the low end of the market.

At the commencement of the 1988 Industry Plan, yarn bounty rates varied between 26.4 per cent and 47.2 per cent of value added, and the fabric printing bounty was 56 per cent of value added. As part of the Industry Plan, all were to phase down to 30 per cent by 1 March 1994. This was subsequently modified as part of the 1991 Industry Statement, with the phase-down to 30 per cent brought forward to 1 July 1992, and bounties phased out on 1 July 1995. At this time the yarn bounty was replaced by a 5 per cent tariff.

Quotas

For the two decades prior to their removal in 1993, quantitative restrictions on imports were the major source of assistance to these industries. Quotas had a major impact on prices and on production and consumption incentives.

Quotas were constantly 'fine-tuned'. Temporary restrictions were imposed, would lapse, only to be re-imposed or superseded by a general measure. Between 1968 and 1986, over 40 separate announcements relating to changes in TCF quotas were made (see IAC 1986a, Appendix S).

In the decade after 1974, TCF industries received more temporary quantitative restrictions than any other industry sector. For example, of the 25 tariff quotas introduced between July 1974 and July 1975, 19 applied to TCF industries. By 1980, quotas covered about one third of the textile industry, about 90 per cent of the clothing industry and nearly all of the footwear industry.

Quota arrangements were modified in 1982, with a view to allow for some flexibility in the quota system and to provide for a controlled increase in imports. There was a gradual expansion in quota (via annual 'Quota Expansion Factors'), and an increasing share was offered to sale by tender.

In 1986, the IAC estimated the cost of quotas as being equivalent to a 40 per cent consumption tax on TCF products (IAC 1986a).

By all but guaranteeing market share of domestic production, the level of protection did not vary with changes in relative competitiveness. The concealment of relative levels of international competitiveness was particularly significant when considering the adjustment involved in the move from quota to tariff assistance. The long history of quota assistance meant that industry was ill-prepared for the move to even high levels of tariff protection, as even high levels of tariff protection did not provide the same level of certainty and predictability regarding import competition.

In the course of the current inquiry, several participants argued for the reintroduction of quotas, namely the Australian Dying Company (sub. 4) and the Australian Printing Company (sub. 35).

Tariffs

Like quotas, tariffs are designed to sustain the demand for local goods by restricting the substitution of lower priced imported goods. Tariffs achieve this by directly increasing the price of imports, providing a more transparent measure of protection than quotas.

The schedule to the *Customs Tariff Act 1995* contains around 20 chapters which are relevant to TCF industries. Within each chapter there are a series of 4-digit sub-headings — within each 4-digit subheading there are increasingly specific descriptions of particular commodities (see Table I4 for an example). The tariff is applied at the 6-or 8-digit level. In general, the tariffs follow an escalated structure.

In general, substantive tariff rates applying in the TCF sector are now relatively free of anomalies affecting like products. That is, within the TCF industries close substitutes generally attract the same rates of duty. However, there are exceptions (see Attachment I1). Various avenues also exist for imports to attract concessional entry at zero rates of duty or at levels below the general rate, creating disparities in the level of duty for close substitutes in production and consumption. Preferential trading arrangements allow the entry of imports at a rate of duty below the general rate. Both Tariff Concession Orders (TCOs) and TCF policy by-laws allow duty-free or concessional entry for a range of imports which are used as inputs for further production (see Chapter 6 and Appendix J).

I3 The measurement of protection: nominal and effective rates of assistance

The various assistance measures provided to TCF industries over the 1970s and the first half of the 1980s increased their protection substantially. Nominal and effective rates of assistance indicate the amount of protection these industries received relative to each other and the manufacturing sector as a whole.

The nominal rates of assistance for clothing and footwear were higher than those for other manufacturing in 1973. Further, in the early 1980s the clothing and footwear rates doubled. Effective rates of assistance for these industries rose even more sharply (see Table L6). By contrast, the average rate of assistance for manufacturing industry as a whole continued to decline (in nominal and effective rate terms), creating a large disparity between the level of assistance to the TCF industries and other manufacturing industries. In 1996-97, effective rates of assistance for the clothing and footwear industries were still almost 8 times those for manufacturing as a whole, while that for the textile industry is 4 times the manufacturing average.

The overall level of protection within TCF industries has been greater for the more labour-intensive activities of clothing and footwear production. Even within the clothing sector there are wide differences between effective rates of

assistance due to factors such as the use of duty-free imports under by-laws. The effects of such factors are discussed in Appendix J.

Table I4: The tariff schedule for unbleached woven cotton fabrics, 1997-98

Tariff Item	*Description*	*Tariff rate*
5208	Woven fabrics of cotton, containing 85 per cent or more by weight of cotton, weighing not more than 200 g/m2	
5208.1	Unbleached	
5208.11	Plain weave, weighing not more than 100 g/m2	
5208.11.10	Fabrics of a kind suitable for use as bed sheeting, pillow casing or bolster casing or for use in the making up of bed linen	22%, DC 17%
5208.11.10.01	Not exceeding 132 cm in width	
5208.11.10.02	Exceeding 132 cm in width	
5208.11.90	Other	21%, DC 16%
5208.12	Plain weave weighing more than 100 g/m2	
5208.12.10	Fabrics of a kind suitable for use as bedsheeting, pillow casing or bolster casing or for use in the making up of bed linen	22%, DC 17%
5208.12.10.01	Not exceeding 132 cm in width	
5208.12.10.02	Exceeding 132 cm in width	
5208.12.90	Other	21%, DC 16%
5208.13	3-thread or 4-thread twill, including cross twill	
5208.13.10	Fabrics of a kind suitable for use as bedsheeting, pillow casing or bolster casing or for use in the making up of bed linen	22%, DC 17%
5208.13.10	Not exceeding 132 cm in width	
5208.13.10	Exceeding 132 cm in width	
5208.13.90	Other	21%, DC 16%
5208.19	Other fabrics	
5208.19.10	Fabrics of a kind suitable for use as bedsheeting, pillow casing or bolster casing or for use in the making up of bed linen	22%, DC 17%
5208.19.10.01	Not exceeding 132 cm in width	
5208.19.10.02	Exceeding 132 cm in width	
5208.19.90	Other	21%, DC 16%

Note: DC stands for developing country.
Source: *Customs Tariff Act 1995*, Schedule 3

Table I5: Summary of general tariff rates (per cent) for intermediate and final TCF products, 1997-98

		Tariff rate
		(%)
Raw materials and fibres		
Natural fibres	- wool	free
	- cotton	free
Silk		free
Man-made staple fibres	- excluding synthetic filament tow	free
	- synthetic filament tow	13
Leather		0–5
Raw hides and skins; fur skins and artificial fur	- to prime initial tannage	free
Yarns, rope and monofil		
Natural fibres	- wool	5
	- cotton	5
Vegetable textile yarn	- excluding flax and jute/bast fibres	free
	- flax	0–5
	- jute/bast fibres	5
Silk		free
Man-made staple fibres		5–13
Man-made filaments		0–5
Special yarns, twine, cordage, ropes, cables, knotted netting	- excluding metal thread	5–13
	- including metal thread	free
Woven fabrics		
Natural fibres	- wool	21
	- cotton	21–22
Vegetable textile fabrics		free
Silk		0–22
Man-made staple fibres		21–22
Man-made filaments		21–22

This table continues over the page.

Table I5: Summary of general tariff rates (per cent) for intermediate and final TCF products, 1997-98 (continued)

		Tariff rate
		(%)
Woven fabrics (continued)		
Carpets and other textile coverings		0–21
Special woven fabrics including	- quilted	21–22
	- pile and chenille	5–22
Other fabrics		
Knitted or crocheted fabrics	- pile fabrics	21–34
Vegetable textile fabrics		free
Textiles suitable for industrial use including	- hose piping	5
	- conveyor/ transmission belts	13
	- technical use	5–21
Felt		5
Carpets and special fabric coverings		5–21
Clothing and footwear		
Articles of apparel and clothing	- general	34
	- other	13–21
	- gloves/mittens	free
	- other accessories or parts of garments	13–34
Footwear/gaiters		0–27
Other products		
Other made up textile articles for example	- pantyhose/tights etc	13–34
	- sacks and bags	5–13
	- blankets	0–21
Furniture/bedding		0–13
Headgear		0–13
Bed linen		34
Table linen		13

Source: *Customs Tariff Act 1995*, Schedule 3

Table I6: Nominal and effective rates of assistance, 1968-69 to 1996-97

	Textiles (ASIC 23)		*Clothing (ASIC 245)*		*Footwear (ASIC 246)*		*All manufacturing*	
Year	*NRA*	*ERA*	*NRA*	*ERA*	*NRA*	*ERA*	*NRA*	*ERA*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*
1968-69	25	43	58	108	51	82	24	36
1969-70	24	42	55	102	53	86	23	36
1970-71	24	42	54	101	46	72	23	36
1971-72	25	45	55	100	38	56	22	35
1972-73	25	45	54	97	43	67	22	35
1973-74	19	35	39	70	30	45	17	27
1974-75	20	39	43	87	49	106	15	27
1975-76	23	50	47	96	51	107	16	28
1976-77	24	51	65	148	55	121	15	27
1977-78	24	47	70	140	60	151	15	23
1978-79	24	47	69	140	60	153	15	24
1979-80	27	51	68	137	56	143	15	23
1980-81	28	55	66	135	63	161	15	23
1981-82	26	54	90	216	88	229	16	25
1982-83	23	68	72	189	71	232	13	21
1983-84	23	69	81	222	102	>250	13	22
1984-85	25	75	90	243	106	>250	13	22
1985-86	23	72	56	136	50	123	12	20
1986-87	23	68	64	168	64	185	12	19
1987-88	22	65	67	167	55	164	11	19
1988-89	24	72	67	159	63	217	10	17
1989-90	19	53	67	105	58	111	9	15
1990-91	18	51	66	106	61	116	8	14
1991-92	16	46	54	84	49	91	8	13
1992-93	14	41	44	66	35	67	7	12
1993-94	12	37	39	59	31	60	6	10
1994-95	11	33	36	54	28	54	5	9
1995-96	10	27	33	50	25	50	5	8
1996-97	9	25	30	47	23	46	4	6

Note: Estimates have been rebased 5 times over this period, (1971-72; 1974-75; 1977-78; 1983-84;1989-90). Where series overlapped, the newer series is included in the table.

NRA: Nominal rate of assistance; ERA: Effective rate of assistance

Source: IC 1995a

Issues concerning the estimation of NRA and ERA

There are two major steps involved in aggregating individual tariff rates into industry-based NRA:

- In Australia, tariffs are levied on the free-on-board price of imports. As such, the tariff rate overestimates the extent to which protection has increased the landed price of imports. Tariff rates are therefore deflated to a landed duty-free basis by multiplying each tariff rate by the value-for-duty: cost, insurance, freight and exchange ratio, usually around 0.8.
- Tariffs are applied according to an internationally agreed commodity classification system, one that is not comparable with ABS measures of output and production. In deriving NRA, tariff lines are aggregated to ABS commodity and then industry classifications, weighted by production. One consequence is that within ABS categories, there can be a wide range of individual tariff rates.

The use of production weights

Because each ABS industry classification includes a number of tariff items, a relative weight must be given to each. Production weights are used by the Commission to focus on resource allocative effects of assistance — in other words, the effect of the tariff in attracting resources to local production. This tends to give a greater weight to commodities with high tariffs, because high tariffs will tend to encourage domestic production but discourage imports of the good concerned. However, an alternative of import weighting would tend to understate the assistance provided by tariffs. In the extreme case in which a tariff is so high that it excludes imports, the commodity concerned would receive zero weight under the import weighting method. Conversely, if the tariff on a particular commodity is very low, there may be no domestic production of that commodity but there may be substantial imports. It has also been important to use production weights as this allowed inclusion of other forms of assistance, such as bounties and quotas.

The impact of by-laws

In the TCF sector, by-laws allow the duty-free importation of large quantities of intermediate inputs to production. Detailed information on the use of this concession is limited. However, it would appear that it is used largely by the clothing sector. As discussed in chapter 6, domestic production of competing commodities appears to have been limited. The assistance measurement framework incorporates by-law imports in the form of an estimated value of the

duty saved. As such, it is reflected in the average ERA for the textiles industries, and (indirectly) in the ERA for user industries such as clothing.

The impact of other avenues of concessional entry

As discussed, imports of finished goods may also enter duty-free or at reduced rates of duty under ANZCERTA, SPARTECA, and Australia's System of Tariff Preference (ASTP). However, the impact on assistance measurement is minimal. One of the assumptions used in estimating assistance has been that these preferences divert rather than create trade. That is, the benefit of the tariff preference is largely gained by the exporter. As such, preferential rates are only assumed to be the protective rate if imports from these sources are the major source of competing imports.

I4 Reductions in protection: the 1987 Industry Plan

The government announced an Industry Plan for the TCF industries (the Button Plan) in 1987. This was the first program involving a systematic dismantling of the assistance structure ever faced by these industries. There was an explicit acknowledgment that these industries could no longer continue to rely on government support — the Plan was to promote the development of more efficient and internationally competitive TCF industries as a means of reducing their dependence on government:

> The Government has been concerned to encourage the development of industries which are more internationally competitive and export oriented ... and capable of operating in the longer term with low levels of community support. (Button 1987, p. 1)

Aspects of the Industry Plan were modified several times between 1987 and 1996.

The 1986 IAC Report

The IAC reported on these industries in 1986. The report found that there were numerous adverse effects of the complex set of arrangements in place and that these came at significant cost to the community. These costs took the form of both direct costs to consumers and user industries (in the form of higher prices and reduced choice) and more generally in the form of an industry structure which was not suited to Australia's comparative strengths.

The 1987 Industry Plan

The 1987 TCF Industry Plan, like the sectoral policy for passenger motor vehicles, involved sustained reductions in tariff and other barrier assistance measures and 'positive' assistance measures designed to help the industries to adjust to reduced border protection.

The Industry Plan commenced in 1989. The changes to barrier assistance comprised the progressive dismantling of the tariff quota system, phased reductions in bounty rates for certain products (mainly textile yarns) and phased reductions in tariff duties to the year 1996. These were accompanied by a range of measures designed to assist capital and labour in the process of adjustment through the Industry Development Strategy (IDS) and the Labour Adjustment Package (LAP) (see Chapters 4 and 8, and Appendix H).

The tariff phasing arrangements were designed so that the highest level of tariff protection would fall to 60 per cent after 7 years. At that time there would be 5 main tariff levels:

- 60 per cent for most clothing and certain finished textiles currently subject to quota;
- 50 per cent for most footwear;
- 40 per cent for most plain fabrics, carpets and footwear parts;
- 25 per cent for most specialty fabrics and apparel products now not subject to quota; and
- 15 per cent for yarns not subject to bounty.

In addition, the Plan foreshadowed the progressive phasing-out of the quota system by 1996:

- within quota duty rates to be 40 per cent for fabrics, 50 per cent for footwear and 60 per cent for clothing;
- a gradual phasing-out of duties applying to imports entering outside the quota arrangements;
- automatic expansion of quotas (so-called quota expansion factor) commencing from the 1988 quota year at a rate for each category equivalent to 1.2 per cent of 1985 market supplies — consistent with the average annual increase in quota due to market growth under the Industry Plan;
- full allocation of quota by tender progressively phased in (that is, no base quotas) by 1992, resulting in a more equitable arrangement; and

- all tariff quotas to lapse at the end of the Plan in 1996 (except for fabrics where tariff quotas would phase to 40 per cent and cotton sheeting where tariff quotas would lapse within four years).

In addition, bounty assistance was to be phased out for most yarns. Bounties on lightweight apparel fabrics were to go to a uniform rate of 30 per cent of value added.

Further reforms of the bounty assistance programs began in 1990 with the introduction of the Capitalisation Grant Program. This program replaced the Textiles Industry Modernisation Scheme (see Appendix H) and ran from 1990 until 1993. The Capitalisation Grants Program could be used by firms which received yarn bounties and was designed to:

> ... encourage rationalisation and new capital investment by allowing bounty recipients to capitalise their expected future bounty payments. (TCFDA 1995, p. 8)

Over the life of the program a total of $141 million was provided to 18 companies

The TCF Development Authority (TCFDA) was established to develop, implement and administer the operation of the Industry Plan. Initially, it was able to recommend the suspension of any feature of the Plan for up to one year if TCF aggregate production seemed likely to fall by 15 per cent overall.

The 1988 Economic Statement

Prior to the scheduled commencement of the Industry Plan, further changes were announced as part of the May 1988 Economic Statement. The major changes were an accelerated program of tariff reductions and out-of-quota duty rates, and a shortening of the life of the announced Plan. The Plan would conclude on 30 June 1995, twelve months earlier than initially planned.

The 1991 Industry Statement

In its 1991 Industry Statement, the government again modified the origin Plan, further accelerated tariff reductions and extended these arrangements to 2000. At this time, the government highlighted the slower than anticipated pace of reform in these industries.

The new arrangements included:

- termination of quotas brought forward by 2 years to March 1993;
- tariff phase down to a maximum of 25 per cent by 2000; and
- bounties abolished by 1 July 1995, to be replaced by a tariff in some cases.

As a partial offset, the Import Credit Scheme (ICS) was introduced, to operate from 1 July 1991 to 30 June 2000 (see Chapter 9).

The Statement also contained an adjustment to preferential tariff arrangements for Singapore, Taiwan, Hong Kong, and the Republic of Korea, to take effect from 1 July 1992.[3]

Modifications were also made to the industry development programs under the IDS, which the Government undertook to review in 1994 (see Appendix H).

The 1992 TCF Statement

Further changes were made in July 1992. At that time the Overseas Assembly Provisions (OAP) Program was announced, to take effect from March 1993 for a trial period of 3 years (see Chapter 6). Commencement of the OAP was to coincide with the ending of quota controls.

Other changes included:

- changes in the phasing arrangements for the ICS;
- preferential rates on Canadian carpet imports were to be phased out;
- announcement of a review of the TCF by-law system; and
- abolition of quota and tariff reductions on footwear parts.

The TCF 2000 Development Package

As foreshadowed in the 1991 Industry Statement, a TCF Future Strategies Committee was established to examine the TCF industries and the effectiveness of the Industries Development Strategy. The Committee reported in late 1994, and in May 1995 the Government announced the TCF 2000 Development Package. The Package rolled over several of the existing programs under the previous plan, and extended the OAP Program to 2000.

[3] In February 1993, the government announced that developing country preferences would be removed for all but the South Pacific Forum Island countries, and 49 of the least developed countries and regions. This change applied to a number of commodities, including TCF (see Appendix J).

Attachment I1: Exceptions to the General Tariff Rates, 1997-98

Table A: Textiles and fabrics

Tariff item	*Description*	*Rate*
		(%)
5007	GENERAL: woven fabrics of silk or of silk waste	22
5007.10.90	EXCEPTIONS: fabrics of noil silk and other (that is, excluding fabrics with 20 percent or more by weight of man made fibres not printed)	nil
5208	GENERAL: woven fabrics of cotton, containing 85% or more by weight of cotton, weighing not more than 200 g/m^2	21
	EXCEPTION: various fabrics of a kind suitable for use as a bed sheeting, pillow casing or bolster casing or for the use in the making up of bed linen	22
5210	GENERAL: woven fabrics of cotton, containing less than 85% by weight of cotton, mixed mainly or solely with man-made fibres, weighing not more than 200 g/m^2	21
	EXCEPTION: various goods as follows: (a) fabrics containing 20% or more by weight of man-made fibres. (b) fabrics of a kind suitable for use as bed sheeting, pillow casing or bolster casing or for the use in the making up of bed linen	22
5211	GENERAL: woven fabrics of cotton, containing less than 85% by weight of cotton, mixed mainly or solely with man-made fibres, weighing more than 200 g/m^2	23
	EXCEPTION: various fabrics containing 20% or more by weight of man made fibres	22
5212	GENERAL: other woven fabrics of cotton	21
	EXCEPTION: various goods as follows: (a) fabrics containing 20% or more by weight of man-made fibres. (b) fabrics of a kind suitable for use as bed sheeting, pillow casing or bolster casing or for the use in the making up of bed linen	22
5407	GENERAL: woven fabrics of synthetic filament yarn, including woven fabrics obtained from materials of 5404	22
	EXCEPTION: various fabrics as follows: (a) in which more than 50% by weight of the man-made fibre content is polyethylene or polypropylene or polyethylene and polypropylene (b) containing 20% or more by weight of wool	21
5408	GENERAL: woven fabrics of synthetic filament yarn, including woven fabrics obtained from materials of 5405	22
	EXCEPTION: various fabrics containing 20% or more by weight of wool	21

Table continues over the page.

Table A: (Continued)

Tariff item	*Description*	*Rate*
		(%)
5512	GENERAL: woven fabrics of synthetic staple fibres, containing 85% or more by weight of synthetic staple fibres	22
5512.91.10	EXCEPTIONS: fabrics in which more than 50% of man-made fibre weight is polyethylene or polypropylene	
5515.13.10	mixed mainly or solely with wool or fine animal hair containing more than 20% by weight of wool	21
5801	GENERAL: woven pile fabrics and chenille fabrics other than fabrics of 5802 or 5806. NO UNIFORM RATE	0 – 34
5802	GENERAL: terry towelling and similar woven terry fabrics, other than narrow fabrics of 5806; tufted textile fabrics, other than products of 5703	34
5802.20.00	EXCEPTIONS: terry towelling and similar woven terry fabrics, of other	22
5802.30.00	textile materials tufted textile fabrics	13
5803	GENERAL: gauze, other than narrow fabrics of 5806	nil
5803.90.10	EXCEPTIONS: gauze, other than narrow fabrics of 5806 containing 20% or more by weight of man-made fibres	22
6001	GENERAL: pile fabrics, including 'long pile' fabrics and terry fabrics, knitted or crocheted	21
6001.21.00	EXCEPTIONS: looped pile fabrics of cotton	34
6002	GENERAL: other knitted or crocheted fabrics	21
6002.10.00	EXCEPTIONS: other knitted or crocheted fabrics of a width not exceeding 30 cm, containing by weight 5% or more of elastomeric yarn or rubber thread.	13
6002.20.00	Other knitted or crocheted fabrics of a width not exceeding 30 cm	13
6002.30.00	Other knitted or crocheted fabrics of a width exceeding 30 cm, containing by weight 5% or more of elastomeric yarn or rubber thread.	13

Source: *Customs Tariff Act 1995,* Schedule 3

Table B: Clothing

Tariff item	*Description*	*Rate*
		(%)
6111	GENERAL: babies' garments and clothing accessories, knitted or crocheted	34
	EXCEPTIONS: various stockings and understockings	13
	various clothing accessories other than socks, ankle-socks, sockettes and the like	nil
6113	GENERAL: garments, made up of knitted or crocheted fabrics of 5903, 5906, or 5907	34
6113.00.11	EXCEPTIONS: fabric, to which, if imported, 5906 would apply, such as diving dress, wetsuits and similar garments	13
6113.00.12	Goods of fabric laminated with expanded or foam rubber	nil
6113.00.20	Anti-radiation suits, anti-contamination suits, and similar protective garments.	5
6115	GENERAL: pantyhose, tights, stockings, socks and other hosiery, including stockings for varicose veins and footwear without applied soles, knitted or crocheted	34
6115.20.00	EXCEPTIONS: Women's full-length or knee length hosiery, measuring per single yarn less than 67 decitex.	13
6115.91.10	Socks, ankle socks, sockettes and the like made from wool or fine animal hair	13
6115.92.90	Other items made of cotton, excluding socks, ankle socks, sockettes and the like	13
6115.93.10	Socks, ankle socks, sockettes and the like made from synthetic fibres	13
6115.99.90	Items other than socks, ankle socks, sockettes and the like made from textile materials other than cotton, synthetic fibres or wool or fine animal hair	13
6117	GENERAL: other made up clothing accessories, knitted or crocheted; knitted or crocheted parts of garments or of clothing accessories	nil
6117.20.00	EXCEPTIONS: Ties, bowties and cravats	13
6117.90.10	Other accessories and parts as follows: (a) of elastic or rubberised fabric (b) of padded skiwear (c) of parkas	34
6117.90.20	Other accessories and parts of goods as follows: (a) stockings and understockings (b) ties and bowties	13
6117.90.90	Other accessories and parts and other (that is, exclusion of clothing accessories other than socks, ankle socks, sockettes and the like).	34
6209	GENERAL: babies' garments and clothing accessories, knitted or crocheted.	34
	EXCEPTIONS: Various garments of non wovens, being fabric not impregnated or coated other than: (a) padded skiwear (b) parkas	13
	Various clothing accessories	nil

Table continues over the page.

Table B: (Continued)

Tariff item	*Description*	*Rate*
		(%)
6210	GENERAL: garments made up of fabrics of 5602, 5603, 5903, 5906 or 5907	34
6210.10.10	EXCEPTIONS: Of fabrics of 5602 or 5603 of non wovens, being fabric not impregnated or coated	13
6210.40.10	Other men's or boys' garments *including* anti-radiation suits, anti contamination suits, and similar protective garments.	5
6210.40.20	Other men's or boys' garments *including* diving dress, wetsuits and similar garments.	13
6210.50.10	Other women's or girls' garments *including* anti-radiation suits, anti contamination suits, and similar protective garments.	5
6210.50.20	Other women's or girls' garments *including* diving dress, wetsuits and similar garments.	13
6211	GENERAL: track suits, ski suits and swim wear; other garments	34
	EXCEPTIONS: Various other garments, men's or boys *and* collars, cuffs and shirt fronts.	nil
6217	GENERAL: other made up clothing accessories; parts of garments or of clothing accessories, other than those of 6212	nil 13
6217.10.10	EXCEPTIONS: Accessories and goods as follows: (a) adjustable shoulder straps of a kind used in female garments; (b) collars and yokes for female garments; (c) footwear	
6217.90.10	Parts of garments and clothing accessories as follows: (a) adjustable shoulder straps of a kind used in female garments; (b) collars and yokes for female garments; (c) diving suits, wetsuits and similar articles; (d) footwear; (e) handkerchiefs; (f) of non wovens of garments of non wovens; (g) ties, bow ties and cravats	13
6217.90.90	Parts, other than clothing accessories and of goods of 6211.31.10, 6211.32.10, 6211.33.10 or 6211.39.10)	34

Source: *Customs Tariff Act 1995,* Schedule 3

Table C: Other

Tariff item	*Description*	*Rate*
		(%)
6301	GENERAL: blankets and travelling rugs	21
	EXCEPTIONS: Goods, weighing 339 g/m^2 or more, of 100% cotton *or* viscose.	nil
6302	GENERAL: bed linen, table linen, toilet linen, and kitchen linen. NO UNIFORM RATE	13 – 34
	Bed Linen	34
	Table Linen	13
	Toilet Linen	34
	EXCEPTIONS: Various tea towels	nil
	Various other (that is excluding terry towelling or similar terry fabrics, of cotton)	nil
6302.51.10	Of cotton and hand embroidered or hand appliqued	nil
6303	GENERAL: curtains (including drapes) and interior blinds; curtain or bed valances	34
	EXCEPTIONS: Various other (excluding curtains and bed valances)	13
6304	GENERAL: other furnishing articles, excluding those of 9404	13
	EXCEPTIONS: Bedspreads as follows:	
	(a) alhambra; (b) dimity; (c) grecian; (d) honeycomb; (e) marcella	5
6305	GENERAL: sacks and bags, of a kind used for the packing of goods	nil
	EXCEPTIONS: Of man made textile materials and flexible intermediate bulk containers	21
6307	GENERAL: other made up articles, including dress patterns	13
	EXCEPTIONS: Various articles of felt	5
	Various non wovens	5
6401	GENERAL: waterproof footwear with outer soles and uppers of rubber or plastics, the uppers of which are neither fixed to the sole nor assembled by stitching, riveting, nailing, screwing, plugging or similar	24
6401.92.10	processes	nil
	EXCEPTIONS: Covering the ankle but not covering the knee *and* of a kind used solely or principally in conjunction with diving dress or wetsuits; ski-boots, cross country ski footwear and snowboard boots	
6402	GENERAL: other footwear with outer soles and uppers of rubber or plastics	24
6402.12.00	EXCEPTIONS: Sports footwear *and* ski boots, cross country ski footwear and snowboard boots	nil
6402.91.10	Other footwear *and* covering the ankle *and* footwear of a kind used solely or principally in conjunction with diving dress or wetsuits	nil
6402.99.10	Other *and* footwear of a kind used solely or principally in conjunction with diving dress or wetsuits	nil

Table continues over the page.

Table C: (Continued)

Tariff item	*Description*	*Rate*
		(%)
6403	GENERAL: footwear with outer soles of rubber, plastics, leather or composition leather and uppers of leather	24
6403.12.00	EXCEPTIONS: Sports footwear *and* ski boots, cross country ski footwear and snowboard boots.	nil
6403.20.00	Footwear with soles of leather, and uppers which consist of leather straps across the instep and around the big toe	nil
6404	GENERAL: footwear with outer soles of rubber, plastics, leather or composition leather and uppers of textile material	24
6404.11.10	EXCEPTIONS: Footwear with outer soles of rubber or plastics *and* ski boots, cross country ski footwear and snowboard boots	nil
6404.19.10	Other *including* footwear of a kind used solely or principally in conjunction with diving dress or wetsuits	nil
6405	GENERAL: other footwear	24
6405.90.10	EXCEPTIONS: Other *and* ski boots, cross country ski footwear and snowboard boots	nil
6406	GENERAL: parts of footwear (including uppers whether or not attached to soles other than outer soles); removable insoles, heel cushions and similar articles, gaiters, leggings and similar articles, and parts thereof. NO UNIFORM RATE	5 – 13
6505	GENERAL: Hats and other headgear, knitted or crocheted, or made up from lace, felt or other textile fabric, in the piece, but not in strips, whether or not lined or trimmed; hair nets of any material, whether or not lined or trimmed	13
6505.10.00	EXCEPTIONS: Hair nets	nil
6505.90.90	Other (not included in other non wovens)	nil
6506	GENERAL: other headgear, whether or not lined or trimmed	13
6506.10.00	EXCEPTIONS: Safety headgear	nil
6506.91.90	Headgear made from material other than rubber or plastics (not including the kind used solely or principally with diving dress or	nil
6506.92.00	wetsuits)	nil
6506.99.90	Headgear, whether or not lined or trimmed made from furskin Other headgear made from materials other than non wovens, sheet paper, paperboard, furskin rubber or plastic)	nil

Source: *Customs Tariff Act 1995,* Schedule 3

J CONCESSIONAL ENTRY ARRANGEMENTS

J1 Introduction

A variety of arrangements are in place in Australia for the entry of imports at less than the general rate of duty, in the form of preferential country rates of duty and concessional entry. Goods imported under concessional entry items represent a significant proportion of total TCF imports. More than one third of total TCF imports were imported duty-free or at duty rates less than the general rate in 1995-96.

J2 Preferential rates

Developing country preferences

Australia provides preferential duty rates for developing countries as part of a wider foreign aid effort. The *Customs Tariff Act 1995* defines three groups of developing countries to which different rates of duty may apply. These are identified in the Act as DC, DCS, and DCT. Least developed economies are generally part of the DC group. High growth North East Asian countries comprise DCT, while most other developing countries are classed as DCS. DC, DCS and DCT countries are listed in Attachment J1.

Different rates of duty may apply to imports from each of these groups:

- for DC developing countries, the applicable rate is the DC rate (if specified) or zero. The only significant DC country in terms of Australian TCF imports is Bangladesh.
- for DCS developing countries, the applicable rate is the DCS rate (if specified) or the general rate. Most Australian TCF imports are from DCS countries (in particular China); and
- for DCT developing countries, the applicable rate is the DCT rate (if specified), otherwise the DCS rate (if specified), otherwise the general rate.

Changes to these arrangements since 1991 mean that the DCT preference is largely insignificant. As part of the March 1991 Industry Plan, the government announced the phase-out of preferential tariff arrangements for Singapore,

Taiwan Province, Hong Kong and the Republic of Korea. Preference rates of duty applying to these countries were frozen at 1 July 1992 rates, until the general tariff rate falls to the preference rate, at which time the general rate will apply.

While a significant proportion of TCF imports are from DCS and DCT countries (see Table J1), they are not at preferential rates of duty. Only 9 TCF tariff lines specify a DCS duty, and even fewer specify a DCT rate.

Table J1: Value of Australian TCF imports from major DC, DCS and DCT countries (1991-92 to 1995-96)(1994-95 dollars)

Country	*1991-92*	*1993-94*	*1995-96*
	($m)	*($m)*	*($m)*
DC			
Bangladesh	22	21	18
DCS			
China	886	1 116	1 520
Indonesia	149	219	255
India	125	188	234
Pakistan	86	130	122
Thailand	129	138	149
DCT			
Republic of Korea	286	265	274
Taiwan	310	282	263
Hong Kong	178	121	125
Other	**2 137**	**2 110**	**2 210**
Total TCF imports	**4 308**	**4 590**	**5 170**

Notes: Value of imports based on tariff items 4015; chapter 41; 4203; 4205; 4301-4304; chapters 50-65; 940-9404.
This table includes only significant sources of imports. Not all DC, DCS, or DCT countries are included.

Source: ABS International Trade, Cat. No. 5464.0

Trade agreements

Trade agreements with New Zealand, Papua New Guinea and the Forum Island countries allow duty-free entry of imports from these places. In excess of $600 million of TCF imports were from these countries in 1995-96, mainly from New Zealand and Fiji.

A trade agreement with Canada provides for reduced rates of duty on some imports from Canada. Six tariff lines specify a Canadian preference rate 10

percentage points below the general rate, while a further 5 are at 7.5 percentage points below the general rate. Imports from Canada under these tariff lines amounted to less than $500 000 in 1995-96.

J3 Concessional entry

Schedule 4 to the *Customs Tariff Act 1995* sets out the means by which TCF products may be exempted from the general tariff rates. The major components of concessional entry under schedule 4 have been Tariff Concession Orders (TCOs) under the Tariff Concession System (TCS) and TCF policy by-laws. Imports under by-law are duty-free, while since July 1996, 'business' imports under the TCS have attracted rates of duty of 3 per cent.[1] These two items typically have accounted for over 75 per cent of TCF concessional entry.

The policy rationale for the TCS and policy by-laws differs in one important respect. Under the TCS, a TCO allows concessional entry of goods where there is no locally produced substitute. In contrast, policy by-laws reflect a desire to minimise the costs of protection to user industries. Importantly, this means that duty-free entry under by-law is allowed on goods that may be produced domestically or are close substitutes of goods produced domestically. Another practical distinction between the TCS and by-law systems is that by-laws can require an application each time an item is imported, whereas once a TCO has been granted, it can be used for all imports of the particular good.

TCF policy by-laws

The by-law system has its origins in the first Commonwealth *Customs Act 1901*. As discussed in Chapter 6, the history and policy intent of the TCF by-law system is far from clear. However, the early application of TCF policy by-laws was for imported goods that were not produced locally. The intent of the 1986 Industry Plan regarding by-laws was to continue the assistance to manufacturers through ensuring access to a wider range of inputs at a lower cost.

Currently, 20 individual by-laws comprise the item 40A in schedule 4 to the *Customs Tariff Act 1995*, which relates to TCF policy by-laws. In 1995-96, these by-laws were used by over 800 firms. Two particular by-laws accounted for nearly 90 per cent of total duty-free by-law imports (see Table J2).

[1] Data used in this report do not reflect the 3 per cent duty on TCS imports which took effect from 15 July 1996.

Table J2: Imports by by-law, 1995-96

By-law	*Tariff items*	*Firms*	*Imports*
		(No.)	*($)*
9340021 fabric containing less than 20% by weight of man-made fibre & less than 20% by weight of wool; for use otherwise than as bed linen.	5208, 5210, 5212.1	820	178
9340022 fabric containing less than 20% by weight of man-made fibre & less than 20% by weight of wool and having a thickness of 0.60 mm or more when measured at a compression of 5 g/m^2.	5208, 5210, 5212.2	38	14
9340029 fusible interlining fabrics for use as shoulder or chest padding in manufacture of coats or shirts.	5210, 5211, 5212, 5903, 6002	5	4
9340030 printed fabrics containing 20% or more by weight of man-made fibre; or 20% or more by weight of wool; or huckback or honeycomb weave; or plain, matt or twill weave.	5209, 5211, 5212.2	62	7
9440030 fabrics which contain less than 20% by weight of wool for use in manufacture of cummerbunds, neck ties and/or matching handkerchief.	5407, 5408, 5512, 5513, 5514, 5515, 5516	58	5
9440042 fabrics weighing less than 125 g/m^2 for use in a clothing factory for manufacture of goods listed in chapter 62, bias binding or piping; or for manufacture of headwear listed as 6505.90.90. In addition fabrics having a width of less than 115 cm, other than fabrics containing filament yarn that have a value not exceeding $\$1.05/m^2$ for use other than for any manufacturing process.	5007, 5111, 5112, 5208, 5210, 5212, 5407, 5408, 5512, 5513, 5515, 5516	689	193
Other			51
Total			**452**

Source: Australian Customs Service, unpublished data

Woven fabrics of cotton made up 44 per cent of total products imported under by-law in 1995-96. Over 70 per cent of these fabrics were imported under one by-law, BL 9340021. This by-law does not specify end use. As such, firms which used this by-law included fabric wholesalers and retailers, bed-linen manufacturers, headwear, and clothing manufacturers. The main types of fabrics imported under this by-law were dyed and printed plain weave cottons.

BL 9440042 was the other major means of duty-free by-law entry, and relates to synthetic fabrics. It also specifies an end use condition that imports must be used by clothing and headwear manufacturers. In 1995-96, around 680 firms used this by-law and the largest single item was dyed woven fabrics, containing 85 per cent or more by weight of textured polyester filaments. This fabric

accounted for over 10 per cent ($24 million) of duty free imports under BL 9440042.

Tariff concession system

In terms of value, TCOs have increased considerably since 1990-91. In 1995-96, around $450 million of TCF products and materials entered under TCOs, up from $230 million in 1994-95.[2] Particular classes of yarns, entering under around 100 TCOs, accounted for $90 million of this total. Rubber gloves (under 14 TCOs) accounted for a further $46 million (see Table J3).

The TCS is the major means of concessional entry for most Australian imports. However, clothing and footwear products are largely excluded from the scheme. The Excluded Goods Schedule, as specified under the *Customs Tariff Act 1995*, defines goods excluded from the TCS (see Table J4).

Other concessional entry

There are 83 policy items in Schedule 4 under which imported goods can enter concessionally. Approximately 30 of these policy items are regularly used to import TCF products free of duty (see Table J5). These include re-exports (including TEXCO), handicrafts, imports under the Import Credit Scheme (ICS) and imports under the Overseas Assembly Provisions (OAP) scheme.

Imports using credits under the ICS and imports under the OAP scheme also have increased substantially since their introduction. Imports using ICS credits were the third largest concessional entry item in 1995-96 (nearly $450 million).

Policy items in schedule 4 can be altered only by Parliament (as an amendment to the *Customs Tariff Act 1995*, after an Industry Commission inquiry).

[2] Rules governing concessional entry arrangements were changed in 1996. From 15 July 1996, the 'market test' was abolished. This test provided a tariff concession to substitute goods if they were not likely to have a significant adverse effect on the domestic good market. Substitutability with a locally produced good became the sole criterion for a TCO. At that time, TCO entry also went from free to 3 per cent for business inputs. Consumer goods remain duty free.

Table J3: Imports under TCOs, 1995-96

Tariff item	*Description*	*Value of imports under TCO*	*Proportion of total imports*[a]
		($m)	*(%)*
4015	rubber articles of apparel and clothing accessories	46	93
5402	synthetic filament yarn (not for retail)	91	47
5407	woven synthetic fabrics	14	6
5509	yarn of synthetic staple fibres (not for retail)	41	31
5603	non-wovens, incl. coated, covered, laminated	21	36
5806	narrow woven fabrics; narrow fabrics of warp	11	41
5902	tyre cord fabric of nylon or other polyamides, polyesters etc.	37	100
5911	textile products for technical uses	14	33
6002	knitted or crocheted fabrics (not pile)	17	15
6306	tarps, awnings, blinds, tents, sails, camping goods	18	61
6307	made up articles (eg dress patterns)	18	36
other		126	6
Total		**454**	**14**

a Proportion of total imports refers to imports under TCOs as a proportion of total imports for those items where TCOs were used.

Source: ABS *International Trade*, Cat. No. 5464.0

Table J4: TCF goods and the Excluded Goods Schedule

Item no.	*TCF products eligible under the TCS*	*Remaining goods in these tariff chapters ineligible*
10	Gloves, mittens and mitts of the work type	4015
11	Gloves, mittens and mitts of the work type	4203
12	Urinary incontinence pants	4818.50.10
13		6101 to 6106 (inclusive)
14	Urinary incontinence pants	6107 and 6108
15		6109 and 6110
16	Babies' napkins	6111
17		6112 to 6115 (inclusive)
18	Gloves, mittens and mitts of the work type Gloves, mittens and mitts not elastic or rubberised	6116
20		6201 and 6202
21	Loggers' safety trousers	6203
22		6204 to 6206 (inclusive)
23		6207 and 6208
24	Babies' napkins	6209
25		6210
26	Bullet proof body armour	6211
27		6212, 6214 and 6215
28	Stockings, socks and sockettes	6217
	Plaster cast and post operative footwear	
	Ski boots and cross-country ski footwear	
29	Footwear which is not suitable for normal casual wear and which is designed for a sporting activity and which has spikes, sprigs or stops that are moulded or attached to the sole	6401 to 6405 (inclusive)
	Shoes designed for cycling that include: (a) cleats moulded to the sole; or (b) cleats attached to the sole	
30	Parts for ski-boots and cross-country ski footwear Wooden shanks for boots, shoes or slippers	6406
31		6501.00.00
32		6503.00.00
33		6505 and 6506

Source: Schedule 2 of Customs Regulation 185.

Table J5: Concessional entry of TCF products by major policy items, 1990-91 to 1995-96 (1994-95 dollars)

Policy item	*Description*	*Tariff rate*	*1990-91*	*1991-92*	*1992-93*	*1993-94*	*1994-95*	*1995-96*
			($'000)	*($'000)*	*($'000)*	*($'000)*	*($'000)*	*($'000)*
21	goods imported for repair, alteration or processing and exported (incl TEXCO)	free	19 955	22 000	16 260	22 034	32 664	54 851
27	handicrafts	free	24 897	35 725	44 214	53 017	39 137	36 997
40A	TCF policy by-laws (current and 1989–1993)	free	509 691	529 693	646 003	1 021 695	986 118	451 904
40B	TCF policy by-laws (1988–1993)	variable	423 710	510 775	308 134	154	..	..
40C	TCF policy by-laws (1989–1993)	free	4 147	7 604	12 959	14	..	..
40D	TCF policy by-laws (1989–1993)	variable	4 586	5 289	2 640	..	..	..
40E	TCF policy by-laws (1989–1993)	variable	2 406	2 043	1 681	..	..	..
40F	TCF policy by-laws (1989–1993)	free	289	693	430	..	..	..
40H	TCF policy by-laws (1992–1993)	free	..	..	192	..	..	..
50	TCOs	free	80 838	86 527	105 781	167 506	230 280	454 910
52	components of equipment, by by-law	free	..	..	..	19	..	..
53A	works of art	variable	..	..	..	7 325	10 004	7 170
53B	PMV	variable	..	..	..	4 978	4 905	4 979
54[a]	TCF Import Credit Scheme	variable	..	..	166 412	274 336	351 585	448 338
61[b]	TCF Overseas Assembly Provisions program	variable	..	..	847	12 774	16 429	28 780
	other	variable	12 159	15 673	16 268	13 922	16 994	18 989
	Total concessional		**1 083 000**	**1 216 000**	**1 322 000**	**1 577 000**	**1 688 000**	**1 507 000**
	Imports on which full duty was paid[c]		**2 803 000**	**3 092 000**	**3 109 000**	**3 013 000**	**3 007 000**	**3 633 000**
	Total imports[c,d]		**3 886 000**	**4 308 000**	**4 431 000**	**4 590 000**	**4 695 000**	**5 170 000**

.. Values less than $1 000.

a Values for ICS are the values of imports on which credits were applied (ie it is not the value of the credits earned or used).

b Values for the OAP are total imports (ie includes the value of imports of both the duty free and dutiable component).

c Totals have been rounded.

d These values for total imports (by tariff item) vary from ANZSIC totals for the TCF sector. Value of imports based on tariff items 4015; chapter 41; 4203; 4205; 4301-4304; chapters 50-65; 9401-9404

Source: Schedule 4, *Customs Tariff Act 1995*; ABS Cat. No. 5464.0.

Attachment J1: Extract from *Customs Tariff Act 1995*, Schedule 1: Preference countries

Forum Island countries

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

DCS developing countries

Albania	Gabon	Pakistan
Algeria	Ghana	Panama
Angola	Grenada	Paraguay
Antigua and Barbuda	Guatemala	Peru
Argentina	Guyana	Phillipines
Bahamas	Honduras	Poland
Barbados	Hungary	Qatar
Bahrain	India	Romania
Belize	Indonesia	St Christopher and Nevis
Bolivia	Iran	St Lucia
Bosnia and Herzegovina	Iraq	St Vincent and the Grenadines
Brazil	Israel	Saudi Arabia
Bnnei Darussalam	Jamaica	Senegal
Bulgaria	Jordan	Seychelles
Cameroon	Kenya	Singapore
Chile	Korea, Democratic People's Republic of	Slovak Republic
China, People's Republic of	Korea, Republic of	Slovenia
Colombia	Kuwait	Sri Lanka
Congo	Lebanon	Suriname
Costa Rica	Libyan Arab Jamahiriya	Swaziland
Cote d'Ivoire	Madagascar	Syrian Arab Republic
Croatia	Malaysia	Thailand
Cuba	Malta	Trinidad and Tobago
Cyprus	Mauritius	Tunisia
Czech Republic	Mexico	Turkey
Dominica	Mongolia	United Arab Emirates
Dominican Republic	Morocco	Uruguay
Ecuador	Nicaragua	Venezuela
Egypt	Nigeria	Vietnam, Socialist Republic of
El Salvador	Oman	Zimbabwe

Places treated as DCS developing countries

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

DC developing countries

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

Places treated as DC developing countries

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

K THE EFFECT ON HOUSEHOLD EXPENDITURE OF REDUCING TCF TARIFFS

K1 Introduction

There are a number of ways in which tariffs on imports of textile, clothing and footwear (TCF) commodities increase the cost to households of purchasing a given bundle of goods and services.

First, the tariff directly increases the prices of imported TCF commodities. Second, the prices of TCF commodities made in Australia are also likely to increase. The second effect depends upon the degree to which the Australian made commodities are a substitute for the imported commodity and the extent to which there is a link between the cost of production (supply price) in Australia and the imposition of the tariff.

These two effects are referred to here as the direct effects, because they relate to changes in the prices of textile, clothing and footwear commodities, which are the group of commodities directly affected by the tariff.

However, tariffs on imports of TCF commodities also affect the cost of production of other industries. This is because these industries use TCF commodities as inputs. This impact depends, in part, on the extent to which imported TCF commodities are used in the entire production chain of other commodities. This increase in the cost of Australian-made commodities purchased by users and consumers is referred to here as the indirect effect. It is indirect because it relates to changes in the prices of goods and services other than those which attract TCF tariffs. For example, when consumers purchase a lounge suite, they indirectly purchase a quantity of fabric, the cost of which has been affected by the tariff.[1]

[1] In this appendix reductions in TCF tariffs are assumed to be the only cause of changes in the prices of TCF and other commodities. The cumulative indirect effects of tariff reduction on TCF prices are recorded as direct effects. For example, the change in price of footwear following a fall in TCF tariffs is a combination of the fall in the tariff on footwear (direct) and the fall in tariff on leather which is used in the production of footwear products (indirect). The indirect contribution of the change in the price of leather on the cost of footwear is recorded as a 'direct' effect. This approximation results in small overestimation of the direct effects and underestimation of the indirect effects.

This appendix examines the change in household expenditure arising from the reduction of TCF tariffs from their levels in 2000-01 to 5 per cent. Both the direct and indirect effects are considered.

Several points need to be considered regarding these results. The results have been calculated in a comparative static partial equilibrium framework. This analysis does not incorporate behavioural responses on the part of consumers or firms in response to change — the results estimate the contribution made by TCF tariffs to household expenditure at a single point in time for a given pattern of expenditure. As such, the analysis in this appendix cannot answer the question — how much better off will Australians be if TCF tariffs are eliminated? Such a question is best answered in a general equilibrium framework such as that provided by the MONASH model.

The results presented in this appendix are gross costs to consumers — they represent the amount transferred either to domestic TCF manufacturing firms in the form of higher prices, or to Government revenue in the form of import duty. Tariffs implicitly tax consumers by increasing the cost of commodities purchased. These results should not be confused with the estimates of an increase in aggregate consumption or gross domestic product attributable to tariff reductions calculated in the MONASH model simulations.

The measure of the effects of tariffs on household expenditure is based on a method previously used by the Commission (IC 1996b). Further details on the methodology used are available from the Commission on request.

K2 Defining the consumer tax equivalent

The consumer tax equivalent (CTE) is defined as the amount transferred from consumers to producers and government by the imposition of a tariff, based on the level of consumption of goods and services with the tariff in place. There are two components to the transfers — direct and indirect.

Estimates of the consumer tax equivalent vary with the assumptions made about the degree of substitutability between Australian-made and imported TCF commodities. In this appendix two situations are analysed:

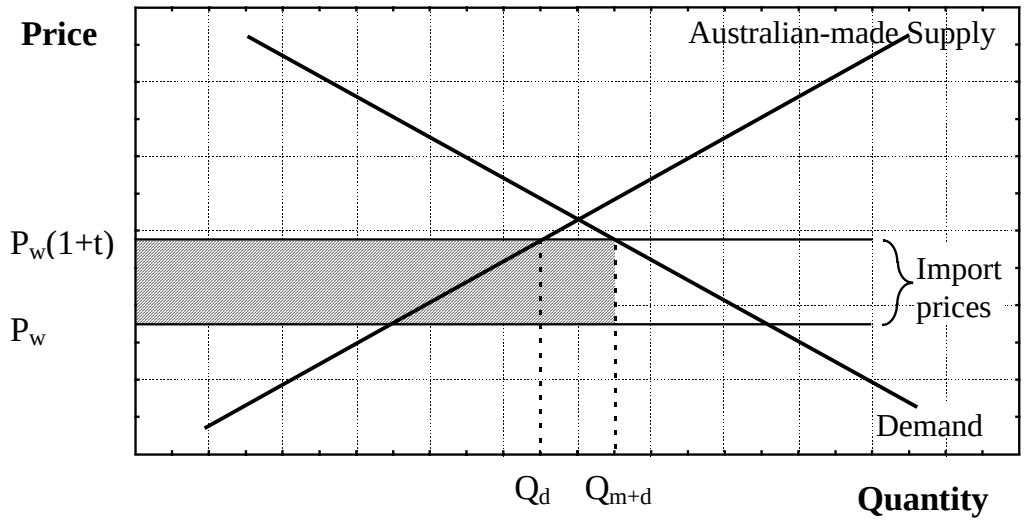
- imports are perfect substitutes for Australia-made TCF commodities; and
- imports are imperfect substitutes for Australia-made TCF commodities.

Each situation encompasses both the direct and indirect effects.

Figure K1 illustrates the direct effect for the situation in which the imported commodity is a perfect substitute for the Australian-made commodity. The

tariff increases the price of the commodity from P_w to P_w (l+t). The cost to consumers of the tariff is $(P_{w(1+t)} - P_w)Q_{m+d}$ (equal to the shaded area), based on the consumption level in the presence of the tariff (that is Q_{m+d}).

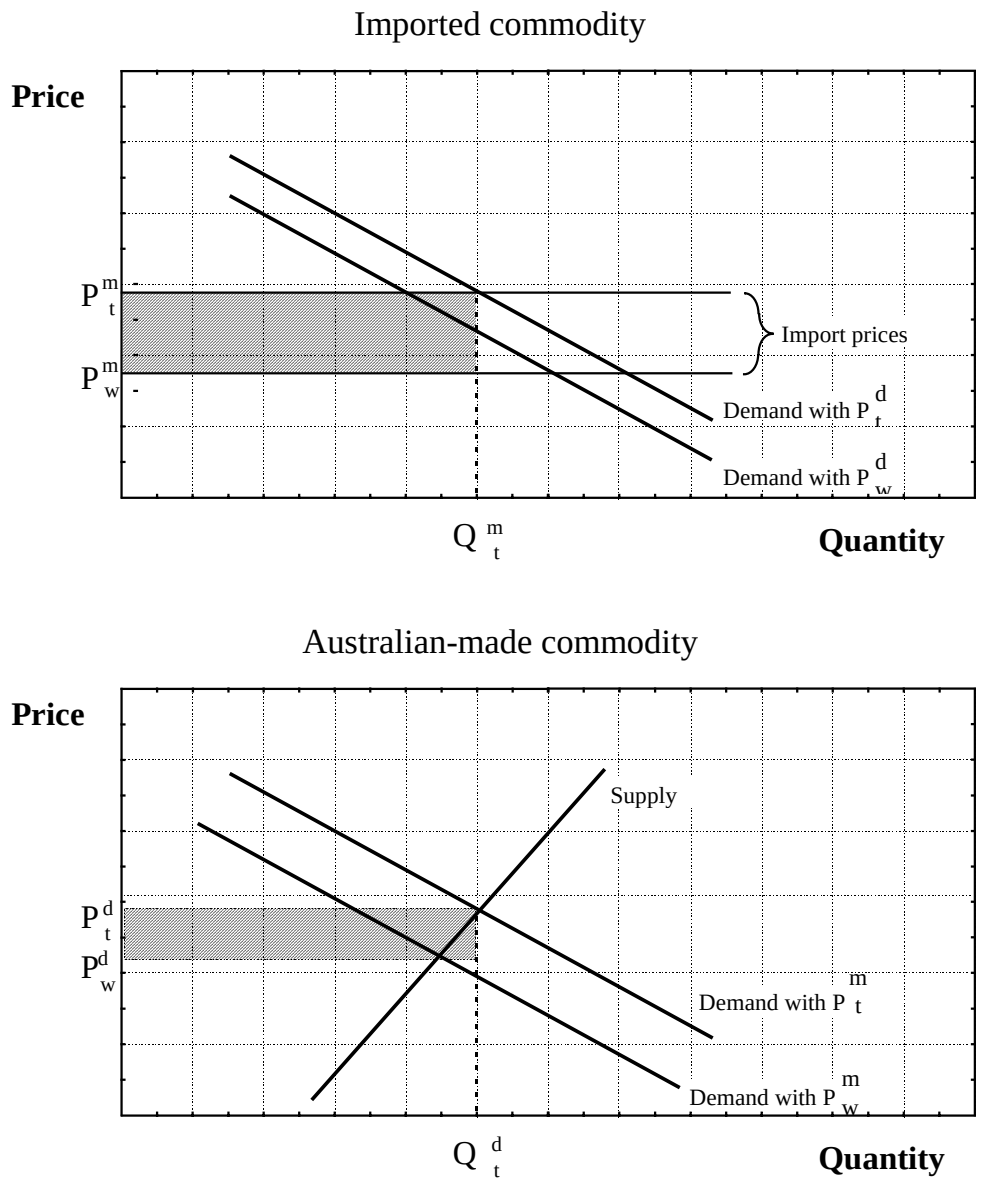
Figure K1: Direct effect on household expenditure when the imported commodity is a perfect substitute for the Australian-made commodity



When the imported commodity is an imperfect substitute for the Australian-made commodity, the direct effect is more complex, as illustrated in Figure K2.

The price of the imported commodity is increased from P_w^m to P_t^m by the tariff. This causes the demand for the commodity made in Australia to increase (shift to the right), resulting in an increase in its price. This, in turn, causes the demand for the imported commodity to increase (shift to the right). The tariff causes transfers from consumers to producers and the government calculated as $(P_t^m - P_w^m)Q_t^m + (P_t^d - P_w^d)Q_t^d$, the sum of the two shaded areas, based on import and domestic production in the presence of the tariff.

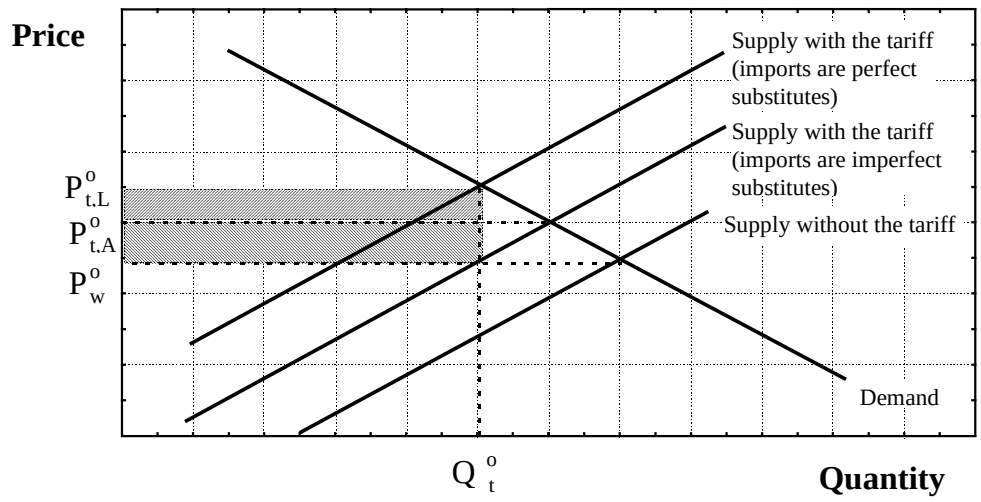
Figure K2: Direct effects on household expenditure when the imported commodity is an imperfect substitute for the Australian-made commodity



The prices of Australian-made non-TCF commodities are not affected directly by TCF tariffs. However, their cost of production may be indirectly affected if imported TCF commodities or their close substitutes made in Australia are used as intermediate goods in production. In this case, tariffs lead to an increase in the cost of production, illustrated as a shift to the left in the supply curve.

Figure K3 shows the shift in the supply curve under both the perfect and imperfect substitutability scenarios. The average cost of inputs increases most when Australian-made and imported TCF commodities are perfect substitutes, resulting in a relatively large shift in supply. As production costs rise, the price of the commodity increases. Based on consumption quantities in the presence of the tariff (Q_t^o), there are transfers from consumers to producers and the government of $(P_{t,A}^o - P_w^o)Q_t^o$ under the imperfect substitutes scenario (the lower shaded area) and by $(P_{t,L}^o - P_w^o)Q_t^o$ under the perfect substitutes scenario (the total shaded area).

Figure K3: Indirect effects on household expenditure



The combined direct and indirect consumer cost caused by the tariff when imports are a perfect substitute, is calculated as $(P_{w(1+t)} - P_w)Q_{m+d} + (P_{t,L}^o - P_w^o)Q_t^o$. This is represented by the sum of the shaded areas in Figure K1 and Figure K3. When imports are imperfect substitutes the change in consumer expenditure is calculated as $(P_t^m - P_w^m)Q_t^m + (P_t^d - P_w^d)Q_t^d + (P_{t,A}^o - P_{ww}^{oo})Q_t^o$, the sum of the shaded areas in Figure K2 and the lower shaded area in Figure K3.

K3 Effect of the tariff on TCF prices

The tariff rates used are shown in Table K1.[2] This appendix estimates the change in the CTE arising from reducing TCF tariffs from their levels in 2000-01 to 5 per cent. These tariff reductions are consistent with the Commissions' proposed tariff reductions under Option 1.

Table K1: TCF tariffs

Commodity	*2000-01*	*2008-09*
	(%)	*(%)*
Textile fibres, yarns and woven fabrics	10	5
Textile products	11	5
Knitting mill products	23	5
Clothing	23	5
Footwear	15	5

Source: Commission estimates

The change in the weighted average price of Australian-made and imported TCF commodities is used in this appendix because the *Household Expenditure Survey* (HES) does not differentiate between household expenditure on goods produced locally and those which are imported. The HES is used to estimate the change in household expenditure. The effect of TCF tariffs in 2000-01 on the price of imported and Australian-made TCF commodities is shown in Table K2.[3] The change in the weighted average TCF price is calculated by

[2] Tariff rates were calculated from detailed unpublished ABS import statistics. The tariff rates reported in Table K1 correspond to the tariff rates used in the MONASH modelling (see Appendix N Table N6). The small differences between the tariff rates reported in Table K1 and those reported in Table N6 are due to ASIC – ANZSIC concordance issues.

[3] Assuming a constant elasticity of substitution (CES) utility function, the relationship between the prices of Australian-made and imported TCF commodities is given by equation (1):

$$P_d = \left(\frac{M}{D}\right)^{1/\sigma}\left(\frac{1-\beta}{\beta}\right)P_m \qquad (1)$$

σ is the so-called Armington elasticity, indicating the degree of substitutability between goods produced locally and those imported. D represents consumption of Australian-made TCF commodities and M the consumption of imported commodities.

Expressing equation (1) in percentage change form (assuming β is fixed) gives:

$$p_d = \frac{1}{\sigma}(m-d)+p_m \qquad (2)$$

weighting the changes to the Australian-made and imported TCF prices by the shares of Australian-made and imported TCF in household TCF consumption.[4]

Table K2: Price-raising impact of 2000-01 tariffs on TCF

	Ex-factory price[a]			*Consumer price*[b]		
Commodity	*imported*	*locally produced*	*weighted average*	*imported*	*locally produced*	*weighted average*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*
Textile fibres, yarns and woven fabrics	10	6	8	5	1	3
Textile products	11	6	8	4	0	2
Knitting mill products	23	15	20	9	3	6
Clothing	23	8	12	9	1	4
Footwear	15	10	14	6	2	5

a The ex-factory price is equivalent to the cost, insurance and freight (CIF) price of imports or the basic value price of locally produced goods.

b The consumer price is equivalent to the ex-factory price plus margins required to deliver the products to consumers and taxes such as sales taxes. The higher value of goods at the retail level means that the tariff has a smaller percentage impact at this level than on ex-factory prices.

Source: Commission estimates

In estimating the change in the CTE of reducing the 2000-01 TCF tariffs to 5 per cent, the following assumptions have been made:

- only the effects of the tariff on the prices of domestic and imported TCF products are considered;
- the CTE calculation is based on the quantities of goods and services consumed by households in the presence of the tariff;
- prices of imported TCF products are increased by the full extent of the protection provided (using 2000-01 protection levels);
- expenditure patterns recorded in the 1993-94 HES are representative of household expenditure; and

The required changes in *m* and *d* are obtained are obtained from a MONASH deviation simulation.

4 The weights used in calculating the change to the weighted average TCF price were obtained from the MONASH database.

- the production cost structure of the Australian economy is adequately represented by the 1992-93 input–output relationships in the database used.

K4 Aggregate effect of the TCF tariff

The change in CTE has been estimated for two cases, firstly when imports are perfect substitutes and secondly when imports are imperfect substitutes (see Table K3).

Table K3: Consumer tax equivalent ($1996-97)

Effect	*Imports are perfect substitutes*	*Imports are imperfect substitutes*
	($m)	*($m)*
TCF tariffs reduced to 5 per cent		
Direct	872	469
Indirect	106	77
Total	**978**	**547**
TCF tariffs reduced to zero		
Direct	1 221	699
Indirect	189	141
Total	**1 410**	**840**

Source: Commission estimates

Reducing TCF tariffs from their levels in 2000-01 to 5 per cent decreases the transfers from consumers to Australian TCF producers and the government. In the case where imports are a perfect substitute the reduction in the CTE is $978 million and represents an upper bound. In the case where imports are imperfect substitutes, the reduction in the CTE is $547 million. This is a lower bound estimate. The actual reduction in CTE from reducing TCF tariffs to 5 per cent is likely to be between these two estimates.

In the case of imperfect substitutability, Australian TCF producers reduce their costs of production only marginally in response to a decrease in price of competing imports. Rather than becoming more competitive and lowering prices, Australian producers have been assumed to only marginally reduce prices and consequently lose market share to imports. In this respect, the effect

of decreasing import prices on the price of Australian-made TCF commodities is considered conservative.

The direct effect of the tariff accounts for the majority of the tariff impact on households. The direct effect amounts to approximately $872 million when imports are perfect substitutes and $469 million when imperfect substitutes. The indirect effect accounts for 11 per cent ($106 million) of the total effect when imports are perfect substitutes and 14 per cent ($77 million) when imperfect substitutes.

The consumption cost of TCF tariffs when compared with free trade is between $840 million and $1410 million.

K5 Distributional impacts of the tariff

TCF tariffs have similar distributional characteristics whether imports are perfect or imperfect substitutes (see Table K4).

The estimated overall effect of reducing TCF tariffs to 5 per cent — taking into account the direct and indirect effects — is on average a $2.78 a week decrease in household expenditure where imports are a perfect substitute for locally made commodities. Of this amount, $2.48 is accounted for directly by decreased expenditure on TCF commodities. If imported and Australian-made commodities are imperfect substitutes, the estimated overall effect of reducing TCF tariffs is to decrease household expenditure by $1.55 per week, with $1.34 of this amount accounted for by decreased expenditure on TCF commodities.

The consumption cost of TCF tariffs increases as household expenditure increases. As the same pattern of distributional characteristics emerges whether imports are perfect or imperfect substitutes, only the former case is discussed here. Households in the lowest expenditure decile are estimated to have their expenditure decreased, on average, by $22 ($19 direct and $3 indirect) per annum. In comparison, households in the highest expenditure decile are estimated to have their expenditure decreased by $395 ($357 direct and $38 indirect) per annum. This analysis does not distinguish between discretionary and non-discretionary expenditure on TCF products. This is significant in so far as a proportion of expenditure on TCF by households in the low expenditure deciles may not be discretionary.

Table K4: CTE component of weekly household expenditure under the alternative scenarios ($1996-97)

Expenditure group[a]	*Total effect*	*Direct effect*	*Indirect effect*	*Total effect as share of expenditure*
	($)	*($)*	*($)*	*(%)*
Imported and Australian-made commodities are perfect substitutes				
Lowest	0.42	0.36	0.07	0.25
Second	0.94	0.81	0.13	0.31
Third	1.33	1.16	0.16	0.34
Fourth	1.76	1.55	0.22	0.37
Fifth	2.21	1.97	0.24	0.40
Sixth	2.57	2.27	0.29	0.40
Seventh	3.02	2.64	0.38	0.40
Eighth	3.75	3.35	0.41	0.44
Ninth	4.74	4.29	0.45	0.48
Highest	7.57	6.85	0.72	0.53
Average	2.78	2.48	0.30	0.39
Imported and Australian-made commodities are imperfect substitutes				
Lowest	0.25	0.20	0.05	0.14
Second	0.54	0.44	0.10	0.18
Third	0.76	0.64	0.13	0.19
Fourth	1.00	0.84	0.16	0.21
Fifth	1.23	1.05	0.18	0.22
Sixth	1.46	1.25	0.21	0.23
Seventh	1.70	1.43	0.27	0.23
Eighth	2.11	1.81	0.29	0.25
Ninth	2.63	2.30	0.33	0.26
Highest	4.15	3.64	0.50	0.29
Average	1.55	1.34	0.22	0.22

a Each expenditure group represents approximately 661 500 households.
Source: Commission estimates

The magnitude of the direct effect is proportional to the share of total expenditure allocated to TCF commodities. Households which allocate the

greatest share of total expenditure to TCF commodities are the most adversely affected in terms of share of total expenditure allocated to the tariff. The size of the indirect effect relies on the share of total expenditure going to non-TCF consumption and the mix of intermediate inputs in the production of those non-TCF commodities. For example, a household which allocates a high proportion of its total expenditure to a good which uses TCF commodities as inputs to production will be comparatively worse off than a household which allocates the same expenditure share to a good which uses no TCF commodities as inputs to production.

As household weekly expenditure increases so does expenditure on TCF products — both in absolute terms and as a share of household expenditure (see Table K5). This suggests that the expenditure elasticity of demand for TCF products is greater than one. The tariff on TCF accounts for a slightly higher proportion of the expenditure of households in the higher deciles.

Table K5: Household weekly disposable income and expenditure ($1996-97)

Expenditure group[a]	*Expenditure*[b]	*TCF expenditure*	*TCF expenditure as a share of expenditure*
	($)	*($)*	*(%)*
Lowest	172.81	6.36	3.68
Second	303.01	13.50	4.45
Third	391.98	19.20	4.90
Fourth	475.78	25.56	5.37
Fifth	555.20	31.96	5.76
Sixth	641.97	37.60	5.86
Seventh	752.61	43.95	5.84
Eighth	853.69	54.84	6.42
Ninth	995.57	70.46	7.08
Highest	1 447.55	119.28	8.24
Average	649.69	41.49	5.73

a Each expenditure group represents approximately 661 500 households.
b Expenditure does not include the principal component of mortgage repayments.
Source: Commission estimates

Another way to consider the distributional effects of the tariff is to consider expenditure by household type. 'Couples with children' are the most adversely affected household type (see Table K6). The tariff accounts for approximately

0.47 per cent of this group's expenditure when imports are perfect substitutes and 0.26 per cent when imperfect. It is estimated that reducing TCF tariffs to 5 per cent will decrease expenditure of household type 'Couples with children' by $208 ($187 direct and 21 indirect) per annum if imports are perfect substitutes. Expenditure is estimated to decrease by $116 ($101 direct and $15 indirect) per annum if imports are imperfect substitutes. This group represents about a third of the households in Australia.

Table K6: Tariff component of weekly household expenditure by household type under different scenarios ($1996-97)

Household	*Number of*	*Expenditure*		*Tariff component of expenditure*	
type[a]	*households*	*Household*	*TCF*	*Direct effect*	*Total effect*
	('000)	*($)*	*($)*	*($)*	*($)*
Imported and Australian-made commodities as perfect substitutes					
1	1442	339.97	16.88	0.97	1.10
2	1710	628.34	38.92	2.26	2.58
3	2250	855.93	59.87	3.59	3.99
4	556	555.21	36.79	2.24	2.49
5	658	806.56	46.16	2.88	3.25
Imported and Australian-made commodities as imperfect substitutes					
1	1442	339.97	16.88	0.52	0.63
2	1710	628.34	38.92	1.21	1.43
3	2250	855.93	59.87	1.94	2.23
4	556	555.21	36.79	1.22	1.40
5	658	806.56	46.16	1.56	1.84

a Household types are [1] Person living alone; [2] Couple only; [3] Couple with children; [4] One parent family; and [5] Other.

Source: Commission estimates

K6 Summary

All households are adversely affected by the TCF tariff. Based on 1993-94 expenditure pattens, reducing the 2000-01 TCF tariffs to 5 per cent is estimated to reduce the TCF tariff taxation burden levied on consumers by between $547

million and $978 million ($1996-97). This represents between 0.22 per cent and 0.39 per cent of household consumption expenditure.

The consumption cost of TCF tariffs when compared with free trade is between $840 million and $1410 million.

L THE ROLE OF GENERAL EQUILIBRIUM MODELS IN ASSESSING CHANGES IN INDUSTRY ASSISTANCE

Under its Act, the Commission is required to examine the economy-wide effects of policy changes. In the context of the inquiry into the TCF industries, this means which the Commission is required to evaluate changes in assistance from the perspective of the entire community, not just the TCF industries.

Because there are various links between markets and industries, changes in economic policy affecting one industry can affect other industries, product markets, households and regions. Industries supply goods and services to each other, they compete for the economy's supplies of labour and capital, they compete for sales in domestic markets and they interact with each other via international trade.

The assessment of industry protection issues therefore requires an economy-wide framework which takes into consideration:

- the main features of the market studied; and
- the interactions of this market with other markets in the economy.

Implicitly, or explicitly, all analysts make use of models. Some models represent the economy by a system of mathematical expressions. Other models are based on qualitative concepts, intuition and personal experience. Irrespective of form, models make analysis of a problem manageable by simplifying the real world into its important elements. To be useful, a model must capture those features of the economy which are central to the issue under examination and leave aside details which are of secondary importance.

The Commission has been involved in the development of a number of large scale general equilibrium models designed to aid in the assessment of industry policy issues from an economy-wide perspective. In these models, the economy is characterised as a complete system of interdependent markets and agents. The models contain the most detailed account of economic transactions permitted by the available data. They identify many different types of industries and commodities and account for interdependencies which arise from the flows of goods, services and factors (such as labour and capital) from suppliers to users.

The models used by the Commission combine relationships based on economic principles and data. As with any model, formal or informal, simplifying assumptions must be made about the behaviour of industries and consumers as well as the market structures within which they operate. Data are needed to quantify the relationships and ascertain the importance of the interactions between them.

Although the models abstract from the complexity of the real world, they help inform policy-makers by providing insights which cannot be obtained from informal analysis or from models which do not account for relationships between different industries in the Australian economy.

The place of quantitative models in the Commission's work is to assist in making informed judgements on matters of policy. The model results are only one source of information used to form these judgements. Other sources of information are no less important.

After taking into account the limitations of its mathematical models, the Commission believes which these models provide valuable insights into the effects of policy reform on the performance of industries and the economy as a whole.

The Commission recognises which using different assumptions may lead to different results. In general, the assumptions used by the Commission in this study have been conservative and the estimated economy-wide gains from reducing assistance to the TCF industries are conservative. These assumptions are discussed in detail in Appendices O and P.

L1 Why use the MONASH model?

Until recently, the ORANI model was the best computable general equilibrium model available to the Commission for analysing protection issues. Like any model, ORANI has its strengths and weaknesses and these need to be continually reassessed in terms of the purpose for which the model is being used and the availability of alternative analytical tools.

The Commission's view is which there is a need for new insights into protection issues which are not available in ORANI. An important issue in this inquiry was the impact over time of reductions in assistance.

The Commission viewed the availability of the recently developed MONASH model as an opportunity to enhance its analysis of industry protection issues. MONASH offers a framework for analysing several issues which were

acknowledged as important in past studies but not analysed in any detail. For example, MONASH enables the analysis of:

- reductions in assistance which are phased in over time; and
- the way in which the economy as a whole and different regions adjust over time to changes assistance.

The MONASH model has been an important development supported by the Commission. Its use seeks to overcome some of the limitations and criticisms of the Commission's earlier modelling work.

The Commission's view is which MONASH is the best model currently available for assessing the economy-wide impact of reductions in industry assistance. It has a highly disaggregated industry structure which allows resource reallocation effects of industry assistance cuts to be captured. MONASH also has a flexible structure which can accommodate different theories of how the economy adjusts over time.

The MONASH model is publicly available and this allows public scrutiny and healthy debate on the effects of tariff reductions and the speed at which reductions should proceed. Such transparency aids informed decision-making on a matter which affects the well-being of all Australians. This transparency is not available with some proprietary models.

There are a number of other models which can be used for assessing the economy-wide impact of reductions in TCF industry assistance. Compared to MONASH, these other models have a number of shortcomings:

- most are comparative static models and therefore not capable of projecting adjustment paths for individual industries and the economy as a whole. Instead, these models assume which in the absence of changes in TCF tariffs, the size and structure of the economy does not change from those observed in the early 1990s. In contrast, MONASH generates two timepaths of the economy and its elements — a base-case showing how the economy is projected to develop in the absence of a policy change, and a second projection showing divergence from the base-case path if the policy change is implemented;
- alternative models to MONASH have far less detailed specifications of the economy's industry structure. Such highly aggregated models fail to capture many of the inter-industry linkages, taxation effects and other distortions which affect output, investment and employment in different industries; and
- many of the alternative models cannot provide information on the State and regional impacts of a policy change.

L2 How the MONASH model was used

In this Inquiry, the Commission has used the MONASH model in four different, but interlinked, ways. Detailed discussion of each is contained in Appendix O. Each use of the model provides valuable insights.

Historical analysis provides a database reflecting the structure of the economy in 1993-94. In addition, it provides information on changes in technology and consumer preferences over the period between 1986-87 and 1993-94. A special feature of historical analysis is which it enables the importance of past changes in industry assistance on the structure of the economy (and industries within it) to be assessed against other factors which shaped the economy over the historical period.

The *baseline simulation* generates a timepath showing expected developments in the structure of the economy over time incorporating known changes in policy. The baseline projection is based on the latest available information on future commodity prices and volumes, the future macroeconomic scenario, and expected changes in technology and tastes.

Policy simulations generate timepaths showing expected developments in the structure of the economy as a result of lowering the TCF tariff and other industry assistance. Different ways of reducing assistance over time can be simulated. Policy analysis compares the baseline and policy simulations to assess the impact of the reduction in TCF assistance will have on the structure of the TCF industries and all other industries in the economy. The effects of assistance cuts on production, employment, investment, international trade, wages and returns to capital also can be assessed.

Regional analysis enables the impact of reductions in assistance on individual States within Australia to be assessed. A reduction in TCF assistance has differing impacts on States because they have different industrial structures, with some being more reliant than others on the TCF industries for employment and income. Conversely, other States are more reliant on non-TCF industries. A cut in TCF assistance may have adverse effects on States which are relatively dependent on TCF production but benefit other States.

M THE TCF INDUSTRIES, 1986-87 TO 1993-94

This appendix analyses the performance of the TCF industries between 1986-87 and 1993-94.[1] It represents the first stage of an economy-wide analysis of the impact of reducing tariff assistance to the industries using the MONASH model. The principles underlying the historical analysis are outlined in Appendix O.

This appendix is organised in three parts. The first part reviews data relating to the industries in 1986-87 and 1993-94. The second part explains how changes in technology, changes in consumer preferences and developments in the macroeconomy and international trade environment have affected the TCF industries. Part three is a summary of the findings.

M1 Observed changes between 1986-87 and 1993-94

Changes relating to the TCF industries are shown in Table M1. The sources of these data are described in Attachment M2.

Industry assistance

The price effect of tariff and quota assistance is measured by the nominal rate of assistance on output, which is calculated as the sum of the base duty rate and the tender premium of quotas.[2] Quota entitlements were tendered for at official quota sales. Like tariffs, the premiums paid for the rights to import added to the cost of importation.[3]

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1 See Attachment M1 for a list of industries covered in this study. The modelling is based on the four-digit input-output industrial classification. For presentation purposes, aggregated results are reported relating to three industry groups, namely textile, clothing, and footwear. The leather industry is excluded because of uncertainties surrounding the data relevant to this industry. A more detailed analysis can be found in Dixon, Parmenter and Rimmer (1997), Chapter 2.

2 For modelling purposes, the duty rates chargeable on free on board import prices are converted to a Cost Insurance Freight (CIF) price basis. For estimating the quota premiums, as most sale prices of quota were given in terms of dollars per unit of imports, the data are treated as specific tariffs and converted to *ad valorem* equivalents on the basis of average import prices. See IC (1995a, Appendix 3) for details.

3 The premiums paid for quotas represent a form of rent on imports, being transferred among industries and between industries and the government.

The level of tariff and quota assistance provided to the TCF industries decreased between 1986-87 and 1993-94, almost halving. These decreases were dominated by changes in the quota premiums rather than the tariff rates (Tables M1 and M2).

Table M1: Percentage Changes in the TCF industries, 1986-87 to 1993-94

Variable	*Textile*	*Clothing*	*Footwear*
	(%)	*(%)*	*(%)*
Trade assistance			
Nominal rate of assistance on output	-47.9	-40.0	-51.3
PSEs of bounties and import credit scheme[a]	-21.4	> 500[b]	> 500[b]
Sales			
Turnover of TCF industry	8.3	-19.4	-36.7
Total sales in Australia	5.2	5.2	12.7
Sales of domestic products in Australia	-3.2	-22.4	-41.1
Exports			
Volumes	48.2	368.5	252.2
Export prices (foreign currency)	10.3	14.5	25.9
Export prices (domestic currency)	14.6	18.8	30.1
Imports			
Volumes	17.6	107.9	105.0
Import prices (foreign currency, before duties)	3.4	1.7	-4.1
Import prices (domestic currency, before duties)	7.7	6.0	0.2
Import prices (domestic currency, after duties)[c]	-5.2	-9.5	-19.8
Input to production[d]			
Labour (hours worked)	-32.0	-36.7	-40.3

a Production bounties and import credits are expressed as producer subsidy equivalents (PSEs).
b The large percentage increase arises because the level of subsidies in 1986-87 was low (see Table M3).
c Includes the price effect of removing quotas.
d Changes in capital and intermediate inputs are not shown here because they are largely determined by the MONASH model.
Source: See Attachment M2

The tariff rates for TCF imports were raised between 1986-87 and 1991-92, followed by a program of reductions in assistance. Overall, the tariff reductions between 1986-87 and 1993-94 were relatively small (Table M2). Despite the

high tariff rates, the policy by-laws permitted the TCF industries to import some TCF materials duty free for use as inputs for further production.[4]

In contrast to the small net changes in TCF tariffs over the period, the premiums for TCF quotas peaked around 1990, then decreased considerably as the quota restrictions on TCF imports were eased. Quotas were eliminated entirely in February 1993, leading to a complete removal of the quota premiums.[5]

Table M2: Estimated nominal rates of assistance on output and scheduled tariff rates for selected TCF products, 1986-87 and 1993-94

	1986-87		*1993-94*	
Selected product	*Nominal rate*[a]	*Tariff rate*	*Nominal rate*[a]	*Tariff rate*
	(%)	*(%)*	*(%)*	*(%)*
Man-made fibre broadwoven fabrics	49	40	28	47 or 34[b]
Household textiles	36	0 – 40[c]	28	29
Knitting	62	50	37	47
Clothing	64	50	39	47
Footwear	64	40	31	37 or 29[d]

a The nominal rate of assistance is composed of the tariff rate and quota premium. This table shows the nominal rate as an average for the captioned product category. The tariff rate shown in this table is, however, the rate that applies to a majority, not necessarily all, of the imports within a category. Some products may be imported at different tariff rates or free of tariffs. As a result, the difference between the nominal rate and tariff rate for the same product category in this table reflects not only the quota premium but also the effect of averaging the nominal rate over different tariff classifications.

b Rates for bed linen, and fabric suitable for use as bed sheeting or in the making up of bed linen respectively.

c Different rates in three tariff classifications: 22.5 per cent, 40 per cent, and zero.

d Rates for finished footwear and parts for footwear respectively.

Source: IC (1995a) and IC (1992)

The TCF industries received other forms of assistance such as bounty payments and the Import Credit Scheme (ICS). Between 1986-87 and 1993-94, the producer subsidy equivalent (PSE) of these two assistance programs received by

4 The main beneficiaries of these commercial tariff concessions have been the clothing producers as they are the major users of imported textiles—roughly 50 per cent of textile imports entered duty free.

5 Annual reports for the IAC (1986a, 1987a) and IC (1992) contain detailed data on the quotas and tender sale premiums during these years.

the textile industry decreased.[6] In contrast, the corresponding PSEs for the clothing and footwear industries increased because of the Import Credit Scheme introduced in 1991. In total, the PSEs of these two assistance programs for all TCF industries are estimated to be $84 million in 1986-87 and $91 million in 1993-94 (Table M3).

Table M3: Producer subsidy equivalents of selected assistance programs, 1986-87 and 1993-94

Selected assistance program	*Year*	*Textile*	*Clothing*	*Footwear*	***Total***
	($m)	*($m)*	*($m)*	*($m)*	***($m)***
Import credit scheme	1986-87	..	..	..	**..**
	1993-94	43.9	18.6	5.1	**67.6**
Production bounties	1986-87	82.7	0.9	..	**83.6**
	1993-94	21.1	2.3	..	**23.4**
All of above	1986-87	82.7	0.9	..	**83.6**
	1993-94	65.0	20.9	5.1	**91.0**

.. nil.
Source: See Attachment M3.

Production and sales

In this appendix, 'production' refers to the TCF industries' turnover. Between 1986-87 and 1993-94, textile production rose by 8 per cent while production by the clothing and footwear industries fell by 19 and 37 per cent respectively (in real terms). The increase in textile production was mainly attributable to strong growth in wool scouring and cotton ginning activity.[7] Excluding these products, textile production fell by about 9 per cent.

One of the main factors affecting production by the TCF industries was the weak demand in domestic markets. Sales of TCF products in Australia (both imports and domestic products) increased by between 5 and 13 per cent. Total sales of TCF products in Australia increased by 6 per cent, less than the rise in real GDP over the same period (over 20 per cent).

6 The PSE is used in this study to summarise the value of assistance provided by the Import Credit Scheme and production bounties. See Attachment M3 for detailed estimates.

7 Over the period, production of cotton ginning is estimated to have increased by 95 per cent (in real terms) and production of wool scouring by 17 per cent.

In spite of higher total sales, the sales of domestically made TCF products in Australia declined by between 3 and 41 per cent. This implies that the market share of sales in Australia by domestic producers has decreased. Meanwhile, imports of clothing and footwear products more than doubled. Imports of textiles rose by 18 per cent over the same period.

Domestic producers increased their TCF exports significantly. Exports of textiles, footwear and clothing rose by 48, 252 and 369 per cent respectively. These increases in exports were mostly achieved on rather low levels in 1986-87. Even so, they contributed to a marked expansion of the share of exports in domestic production, from an average of 11 per cent in 1986-87 to over 19 per cent in 1993-94. The concurrent increases in exports and imports of these products, clothing and footwear in particular, reflected increasing product differentiation and specialisation in local and overseas markets.

Import and export prices

Basic prices of imports in Australian markets were affected by the c.i.f. foreign currency import prices, the exchange rate, and tariff rates.[8] Between 1986-87 and 1993-94, foreign currency prices of imported textile and clothing products increased by 3 and 2 per cent respectively. In contrast, the prices of imported footwear dropped by 4 per cent. Over the same period, the Australian dollar depreciated 4.3 per cent (on a trade weighted average). This reinforced the price rise for imports of textiles and clothing, and reversed the price decline for imports of footwear to a small price increase, after conversion into Australian dollars. However, the price increases for TCF imports were more than offset by the reductions in trade assistance, resulting in net decreases in the cost of importing TCF products.

Export prices rose considerably along with the large increases in export volumes mentioned earlier. This reflected a growing foreign demand for Australian exports of TCF products.

[8] The basic price of imports refer to the value paid by users to importers. It is the price that domestic producers are assumed to face when competing with imports. This price includes import duties but excludes other sales taxes and margin costs associated with delivery from the ports to domestic users, regardless of who initially pay for these costs and taxes. The incidence of margin costs and sales taxes differ between users, thus contributing to varying effects of changes in tariff rates on the purchasers' price. This point is elaborated in the text below when discussing the price effect of reducing trade assistance.

Inputs to production

Labour input (measured in terms of hours worked) decreased by more than 30 per cent in the TCF industries. This was indicative of the decline in employment in these industries, offset slightly by longer working hours of employed workers.[9]

Data on capital stocks are available only for broad industry groups defined at a two-digit ASIC level. The total capital stock of the TCF sector is estimated to have increased by around 9 per cent between 1986-87 and 1993-94.

M2 Factors contributing to changes in output

The previous discussion highlights that, between 1986-87 and 1993-94, the TCF industries have underwent many changes. Domestic sales grew slowly and demand switched from Australian-made products to imports. It is likely that this change in demand towards imports was partly induced by cheaper import prices resulting from changes in world markets and the reductions in trade assistance. However, the observed information is less revealing of other factors such as technical changes and developments in the macroeconomy, which may have played an important role in affecting the TCF industries.

To identify and estimate the major factors contributing to production changes in the TCF industries, a two-stage modelling process is used. In the first stage, changes in parameters representing various structural factors are computed. This is done in a way that reconciles the observed changes in a range of economic variables (such as production, employment, prices, imports, exports, etc) within the MONASH model representation of the economy. The model identifies five categories of structural changes, with each category involving several factors. The five categories are:

- assistance policy — the level of tariff and quota assistance, and other assistance programs that provide subsidies to the industries;
- demand preferences — shifts of preferences between commodities and between the source of supply (domestic and overseas);
- international trade environment — shifts in export demands and import supplies;

[9] The average weekly working hours of manufacturing workers increased by 3.5 per cent over the period (ABS 1997f).

- macroeconomy — growth in the number of households and aggregate employment, changes in the composition of aggregate expenditure and changes in industry-specific rates of return on capital; and
- production technology — changes in the use of capital, labour, and intermediate inputs in production and capital creation, as well as changes in the technical efficiency of these inputs.

In the second stage, the contributions of each of the identified factors to changes in TCF production between 1986-87 and 1993-94 are calculated. The estimates of these contributions are shown in Table M5. The contributions are interpreted as the partial effect of a particular factor assuming no changes in other factors. Details of the modelling are given in Appendix O of this report.

Assistance to the TCF industries

The MONASH model captures the impact of trade assistance policy in several ways. First, a tax variable based on the nominal rate of assistance is used to incorporate the price effect of lower tariffs and the removal of quotas. Second, the impact of by-laws is captured by adjusting the tax variable for the TCF industries with a factor that reflects the proportion of by-law imports in their total TCF imports. In effect, the TCF industries are modelled to experience smaller decreases in the TCF tariff rates than other users.[10] Third, the impact of the other two assistance programs — the ICS and production bounties — is captured through producer subsidies.[11] Fourth, it is recognised that reducing quota restrictions may increase demand for imported products because it increases the product variety available. This is partly captured in the model as a shift of demand preferences between imported and Australian made products. However, other non-price factors also influenced demand preferences.

[10] The treatment of by-laws assumes that most of the by-law imports are made by the TCF industries and that, on average, these industries import TCF products at lower average tariff rates than other industries and consumers. Little information is available about which other industries have benefited from the by-laws. However, the background and description of the by-laws suggest that the main beneficiaries are the TCF industries, particularly parts of the clothing and knitting mills industries. It is recognised that not all TCF producers are entitled to the same concessional import entry.

[11] The TCF industries benefit from the ICS by earning import credits, which are largely tradeable at full value. The treatment of these import credits as subsidies in the model thus accounts for the industries' ability to sell the credits if they do not intend to use them against any of their own import requirements.

Table M4: Contributions of structural factors to changes in TCF production, between 1986-87 and 1993-94

Structural factor	*Textile*	*Clothing*	*Footwear*
	(%)	*(%)*	*(%)*
Industry assistance			
Changes in assistance[a]	-6.1	-9.4	-17.9
Demand preferences			
Changes in pattern of consumer expenditure	-6.1	-12.7	-12.7
Changes in preferences of supply source	2.1	-8.6	-17.0
Trade environment			
Shifts in import demands and export supplies	1.3	-7.4	-16.9
Macroeconomy			
Growth of household number and employment	9.2	10.8	11.1
Changes in macro-composition of GDP	3.4	4.7	4.7
Changes in target rates of return	-6.7	-8.9	-3.0
Production technology			
Technical changes in the use of inputs	11.2	10.3	7.8
Total contributions[b]	**8.3**	**-21.1**	**-44.0**

Note: Figures in this table indicate the change in production as a percentage of the average production value in 1986-87 and 1993-94. They are not like the usual expression of a percentage change, as used elsewhere in this report, which relates the change to the initial value in 1986-87. The mid-point calculation of these percentage changes arises from the use of mid-point impact elasticity in the MONASH model in an attempt to minimise linearisation errors when estimating the contributions of individual structural factors. This procedure works on the principle of the mean-value theorem, as described in Chiang (1987). See Dixon, Parmenter and Rimmer (1997, Chapter 1) for its application in the context of the MONASH model.

a Changes in assitance include the combined changes of nominal rates of assitance and the PSEs of production bounties and the ICS.

b Total contributions of all structural factors appear to differ slightly from the observed changes in production shown in Table M1, mainly reflecting the two different ways of expressing the changes in percentage terms, as explained in footnote (a) of this table. Also relevant but of secondary significance is the remaining linearisation errors. Shift variables representing the structural factors in the model are derived jointly in one simulation. The contributions of individual factors are estimated, however, assuming no changes in other factors. Therefore, the estimated contributions may not include all of the interacting effects between the structural factors, hence the small linearisation errors.

Source: MONASH simulations

The model does not distinguish the effect of quota restrictions in reshaping demand preferences from that of other non-price factors. Therefore, the estimated output changes (in Table M5) attributable to reductions of the nominal rates of assistance and PSEs may represent only part of the impact of

the assistance policy. These estimates need to be interpreted in conjunction with the contributions due to shifts in preferences for the supply source.

Reducing trade assistance contributed a 6 to 18 percentage point decrease in the observed decreases in production of the TCF industries between 1986-87 and 1993-94.

The effects of reducing tariff and quota assistance outweighed the effects of changes in the bounty payments and ICS. Lower tariff and quota assistance would have reduced the basic prices of imports even if their c.i.f. prices in world markets had not changed. Given the reductions in tariffs and quota premiums between 1986-87 and 1993-94, the duty-paid basic prices of textile, clothing, and footwear imports fell by 13, 16 and 20 per cent respectively.[12]

The clothing industry experienced a smaller percentage reduction in tariff and quota assistance than the textile industry — but the reduction in the price of clothing imports was larger because the 1986-87 level of assistance to the clothing industry was higher relative to that for the textile industry. The price effect on footwear imports was largest, both because this industry experienced the largest percentage reduction in tariff and quota assistance and because its level of assistance in 1986-87 was higher than that for the other two industries. As higher import prices fed through to local sales, the prices faced by purchasers of TCF imports declined, but by less than the figures shown for the basic prices. The reason is that purchasers' prices include other mark-up costs related to retail, wholesale and transport services that are not likely to be affected by changes in assistance to the TCF industries.[13]

The resulting decreases in purchasers' prices of TCF imports induced domestic demand to switch from local products to imports. The model uses the Armington elasticity to specify the propensity of purchasers to switch between the supply sources (domestic and imports) in response to a relative change in purchasers' prices of domestic and imported products. Higher values of the substitution elasticity are assumed for footwear and clothing than for most

[12] These figures are the differences between the changes in import prices before and after payment of duties and quota premiums as shown in Table M1.

[13] On average, these mark-ups amounted to 90 per cent of the basic values of the TCF imports used for consumption and 25 per cent of those used for production. As a direct consequence of the reductions in tariff and quota assistance, the decrease in retail prices paid by consumers would be only about half (that is $1 \div (1+0.90)$) of that in basic import prices. The corresponding fraction of the price decrease in local sales for industrial buyers would be in the order of 80 per cent (that is $1 \div (1+0.25)$) of that in basic import prices.

textile products.[14] This assumption, coupled with the differing price effects of assistance reductions, explains the larger decreases in footwear and clothing production than in textile production.

As a major recipient of duty-free concessions on imports of textile yarns, the clothing industry derived less benefit from the lower tariff rates on textile imports than other users who paid full tariffs. Therefore the reductions in tariff assistance increased import competition for the clothing industry without simultaneously lowering its cost of importing textile materials. This also contributed to the relatively larger decrease reported for clothing production.

Changes in bounties and subsidies from the ICS had a small impact on TCF production, because the levels of assistance were low in comparison to the industries' total production cost.[15]

Demand preferences

In the MONASH model, shifts in demand preferences explain those changes in commodity demands that cannot be accounted for by price movements and changes in aggregate consumption and production activity. Two types of shift variables are used in the study. The first type is related to the pattern of consumer expenditure on different commodities. The second type deals with purchasers' choice of the origin (domestic or import) of a commodity.[16]

The model estimates that consumer preferences have shifted away from TCF products.[17] That is, for the same relative prices and level of household income, consumer demand for these products would have been lower.[18] As a result,

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[14] The assumed Armington elasticity of domestic/import substitution is largest for footwear, knitting mills products, cotton yarns and synthetic fibres (at 7), followed by clothing (between 4.2 and 6.8), and other textile products (between 2 and 4). It is smallest for wool scouring and cotton ginning products (at 0.6). For a specific commodity, consumer demand is generally more price-sensitive than industry demand. See Appendix P for further discussion of Armington elasticities.

[15] In 1986-87, the PSE value of bounty payments and import credits for the textile industry was 2 per cent of its production cost. The corresponding PSE value for the clothing and footwear industries was insignificant compared to their production cost.

[16] See Appendix O for details.

[17] Consumer preferences have grown in favour of motor vehicles and services (like travelling, restaurant eating and entertainment) at the expense of tobacco, alcoholic beverages and housing, as well as clothing and footwear.

[18] This is consistent with ABS data which show that household spending on clothing, footwear, carpets, bed linen and other household textiles, as a proportion of total expenditure, diminished from 6.4 per cent in 1984 to 6.1 per cent in 1988-89, and further

domestic sales grew slowly for both importers and local producers. This directly affected the clothing and footwear industries as most of their products were sold to consumers. The textile industry was also affected by the shift of consumer preferences away from household textile products. Sales of intermediate TCF products were indirectly affected by the reduced growth in sales of final goods by the industries. These changes in consumer preferences led to a reduction in TCF production of between 6 and 13 per cent.

Observed changes in the market shares of domestic and imported TCF products cannot be fully explained by movements of relative prices. The model attributes such unexplained changes in market shares to shifts in demand preferences for the supply source. For a given level of demand and relative prices, preferences are found to have grown in favour of imports for knitting, clothing and footwear products. These preference shifts reflected the influence of several non-price factors. For many clothing and footwear products that used to be subject to quota restrictions on imports in early years (see Table M2), the diminishing effect of the quota restrictions was a likely prime factor. As the quotas were removed, a greater variety of overseas products were able to gain access to markets in Australia. Purchasers were increasingly attracted to the more diverse features and comprehensive ranges of imported products.[19] The clothing and footwear industries were particularly affected, partly because these two industries experienced larger reductions of quota assistance between 1986-87 and 1993-94 and partly due to the greater importance of product differentiation in these goods. A growing appetite of consumers in Australia for brand-name fashion and footwear was a possible explanation for the shift in demand towards imports. Also, local companies relocating part or all of their production activity abroad while continuing to sell their products in Australia contributed to higher import penetration in domestic sales.

down to 5.2 per cent by 1993-94 (ABS, various years, *Household Expenditure Survey, Australia: Detailed Expenditure Items*, Catalogue no. 6535.0, AGPS, Canberra).

[19] The liberalisation of quota restrictions may have given rise to another effect that is captured by the model in a different way. This was related to a switch in imports from high value items to more affordable ones, which occurred since the quotas of many TCF imports were specified in quantity terms. Such change in the import composition lowered the average price of the imported items. To the extent that an increase in import volumes accompanied a decrease in average import prices, the model represents this compositional change in imports as a response to lower import prices, rather than as a shift in demand preferences. Nevertheless, part of the increases in imports that cannot be adequately explained in the model by price changes would still be captured as a non-price effect.

For some textile products, purchasers exhibited increased preferences for Australian made textiles. This was possibly related to users' requirements of specialty products.[20]

For non-TCF products, demand preferences are found to have generally shifted in favour of imports. In estimating the contributions of this factor, the model assumes that the balance of trade is held constant. The increase in imports associated with the preference changes, therefore, led to a real devaluation (an increase in competitiveness mainly through a decline in real wages) that helped exports and deterred imports, hence offsetting part of the decline in clothing and footwear production and reinforcing the increase in textile production.[21]

Taking the direct and indirect effects together, changes in preferences for the supply source contributed a 2 per cent increase in textile production, but decreases of 9 and 17 per cent in clothing and footwear production respectively.

[20] Alternately, this may indicate that the values of the Armington elasticity used in the model are larger than they should have been. The decomposition of demand into the effects of price changes and preference changes is critically contingent on the assumed values of the Armington elasticity. The finding of increased preferences towards domestic supply of some textile products may reflect an over-estimation of the elasticity for these commodities. If smaller values of the substitution elasticity were assumed in the model, this factor would be estimated to have less positive (or even negative) contributions to changes in production by the textile industry — but the contributions from changes in trade policy would have been smaller.

[21] Real devaluation means that domestic output prices (including export prices) decline relative to world prices (as measured by basic import prices in Australian dollars). The preference shifts towards imported products increased the demand for imports, raising the balance of trade deficit above its 1986-87 level. Assuming that the balance of trade is independent of changes in trade policy, two forces take effect in the model to restore the trade balance to its 1986-87 level. The first force is to increase export volumes through real devaluation. Reflecting this, domestic production costs declined, mainly through a fall in real wages. Export prices fell along with domestic production costs. Export volumes thus increased, given the downwards sloping export demands used in the model. The second force is to wind back part of the initial increase in import demand by increasing import prices. Foreign currency import prices were exogenous; but the import prices in Australian dollars were adjusted upwards through a depreciation of the nominal exchange rate. In consequence, imports still increased, but by a lesser amount than initially. In the course of adjustment, the terms of trade (that is the average ratio of export prices to import prices in Australian dollars) declined.

Trade environment

While local costs rose rapidly, the cost of TCF imports changed little between 1986-87 and 1993-94 (see Table M1). Domestic producers thus faced increased pressures from import competition.

On the other hand, exports of wool scouring and cotton ginning products increased dramatically in spite of increased production costs. This reflected a stronger export demand for these products. All TCF industries participated in the rapid export growth experienced by most manufacturing industries between 1986-87 and 1993-94. However, the increases in TCF exports started from relatively small bases, except for wool scouring and cotton ginning. These increases in exports were largely accounted for by non-price factors that are captured in the model as shifts in export demands for Australian made TCF products.[22]

In summary, the shifts in import supplies dominated the shifts in export demands. The net contributions of changes in international trading conditions were an increase of one per cent in textile production, and decreases of 7 and 17 per cent in clothing and footwear production respectively.[23]

Macroeconomy

The TCF industries were favoured by changes in the size and structure of the economy. A major positive influence arose from an expansion of the economy. This is represented in the model by an increase in both the number of households and aggregate employment of just below 10 per cent between 1986-87 and 1993-94. Expansion of the economy contributed increases of 9 per cent in textile production and 11 per cent in both clothing and footwear production.[24]

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[22] The share of exports in wool scouring and cotton ginning production was about 70 per cent in 1986-87. The share of exports in other TCF production was 5 per cent at most.

[23] The small positive increase in textile production masked some wide variations among the component industries. For instance, production of wool scouring and cotton ginning increased 15 per cent due to this factor while production of synthetic fibres and cotton yarns dropped by 14 and 16 per cent respectively. The latter two industries were significantly disadvantaged by shifts in import supplies, given high import penetration and assumed high domestic/import substitutability for their products.

[24] Due to this factor, production of most TCF products rose faster than the growth of real GDP (9.6 per cent) because of the effect of real devaluation. As imports increased along with expansion of the economy, real devaluation occurred as prices adjusted to restore the balance of payment to its initial position (similar to the adjustment described in

Another positive influence originated from the changing composition of GDP, which showed the balance of trade moving towards surplus and an increase in the share of consumption relative to investment in domestic absorption.[25] From the TCF industries' point of view, the most important aspect of these changes was the faster growth of private consumption than investment. This shift of demand away from capital goods towards consumer goods favoured the TCF industries as they were directly or indirectly involved in production of consumer goods.

Further, a decrease in the share of domestic absorption in GDP dampened domestic sales (including imports) but favoured export production. Industries affected by weaker domestic sales tended to be more labour intensive (the services sector as an example) than export-oriented industries (such as mining). As a result, the aggregate demand for labour was reduced and real wages fell.[26] The rental cost of capital also declined as investment demand weakened. Decreases in these costs of production provided an additional stimulus to export industries. For import-competing industries, including most of the TCF industries, lower costs helped offset part of the adverse influence of weaker domestic sales by improving their competitive position against imports. In sum, these structural changes added 3 to 5 percentage points to the growth of TCF production.[27]

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footnote 21 above). This helped the TCF industries by restraining the inflow of competing imports. Although real devaluation also favoured export production, the increase in wool scouring and cotton ginning production was considerably less than the overall expansion of the economy because this industry relied heavily on agricultural inputs which were constrained by the model-assumed fixity of agricultural land. As a consequence, textile production as a whole increased at a slower rate than that of clothing and footwear.

[25] In notation, $GDP = C + G + I + (X - M)$, where the variables on the right hand side of the equation denote private consumption, government consumption, investment, exports and imports respectively. It follows that $1 = (C + G + I)/GDP + (X - M)/GDP$, where the two ratio terms on the right are the proportions of domestic absorption and net exports in GDP respectively. Accordingly, a movement towards trade surplus implies a reduction in the share of domestic absorption in GDP, ignoring the effect of changing prices of traded goods on export and import values.

[26] This follows from the model assumption that real wages adjust to maintain aggregate employment unchanged.

[27] These structural changes affected the distribution of domestic and export demands among industries rather than the size of the economy. Nevertheless, this factor contributed to some growth in real GDP through a real revaluation, making imported goods less expensive in Australian dollar terms. As a significant proportion of capital goods were imported, prices of capital goods were lowered relative to domestic output prices. Capital

Rates of return on capital for the TCF industries were lower than the economy-wide average in 1986-87. In the MONASH historical simulation, it is assumed that these rates would not be sustainable in the long run and, therefore, would be adjusted upwards over the period. This raised the cost of production in these industries and had a negative impact on production. The higher cost of capital to the TCF industries reduced their production by between 3 and 9 per cent.

Production technology

The MONASH model attributes changes in the usage of inputs — land, labour, capital and intermediate inputs — primarily to changes in production and relative prices. However, these variables cannot explain all of the observed input changes within the modelling framework. Any unexplained changes in the usage of inputs are modelled as changes in production techniques, which alter the input mix for a given level of production and relative prices. These technical changes are found to result mostly in lower average costs of production and hence higher factor productivity. The model does not explain the causes of the observed changes in the input-output relationship. Some of the technical changes may be linked to increased incentive for industries to improve their productivity in the face of greater competition as trade assistance was reduced.[28] It may also reflect changes in the firm and product composition within these industries.

While production declined in the footwear, clothing and most textile industries, the estimated total amount of inputs used by these industries (after adjustment for changes in factor prices) declined at a faster rate than output. This suggests a strong improvement in their total factor productivity over the period. In the wool yarns industry, however, production contracted faster than inputs.[29]

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stocks thus increased, supporting a 1.2 per cent expansion of real GDP and consequently adding output growth across all industries.

[28] In the case of reducing assistance to the TCF industries, the adverse impact on TCF production analysed above would be partly mitigated by the induced improvement in their production techniques.

[29] Such change in the input-output relationship appears as a 'technical regress' for the wool yarns industry. This is possible, if not readily conceivable. Plausible explanations include data problems and changes in the composition of the industry. Over the period covered by the historical analysis, industry classification changed from ASIC to ANZSIC; this might have led to inconsistent classification of the industry in 1986-87 and 1993-94. The second possibility is that the composition of the industry shifted over the period toward activities that required a higher ratio of inputs to outputs.

Technical changes elsewhere in the economy affected the TCF industries indirectly. For instance, productivity improvements in the transport, retail and finance sectors helped reduce the costs of distribution from factory to retailers. Relatively rapid technological advances in agriculture lowered the costs of the major inputs to wool scouring and cotton ginning, significantly reducing the cost of production for this industry.

Productivity improvements in the economy as a whole resulted in wage increases for workers in all industries.[30] Real wages tended to rise in line with the average increase in labour productivity. Industries that experienced relatively rapid productivity improvements were able to absorb the additional labour cost arising from the wage increases. These industries (including most TCF industries) thus expanded their production while benefiting from the economy-wide productivity improvements.

However, the consequence of a real revaluation that accompanied these technical changes had mixed effects on the TCF industries. Technical changes that occurred between 1986-87 and 1993-94 led to increases in both exports and imports. Productivity improvements were largest in the exporting agriculture and mining sectors, reducing costs in these industries. This encouraged export growth. Changes in production techniques requiring an increased usage of high-tech inputs such as computers, communication equipment, and scientific equipment stimulated imports as the latter goods have been imported to a high degree. The net impact on the external trade account was a movement towards surplus as the impact on export growth exceeded that on import growth. In the course of adjustment to restore the balance of trade position, real revaluation occurred, with real wages and domestic output prices rising and the nominal exchange rate appreciating.[31] This dampened TCF exports and, more important, assisted the access of competing imports in Australian markets by lowering their prices in Australian dollar terms.

In sum, TCF production increased by 8 to 11 per cent between 1986-87 and 1993-94 because of technical changes in the TCF industries and the rest of the economy.

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30 While the model does not attribute such productivity improvements to any specific origins, some of the technical changes modelled would be stemming from improved production techniques induced by programs of micro-economic reform.

31 The adjustment associated with a real revaluation is similar, yet in an opposite direction, to that described in footnote 21 above.

M3 Summary

The historical analysis shows that, between 1986-87 and 1993-94, many factors influenced the performance of the TCF industries. Reductions in trade assistance was an important determinant, but by no means the only major factor responsible for the general contraction of TCF production. Changes in trade assistance had the greatest significance for the clothing and footwear industries.

Changes in demand preferences against TCF products and against Australian made TCF products also adversely influenced domestic TCF production. As markets in Australia have been opened up to foreign suppliers, developments in world markets have become a more relevant factor in influencing domestic production. However, like many other industries, the TCF industries have benefited from economic growth and productivity gains in the economy over the period between 1986-87 and 1993-94.

Attachment M1 Sector composition

The grouping of the TCF industries into three broad sectors is as follows, where the numbers in the first column are the Input-Output Industry Classification (IOIC) codes:[32]

IOIC code	MONASH industry	ABS's industry description
Textile:		
2301	Wool scouring, etc.	Cotton ginning, wool scouring and top making
2302	Synthetics	Man-made fibres, yarns and broadwoven fabrics
2303	Cotton yarns	Cotton yarns, broadwoven fabrics, narrow woven, elastic and household textiles
2304	Wool yarns	Worsted and woollen yarns and broadwoven fabrics
2305	Textile finishing	Textile finishing
2306	Carpets	Textile floor coverings, felt and felt products
2307	Canvas	Textile products not elsewhere classified
Clothing:		
2401	Knitting mills	Knitting mills
2402	Clothing	Clothing
Footwear:		
2403	Footwear	Footwear

[32] This classification is based on the 1983 version of ASIC, (see ABS 1985, *Australian Standard Industrial Classification 1983*, Catalogue no. 1201.0, AGPS, Canberra).

Attachment M2 Data sources

In updating the 1986-87 input-output table to 1993-94, data from a wide variety of sources are used. These data are used to calculate the percentage changes between the two years in key variables such as industry production and employment, import and export volumes and prices, and measures of assistance. They are collected from the following sources.

Production

Production is based on unpublished ABS data on real gross product at factor cost as recorded by the *Manufacturing Industry Survey* (MIS) (ABS Cat. No. 8221.0). Gross product at factor cost represents the value added by primary inputs in the production process. ABS extrapolates a base year estimate of gross product using data on turnover at constant prices. As a result, the related growth rate approximates the change in turnover in real terms.

Labour

Hours worked are based on ABS data of employed persons recorded by the MIS (ABS Cat. No. 8221.0) and average hours worked per employee recorded by the *Labour Force Survey* (LFS) (ABS Cat. No. 6203.0). The use of employment data from the MIS follows ABS's comment that this would ensure greater consistency between the estimates of industry employment and output, which is particularly important for measuring productivity (ABS 1990a, para. 23.15). These employment data, however, do not account for home-based outworkers. Outworkers are more likely to be covered by the LFS. However, since the LFS is a household survey and not a workplace survey, it does not accurately collect employment data at the required level of industry disaggregation. Moreover, its coverage of outworkers is loose and, as a result, the survey is not well designed to gauge the changes in their number over time (ABS, personal communication). For these reasons, this study uses employment data of the MIS instead of the LFS. Nevertheless, to adjust employment for hours worked, an estimated 3.5 per cent increase in the average weekly working hours of manufacturing workers is drawn from the LFS.

Capital

Commission estimates for broad industry groups defined at a two-digit ASIC level. The MONASH model is used to allocate the given total increase in capital stocks to individual industries on the basis of changes in their output, factor prices and assumptions about production technology.

Household consumption

Based on unpublished National Accounts data on household expenditure in 38 categories of goods and services. These data are re-classified into 115 MONASH commodities using an unpublished concordance matrix.

Export and import volumes

Changes in nominal value are estimated using input-output tables (ABS Cat. No. 5215.0) for the period 1986-87 to 1992-93 and from unpublished ABS trade data for the period 1992-93 to 1993-94. Changes in deflators are based on related price data contained in the MONASH model database (see below).

Export and import prices

Export/import prices in domestic currency are based on unpublished ABS data on merchandise export/import deflators for four-digit commodity groups. These estimates are adjusted for a depreciation of the Australian dollar (4.3 per cent in trade weighted terms) to express trade prices in foreign currency terms.

Producer subsidy equivalents of ICS and production bounties

Commission estimates based on Australian Customs Service's (ACS 1996b) data for estimating bounty payments and import credits.

Nominal rate of assistance on output

Drawn from IC (1995a). The estimates incorporate the effects of tariff and quota assistance, using data on customs duty rates and tender premiums of quotas in official quota sales. For assistance measurement purposes, the customs duty rates are adjusted to exclude excise taxes as the latter are not discriminatory between domestic and imported products. Further, the duty rates chargeable on free on board import prices are converted to a cost, insurance and freight price basis. For estimating the quota premiums, as most sale prices of quota were given in terms of dollars per unit of imports, the data are treated as specific tariffs and converted to *ad valorem* equivalents on the basis of average import prices.

Attachment M3 Estimated producer subsidy equivalents for ICS and production bounties

In the Monash model, producer subsidy equivalents (PSEs) are used to summarise the combined effect of:

- the import credit scheme (ICS); and
- production bounties for textile yarns, bed sheeting and printed fabrics.

The table below shows the estimates of PSEs for assistance provided to the TCF industries in 1986-87 and 1993-94 through the ICS and production bounties.[33] The total figures represent the sum of these two forms of assistance. In the MONASH model, only the ICS and production bounties are modelled as producer subsidies — the effect of by-laws is captured through reduced tariff rates for industries that are assumed to benefit from the by-laws.[34]

The PSE estimates for the ICS and production bounties form the basis for deriving the related subsidy variables for use in the model. The estimates of import credits and bounty payments are drawn from the Australian Customs Service's data (ACS 1996b). In particular, the estimates for the ICS are derived from import credits granted to TCF companies. These import credits are often traded at their full value, making a company to which the credits are granted a beneficiary of this program even though it might not actually use the credits against any of its own imports.

The total value of PSEs for ICS and production bounties increased from $84 million in 1986-87 to $91 million in 1993-94, representing an increase of 9 per cent over the period.[35] Production bounties declined by 72 per cent. This was compensated for by increased assistance through the ICS introduced in 1991. Combined assistance in these forms to most textile industries was reduced over the period, while the clothing and footwear industries increasingly benefited from the ICS.

The PSE estimates shown in the table depended on several factors:

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[33] These PSE estimates do not account for all assistance provided to the TCF industries, but just the programs listed.

[34] See footnote 10 above.

[35] In comparison, the by-laws play a more significant role than the ICS and production bounties in assisting the TCF industries. The estimated PSEs for import concessions amounted to around $370 million in 1986-87 and $280 million in 1993-94.

- the available assistance programs (for example, the ICS was not available in 1986-87), the tariff rates and bounty rates, and the basis for calculating bounty payments; and
- the level of output, which affected the industries' access to bounties (for instance, bounty payments decreased as local production contracted in most of these industries).

Table M5: Estimated PSEs for ICS and production bounties, 1986-87 and 1993-94

Industry	*Production bounties*	*Import Credit Scheme*[b]	***Total***
	($m)	*($m)*	***($m)***
1986-87			
Synthetics	32.98	..	**32.98**
Cotton yarns	32.98	..	**32.98**
Wool yarns	16.49	..	**16.49**
Textile finishing	0.22	..	**0.22**
Carpets	..	..	**..**
Canvas	..	..	**..**
Knitting mills	0.06	..	**0.06**
Clothing	0.89	..	**0.89**
Footwear	..	..	**..**
All of above	**83.63**	..	**83.63**
1993-94			
Synthetics	8.39	18.22	**26.61**
Cotton yarns	8.39	16.61	**25.00**
Wool yarns	4.20	4.20	**8.40**
Textile finishing	0.13	4.85	**4.99**
Carpets	..	..	**..**
Canvas	..	..	**..**
Knitting mills	1.77	..	**1.77**
Clothing	0.54	18.60	**19.14**
Footwear	..	5.11	**5.11**
All of above	**23.42**	**67.60**	**91.02**

.. Nil.

Note: PSE estimates shown in this table do not account for all forms of assistance, just the programs listed.

b The Import Credit Scheme (ICS) was introduced in 1991.

Sources: Commission estimates; see Attachment M2.

N THE ECONOMY-WIDE EFFECTS OF REDUCING TARIFFS

This appendix analyses the economy-wide impact of reductions in government assistance to the TCF industries using the MONASH computable general equilibrium model.[1] As is the case with all models, the results of the MONASH model are influenced by the data and behaviour incorporated in the model and assumptions made about different aspects of the economy. The effect of these assumptions should be borne in mind when interpreting the results of any model, especially quantitative models.

The analysis evaluates the Commission's preferred option (option 1, see Chapter 11) that is, the gradual reduction in tariffs on TCF products from between 25 and 5 per cent in 2000-01 to a uniform rate of 5 per cent by the year 2008-09. The entire period of the analysis is from 1996-97 to 2013-14 (to allow for most adjustments and changes to have taken place) and consists of two scenarios (the basecase and policy scenario).

The basecase scenario freezes TCF tariffs at their 2000-01 levels until 2013-14. In 2000-01, tariffs are scheduled to be 25 per cent (clothing and other finished textiles) and 15 per cent (footwear and fabrics). In the policy scenario, TCF tariffs are reduced to 5 per cent by the year 2008-09. By 2013-14, the gain in terms of real consumption from reducing tariffs from their 2000-01 levels to 5 per cent by 2008-09 is 0.036 per cent. This would be equivalent in 1996-97 to $100 million per year in additional consumption.[2]

Assuming TCF tariffs are maintained at their 2000-01 levels, employment in the TCF industries is projected to fall by 27 per cent to approximately 73 000 jobs

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[1] The MONASH model is described in Appendix O. The ten TCF industries in the MONASH model are described in Attachment M1 of Appendix M.

[2] A separate simulation has been run to mimic option 2 (see Chapter 11) reductions. Under this option, tariff protection on yarns is assumed to be abolished on 1 July 2001 and the affected industries are compensated by bounty payments. The results of this simulation are very close to those obtained for the first option analysed in the present simulation. In particular, both simulations point to the same aggregate impact in terms of the long-term gains in real GDP and consumption. Nevertheless, industries using imported yarns (such as the clothing, knitting mills, canvas and carpets industries) would be slightly better off with the option of zero tariffs on yarns. Given the similar simulation results for these two options, this appendix will report only the results obtained for reducing assistance as recommended in the first option.

(using labour force survey data) by 2013-14, mainly through technological changes. The reduction in tariffs to 5 per cent is projected to reduce employment in the industry by an additional 8.7 per cent or 6000 jobs. The stimulus to other sectors of the Australian economy is projected to result in increased employment in the short term and increased real wages in the long term.

There are many reasons why the likely gains may be greater than those reported. For example it is assumed here that in the long run there is no net increase in employment as a result of reducing the tariff. This is because gains in the labour market are assumed to be converted into higher real wages. If the increases in real wages in the economy were slightly lower, employment gains and the gains from reducing assistance would be larger.

As another example, it is assumed that there are no improvements in industry productivity attributable to the reduction in the tariff.[3] Such improvements would also increase the measured gains from reducing the tariff.

The Commission has deliberately chosen conservative assumptions so as not to overstate the gains from reducing assistance. These assumptions concern trends in consumer preferences, terms of trade effects, and improvements in the TCF industry's cost efficiency that may be stimulated by reducing the tariff. The implications of these assumptions are discussed in further detail in Appendix P.

In the remainder of this appendix, the basecase (against which the changes to the tariff are compared) is described, the simulated policy scenario is outlined and the results of the policy scenario presented.

N1 Basecase scenario for the economy

The basecase scenario provides a picture of how TCF industries and the rest of the economy are likely to develop over the period 1996-97 to 2013-14 without further reductions in assistance to TCF industries after 2000-01. This picture provides a basecase against which the impact of additional changes in assistance can be assessed. The basecase scenario incorporates assumptions regarding key macroeconomic variables, international commodity prices, changes in consumer

[3] However, as tariffs decrease, less productive firms tend to close first, resulting in apparent increased productivity in the industry even though there may not have been any changes in technology. Similarly, an industry may appear to become more capital intensive as less capital intensive parts of it disappear. This can occur without any changes in technology, just by increasing the relative share of existing capital intensive technology in the industry.

preferences and technology and many other factors.[4] In the basecase scenario, tariff policy for any industry is assumed not to change beyond 2000-01. The combination of all the assumptions made determine the projected growth and structure of the economy, the demand for goods and services, and the output and employment of industries for each year during the period 1996-97 to 2013-14.

The Commission's macroeconomic assumptions are explained below. Also explained are the assumptions made about changes in technology, tastes and the four key factors determining TCF output.

Macroeconomic assumptions, 1996-97 to 2013-14

Macroeconomic assumptions which influence the structure of the economy include changes in investment, real consumption, and the level of foreign trade. Selected aspects of the basecase describing the macroeconomy are outlined in Table N1.

Over the period 1996-97 to 2013-14, real GDP is assumed to grow at an average annual rate of 3.3 per cent. This is based on an average annual growth in employment and capital of around 2 per cent and a growth in productivity of around 1.5 per cent. This rate of GDP growth is higher than for the historical period (1986-87 to 1993-94), in line with better recent performance of the economy and forecasts to the year 2003.[5]

The composition of GDP is assumed to change, with investment increasing its share of GDP, mainly at the expense of government expenditure. Exports and imports are also assumed to grow faster than GDP. Traditional exports (agricultural and mining products) increase relatively slowly compared to overall exports. This means that exports of non-traditional manufactured products increase relatively quickly.

The Australian economy is assumed to maintain its overall competitiveness, as indicated by the lack of change in the real exchange rate. This means that Australian prices (measured by the GDP deflator) increase at the same rate as the import price index.

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4 For further explanation, see Appendix O.

5 See Appendix M for a detailed discussion of changes in macroeconomic conditions and their influence on the TCF sector.

Table N1: Growth in macroeconomic variables, 1986-87 to 1993-94 and 1996-97 to 2013-14

Macro variables	*Annual changes*[a]	
	History: 1986-87 to 1993-94	*Basecase: 1996-97 to 2013-14*
	(%)	*(%)*
Real GDP	2.7	3.3
Real investment	0.7	3.7
Real consumption	3.1	3.2
CIF price of imports[b]	1.3	3.2
Price deflator for GDP	4.1	3.2
Real exchange rate	2.7	0.0
Import volumes	6.8	6.4
Export volumes	7.2	7.1
Non-traditional export volumes	11.3	8.5

a Average annual percentage changes.
b Cost, insurance and freight (CIF) prices are expressed in Australian dollars.
c Non-traditional exports exclude agricultural and mining exports.
Source: Commission estimates based on various sources; see Appendices M and O

Basecase projections for TCF production and employment

The output of TCF industries is dependent on the demand for their products and the competition they face from imports. The projected demand faced by TCF industries depends on assumptions about:

- growth in export demand;
- growth in consumer demand;
- growth in industries using TCF products; and
- competition from imports.

Assumptions about future prospects for TCF industries have been informed by analysis of their past performance (including the historical analysis in Appendix M), industry visits, public hearings, submissions and correspondence with industry experts.

Exports

Table N2 shows export growth rates assumed for the period 1996-97 to 2013-14. Export growth for textiles is higher than for clothing and footwear. Export growth for most TCF products in the basecase is lower than in history to account for the end of the ICS and low forecast growth in world TCF prices, which are assumed to limit Australian TCF industries export growth potential.[6]

Table N2: TCF export volume 1996-97 to 2013-14

MONASH commodity	*Annual changes*[a]	
	History: 1986-87 to 1993-94	*Basecase: 1996-97 to 2013-14*
	(%)	*(%)*
Wool scouring, etc.	4.3	1.2
Synthetics	16.7	9.5
Cotton yarns	21.3	5.0
Wool yarns	14.8	2.5
Textile finishing	26.9	11.8
Carpets	3.5	5.6
Canvas	21.9	11.0
Knitting mills	32.3	7.3
Clothing	22.7	5.0
Footwear	19.7	0.0

a Average annual percentage changes.

Source: Commission estimates based on various sources; see Appendices M and O

Other demands for TCF products

Based on macroeconomic forecasts, aggregate consumer demand is assumed to grow by an average of 3.2 per cent per year over the period 1996-97 to 2013-14. This is higher than the historical period. However, consumer demand for clothing and footwear is assumed to grow at a slower rate than aggregate consumption, following historical patterns which indicate a shift in consumer preferences against TCF products. In spite of relatively fast export growth, the growth of textile production is also less than the growth in aggregate

[6] However, some benefits from the ICS are assumed to continue beyond its scheduled conclusion These benefits are mainly in the form of business contacts abroad and knowledge accumulated by Australian companies about trading in foreign markets. This accounts for part of the growth assumed for textiles and clothing exports.

consumption. This is because textile industries are largely dependent on sales to the clothing industry which is growing slowly relative to the rest of the economy.

Demand for TCF products by other industries depends on how these industries fare in the basecase scenario. Growth prospects of other industries using TCF inputs are largely determined by macroeconomic assumptions and inter-industry linkages embodied in the model.

Imports

The pressure of TCF imports on the industry depends on world TCF prices, the exchange rate and tariff levels.

The historical analysis suggests that reductions in the Australian dollar price of TCF imports had a strong detrimental effect on domestic production. The *basic price of imports*[7] fell in the historical period because the price reducing effects of quota abolition and tariff reductions more than offset the price raising effects of the depreciation in the Australian dollar and the mixed movements in the world price of TCF goods (measured in foreign currency).[8] The basecase projects that basic prices of imported TCF products will continue to fall, but at a decreased rate. This is because the price reducing effect of abolishing quotas is not present in the basecase scenario as it was in the historical period.

The projected fall in basic prices is explained by movements in the world price of TCF commodities (measured in foreign currency), changes in tariff rates and movements in the nominal exchange rate (measured as units of foreign currency per Australian dollar).

In the basecase, world prices of imported TCF products are assumed not to increase until 2004-05 (the projected end of export restraints inherited from the Multifibre Arrangement). After that time, the world price of TCF imports (CIF value in foreign currency) is assumed to grow about 1 per cent per year. Tariffs are modelled to fall according to the scheduled rates until the year 2000. As a result, this is in contrast to the macroeconomic assumptions for the economy as a whole — that is, the TCF industries are assumed not to maintain their competitiveness relative to world prices. After 2000-01, the basecase assumes that tariffs are maintained at their year 2000 levels.

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7 The basic price is the sum of the CIF price of imports in *domestic currency* and relevant customs duties. See also footnote 8 of Appendix M.

8 Table M1 in Appendix M shows that between 1986-87 and 1993-94, foreign currency prices changed by 3.4 per cent (Textiles), 1.7 per cent (Clothing) and -4.1 per cent (Footwear).

The combination of these factors results in relatively strong pressure from imports. This is reflected in a projected increase in the proportion of imports in sales for all TCF products in Australia (see Table N4).

Output

The combination of relatively weak demand and strong import pressure results in modest output growth for selected TCF industries and declines in output for others.

Employment

Projections for employment in the TCF industry depend on:

- projections for TCF output; and
- assumed technological changes.

The industries' weak prospects for output expansion, changes in the composition of output towards less labour-intensive activities and assumed continued substitution of capital for labour result in weak employment prospects for TCF industries.

Historically, TCF industries have substituted capital for labour, making their production processes more capital-intensive. Much of this substitution arose from compositional changes in TCF industries, with declines in labour-intensive activities relative to capital-intensive activities. This compositional change raised the (average) capital intensity and led to increasing labour productivity. This labour productivity increase is reflected in falling employment levels. The TCF industries are assumed to continue undergoing compositional changes and substituting capital for labour (especially the textiles industries), thereby achieving moderate labour productivity gains. This combination of factors results in poor employment prospects for all TCF industries.

Detailed industry analysis

At the disaggregated ten industry level, the mechanisms discussed above apply most clearly for the Clothing, Footwear and Textile finishing industries. For the Knitting mills, Canvas and other textile products, Carpets, Wool yarn, Cotton yarn, Synthetics and Wool scouring and cotton ginning industries, some additional mechanisms come into play.[9]

[9] Detailed discussion of the factors determining the basecase for each of the ten TCF industries is in Dixon, Parmenter and Rimmer (1997, Tables 3.3.1 to 3.3.10).

The projection for the Knitting mills industry assumes that the historical increase in the capital/labour ratio is reversed because the industry's projected low rate of return makes investment unattractive. This implies a lower growth in labour productivity than between 1986-87 and 1993-94 and a reduction in the rate at which the Knitting mills industry has been shedding labour.

The Canvas and other textile products industry differs from other TCF industries in that it sells most of its output to industries outside the TCF sector and relatively little to consumers. As such, slow growth in the TCF sector and consumer shifts against TCF products are assumed to have less of an influence on its output and employment projections than for other TCF industries. A key determinant of the Canvas and other textile products industry's output and domestic market share may be a change in the composition of this heterogeneous product group. The historical analysis suggests that there has been a shift in the composition of demand favouring imports. This could be due to Australian companies locating their production offshore or a switch in demand towards products within this group that are predominantly made abroad. The basecase assumes this import favouring compositional change continues into the future, but at a reduced rate.

The Carpets industry sells around half its products to consumers and the other half to industrial users, which are predominantly outside the TCF sector. The historical analysis reveals a strong shift in consumer preferences away from carpets as well as a small negative shift in industrial users preferences. In addition, there appears to have been a shift in consumer preferences towards imported carpets. These three preference changes are assumed to continue at reduced rates into the future, thereby contributing to the projected decline in the Carpet industry's output and employment.

The projections for the Wool yarn, Cotton yarn, Synthetics and Wool scouring and cotton ginning industries are also affected by shifts in user preferences. The main users of these products are TCF industries. The historical analysis suggests that there were shifts in favour of domestically produced varieties of these commodities. These shifts benefited local producers by partially offsetting the pressure on domestic sales from cheaper imports. The basecase projections assume that these preference shifts either don't continue into the future, are much weakened or are reversed in favour of imports. The impact of these assumptions is that these industries are projected to face greater pressure from imports than in the historical period. This pressure has a detrimental impact on their projected domestic sales, output and employment.

Summary basecase projections for TCF industries

Positive output growth of 0.91 per cent per annum is projected for the TCF industry as a whole, in contrast to falling production in the period 1986-87 to 1993-94 (see Table N3).[10] This is explained primarily by some offsetting factors.

Table N3: Estimated growth in TCF production and sales: history and basecase

TCF variables[b]	*Annual changes*[a]	
	History: 1986-87 to 1993-94	*Base case: 1996-97 to 2013-14*
	(%)	*(%)*
Sales on domestic market	0.51	0.59
Domestic sales on domestic market	-2.49	-0.37
Imports	5.78	1.77
Output	-1.06	0.91
Exports[c]	6.81	3.51
Employment	-6.06	-1.92
Capital	1.68	1.09

a Average annual percentage changes.
b All changes refer to real changes.
c The average annual export growth rate used is assumed (that is, it is an exogenous variable). This leads to changes in all of the other variables which have been estimated by the model (that is, the endogenous variables).
Source: MONASH simulations

The historical analysis (Appendix M) suggests that although domestic producers of TCF have responded to the reduction in their share of the domestic market by exporting larger shares of their production, this has not been sufficient to prevent falling domestic production of TCF goods and TCF employment. Appendix M also suggests that there has been a shift in consumer preferences away from TCF goods.

Both of these trends are assumed to continue in the basecase scenario. For most TCF commodities, it is assumed that there is no reduction in the rate of consumer preference change against TCF goods. This preference change limits

[10] ABS production statistics indicate that most of the fall in production occurred before 1991-92. During the period 1991-92 to 1996-97, production also fell, but at a much slower rate than before.

any expansion in the output growth rate of the TCF industry. The basecase assumes that export growth continues, but at a lower rate than the historical period. This lower than historical export growth rate is a negative influence on the growth rate of TCF output.

The main determinant of the projected positive growth rate for the TCF industry is the reduced growth rate of imports compared to that in the historical period. The average annual reduction in protection in the basecase is much smaller than the reduction between 1986-87 and 1993-94, when quotas were abolished. In the basecase, tariffs are held fixed after 2000-01.

Finally, the projected TCF-industry growth rate is positively influenced by the assumption that consumers (the main users of TCF products) will increase their use more rapidly in the basecase than they did in the historical period.

To put the basecase scenario into perspective, the sales structure for the TCF industry for four points in time are shown in Table N4. The table reflects a decreasing market share for domestic production and an increasing share of exports in domestic production.

Although domestic producers' share of Australian sales under the basecase is estimated to fall in textiles and footwear between 2001-02 and 2013-14, it is projected to remain stable for clothing, mostly because the reduction in assistance to this sector are modelled to be small in the basecase. Nonetheless, the total TCF industry's share of domestic final consumption is projected to decline. The reduction in domestic market share has negative consequences for TCF industries' output and employment. However, these declines are projected to be partially offset by an increase in exports.

Non-TCF industries in the basecase scenario

The average annual rates of growth for other industries under the basecase scenario are shown in Table N5. They reflect the set of assumptions made on changes in productivity, tastes, and macroeconomic and commodity-specific forecasts. Communications and Finance services are the fastest growing sectors. Other sectors with high rates of growth such as Other machinery, Transport, Chemicals and Mining are related to relatively strong forecast commodity export growth. The slow growing sectors are Public administration and Wood products, which — like TCF industries — have relatively high labour costs and low opportunities for reducing these costs through productivity improvements.

Table N4: TCF sales structure, 1986-87 to 2013-14

	History		*Base case*	
	1986-87	*1993-94*	*2000-01*	*2013-14*
	(%)	*(%)*	*(%)*	*(%)*
Textiles				
Domestic sales[a]	60.1	57.3	*48.6*	*40.9*
Imported sales	39.9	42.7	*51.4*	*59.1*
Total sales in Australia	**100.0**	**100.0**	**100.0**	**100.0**
Share of exports in Australian production[b]	24.4	28.3	42.4	54.5
Clothing				
Domestic sales[a]	79.3	65.1	*53.0*	*52.8*
Imported sales	20.7	34.9	*47.0*	*47.2*
Total sales in Australia	**100.0**	**100.0**	**100.0**	**100.0**
Share of exports in Australian production[b]	0.8	2.9	6.2	11.7
Footwear				
Domestic sales[a]	63.5	41.1	*29.7*	*27.2*
Imported sales	36.5	58.9	*70.3*	*72.8*
Total sales in Australia	**100.0**	**100.0**	**100.0**	**100.0**
Share of exports in Australian production[b]	1.6	4.6	8.1	9.3

a Domestic sales are defined as the value of sales of domestically produced commodities on the domestic market plus the value of imports.

b Domestic output is defined as the value of domestically produced goods sold on domestic markets plus the value of exports.

Source: MONASH basecase simulation

N2 Basecase and policy scenario assistance arrangements

The basecase assumes that assistance to the TCF industries is reduced as scheduled over the period 1996-97 to 2000-01.[11] By 2001-01, tariffs are

[11] *Assistance* is defined as a policy which favours the TCF sector relative to other industries. If a program is available to other industries, it is not counted as TCF industry-specific assistance. TCF industry-specific assistance by State and Local governments has not been modelled. In addition to budgetary assistance, these tiers of government may provide exemptions to payroll tax and building permit fees, low interest loans, equity funding and discounted land rates. Given its relatively small size, assistance through various Textile, Clothing and Footwear Development Authority capital grants programs — totalling $266.7 million between 1988 and 1994 — was not modelled.

reduced to 25 per cent for clothing and other finished textiles, 15 per cent for footwear and fabrics and 5 per cent for yarns. In the basecase, these tariffs are held at these levels during the rest of the simulation period (to 2013-14). The basecase projections also account for the scheduled end of the ICS in June 2000.

Table N.5: Rate of growth of non-TCF sectors in the basecase scenario, 1996-97 to 2013-14

Industry sector	*Annual changes*[a]
	(%)
1 Agriculture, forestry and fishing	2.7
2 Mining	4.7
3 Food, beverages and tobacco	3.1
4 Wood, wood products and furniture	2.1
5 Paper, paper products, printing and publishing	3.2
6 Chemicals, petroleum and coal products	4.6
7 Non-metallic mineral products	3.0
8 Metal products	4.7
9 Transport equipment	3.7
10 Other machinery and equipment	6.0
11 Miscellaneous manufacturing	3.8
12 Electricity, gas and water	3.4
13 Construction	4.2
14 Wholesale and retail trade	3.2
15 Transport and storage	4.8
16 Communications	7.9
17 Finance, property and business services	6.1
18 Ownership of dwellings	2.6
19 Public administration and defence	1.7
20 Community services	3.1
21 Recreation, personal and other services	4.2

a Average annual percentage changes.
Source: MONASH basecase simulation

Table N.6: Tariff assistance in terms of average rates on CIF values, 1996-97 to 2013-14, basecase and policy scenarios

	Wool scouring etc	*Synth-etics*	*Cotton yarns*	*Wool yarns*	*Textile finish-ing*	*Carpets*	*Canvas*	*Knit-ting mills*	*Cloth-ing*	*Foot-wear*
	(%)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*
1996-97[a]	0.0	14.6	15.5	12.1	13.0	17.1	14.5	31.7	31.6	23.6
1997-98	0.0	13.5	14.2	11.4	12.1	15.9	13.5	29.5	29.4	21.3
1998-99	0.0	12.4	13.0	10.7	11.1	14.6	12.5	27.3	27.2	19.1
1999-00	0.0	11.3	11.7	10.0	10.2	13.4	11.5	25.0	25.0	16.8
2000-01[b]	0.0	10.2	10.5	9.3	9.3	12.1	10.5	22.8	22.9	14.5
2001-02	0.0	9.5	9.8	8.7	8.7	11.2	9.8	20.6	20.6	13.3
2002-03	0.0	8.8	9.1	8.2	8.2	10.3	9.0	18.3	18.3	12.1
2003-04	0.0	8.1	8.3	7.6	7.6	9.3	8.3	16.0	16.1	10.9
2004-05	0.0	7.5	7.6	7.0	7.0	8.4	7.6	13.8	13.8	9.6
2005-06	0.0	6.8	6.9	6.5	6.5	7.5	6.9	11.5	11.5	8.4
2006-07	0.0	6.1	6.2	5.9	5.9	6.6	6.2	9.3	9.3	7.2
2007-08	0.0	5.4	5.5	5.3	5.3	5.7	5.5	7.0	7.0	6.0
2008-09	0.0	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
2009-10	0.0	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
2010-11	0.0	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
2011-12	0.0	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
2012-13	0.0	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
2013-14	0.0	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8

Note: Tariff rates are based on fob values; the cif/fob ratio for TCF imports is assumed to be 0.95. These average rates are assumed to apply to imports entering under the 'normal' rate of the ACS tariff schedule and exclude in parts under by-law, ECOs and OAP.

a Rates coming into effect on 1 July of the corresponding financial year.

b Basecase tariffs for the period 2001-02 onwards remain at the levels shown for 2000-01.

The effect of concessional entries benefiting the TCF industries (by-laws, TCOs and OAP) are also taken into account.[12] The scheduled tariff reductions to

[12] The majority of goods imported under TCOs are assumed to be used by TCF industries as intermediate inputs. Concessional entry under the OAP is only available to the clothing industry.

2000-01 are summarised in the first part of Table N6 for detailed commodity groups.[13]

The policy scenario assumes that tariffs on imports of TCF products are reduced to 5 per cent between 2000-01 and 2008-09.[14] The schedule of reductions is found in Table N6 and corresponds to the schedule in option 1 described in Chapter 11.

How the policies are modelled

The effects of by-laws, TCOs and the OAP are modelled as TCF industry-specific tariff rates, which allow TCF producers to import some of the TCF commodities they use at a zero tariff.[15] This reflects lower average tariff rates paid by the TCF industries than by other industries and consumers on products classified in the same commodity groups.[16]

Production bounties and the ICS are modelled as *producer subsidies* benefiting TCF industries. The effect of these policies is to reduce the cost of TCF products to their purchasers, relative to what they would cost without the subsidies.

Production bounties are modelled to end in 1996-97 as scheduled. The value of assistance from the ICS is determined by regulations concerning the proportion of eligible exports that can be used to claim import credits. Concessional entries under by-laws, TCOs and the OAP are assumed to continue throughout the period 1996-97 to 2013-14. Table N7 shows estimates of the value of assistance benefiting TCF industries from bounties and the ICS for 1995-96.

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[13] These rates are expressed in terms of CIF values of imports. CIF tariff rates can be thought of as the ratio of tariff revenues to the CIF value of imports. The difference between CIF-based and FOB-based tariffs is the cost of transport and insurance between the exporting country and the Australian port of entry. The Customs schedule duty rates are applied to Value for Duty (VFD), which is approximately equal to the FOB value of imports. These FOB rates are adjusted to CIF rates for use in the MONASH model.

[14] In terms of FOB rates, which corresponds to 4.8 per cent in terms of CIF rates.

[15] The baseline and policy scenario both assume that the shares of imports that are eligible for concessional entry remain as in 1995-96.

[16] In 1996-97, the TCF industries are estimated by the Commission to have paid around $83 million in tariffs on imported TCF inputs with a FOB value of $1152.8 million (an implied FOB tariff rate of 7.2 per cent). Non-TCF industries and consumers are estimated to have paid around $836 million in tariffs on TCF imports having an FOB value of $3735 million (an implied FOB tariff rate of 22.4 per cent). That is, TCF industries pay around one third the tariff rate of non-TCF industries and consumers.

These estimates provide a basis from which to estimate the value of assistance through the ICS in future years.

Table N7: Value of assistance to TCF industries from bounties and the ICS, 1995-96

	Textiles	*Clothing*	*Footwear*
	($m)	*($m)*	*($m)*
Import Credit Scheme	70.8	26.1	6.0
Production bounties	5.9	0.1	0.0
Total	**76.7**	**26.2**	**6.0**

Note: Bounty payments are divided between industries producing the commodity eligible for the bounty. Import credits are apportioned across the industries that earn the credits. In addition to the figures shown, the Commission estimates that the Leather and leather products industry received around $32 million in assistance from the ICS.

Source: Commission estimates based on Customs figures on Bounty and ICS payments (ACS 1996b, p. 52 and p. 64)

N3 The impact of reducing TCF tariffs beyond 2000-01

This section studies the impact of the modelled tariff reductions after 2000-01. In assessing the projection results, the following assumptions should be borne in mind:

- In the long run, the effect of tariff reductions on aggregate employment is assumed to be negligible — any tendency for a change in tariff policy to affect aggregate employment is offset by movements in real wage rates. But wages adjust sluggishly and aggregate employment may respond to the tariff cuts before the adjustment process is completed.[17]
- In the long run, rates of return on capital are assumed to be independent of the tariff policy — any influence of tariff reductions on rates of return are assumed to be counteracted by changes in capital stocks. However, because it takes time for new capital to be built and for existing capital to depreciate, tariff reductions can have a transitory effect on rates of return.
- The additional tariff reductions are assumed to have a neutral effect on government spending and revenue — a decline in tariff revenue is

[17] This is consistent with the notion of a non-accelerating-inflation rate of unemployment (NAIRU) that does not depend on industry protection. See Appendices O and P for related discussion.

assumed to be fully compensated by an increase in income tax revenue through higher income tax rates.[18]

- The gain in incomes of Australians as a result of the additional tariff reductions is assumed to be used to increase current consumption without affecting savings and hence Australians' holdings of capital assets. Any increases in capital stocks induced by the tariff reductions are assumed to be financed by inflows of capital from overseas. This assumption allows changes in real consumption to serve as an indicator of the effect of the tariff cuts on Australians' economic welfare.[19]
- The possibility of an income gain from the additional tariff reductions in the form of increased technical efficiency at the enterprise level is ignored. The same improvements in technical efficiency at the enterprise level are assumed in the basecase and policy scenario. This results in a conservative estimation of the economy-wide benefits from tariff reform.

Economy-wide benefits

Reducing TCF tariffs after 2000-01 as modelled in the Commission's preferred policy option is projected to increase real GDP over and above the basecase projection by up to 0.037 percentage points. This is shown by the top line in Figure N1, which indicates the additional GDP achievable from reducing TCF tariffs relative to the basecase. The gain in real GDP is largest in 2008-09 when the tariff rates reach the five per cent level. After that year, the impact on real GDP remains positive, albeit smaller, as the labour and capital markets continue to adjust to the tariff cuts that occur in the previous years. By 2013-14, the increase in GDP is 0.024 per cent relative to the basecase.[20] Since aggregate employment has returned to its basecase level, this gain in real GDP is considered to represent the long-run aggregate annual gains from reducing tariffs to 5 per cent.

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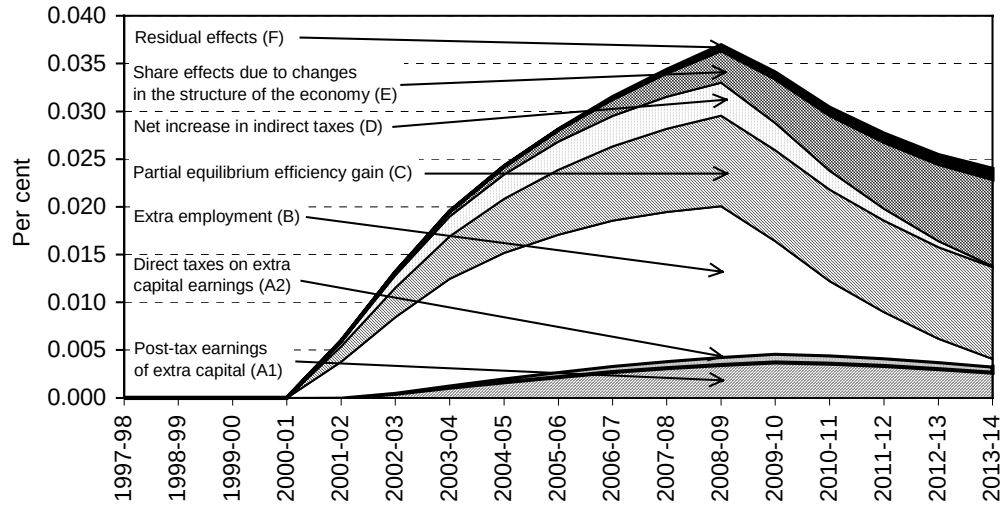
[18] The lost tariff revenue might also be recovered through higher sales tax rates or matched with lower government outlays. These alternative assumptions may, however, make it difficult to use real consumption as an indicator of the economic welfare effect of tariff reductions. See Appendix P for details.

[19] Relaxing this assumption may complicate the measurement of the economic welfare gain since changes in real consumption would then involve transfers of resources between consumers and producers, and between current and future generations of the community. See Appendix P for further discussion.

[20] By model construction, adjustments in the labour and capital markets will have completed by 2013-14.

Figure N1: Contributions to changes in real GDP for the policy scenario, 1997-98 to 2013-14 (per cent deviation from basecase)



Source: MONASH simulations

The increase in real GDP can be decomposed into a number of components, similar to the income approach to estimating GDP. This approach divides GDP into factor incomes for labour and capital, and indirect taxes. The decomposition is depicted also in Figure N1, which shows the contributions of various factors to the difference between the level of GDP in the basecase and policy scenarios.

The first component relates to an increase in capital stocks, which raises the earnings of capital. Taking the year 2008-09 as an example, this factor accounts for 0.004 percentage point (areas A1 and A2 in Figure N1) of the 0.037 per cent deviation from the basecase projection. This part of the GDP increase is sustained through to 2013-14, representing a permanent gain for the economy. Capital stocks increase because tariff reductions cause real wage rates to rise relative to capital rental rates. As resources are reallocated from TCF to other industries, benefits to the community are eventually realised as increases in real wages.[21] The increase in labour cost relative to capital cost encourages the use of capital, leading to a more capital intensive economy compared with the basecase.

[21] It is assumed that, in the long run, the aggregate employment and rates of return on capital remain unchanged from the basecase.

The earnings of additional capital stocks are divided between foreign owners of capital and the government in the form of income taxes. By 2013-14, about 81 per cent of the additional capital earnings accrue to investors (area A1) and 19 per cent are paid in direct taxes (area A2).

A temporary increase in employment contributes to higher real GDP (area B) than in the basecase. The impact is largest immediately after the tariff cuts. In 2008-09, this factor adds 0.016 percentage points to real GDP. However, its contribution is largely eroded by 2013-14 as wage rates rise high enough to eliminate the short-term increase in employment.

The allocative efficiency gain (similar to the Harberger triangles in the conventional partial equilibrium analysis of trade protection) is represented by area C in Figure N.1. This gain increases at a decreasing rate as the difference between tariffs in the basecase and in the policy simulations decreases. This factor contributes 0.01 percentage point to the increase in GDP beyond 2008-09.[22] This is a permanent gain for the economy, resulting from a switch of resources from TCF production to other industries.

The next component of the increase in real GDP, shown as area D in Figure N1, arises from offsetting changes in industry subsidies, commodity taxes and tariffs on goods other than TCF products. As the reductions in TCF tariffs stimulate the economy, existing subsidies to industries rise with production activity but indirect taxes and non-TCF tariffs also increase with expansion of the value of transactions in the economy. Further, changes in the industrial structure affect the collection of indirect taxes and tariffs as different trading activities attract these taxes at different tax rates. In the presence of subsidies, indirect taxes and tariffs, the market value of production by additional factors deviates from the factor cost (measured by the returns to the additional labour and capital including direct taxes). In the policy scenario modelled, indirect taxes and tariffs combined tend to rise faster than subsidies, resulting in a net increase in tax revenues. In 2008-09, this factor contributes 0.003 percentage point to the GDP gain. However, its contribution in later years is negligible as most of the increase in indirect taxes and tariffs is offset by the increase in subsidies.

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[22] This gain is calculated as $\sum_{i \in TCF} \left(\frac{T_i^{BC} + T_i^{PS}}{2} \right) M_i \Delta m_i$, where T_i^{BC} and T_i^{PS} are the levels of tariff assistance to TCF industry i in the basecase and policy scenario respectively, M_i the value of competing imports for industry i, and Δm_i the percentage change in M_i. This measure is not strictly equal to the partial equilibrium gain. The change in imports (Δm_i) used in this calculation incorporates general equilibrium effects such as a rise in real wages which increases the cost of production.

The tariff cuts alter the structure of the economy in a way that magnifies the contributions of some factors to the increase in GDP. Such structural changes in the economy result in a net increase in real GDP above the basecase level shown as area E in Figure N1. The dominant effect stems from the gains in employment and wage rates following the tariff cuts. With a larger share of labour income in GDP, the forecast increase in aggregate employment in the basecase leads to a larger increase in real GDP. This GDP gain is in addition to the contribution of a temporary further increase in employment in the policy scenario (already captured as area B above). Further, the tariff cuts reduce the share of TCF tariffs in GDP. This diminishes the negative effect on tariff revenues, and subsequently on real GDP, of a relatively slow growth of TCF imports forecast in the basecase. Part of these increases to real GDP are offset by decreases in the shares of other GDP components (see Box N1). Overall, the share effects contribute an increase of 0.003 per cent in real GDP (relative to the basecase) in 2008-09. By 2013-14, the net increase is larger, at 0.009 per cent of the basecase GDP.

The last component, marked as area F in Figure N1, represents a small difference between the total change in real GDP and the sum of the above contributions. It reflects a minor linearisation error that arises in the process of decomposing a real GDP gain into individual components.

Impact on Australians' economic welfare

To assess the impact on Australians' economic welfare, several issues need to be considered. First, not all of the gain in real GDP belongs to domestic residents. The post-tax earnings of extra capital are excluded (area A1 in Figure N1). Taking the year of 2013-14 to illustrate, these capital earnings are 0.003 per cent of GDP. Since the total gain is estimated to be 0.024 per cent of the basecase GDP, domestic residents receive a gain of 0.021 per cent of GDP. Second, the purchasing power of the gain depends on the terms of trade. The terms of trade are projected to decline by 0.008 per cent in the policy scenario. With exports and imports both being about 30 per cent of GDP by that year, the projected decline in the terms of trade reduces the purchasing power of Australians' incomes by 0.002 per cent (that is, 0.008 per cent times 0.3). Therefore, an increase of 0.021 per cent in GDP translates into a 0.019 per cent increase in national income. As private consumption accounts for about 60 per cent of GDP by that year, this calculation shows that an increase of 0.019 per cent in GDP allows an increase of approximately 0.032 per cent in household spending. Further adjusted for a decline in consumer prices relative

Box N1: The share effect in decomposing GDP

In analysing the increase in real GDP, it is instructive to decompose it into the contributions of its constituent factors. This approach is commonly used to relate economy-wide income growth and productivity changes to the performance of different sectors of the economy (see Jorgenson *et al* (1987) for example). A similar approach is adopted in the present study to decompose the differences between the projected path of GDP in the basecase and the policy scenario.

The share effect shown in Figure N1 is based on such a decomposition. The following is a simplified exposition of the detailed estimation method used by Dixon, Parmenter and Rimmer (1997).

The annual growth rate of real GDP in year t (g_t) can be expressed as a share-weighted sum of the growth rates of its i components in real terms (v_{it} 's):

$$g_t = \sum_i S_{it}\, v_{it}$$

where the index i stands for the components of labour income, capital earnings, indirect taxes, etc, and S_{it} s are their shares (in value terms) in GDP. The same equation may be used to represent the projected growth rates of GDP and its components in the basecase and the policy scenario. With superscripts b and p added to denote the variables in respective projections, the difference between the two projections for year t is an algebraic equivalent to Figure N1:

$$g_t^p - g_t^b = \sum_i \left[S_{it}^p\, v_{it}^p - S_{it}^b\, v_{it}^b \right] .$$

This expression can be modified by adding and subtracting the same term $S_{it}^b\, v_{it}^p$, yielding:

$$g_t^p - g_t^b = \sum_i \left[S_{it}^b \left(v_{it}^p - v_{it}^b \right) + v_{it}^p \left(S_{it}^p - S_{it}^b \right) \right].$$

The left-hand group of terms in the summation represent the contributions of respective components to GDP growth arising from the differences in their growth rates between the basecase and the policy scenario. These contributions are depicted as areas A to D in Figure N1. The sum of the right-hand group of terms is the share effect, shown as area E in Figure N1. It represents the net contribution of these components to GDP growth arising from changes in their shares in GDP as the structure of the economy is altered between the basecase and the policy scenario.

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Box N1: The share effect in decomposing GDP (continued)

To illustrate, consider the effects of tariff reductions on increasing the growth rates of aggregate employment and real wages above the basecase. While capital earnings and indirect taxes also increase as a result of the tariff cuts, the positive impact on labour income is more prominent (compare area B against areas A, C and D). Thus, the share of labour income in GDP becomes permanently larger in the policy scenario than in the basecase. During the period of tariff reductions (from 2000-01 to 2008-09), the induced employment growth in the policy scenario contributes to a faster GDP growth through the effects of both increased labour input and increased share of labour income. Towards 2013-14, when employment growth slows down to the rate assumed in the basecase (about two per cent a year), this component contributes to GDP growth not by adding more labour input (as reflected by the tailing-off of area B in Figure N1), but by according the assumed employment growth a greater weight in the policy scenario than in the basecase (through the increased share of labour income in GDP).

The share effect given in Figure N1 reflects the net impact of various GDP components amid a restructuring of the economy. Changes in labour income account for a majority of the share effect because:

- both aggregate employment and wage rates grow faster in the policy scenario, thus producing noticeable permanent increases in labour income, although the induced employment growth is only transitional (Figure N2 below shows how wages and employment change relative to the basecase);
- the induced changes in employment and wage rates apply to a relatively large component of GDP (compared to capital earnings and net indirect taxes especially); and
- employment is assumed to grow quicker over time than other components of GDP in the basecase (especially when compared to indirect taxes whose share decreases over time).

to the GDP deflator, this gain leads to a total increase of 0.036 per cent in real consumption.[23] This is equivalent to around $100 million additional consumption in 1996-97.

The decomposition shows that the partial equilibrium efficiency gain accounts for a small part of the total GDP and economic welfare gains of tariff changes in

[23] In the policy scenario, consumer prices are projected to fall relative to the GDP deflator because the tariff cuts reduce consumer prices more than prices of capital goods and other inputs. As a result, consumers benefit from larger price reductions than the rest of the economy which translates into an additional increase in consumers' purchasing power.

the presence of induced structural changes in the economy. Partial equilibrium analysis generally assumes fixed labour and capital over time and it overlooks the potential positive influences of tariff reductions on the usage of capital and labour. In the policy scenario, the partial equilibrium efficiency gain in 2008-09 accounts for only 26 per cent of the increase in GDP and less than 20 per cent of the increase in real consumption. Even allowing for additional employment growth to cease as in 2013-14, this part of the gain only increases to 40 per cent of the total increase in GDP.

Aggregate employment and wages

The effects of the tariff reductions on pre- and post-tax real wages, and aggregate employment are shown in Figure N2 in the form of deviations from the basecase. Reducing tariffs allows resources to relocate from the TCF industries to other industries, resulting in higher aggregate output of the economy. This increase in aggregate output is more than proportional to the increase in input resources, implying an overall productivity improvement in the economy as a consequence of the reorganisation of production activity.

Figure N2: Changes in real wage rates and aggregate employment, 1997-98 to 2013-14 (per cent deviation from basecase)

Source: MONASH simulations

As the tariff cuts improve the allocative efficiency of the economy, demand for labour is increased. As an instantaneous response, real wages and employment both rise relative to the basecase. In the longer term, real wages are modelled to

rise further until any increases in aggregate employment are eliminated. Thus, as tariff rates stop decreasing after 2008-09, wage rates continue to rise while employment returns to the level projected in the basecase.[24]

As tariffs are reduced, income tax rates are assumed to rise to keep the ratio of government revenue to GDP at its basecase level. This introduces a gap between pre- and post-tax wages. Although the tariffs stop declining after 2008-09, income tax rates are maintained above their basecase level.

Real wage and employment are modelled as a trade-off. If less of the benefit is realised in the form of wage increases, then some of the employment increases achieved during the period of tariff reductions can be retained afterwards. In this case, the benefit of reducing tariffs may be greater than that estimated above — increases in GDP would likely not decrease after 2008-09 (as in Figure N1). There may be a larger permanent increase in the level of GDP, in the order of 0.037 per cent relative to the basecase.[25]

Impact on the TCF industries

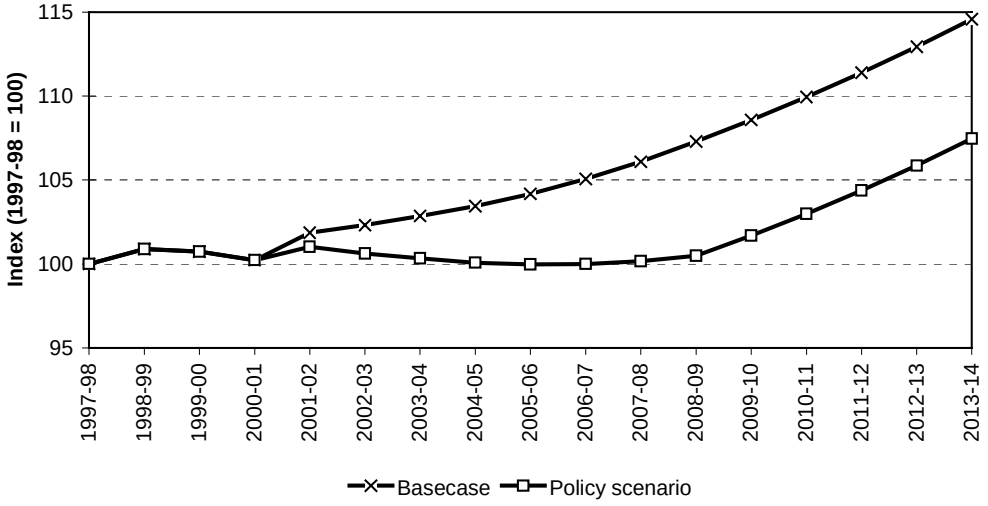
Figure N3 compares the level of total TCF production in the policy scenario to that in the basecase. By 2013-14, the tariff cuts reduce TCF production by around 6.2 per cent relative to the basecase. The modelled tariff reductions do not prevent the industries from growing — total TCF production in 2013-14 is still 7.3 per cent higher than in 2000-01. This compares to a larger increase of 14.4 per cent in TCF production over the same period in the basecase. This increase is much lower than the projected 40 per cent increase in real GDP, indicating that the share of TCF production in the economy shrinks.

Figure N4 helps explain the impact on TCF production. It shows that Australian producers lose share to TCF imports in domestic markets. This happens as prices of imports in domestic markets are lowered relative to those of domestic products. By 2013-14, the value of TCF imports is projected to be 6.7 per cent higher than in the basecase. Total sales in Australia (including imports and

[24] See Appendix O for a detailed exposition of the labour market adjustment mechanisms.

[25] The employment increase between 2002-03 and 2008-09 is affected by the rise in real wages over the period. This means that, if wages did not rise at all in the face of increasing demand for labour, the gains in employment (and GDP) might be greater than the present estimate (allowing for the possibility of a reduced contribution from capital formation as a reduced increase in real wages would reduce the incentives for industries to substitute capital for labour).

Figure N3: Total TCF production, basecase and policy scenario projections, 1997-98 to 2013-14



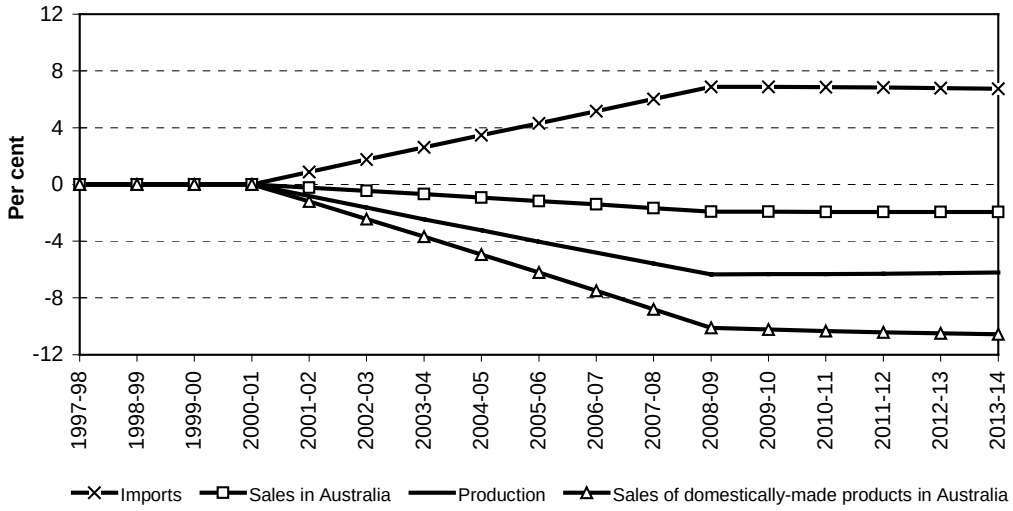
Source: MONASH simulations

domestic products) are dampened by the tariff cuts, and are 2 per cent lower than in the basecase. Lower product prices following the tariff cuts increase the demand for both imported and domestic TCF products, but lower activity of TCF producers reduces the demand for intermediate TCF materials. Given a small net decline in total demand and an increased market share of imports, sales of domestically made TCF products in Australia fall below the basecase level by around 10.6 per cent. Export sales are not reduced by the tariff cuts — rather, they are encouraged by a real depreciation (as reflected in Figure N4 by the diverging paths of the production and sales of domestically-made products in Australia). Combining the sales in domestic and overseas markets, annual TCF production is 6.2 per cent lower than in the basecase, by the year 2013-14.

Compared to the price effect of reducing trade assistance between 1986-87 and 1993-94 (analysed in Appendix M), the tariff cuts modelled in the policy scenario have a smaller impact on TCF production. The main reason for this is that the level of assistance in 2000-01 is considerably lower than in 1986-87 — tariffs account for a smaller part of the basic prices of TCF imports. Thus, although the modelled tariff reductions appear to be larger in relative terms, the resulting decreases in import prices (against which domestic producers compete) are smaller and effects on production are smaller.[26]

[26] Take the tariffs on footwear as an example. The level of trade assistance (as represented by the nominal rate of assistance) was 64 per cent in 1986-87, halved to 31 per cent in

Figure N4: Changes in TCF production, imports, and sales in Australia, 1997-98 to 2013-14 (per cent deviation from the basecase)



Source: MONASH simulations

Employment in the TCF industries is related to the level of production, production techniques that evolve to become less labour intensive, and the cost of labour to producers. The policy scenario includes the same assumptions about technical changes as the basecase, but lower tariff assistance results in decreases in TCF production and therefore employment (Figure N5). The impact on employment by 2013-14 is a decline of 8.7 per cent from the basecase level.[27] The tariff cuts reduce TCF employment more than TCF production.

Two major factors are affecting the industries' labour demand — the contraction in output and higher real wages. Higher real wages prompt industries to substitute capital for labour and particularly affect firms using labour-intensive processes, causing a larger than proportionate decline in TCF employment.[28] This factor underlies an improvement in labour productivity. As most of the wage increases take place during the tariff reduction period (see

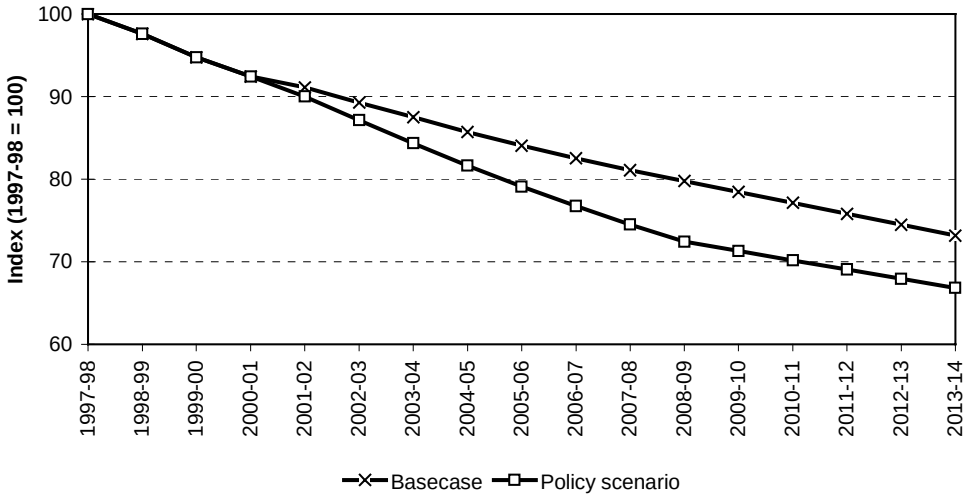
1993-94 (see Appendix M). The direct effect on basic import prices was a decrease of 20 per cent (that is $(1.31 \div 1.64)-1$). In modelling the future tariff reductions, the tariff rate is reduced by two thirds from 15 per cent in 2000-01 to 5 per cent in 2008-09 (see Table N6). Basic import prices decline by less than 9 per cent (that is $(1.05 \div 1.15)-1$) as a result.

[27] This is equivalent to an extra loss of about 6000 jobs by 2013-14.

[28] Wage increases significantly affect employment in the clothing and footwear industries. This point is elaborated further below.

Figure N2), the extra reduction in TCF employment peaks in 2008-09, at 9.2 per cent of the basecase level. After that year, the reduction in employment is smaller in both relative and absolute terms.

Figure N5: Total TCF employment, basecase and policy scenario projections, 1997-98 to 2013-14



Source: MONASH simulations

Table N8 presents the effects of the modelled tariff reductions on production and employment in individual TCF industries by 2013-14. The clothing and footwear industries are more affected than the textile industries. This reflects the differences among the industries in respect of, first, the existing trade assistance in 2000-01 (low for most textile industries and higher for the clothing and footwear industries); second, the relative extent of the tariff cuts (smallest for the textile industries); and, third, the assumed substitutability between imported and domestic products (relatively low for textiles).

The clothing and footwear industries remain more reliant on tariff assistance in 2000-01. The average tariff rates for their competing imports are around 23 and 15 per cent respectively, compared with rates of between 9 to 12 per cent for textile imports (Table N6). Further, a large proportion of textile imports already enter duty-free under by-law, TCOs and OAP. The basic values of clothing and footwear imports thus contain a larger element of tariffs than those of textiles. Given these tariff rates, reducing all TCF tariffs to 5 per cent by 2008-09 means relatively larger tariff reductions in the clothing and footwear industries than in

the textile industries.[29] Higher initial tariff assistance and relatively larger reductions in this form of assistance jointly lead to larger declines in the basic prices of clothing and footwear imports as a direct result of the modelled tariff cuts. These larger price effects are further reinforced by the assumption that footwear and clothing products are characterised with higher values of the domestic/import substitution elasticity than for textiles.[30] In consequence, the modelled tariff cuts are projected to reduce clothing and footwear production by 12 and 10 per cent in respectively in 2013-14, while textile production is no more than 6.4 per cent lower than in the basecase.

Table N8: Changes in production and employment in TCF industries by 2013-14, (per cent deviation from basecase)

Industry	*Production*	*Employment*
	(%)	*(%)*
Wool scouring, etc.	-0.17	-0.17
Synthetics	-5.79	-5.70
Cotton yarns	-5.35	-5.36
Wool yarns	-3.95	-3.92
Textile finishing	-6.45	-6.37
Carpets	-1.76	-1.74
Canvas	-1.51	-1.37
Knitting mills	-11.67	-12.10
Clothing	-12.11	-12.60
Footwear	-10.09	-10.30
All TCF industries	**-6.22**	**-8.74**

Source: MONASH simulations

Employment in the textile industries is projected to fall by as much as production, but the clothing and footwear industries exhibit more than proportionate decreases in employment. This follows from the assumption that the productivity gain arising from the tariff cuts is to be distributed across the economy as a general increase in real wages. As all industries experience the

[29] This can be observed from Table N6. Between 2000-01 and 2008-09 — since tariffs on textiles are assumed to fall from a range of 9 to 12 per cent to 5 per cent, the decline in tariff assistance is within the range of 48 to 60 per cent. The corresponding declines in tariff assistance to the clothing and footwear industries are 79 and 67 per cent respectively.

[30] See footnote 14 of Appendix M.

same percentage increase in wage rates, the more significant impact of the tariff cuts on clothing and footwear prices is reflected as larger decreases in the rental cost of capital paid by these industries. The clothing and footwear industries thus have stronger incentives than the textile industries to substitute capital for labour, reducing employment more than production contracts.

Table N9: Changes in production of selected industries by 2013-14

	Deviation from basecase
	(%)
Selected industries that benefit from tariff reduction	
Ferrous metal ores	0.38
Non-ferrous metal ores	0.31
Black coal	0.13
Services to mining	0.16
Basic non-ferrous metal products	0.42
Water transport	0.27
Railway transport	0.10
Air transport	0.10
Rubber products	0.26
Furniture and mattresses	0.10
Restaurants and hotels	0.06
Retail trade	0.23
Wholesale trade	0.04
Selected industries adversely affected by tariff reductions	
Entertainment and recreational services	-0.02
Banking	-0.02
Personal services	-0.02
Health	-0.03
Insurance	-0.09

Source: MONASH simulations

Impacts on other industries

Reducing tariffs results in structural changes to the economy. Table N9 shows the effects on industries outside the TCF sector by 2013-14. Industries that benefit from the additional reductions in TCF tariffs are:

- export industries, particularly those with a low labour share in their costs, and related industries;
- industries with a heavy reliance on TCF products as inputs; and
- industries providing services to facilitate trading activity.

Most of the mining industries are in the first category. They are capital intensive, hence well positioned to benefit from the projected decline in capital cost (relative to wages), to increase investment and are not significantly penalised by higher real wages as a result of the tariff cuts. They are export oriented, and reductions in the cost of production strengthen their price competitiveness in overseas markets, helping their export sales. The strong performance of the non-ferrous metal products and mining services industries is related to expansion of the mining sector. The freight transport industries, water transport in particular, benefit from the expansion of mineral exports and of international trade in general.

The second category includes the rubber, furniture and hospitality industries, which are dependent on textile products as inputs. They benefit from lower prices of TCF products as a result of the tariff reductions. The significant savings in material costs outweigh the negative effect of rising labour cost.

The retail and wholesale trade industries are examples of the third category. They benefit from increased trading activity stimulated by the tariff reductions. Retail trade is a major beneficiary, because real consumption is modelled to show a larger gain (0.036 per cent above the basecase level by 2013-14) than overall economic activity (0.024 per cent) and because retail trade is the largest component of the trading services involved in consumption activity.[31]

Industries that are adversely affected by the tariff reductions are mostly in the service sector. This sector is characterised by a high proportion of staff cost in total operating expenses. These industries include banking, finance, health, entertainment and recreational services. The wage increases assumed to accompany the tariff cuts offset the positive impact of faster economic growth on demand for their services. As a result, their output is slightly reduced relative to the basecase.

[31] As shown in the MONASH database, retail trade takes up roughly 65 per cent of the total cost of distribution services involved in consumption activity. Wholesale trade takes up another 25 per cent. The rest of the distribution cost is divided between freight transport, insurance, and hospitality services.

Impacts on regional employment

Table N10 shows the long-run effects of the additional tariff cuts on regional employment. These estimates are based on the assumption that TCF employment is reduced by the same proportion across all regions. The regional employment outcomes depend on the relative representation of the TCF industries and other industries in the region. A decline in TCF production affects employment in other industries (especially services) of the region through the local multiplier effects.[32]

Victoria is the only State projected to show a lower employment than in the basecase as a result of the tariff cuts. All other States and Territories are projected to benefit from the reductions of TCF tariffs; their total employment levels increase above the basecase level by varying degrees.

Victoria accounts for almost half of TCF production and clothing manufacturing is particularly concentrated in this State. Thus, while TCF employment in Victoria is projected to decline by as much as other States and Territories (about 8.7 per cent relative to the basecase, as seen in Table N8), it experiences a greater number of job losses. The local multiplier expands this negative direct influence, reducing employment in local industries (especially the services sector) of the State. However, the nation-wide expansion of some other manufacturing activities, such as the production of non-ferrous metal products and furniture that benefit from the tariff cuts, creates jobs in Victoria. Overall, total employment in this State is projected to be 0.05 per cent below the basecase projection. In the Melbourne metropolitan area, where a third of national TCF employment is located, employment is projected to be 0.07 per cent lower than in the basecase.

New South Wales also accounts for a relatively large share of TCF production. But many of the industries benefiting from the tariff cuts, such as black coal, non-ferrous metal ores and related fabricated products, are located there. This helps overcome the adverse impact of lower TCF employment, especially in the non-metropolitan area.

[32] Local multiplier effects are captured in the MONASH model by requiring that local demand for certain commodities (such as bread and cakes, housing, retail services, mechanical repairs, to name a few) is satisfied with local production. Two levels of local economies are considered in the model: State and regional economies. State-level local activities account for about 60 per cent of the national output. Regional-level local activities account for less. The impact of lower TCF employment and income on a region is multiplied through the induced effects on the growth rates of its local industries. See Adams and Dixon (1995) for details of the regional estimation methodology. Appendix O of this report contains an exposition of the assumptions underlying the regional results.

Table N10: Changes in regional employment by 2013-14

	Deviation from basecase
	(%)
Regions adversely affected by the reductions of TCF tariffs	
Victoria	-0.054
Melbourne	-0.068
Victoria excluding Melbourne	-0.025
Regions benefiting from the reductions of TCF tariffs	
New South Wales	0.016
Sydney	0.004
New South Wales excluding Sydney	0.037
Queensland	0.062
Western Australia	0.081
South Australia	0.031
Tasmania	0.042
Northern Territory	0.102
Australian Capital Territory	0.034
Australia[a]	**0.000**

a Aggregate employment is assumed not to be affected by the tariff cuts in the long run. However, the shares of employment in different regions may change as a result of changes in the industrial structure of the economy.

Source: MONASH simulations

Western Australia (WA) and the Northern Territory (NT) have comparatively large mining industries oriented towards exports and very small TCF industries. They are the major beneficiaries of reducing TCF tariffs. Employment growth in these States is raised above the basecase.

Queensland, South Australia (SA), Tasmania and the Australian Capital Territory (ACT) all have small involvement in TCF production but relatively small (or no) employment in the mining sector. Employment in these States benefits from increased activity in other industries due to reduced input costs. Although their growth is projected to be higher than in the basecase, it is not as strong as for WA and the NT because they do not have large mining sectors relative to the size of their economies.

N4 Summary

Reducing TCF tariffs after 2000-01 to five per cent by 2008-09 would generate a permanent gain in economic welfare measured as an increase in real consumption of 0.036 per cent. In terms of 1996-97 consumption, this represents approximately $100 million in additional consumption.

The long-term impact on TCF production would be a decrease of around 6 per cent relative to the output level in the absence of further tariff cuts after 2000. The additional tariff reductions, however, do not prevent the TCF sector from growing. Total TCF production is projected to expand by 7 per cent between 2000-01 and 2013-14. The share of TCF production in the economy is projected to shrink even in the basecase, and further tariff cuts after 2000 will accelerate this trend.

Reducing TCF tariffs to five per cent would cause employment in the TCF sector to decrease by around 9 per cent (that is 6000 jobs) from what it would otherwise be 2013-14. This results in a TCF workforce of about 67 000 persons by 2013-14. The major driving forces behind the projected trend of TCF employment, apart from tariff reductions, include technological changes towards capital-intensive production techniques, wage differentials between Australia and other countries, and slow growth of local demand for TCF products. These factors suppress future job opportunities in the TCF sector regardless of changes to tariffs.

By improving the allocation of resources in the economy, the additional tariff cuts help create jobs in other sectors of the economy. Because increases in real wages and employment are regarded as a trade-off, the positive effect of the tariff reductions on aggregate employment is projected to be transitory, gradually eliminated by increases in real wages. Benefits of tariff reductions in the labour market may be realised partly as wage increases and partly as increased employment. In this case, some of the increased employment achieved during the period of tariff reductions can be retained afterwards and the gain in economic welfare from reducing tariffs may be greater than the conservative estimate of $100 million.

Australians across all regions share the benefits of tariff reductions in the forms of cheaper product prices and higher real wages. Given Victoria's greater representation in TCF production, this State is projected to show a slightly lower employment than without the additional tariff cuts. In contrast, all other States and Territories are projected to experience slightly higher employment in the presence of the tariff cuts.

O THE MONASH MODEL

This appendix explains the structure and workings of the MONASH model in an intuitive fashion. MONASH is a multi-period extension of the ORANI model (Dixon, Parmenter, Sutton and Vincent 1982). It is a sequence of single-period models, linked through time by the behaviour of capital and labour markets.

O1 The Model

The MONASH model is composed of three elements — a database, theory and parameters — which are embodied in the model's system of equations. These equations describe how industries and consumers respond to changes in the policy variables being studied.

Database

The core of the MONASH model is its database showing how each sector in the economy is linked to other sectors.

The database used by MONASH is similar but more extensive than that used by the ORANI model. It is based on input-output tables prepared by the Australian Bureau of Statistics (ABS).[1] These tables show commodity flows for over 100 commodities and industries (ABS 1996a).[2] In essence, input-output tables show:

- the flow of industry outputs to other industries (termed 'intermediate demands'), final demands by households (consumption), government, investment (for capital formation purposes) and exports; and
- the cost structures of industries in terms of intermediate inputs of commodities (goods and services supplied by domestic industries and by imports), primary factors of production (labour, capital and agricultural land) and commodity taxes and subsidies.

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1 Documentation for the input-output tables can be found in ABS 1990a.

2 Given its high level of disaggregation (more than 100 industries), the database can support a highly disaggregated set of industries which improves its analysis of allocative issues facing the economy. For example, the MONASH model can be used to analyse the effects on industries in the manufacturing sector of selectively reducing tariff protection of one industry in this sector.

The input-output data provided by ABS are modified to account for some peculiarities of the Australian agricultural production system (see Higgs 1986). They are also supplemented by labour statistics on employment by industry and occupation and disaggregated data relating to the commodity composition of private and public investment.

The MONASH database provides a detailed description of the structure of production and demands in the Australian economy. It accounts for taxes and subsidies on all transactions. It also includes margins which represent the costs associated with transferring a product from the firm or the wharf (in the case of imports) to consumers and other users. Examples of margins are wholesale and retail mark-ups, transport, storage and insurance costs. Taxes and margins represent the difference between the cost of providing a good or service (at the firm level) and the price paid by the user. Tariffs are treated as a commodity tax on imports.

Theory

While the database provides information about the linkages between sectors of the economy, it only does so for a particular point in time. To analyse the effects of changing policies on the whole economy, assumptions need to made about how different groups in the economy are likely to respond to such change. For example, if prices fell in a particular industry, how are its investors likely to react? What effect is this likely to have on other industries? How quickly is this likely to occur?

MONASH uses economic theory to specify the behaviour of producers, consumers, foreigners and investors. It also has a government sector whose revenue and expenditure behaviour is modelled separately.

MONASH is a general purpose model that can be used to analyse a wide variety of questions. The framework of MONASH is flexible, allowing it to accommodate alternative theories about how the economy operates. For example, the model is typically run under the assumption of constant returns to scale, but it can be altered to include increasing returns to scale in one or more industries. The labour market adjustment mechanism, which specifies how employment and wages adjust over time in response to a change in labour demand, can also be varied.

The theoretical structure of the model contains many more variables than equations. Therefore, it is necessary to specify a subset of the variables as being

predetermined.[3] The choice of which variables are predetermined varies with the application at hand and reflects the judgement of the analyst as to which theory is most appropriate to the study.

Parameters

While economic theory guides the model's broad assumptions (which, as noted above, can be altered to accommodate different views of the world), actual numerical parameters are required to estimate the size of the responses expected. The model's theory estimates how different groups are expected to respond to change, and the model's parameters influence the size of their responses.

The theoretical structure of MONASH requires many behavioural parameters which govern the degree to which the behaviour of producers, consumers, investors and foreigners changes in response to economic signals, such as price changes.

The values for the parameters in MONASH are either derived from the input-output database (for example, budget shares) or from other external sources (for example, import substitution elasticities).

The model can accommodate a range of values and be tested for sensitivity to these values.

Box O1 provides a list of references giving further details on the structure and application of the MONASH model.

[3] MONASH is a simultaneous equations system which has a total number of m equations and n variables, where $n>m$. In order to solve such a system, it is necessary to predetermine (that is, set exogenously or take as given) the values for $(n–m)$ of the variables and solve for the remaining (m) variables.

Box O1: Documentation on the MONASH model

No single reference on the MONASH model currently exists. The following papers give detailed information on how the model is structured and used for forecasting and policy analysis, historical analysis and regional analysis. Full documentation is currently being prepared and its release is forthcoming.

Overview of the MONASH model

Adams, P., Dixon, P., McDonald, D., Meagher, G., and Parmenter, B. 1994, 'Forecasts for the Australian economy using the Monash model', *International Journal of Forecasting*, no. 10, pp. 557-571.

Parmenter, B. 1995, 'Forecasting and policy analysis with the Monash model' paper prepared for the International Symposium on Economic Modelling, Bologna, Italy, 19-21 July.

Behavioural theory in detail (excluding capital and labour adjustment)

Dixon, P., Parmenter, B., Sutton, J., and Vincent, D. 1982, *ORANI: a Multisectoral Model of the Australian Economy*, North-Holland, Amsterdam.

Capital accumulation theory

Dixon, P., and Malakellis, M. 1996, 'Investment Behaviour in the MONASH Model of the Australian Economy', in Vlacic, L.J., Nguyen, T., and Cecez-Kecemanovic, D. (eds.), *Modelling and Control of National and Regional Economies 1995*, Pergamon, Oxford.

Historical analysis

Dixon, P., and McDonald, D. 1993, *An explanation of structural changes in the Australian economy: 1986-87 to 1990-91*, Background Paper no. 29, Economic Planning and Advisory Commission, Canberra, June.

Forecasting

CoPS (Centre of Policy Studies) 1996, *Guide to Growth*, CoPS, Monash University, Melbourne.

Policy analysis

Dixon, P.B., Parmenter, B. and Rimmer, M.T. 1997, *The Australian Textiles, Clothing and Footwear Sector from 1986-87 to 2013-14: Analysis using the Monash Model. A Report to the Industry Commission*, Centre of Policy Studies and IMPACT Project, Monash University, Melbourne.

Regional analysis

Adams, P.D. and Dixon, P. 1995, 'Prospects for Australian Industries, States and Regions: 1993-94 to 2001-02', *Australian Bulletin of Labour*, vol. 21, no. 2, pp. 87-108.

O2 Modelling industry assistance policy

MONASH is a flexible model that can be used in three distinct modes — *historical*, *forecasting*, and *policy analysis*. In this inquiry all three modes were used in a sequence, as outlined in Box O2.

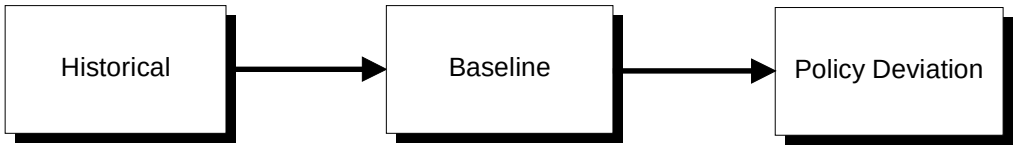
Box O2: Using the Monash model over the period 1986-87 to 2013-14

To assess the impact of changes in industry assistance, a three step procedure is followed.

The first step involves generating an up-to-date picture of the economy's structure using an historical simulation. The historical simulation also provides information on changes in productivity and consumer preferences that occurred in the historical period which can be used to form views about how these may change in the future. In this study, the historical analysis is from 1986-87 to 1993-94.

The second step uses forecasts of macroeconomic variables and changes in technology and consumer preferences to generate the basecase projection of the economy's future structure. The basecase projection is an estimate of how the economy will be structured in the future if current and announced government policy settings are left unchanged. In this study, the basecase covers the period 1994-95 to 2013-14.

Finally, a policy deviation simulation is carried out. The policy deviation simulation shows how the economy's structure differs from the basecase, as a result of the change in policy, such as a reduction in assistance. In this study the policy deviation commences in 2001-02 and extends to 2013-14.



O3 Historical analysis

The historical analysis serves three related purposes:

- it facilitates the development of an up-to-date database;
- it provides estimates of changes in technology and consumer preferences that occurred in the historical period; and

- it provides a basis for studying the contribution of various factors to structural change that occurred over the historical period.

In the context of examining assistance policy for the TCF industries, the timeliness of data is particularly important. The distortionary effects of the tariff, indirect taxes and labour market rigidities on the allocation of resources change over time. For example, the existence of import quotas on TCF commodities strongly distorted the decisions of producers and consumers towards buying domestically produced goods. In such a case, a small change in the level of assistance (quotas and tariffs) would lead to a large change in the volume of imports and their share in the domestic market as their price fell relative to domestically produced TCF. Using a database from a period with quotas, 1986-87, to analyse producer and consumer decisions in a period without quotas would overstate the impact of reducing assistance. Using up-to-date information enables a more accurate assessment of the impact of the policy change to be made.

Input–output data are published less frequently than other data relating to the structure of the economy. More up-to-date data at various levels of aggregation are available on rates of industry protection, export and import volumes and prices, employment, capital stocks and investment, commodity outputs, household consumption, public consumption, wages, the exchange rate, inflation, population growth, and so on. In the historical analysis, these data are used to update the latest available input-output data.

In historical mode, a single-period configuration of MONASH is used. For this report, the single period is eight years long. Using data based on the 1986-87 input-output tables[4] as the starting point, MONASH is used to generate an updated database that fits with the observed structure of the economy in 1993-94.[5] An advantage of this procedure for updating the input-output data is that it is based on explicit economic assumptions.[6]

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[4] Although the ABS has published input–output tables for 1992-93 and 1993-94, in their current form they are not suitable for calibrating the MONASH model. The ABS input–output tables are the starting point for constructing the MONASH database. The data contained in the ABS input–output tables are modified to accommodate more detail on: the structure of imports; the structure of investment; and the structure of indirect taxes and margins (that is, services such as retail trade and transport which are used in transferring goods and services from producers to users).

[5] The reason for projecting forward to 1993-94 rather than to 1995-96 is the lack of detailed data. The latest year for which consistent disaggregated data are available is 1993-94. Note that the first year of the MONASH policy simulations is 1995-96. Data for this year are generated by a series of annual forecasts starting from the 1993-94 database. As will

To update the MONASH database, the observed changes in economic variables between 1986-87 and 1993-94 are set as predetermined variables. The MONASH model is used to solve for the values of the remainder of the variables such that the observed values for variables are obtained. That is, it solves for the variables whose changes over the period 1986-87 to 1993-94 are unobserved.

Included in this set of unobserved variables are technical changes, household preferences, and foreign demand and supply conditions. No details about the paths of variables over the period 1986-87 to 1993-94 are obtained in this exercise because, in historical mode, MONASH does not divide the 1986-87 to 1993-94 period into eight distinct years.

Box O3 uses a simple example to illustrate the key principles underlying the MONASH updating procedure.

MONASH can be used to calculate the contribution of each factor to the change in an economic variable between 1986-87 and 1993-94. The purpose of decomposing the results obtained in the MONASH updating procedure is to assess the relative importance of key factors such as government policy changes, changes in technology and preferences, changes in foreign demand conditions and so on.

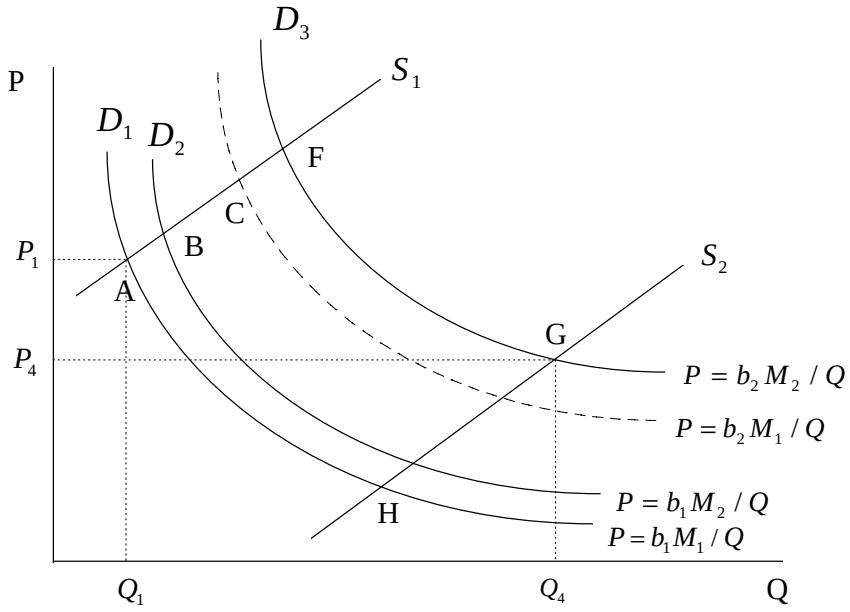
Appendix M provides an analysis of the relative importance of various factors that influenced the structure of the economy and the TCF industries between 1986-87 and 1993-94. These include reductions in assistance, changes in consumer tastes, technological change and general economic growth.

be explained later, the forecasting exercise that takes the economy from 1993-94 to 1995-96 is similar to the historical exercise that takes the economy from 1986-87 to 1993-94.

6 An alternative method for updating input-output data is to use a RAS type of procedure (see Bacharach 1970). As typically used, the RAS procedures are statistical techniques in which input-output data are scaled to accord with pre-specified values of key items of data (usually aggregates). A potential limitation of this approach is that the scaling procedures used are not based on economic principles.

Box O3: Calculating preference and supply changes

Take as an illustrative example, the demand for vegetables (based on a Cobb-Douglas utility function) and a linear supply function. The demand curve is given by Q = bM/P where Q is the quantity demanded, b is a parameter reflecting consumer preference for vegetables, M is income and P is the price of vegetables. Suppose that Q, M and P are observed in two periods. Point A is the observed market equilibrium in the first period, when income is M_1. Point G is the observed market equilibrium in the second period, when income is M_2. Because the two points A and G are market equilibria, they must have demand and supply curves passing through them.



To reconcile the observed equilibria given the specific theory being used for supply and demand, there must have occurred an increase in the preference for vegetables by consumers and a shift in the supply curve (technical change) by producers. The movement from A to B accounts for the change in quantity due to the change in income. The movement from A to C accounts for the change in quantity due to the change in preferences. The point F is the change in quantity from both changes in preferences and income, assuming supply is unchanged. The movement from A to H is the change in quantity from the shift in the supply curve. This shift in supply represents changes in production costs, which for purposes of illustration will be assumed to be solely due to changes in technology (other shifts, such as those due to lower intermediate input prices are accounted for in MONASH). Combining together the shifts in demand due to income and preference changes with the technology-induced shift in supply generates the equilibrium point G. The movement from A to G is explained in terms of changes in incomes, preferences and technology.

O4 Basecase simulation

The basecase simulation shows how the underlying structure of the economy is expected to change through time in the absence of any new policy change. The basecase incorporates predetermined policy changes, such as the gradual reduction in the TCF tariffs to 15 and 25 per cent by 2000-01. Where little information about the economy and policies is available (such as beyond 2000-01 for assistance and 2002-03 for macroeconomic forecasts), relatively neutral assumptions are made to extend the basecase to 2013-14. The extension involves projecting forward to 2013-14 the macroeconomic forecasts for 2002-03. The basecase simulation is generated by modelling changes in endowments (factors of production), preferences and the structure of the economy that are consistent with macroeconomic, industry and trade forecasts.

The basecase simulation produces a database for each year of the forward looking period. The changing composition of the databases indicates the changing structure of the economy. Structural change is determined by the interaction of the behavioural theory, data, parameters and the way in which labour and capital stocks adjust through time.

As explained in the previous section, the historical updating procedure provides a database that represents the structure of the economy in 1993-94. To obtain a database that is representative of the structure of the economy in the current year, 1997-98, MONASH is used in forecasting mode to generate annual projections for the four years 1994-95 to 1997-98.

In making these projections, the analyst must choose the variables that will be pre-determined (that is, those whose values will be set by the analyst) and those that will be determined by the model. This process for updating the database is similar to that used in the historical updating procedure. The main difference between the two updating procedures is that in forecasting mode the database is updated one year at a time.

There are limited data available for the period 1994-95 to 1996-97 that are consistent. Data that are available include rates of industry protection and exports of a range of rural and mining commodities. Also available are detailed scenarios on the structure of taste changes and technical changes inferred from the MONASH historical analysis. Information on TCF industries outputs, employment, prices, and trade volumes are also available.

At the aggregate level, data are readily available on macroeconomic aggregates such as employment, wages, private and public consumption, private and public investment, exports and imports, inflation, the exchange rate, population growth and so on.

In each year of the forecast horizon 1994-95 to 1996-97, values are assigned to the variables for which historical data are available. Values must also be assigned to the technical change and consumer preference change variables. In setting the values of these variables, the analyst must exercise judgement about how much of the taste changes and technical changes inferred from the historical analysis should be carried over to the forecast period (for example, the user must decide the extent to which the change in tastes away from tobacco products inferred in the historical analysis will continue in the forecast period).

Given this information on observed variables and on inferred technical and consumer preference changes, MONASH produces annual projections for those variables that are on its database but for which data are unavailable.[7]

MONASH forecasts the structure of the economy from 1997-98 to 2013-14 incorporating information from external sources with expertise in particular facets of the economy. For example, macroeconomics (Treasury and other sources), trade policy (IC), commodities (Australian Bureau of Agricultural and Resource Economics) and tourism (Bureau of Tourism Research).[8] Data from their forecasts are used to predetermine the values of the appropriate MONASH variables in each year of the simulation period. MONASH also incorporates external information on expected government policy and shifts in technology and consumer preferences. The model then solves for the industry variables that are consistent with these external projections.

For example, in the basecase simulation, growth rates of GDP, employment and aggregate investment are set to values from a macroeconomic forecast. The model then solves for the implied value of economy-wide primary-factor-saving technical change necessary to reconcile the assumed growth of output and factor inputs.

A further example is the determination of households' propensity to consume. Aggregate household spending and aggregate household income are both parts of the basecase macroeconomic scenario. The model's basecase solution calculates the shift in the households' implied propensity to consume for each year, necessary to reconcile the assumed values of these two variables.

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7 Note that only a limited amount of data relating to the last six months of 1996-97 are available. Thus, the values of the 'observed' variables in 1996-97 are really forecasts which are heavily conditioned by information available for the first half of the year.

8 It is also possible to incorporate expert knowledge on the future prospects of TCF industries into the MONASH model.

O5 Policy simulation

The policy simulation determines the effect of a policy option as a deviation from the basecase. The difference between the two is interpreted as the effect of the policy in isolation from other factors, because these other factors are common to the basecase and the policy deviation. Box O4 illustrates the principles used in obtaining the effects of a policy change for two hypothetical industries.

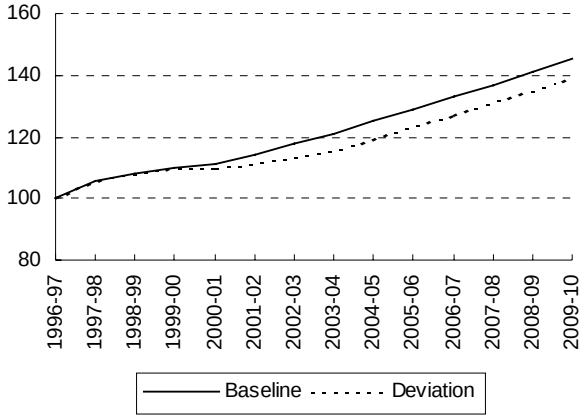
The policy simulation is generated by swapping some of the predetermined variables in the basecase simulation with endogenous variables. The change in the endogenous variables solved for in the basecase simulation is now treated as predetermined. The policy simulation treats the changes in technology, shifts in export supply and demand curves, and macroeconomic parameters (which were solved for in the basecase forecast) as predetermined, while the corresponding macroeconomic variables (which were predetermined in the basecase) need to be solved for. Changes in GDP and real consumption now reflect the changes in technology and the propensity to consume as well as the effects of the change in policy.

In the absence of a policy change, the policy simulation generates the basecase.

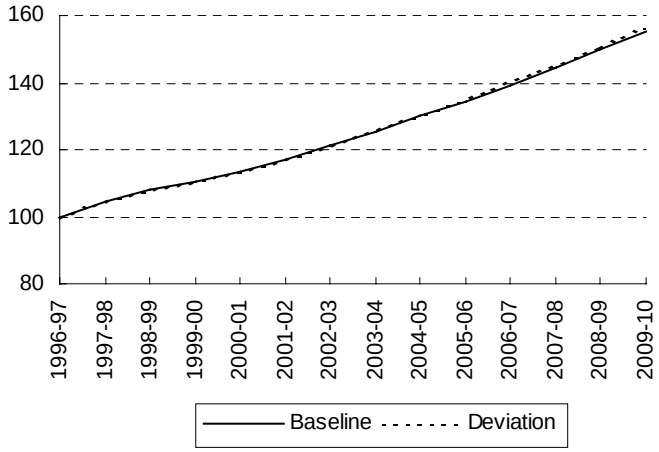
Box O4: Policy analysis using the MONASH model

The MONASH model is mainly used by the Commission to evaluate the structural impact on the economy of a change in government policy. The evaluation is made by comparing a basecase scenario of the economy's structure with a policy-induced deviation. For example, Panel (a) and Panel (b) show output in two industries, for the basecase and policy deviation scenarios between 1996-97 and 2009-10.

Panel (a): Industry 1 output changes (Index 1996-97 = 100)



Panel (b): Industry 2 output changes (Index 1996-97 = 100)



The vertical difference between the two lines in Panel (a), at the end of the forecast period, is around 6 per cent of the basecase level of output. This indicates that the effect of implementing the policy option is to decrease Industry 1's output by around 6 per cent below the basecase by the year 2010. In Panel (b), the same policy change benefits Industry 2, whose output at the end of the period is around 1 per cent higher than it would otherwise be.

O6 Regional disaggregation of results

State and regional economies may have a greater (or lesser) dependence on particular industries than the economy as a whole. Consequently, economic developments which affect an industry at the national level can have a magnified (or diminished) impact on a State or region which is relatively more (or less) reliant on a particular industry.

How changes in policy impact on the overall economic activity and employment in a State (or region) depends on the assisted industry's contribution to State (or regional) output relative to other industries. Other industries may benefit from the reduction in their intermediate input costs induced by reduced assistance. As a result, these other industries will increase their output and employment. Regional analysis can determine whether this increase is sufficient to offset the effects of the downturn in the assisted industry.

In MONASH, regional results are generated by the *tops-down* approach[9] described in Adams and Dixon (1995), based on the ORANI regional equation system in Dixon *et. al*. (1982). In mapping national results to regions, a distinction is made between *national* industries and *local* industries. National industries are assumed to be those which produce a commodity that is highly tradeable on inter-regional markets (for example, automobiles, clothing and other non-perishable and easily transported commodities). Because of the tradeable nature of their output, the fortunes of national industries are assumed to be dependent mainly on factors outside of the region in which they are located. Conversely, local industries are assumed to be those which produce a commodity that is not heavily traded in inter-regional markets (for example, most services and perishable commodities). The fortunes of local industries are assumed to be dependent mainly on factors specific to the region in which they are located.

Given the distinction between national and local industries, the standard way national results in MONASH are mapped to the States involves a two step procedure. First, the economy-wide projections for national industries are allocated to the regions on the basis of regional employment shares. For example, if employment in a national industry increases by 10 per cent at the economy-wide level, then it is assumed that in each State employment in that industry also increases by 10 per cent. Second, projections for the local

[9] See Appendix P for a description of the two alternatives for modelling the regional consequences of a change in economic circumstances.

industries are obtained by computing the induced effects on the State economies implied by the projections for the national industries. For example, if a national industry located in Victoria is projected to expand by 10 per cent, it will directly stimulate the local industries which supply inputs to the national industry. In this example, local industries will also be stimulated indirectly via input-output linkages (that is, the local industries that supply inputs to the national industries will stimulate the demand for inputs from other local industries) and via local income effects (that is, the increase in activity in the State will stimulate regional consumption).

The key determinant of regional results generated using this standard method is the structure of regional employment by industry. Essentially, the national employment changes are allocated on a pro-rata basis to the regions.

If other information is available, it is possible to use non-standard methods to allocate national changes in employment and economic activity to regions. For example, expert knowledge may indicate that several regions with TCF industries are likely to be more adversely affected by a reduction in assistance than other TCF dependent regions. It is possible for the model to use this information to allocate a larger share of the national impact of the policy to the strongly affected regions than would be the case if the standard allocation method was used.

O7 Theoretical developments

The MONASH model includes explicit theory to capture the likely adjustment processes of producers and consumers faced with some change in the economic environment. The type of behaviour reflected in its equations is derived from microeconomic theory. It portrays producers seeking to minimise costs (within certain constraints) and consumers seeking (again, within limits) to maximise utility (or to minimise the cost of achieving a certain level of consumption).

There is a strong similarity between the theoretical structure of the single-period models that make up MONASH and the theoretical structure of the ORANI model. Given that ORANI is exhaustively documented elsewhere, this section focuses on six key differences between the theoretical structures of the two models.[10]

[10] Comparisons are with the ORANI model described in Dixon *et al.* (1982). More recent versions of ORANI used at the Industry Commission had resolved a number of issues regarding the treatment of capital and labour markets and a full set of government sector accounts (see IAC 1987b, Dee 1989).

These are the specifications of:

- investment behaviour;
- labour market behaviour;
- aggregate private household behaviour;
- the revenue side of the government accounts;
- exports of goods and services not related to mining and agriculture (for example, manufactured goods and tourism); and
- regional supplies and demands.

In these six areas (and others), the theories incorporated in the model can be changed, according to the application. After outlining some of the theories that MONASH can incorporate, the theory adopted by the Commission for this study of the Australian TCF industries is outlined.

Investment behaviour

MONASH investment theory explains year-to-year changes in industry capital stocks. As in ORANI, capital goods are industry-specific in MONASH. The investment process in MONASH is characterised by a one year lag between the commitment of resources to the creation of capital (investment) and the availability of this capital (asset) for use in the production process. That is, plant and equipment are commissioned into service the year after the investment takes place. Thus, the stock of capital available to each industry in each year is predetermined because it depends on investments undertaken in previous years.

Capital is assumed to depreciate at a fixed, industry-specific rate so that some investment is necessary to maintain the capital stock at its current level. Because capital is industry-specific, investment decisions are assumed to be irreversible. That is, once capital is installed in a particular industry it cannot be sold to any other industry.[11] Under these conditions, the rate of depreciation determines the maximum annual rate at which an industry can reduce its capital stock.

A key variable motivating investment behaviour in MONASH is the expected post-tax *rate of return*[12] of capital. The post-tax return on a unit of capital in an industry in each year is equal to the present value of the stream of expected

[11] Industry-specific capital can be traded among firms in the same industry.

[12] The rate of return is calculated as the ratio of the value of returns to the value of the capital stock. The rate of return is sometimes referred to as 'profitability'.

future after-tax earnings accruing to that unit of capital.[13] To produce a unit of capital that comes on stream in the next year investors must outlay funds in the current year.

The *expected return* on investment is equal to:

the post-tax rental income expected from that unit of capital in the next year (when it comes on stream) discounted back to present year values[14]

PLUS

the replacement cost of the depreciated unit of capital in the next year (that is, the value of the unit of capital after it has been used for one year) discounted back to present year values

MINUS

the cost of the investment in the current year that is necessary to create a unit of productive capital in the next year

MINUS (PLUS)

the taxes (tax credits) accruing on expected capital gains (losses) discounted back to present year values.

The expected rate of return on investment undertaken in the current year depends on expectations about outcomes in the following year (for example, rental income, replacement cost of capital and capital gains). MONASH allows some flexibility in the choice of assumptions governing the way investors form their expectations about future events. In the simulations conducted for this report, investors' expectations are assumed to be static. That is, investors form their expectations about future events using information from the current period only. For example, in a given year investors form expectations about prices in the next year by assuming that the real replacement cost of capital and the real price of its services (the *rental price of capital*[15]) are constant. Note that in this treatment of expectations there is no presumption that expectations are actually realised.[16]

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13 MONASH allows for taxes on capital rental income and capital gains.

14 The post-tax real interest rate is used as an estimate of the discount rate.

15 Sometimes called the annual user charge. This may be approximated by a lease fee on a unit of capital.

16 Under the alternative treatment of expectations in MONASH, investors form expectations about future outcomes using the model's projections of these outcomes. For example, in the current year, investors form their expectations about next year's prices on the basis of

Apart from the rental price of capital (which together with the quantity of capital used determines the pre-tax rental income), the variables that determine the profitability of investment in a particular industry are determined largely outside the industry. Further investment in an industry is made if the marginal value product of the extra capital created is greater than the (annualised) cost of creating the capital. The marginal value product of an extra unit of capital depends on the price of the industry's output and the marginal physical product of capital. This marginal value product of capital represents how much each industry is willing to pay for rental of an extra unit of capital.

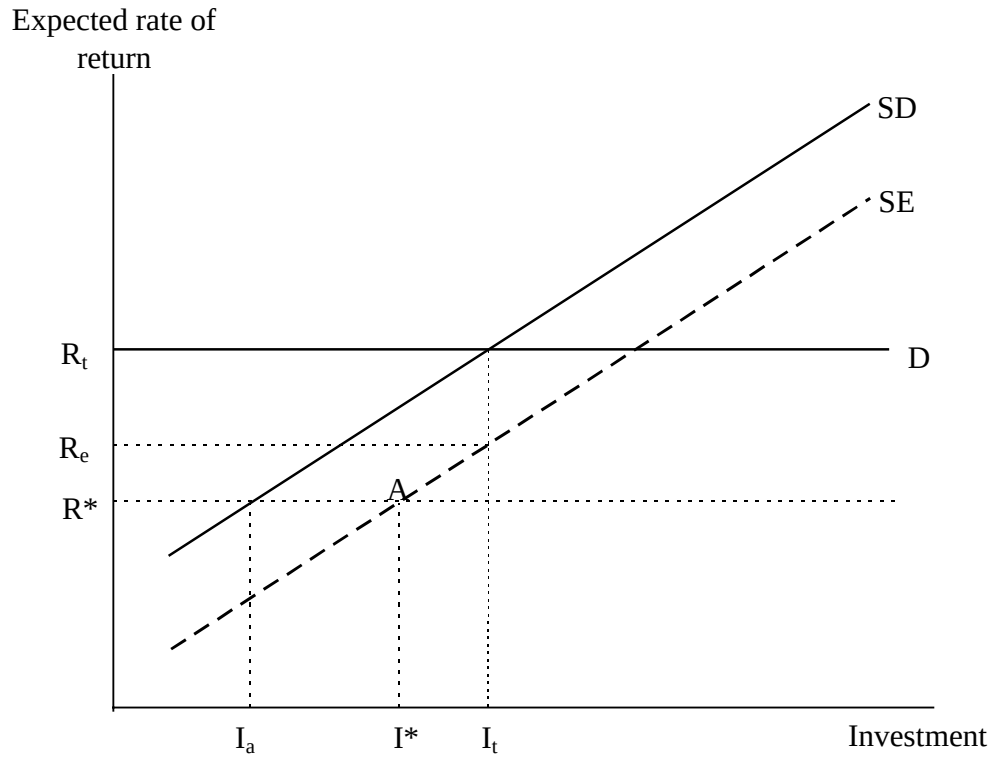
The annualised cost of a unit of capital depends on the cost of producing it and the (industry-specific) rate of return. The cost of constructing a unit of capital (estimated as its replacement cost) in an industry depends on the costs of inputs purchased from other industries (for example, from the construction industry). Similarly, the rate of return is determined on world capital markets. Other things constant, with a given amount of capital in place in an industry, the rental price of capital increases when the demand for that industry's output increases (that is, if the price of its output increases).

The discount rates and tax rates used in calculating the expected rate of return do not vary across industries and nor does the cost of constructing capital since most industries use similar inputs to construct their capital. Thus, the expected rate of return on investment varies across industries mainly because of variations across industries in the rental price of capital. The main determinant of such variations are changes in the output prices of industries.

A simple illustration of the key mechanisms underlying the MONASH investment theory is provided in Figure O.1. Although the actual mechanism used by MONASH is more complicated, the essence of how MONASH handles investment and capital accumulation is captured in the figure. The main difference between the complexity of MONASH and the stylised representation in Figure O.1 is that many variables that Figure O.1 assumes to be unchanged are allowed to vary in MONASH. These changes have the effect of further shifting the curves in Figure O.1. Abstracting from these secondary shifts allows the key mechanisms underlying capital stock adjustments to be explained relatively simply.

MONASH's projections for prices next year. Under this specification expectations are assumed to be realised.

Figure O.1: Stylised representation of investment behaviour



In Figure O.1, the demand and supply curves relate to investment behaviour in an industry in the current year. The demand curve, labelled *D*, is flat because investors expect that the future rate of return on investment will be equal to R_t, the realised rate of return on existing capital. Thus, investors behave as if the future rate of return of capital is not influenced by the amount of investment currently being undertaken.

Two supply curves (*SE* and *SD*) are shown. The slopes of these reflect the assumption that the supply of investment is positively related to the expected rate of return. The higher the expected rate of return on investment, the higher will be the supply of investment and vice versa.

The supply curve *SE* represents the equilibrium supply relationship for the current year. It passes through point *A*, which represents the combination of expected rate of return and capital growth that is considered normal for this industry. The normal expected rate of return, *R**, is inferred from historical data. The amount of investment required in the current year to achieve a normal rate of capital growth, *I**, is inferred from historical data.

The second supply curve (*SD*) represents the disequilibrium supply relationship. While the equilibrium supply curve shows combinations of *normal* expected rates of return for each level of investment, the disequilibrium supply curve shows combinations of *currently* expected rates of return and investment. Thus, the market clearing level of investment for the current year is I_t which is consistent with the intersection of the demand curve with the disequilibrium supply curve.

Over time the disequilibrium supply relationship is driven gradually closer to the long-run equilibrium supply relationship as the rate of return decreases for any given level of investment. An interpretation of the gradual adjustment of the disequilibrium supply curve towards the equilibrium supply curve is that investors are cautious and react slowly to new information.

For example, as shown in Figure O.1, if the rate of return in the current year happened to be R^*, actual investment would be I_a rather than I^*. Such an outcome is consistent with the equilibrium rate of return in the previous year being lower than R^*. If the rate of return settles at R^* for several years, then investment will converge to I^*.

In moving from one year to the next, the SE and D curves shown in Figure O.1 can adjust. Except in the long run, the expected rate of return of investment made in the current year will not be realised in the following year. Thus, the demand curve will move up or down to reflect the rate of profitability realised in the following year on investment made in the current year. The realised rate of return of current year investment will depend mainly on the scarcity of capital in the following year.

For any particular industry this will be influenced by the demand for its output, the rental price of capital relative to the price of other primary factors (such as labour), the capital intensity of the industry, and the degree of substitutability of capital with other primary factors. Other things constant, the higher the expected rate of return of capital in the next year, the higher will be investment in the current year and the higher will be the stock of capital in the next year. Again, other things constant, the more capital there is in place in the current year, the lower will be the scarcity value of capital (indicated by its rental price), and the lower will be the realised rate of return in the next year of investment taking place in the current year. Since the realised profitability in the following year motivates investment in that year, a fall in the realised profitability in the following year will tend to dampen investment in that year.

In Figure O.1, a fall in the realised rate of return will cause the demand curve to fall. In the Commission's simulations in Appendix N, the disequilibrium supply curve is assumed to move each year in a vertical direction to eliminate 25 per

cent of the gap between R_t, the expected rate of return of the investment done in the current year, and R_e, the rate of return that such an investment would earn in equilibrium.

Labour market behaviour

The treatment of labour markets in the MONASH model is different to that in the ORANI model.

In the ORANI model there are two alternative treatments of the labour market. One assumes that the supply of labour is predetermined and that real wages adjust to clear the labour market. The other assumes that there is an excess supply of labour and that the demand for labour adjusts to accommodate a predetermined pre-tax real wage.

MONASH has a more flexible treatment of labour markets than ORANI. There are five options available in MONASH:

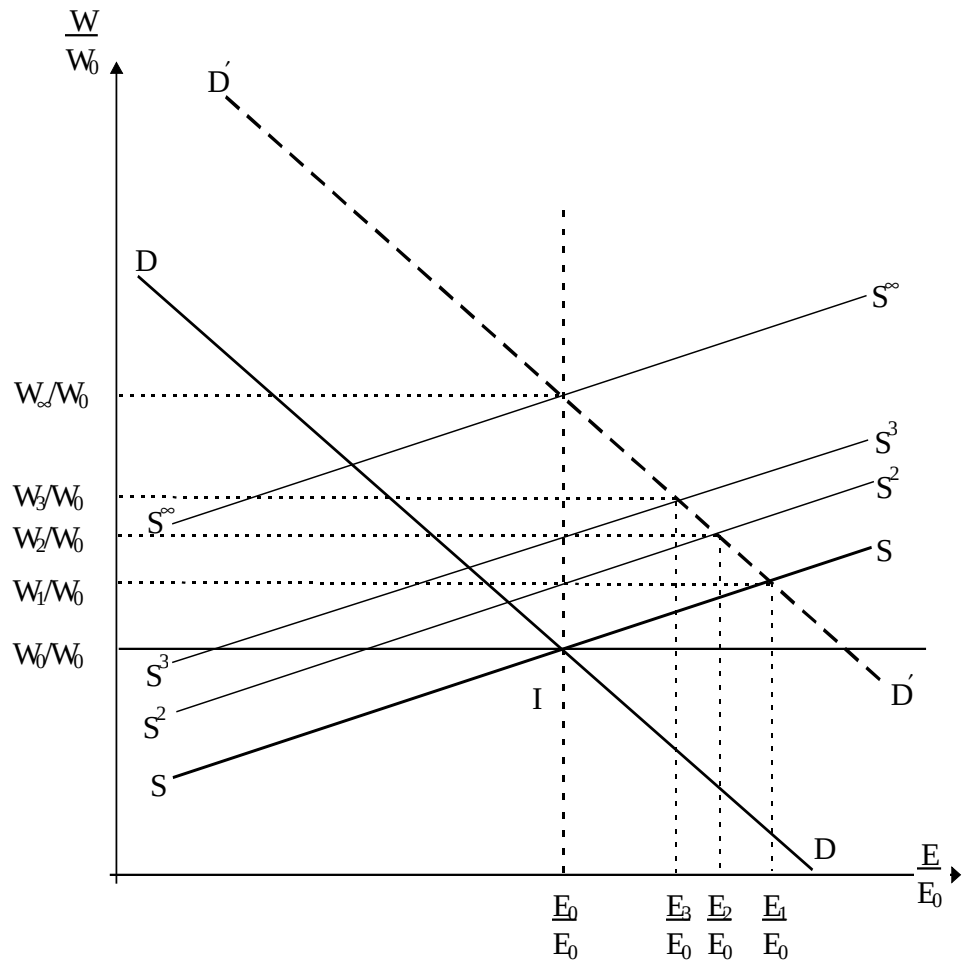
1. in each year, aggregate employment is predetermined with real wages allowed to adjust rapidly;
2. in each year, the pre-tax wage is predetermined with aggregate employment allowed to adjust rapidly;
3. in each year, the post-tax wage is predetermined with aggregate employment allowed to adjust rapidly;
4. in a combination of the first two options, there is assumed to be a trade-off between real pre-tax wages and aggregate employment over time. The response of real pre-tax wages to a disturbance in the labour market (for example, as a result of a fiscal stimulus or a change in the tariff) is assumed to be sluggish initially (because of institutional arrangements); or
5. an alternative version of option 4 assumes there is a trade-off between post-tax, rather than pre-tax, real wages and aggregate employment over time. As in option 4, initial real wage adjustments are assumed to be sluggish.

In its analysis of the effects of reducing the TCF assistance, the Commission assumes that in the long run, the aggregate supply of labour is determined by factors which are independent of changes in assistance to TCF industries. This assumption is based on the work of Vincent (1980) and is consistent with the macroeconomic concept of non-accelerating-inflation rate of unemployment (NAIRU). The adoption of this assumption requires MONASH to implement either option 4 or option 5 above. The Commission's modelling in Appendix N uses option 5.

To ensure that, over a period, employment converges to the level in the basecase requires that wages become increasingly more flexible over time as agents become accustomed to the disturbance. Initially, when the response of real wages are unchanged, disturbances in the labour market are accommodated mainly by adjustments in aggregate employment. Over time real wages adjust with a corresponding change in employment. Eventually, the adjustment in real wages is sufficient to return employment to the level in the basecase.

Figure O.2 provides a stylised representation of the dynamic relationship between employment and wages used by the Commission. As in the case of capital the actual mechanism used by MONASH is more complicated than that outlined in the figure, but the essence of how MONASH handles labour market adjustment is captured. The stylised representation is for a special case that assumes that technology, consumer tastes, foreign prices and capital availability are unchanged from year to year. (In MONASH, these variables and others are allowed to vary from year to year, thereby shifting the demand and supply curves around even more than the movements described next). In the absence of a perturbation, the demand curve for labour in each year is *DD* and the supply curve is *SS*. In each year the basecase level of employment is E_0 and the real post-tax wage rate W_0 — that is, the employment-wage combination is at point *I* in Figure O.2. The introduction of a perturbation (which may be induced by a policy change or some other change that increases the demand for labour) is assumed to move the demand curve for labour up to $D'D'$, where it remains for all future years. The supply curve for year 1 is the initial supply curve *SS*. Taking into account the effects of the disturbance, the levels for employment and the real wage rate in year 1 are E_1 and W_1. In year 2 there is a vertical upward shift in the supply curve reflecting the gap between W_1 and W_0. In the diagram employment and the real wage rate in year 2 are E_2 and W_2. Eventually the supply curve for labour stops moving when *W* reaches $W_{\nearrow}$. At this stage employment has returned to E_0, the level in the basecase.

Figure O.2: Stylised representation of the dynamic relationship between employment and wages



Aggregate private household behaviour

MONASH contains the same options for modelling aggregate consumption as in ORANI.

In ORANI, aggregate consumption can be modelled in a variety of ways. One approach is to assume that net borrowings from overseas adjust to accommodate a predetermined level of aggregate consumption. An alternative approach is to assume that aggregate consumption adjusts to accommodate a predetermined level of net borrowings from overseas. Other options available in ORANI

include holding constant the ratio of aggregate consumption to an expenditure aggregate such as aggregate investment, GNE or GDP.

However, MONASH also has an additional option, in which aggregate consumption is driven by household disposable income. Household disposable income in each year is equal to the sum of factor incomes (that is, returns to labour, capital and agricultural land); less income taxes paid; less income accruing to foreigners; plus net transfers from the government (for example, unemployment benefits).

The Commission's modelling in Appendix N adopts this last option for specifying aggregate consumption.

Government revenue

The government funds its expenditure through taxes and is able to run deficits. Taxation revenue is derived from two sources — net indirect taxes (commodity taxes and subsidies) and income taxes.

In ORANI, indirect taxes are explicitly modelled but income taxes are not. This limits the range of options available for specifying how the government collects revenue.

In MONASH, indirect taxes and income taxes are explicitly modelled. The explicit treatment of income taxes is necessary for defining household disposable income which, as explained above, can be used to drive aggregate consumption. Explicit treatment of income taxes is also necessary for modelling the revenue side of government activity.

The specification of the revenue side of the government activity in MONASH provides additional flexibility for modelling the government's fiscal reaction. For example, in MONASH, a deterioration in the government's budgetary position caused by the loss of tariff revenue may be offset by adjusting any one or more of the following — indirect tax rates, income tax rates, or government expenditure.

The basecase simulations in Appendix N used macroeconomic forecasts to exogenously set the level (and commodity composition) of government expenditure. The policy simulations assumed that aggregate government expenditure and the level of the deficit were fixed, with the fall in tariff revenue being compensated for by an increase in income taxes.

Exports — traditional and non-traditional

MONASH does not explicitly account for the behaviour of foreign users of Australian products. MONASH, like ORANI, divides exports into two categories: traditional and non-traditional. The former category includes commodities for which exports account for more than 20 per cent of domestic output. The key examples of traditional export commodities are Wool, Wheat, Non-ferrous metal ores and Black coal. The remainder of the ORANI export commodities fall into the non-traditional category. Examples of non-traditional export commodities are textiles, clothing and footwear products, motor vehicles, petroleum products and education.

The treatment of traditional exports in MONASH is the same as in ORANI. ORANI assumes that the demand for exports of each traditional commodity is a function of its foreign currency price and its export demand elasticity. The export demand elasticities used in MONASH reflect the sensitivity of the world price to increases in the volume of exports by Australia. That is, the elasticities reflect the degree to which Australia can influence the world price of these commodities.

For export commodities which are not highly differentiated, or where Australia has only a small share of the world market, export demands are assumed to be highly sensitive to price. That is, world prices are insensitive to the volume of exports by Australia. Where Australia has a significant share of the world or regional market (for example wool) or where commodities are highly differentiated (for example scientific equipment), exports are modelled as being price sensitive, but to a much lower degree. In these cases, Australian export volumes have some limited influence on world prices.

The MONASH treatment of non-traditional exports is different to that in ORANI. In ORANI, sales of non-traditional exports are predetermined. MONASH retains this ORANI treatment of non-traditional exports as an option but offers a range of alternative specifications.

In the treatment of non-traditional exports used in Appendix N, the demand by foreigners is assumed to be for a bundle of export commodities (that is, a combination of different types of exports) rather than for individual export goods. Two bundles of non-traditional export goods are distinguished.

The first bundle contains tourism-related exports (for example, Air transport, Entertainment, Hotels and restaurants, and Personal services). The second bundle contains all other non-traditional export commodities, including so-called elaborately transformed manufactures. For convenience, this second bundle is referred to as the miscellaneous export bundle.

Analogous to the treatment of traditional exports, sales of the tourism-related and miscellaneous export bundles are allowed to respond to changes in competitiveness and to changes in foreign demand conditions. Although the sales of the two export bundles are allowed to adjust, the composition of each bundle is typically assumed to be constant. That is, if sales of the tourism-related export bundle expand by 10 per cent then exports of the commodities that make up this bundle (for example, Air transport, Entertainment, Hotels and restaurants, and Personal services) all increase by 10 per cent, thereby maintaining their share in the bundle.

P ISSUES IN EVALUATING CHANGES IN INDUSTRY ASSISTANCE

A number of issues need to be taken into consideration in evaluating the overall impacts on the economy of reducing assistance to TCF industries. Evaluating the overall effects means examining the impacts of changing assistance arrangements on the industries themselves, other industries, households and government. The assumptions about the relationships between these groups and their responses to changes induced by reducing assistance can affect the overall evaluation. These assumptions are just as relevant in qualitative models (even though they are often implied and not explicitly stated) as they are in quantitative models (where they are expressed as mathematical relationships).

Some of these issues have been discussed in detail by others and are only summarised here. Further detail can be found in Vousden (1990), Hazeldine (1989), Dixon (1978) and Corden (1974). The discussion here does not include all issues, but covers those that are considered most relevant to this inquiry.

The main issues that need consideration are:

- What criteria should be used to evaluate assistance reform?
- Are changes in real consumption adjusted for changes in the economy's resources (as measured by changes in the capital stock) a suitable proxy for changes in aggregate economic welfare?
- How is the government sector going to respond to changes in assistance that may affect its revenue?
- How responsive are import volumes to changes in the relative price of domestic and foreign produced goods?
- How will the labour market adjust?
- How will investment and capital stocks adjust?
- Is investment funded from domestic savings or from international sources?
- Do the demands for exports have terms of trade effects?
- At what level of disaggregation is the analysis being conducted and what is the nature of other distortions, such as taxes, at that level of disaggregation?

- What sort of distortions exist that are specific to TCF industries and how do they affect business decisions in these industries?
- How does the economy adjust over time to changes in industry assistance?
- How are different regions of Australia affected by changes in industry assistance?

The explicit and implicit assumptions made regarding these and other questions can influence the impact of changing assistance on the industries themselves and the rest of the economy. These issues are discussed below, together with the approach adopted by the Commission.

P1 Criteria to evaluate changes in industry assistance

Two aspects relating to the criteria to be used to decide whether reducing tariffs results in net benefits for the community need to be considered. The first is the set of criteria to be used and the second is the definition of each of the criteria.

Regarding the criteria to be used, it is important to use measures that capture the economy-wide effects of policy changes, rather than the effects of changes on a particular industry or segment of the economy. For this reason, the results of partial equilibrium analysis will not provide an adequate indicator, although it may capture some important effects.

Often, it is desirable to use a measure that represents the net effects on the community as a whole (although such measures should be viewed in conjunction with more disaggregated information, as discussed below). Two commonly used measures are GDP and the aggregate level of real consumption. Under certain conditions, changes in real private consumption may be a good measure of changes in economic welfare. In general, changes in GDP is only a good measure of changes in overall economic activity.

Changes in real consumption can be a good measure of changes in economic welfare if the effects of any changes in resources available to the economy are accounted for. In the MONASH analysis, additional capital is assumed to be supplied by foreigners and employment is assumed to return to the level projected under the basecase. The amount of resources used in Australia is therefore unchanged after all adaptations have been made (by 2013-14). This makes real consumption an appropriate measure of economic welfare.

However, aggregate real consumption does not take into account the economic welfare effects of income redistribution. For example, TCF tariffs are taxes on imported TCF products, making textiles, clothing and footwear purchased by households and businesses all over Australia more expensive. Other forms of

assistance, such as production bounties and duty-free entry on intermediate inputs, are equivalent to subsidies to TCF producers. These subsidies are paid for by taxpayers, who have to pay more tax than they would in the absence of subsidies. Another example of the redistribution of income is that a whole range of indirect taxes and subsidies affect industries and households in non-uniform ways. Changes in the structure of industry and consumption may redistribute these transfers. Real aggregate consumption does not take into account the possible effects of this redistribution on economic welfare.

Given the limitations of real consumption and GDP, it is useful to examine changes in industry assistance using a number of criteria or measures. In addition to GDP and real consumption, the impacts on output and employment for States and industries over time provide further information to assist in the overall assessment.

The Commission chose the MONASH model to quantify the impacts on the economy of changes in assistance for the TCF industries because it provides:

- aggregate measures of the economy-wide impacts, such as real GDP and real consumption;
- a high level of industry disaggregation, so that the output and employment effects on a large number of industries can be taken into consideration;
- a possible adjustment path of output and employment by industries over time; and
- a regional disaggregation of the possible adjustment by industries over time.

This set of information is currently not available from other models (see Appendix L).

P2 Changes in real consumption and the capital stock

In this study, changes in real consumption are used as an indicator of the net welfare gains to Australians arising from the changes in the level of assistance. In evaluating the impact over a period of time, it is important to take into account any consequences for current and future consumption arising from the way in which current consumption and investment is financed.

An increase in current consumption could be financed by borrowing rather than through an increase in current income. In such a case, resulting changes in real consumption would overstate the increase in economic welfare because it would

not take into account that future consumption will be reduced when the borrowings are repaid.

Consider an example where the decrease in TCF tariffs induces an increase in the capital stock of the economy. This can affect the time profile of real consumption in several ways, depending upon how the extra investment is financed.

One possibility is that Australians finance the investment through savings. This requires them to forgo consumption in earlier periods, as they save and invest. Later they receive higher incomes as returns on capital and are able to increase their consumption.

Alternatively, Australia could have borrowed (internationally) or used foreign investment (equity) to finance the increase in capital stock.[1] In this case, real consumption is higher in the earlier periods, compared to the first option, but lower in the later periods. Real consumption is lower in later periods compared with the first alternative because the income generated by the foreign-owned capital is accruing to foreign investors (as dividends) or is being used by Australians to repay the loans and meet interest payments.

The two alternatives generate different paths for real consumption over time. However, there should be no difference in the present value of real consumption between the two alternatives when evaluated over a period of time sufficient for the adjustments in the economy to stabilise.

The second financing assumption was adopted in this study because it provides an easy way to keep track of the ownership of incremental capital and allows the changes in real consumption to be proportional to changes in current income. Under these circumstances, in any given year the change in real consumption can be interpreted as the change in economic welfare for that year.

P3 Real consumption and the government sector

Another way in which real consumption can be affected by changes in assistance is through the impact on government revenues and the response of government to this change.

The elimination of a subsidy leads to a decrease in government outlays. A reduction in tariff rates directly contributes to a loss in revenue. Such a

[1] This implies that the marginal propensity to save by households is zero. While this is probably an extreme assumption, this propensity is quite low currently. This assumption leads to a slight overestimation of the immediate consumption gains.

reduction is likely to be at least partly offset by an increase in imports because the price of imported TCF has decreased relative to the price of TCF made in Australia.[2] Another factor that can contribute towards an increase in revenue is an expansion in Australians' incomes and expenditure arising from the reduction in the tariff. This is likely to increase the revenue from indirect (other than the tariff) and direct taxes.

If the net change in government revenue is not zero, then it has implications for the interpretation of a change in real consumption as an indicator of change in economic welfare.[3] If there were an increase in revenue and the government did not change its outlays, then the government would either be reducing its deficit or improving its surplus. Either way, this is a form of saving at the expense of current real consumption. The reverse would be true if there were a net decrease in revenue.

There are three ways to take this into account. One is to hold taxes constant and adjust government expenditure to maintain the level of deficit or surplus at the level prevailing before the tariff reduction. In this case, the indicator of changes in economic welfare should be changes in real consumption plus changes in government consumption.

The second way is to adjust taxes to maintain the level of deficit or surplus. In this case, it is private consumption that adjusts as disposable income decreases or increases.

A third option is to allow the deficit or surplus to vary over the period being studied. However, the present value of the stream of real consumption over the period would need to be adjusted to reflect the fact that in the long run the accumulated debt would need to be financed out of forgone future consumption (that is, higher taxes in the future). Alternatively, the accumulated surplus would allow future real consumption to be increased through reductions in future taxes.

The economy-wide results may differ according to the option chosen. One reason is that the government sector is a labour intensive industry and consumes different intermediate goods compared to the rest of the economy. A second

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[2] This effect only occurs when tariff rates remain above zero.

[3] A measure of economic welfare should include public consumption (government current expenditure on goods and services) as well as real private consumption. However, in this study government expenditure is held constant and does not contribute to a change in the measure of economic welfare. In this way, a change in real (private) consumption can be interpreted as the change in economic welfare.

reason is that the choice of taxes (direct or indirect) can affect the relative prices of commodities, capital and labour.[4]

In this study, the Commission has assumed that direct income taxes are adjusted to maintain the government deficit or surplus at the level in each year of the basecase scenario. This assumption, together with the financing assumption described above, allows aggregate real consumption to be used as an indicator of economic welfare.

P4 Demand for exports and the terms of trade

The nature of the demand functions for exports is another factor that can influence the evaluation of the economy-wide effects of changes in industry assistance. The issue here is whether the world prices of commodities exported by Australia are sensitive to the quantities exported.

In many computable general equilibrium (CGE) models of the Australian economy, some sensitivity of the world price to the quantity exported by Australia is assumed. This is usually justified on the grounds that the commodities exported by Australia have attributes that differentiate them from those produced by other countries. Using this argument, Australia does not necessarily require a large market share of a broadly defined commodity to be able to influence the world price of its exports.

Reducing tariffs on TCF imports leads to a reduction in the cost of producing commodities in Australia. The level of cost reduction depends upon the extent to which TCF are directly and indirectly (through intermediate goods) used by industry, the extent to which imported TCF goods are substitutes for domestically produced TCF goods and the extent to which any increases in real wages capture any efficiency gains.

Reducing the costs of production of export-oriented industries (shifting their supply curves downwards) means they are willing to sell more for a given price. This leads to an increase in the volume of exports by many industries.

If the world price of a commodity is influenced by the quantity exported by Australia, then the increase in exports will cause its world price to fall. This reduces Australia's terms of trade and purchasing power for imports, offsetting some of the benefits from reducing the tariff. The MONASH model assumes

[4] The type of tax chosen to replace the lost tariff revenue can affect the projected benefits from reducing tariffs. A tax that is less (more) distorting than the tariff can produce increased (reduced) benefits from reducing tariffs.

that the world price of some commodities (for example, wool) depends on the level of Australian exports. The estimated gains from reducing tariff and other assistance would be higher if world commodity prices were not sensitive to the quantity of exports by Australia.

The balance of trade may increase or decrease in response to tariff reductions. Further, in a dynamic model, it may change direction over time as the economy fully adjusts to the tariff changes. In MONASH, it is assumed that the nominal exchange rate is not affected by changes in tariffs and that the balance of trade is variable.

P5 Labour and capital markets

The behaviour of labour and capital markets is one issue which is particularly important in determining the gains from reducing industry assistance.

In many CGE models, two alternative assumptions are used for both labour and capital. In the case of labour, one approach assumes that employment is predetermined and independent of the changes in assistance under consideration. In this case, real pre-tax wages (the price of labour to firms) adjust so that firms remain on their labour demand schedules. This is consistent with the macroeconomic concept of the non-accelerating-inflation rate of unemployment (NAIRU).[5]

There is a mixture of views on what, if any, role the NAIRU concept should have in the setting of government policies on employment (see Stiglitz 1997, Blanchard and Katz 1997 and Galbraith 1997). There is also debate on whether the NAIRU has changed over time. US research implies that sustained, broad ranging economic reforms can significantly increase the economy's level of employment by reducing the inflationary expectations of parties negotiating wage agreements and businesses setting prices (Gordon 1997 and Staiger, Stock and Watson 1997). These changed expectations can lead to an increase in the proportion of jobseekers who are able to find work.

The Commission considers that the NAIRU is a useful concept and has taken the conservative view that the NAIRU cannot be reduced using reforms to industry assistance. This study assumes that changes in TCF industry assistance have no long-term effect on Australia's current NAIRU of around 8 per cent.[6]

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[5] The NAIRU is also referred to as the 'natural rate of unemployment'.

[6] Effectively, the Commission has assumed that those with jobs will demand increased real wages, even if this has the effect of permanently consigning 8 per cent of the workforce to the dole queue. In addition, it is assumed that there is no change in the willingness of

This assumption leads to the estimated gains from reform being conservatively small because there is no sustained increase in the employment rate. If a less pessimistic view of the labour market was built into a model, then the economy-wide gains from reductions to TCF industry assistance would be higher.

The alternative approach commonly used is to assume that changes in assistance do not affect pre-tax real wages and that changes in the demand for labour are met by changes in the level of employment.

However, it is possible that the supply curve for labour is in between these extremes, even in the long run. Higher real wages may induce people to enter the work force, increasing the number of workers in the economy.[7]

In this study, it is assumed that, in the short run, pre-tax real wages are 'sticky' and aggregate employment can adjust to changes in conditions. Over time, real wages are assumed to adjust until the level of employment returns to its level in the basecase. The temporary increase in employment generates temporary increases in GDP, household income and real consumption (see Appendix O for more details).

For capital, one approach is to assume that the supply of capital is fixed in each industry and that rates of return adjust in response to changes in industries' prospects. This is consistent with a short-run view because it takes time to invest and adjust the quantity of capital.

An alternative view is that the rate of return for an industry is predetermined, for example, through the operation of international capital markets. The quantity of capital in the economy and in each industry adjusts in response to changes in the prospects of industries.

As in the case of labour above, if the level of capital increases in response to tariff changes, then so too does real GDP.

In this study, it is assumed that, in the short run, the level of capital is fixed in each industry, and that rates of return vary. However, in the long run, the capital stock adjusts and rates of return revert to their normal levels. This is consistent with capital being internationally mobile in the long run.

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employers to hire and train the unemployed, even when business prospects improve. These assumptions are consistent with pessimistic versions of 'insider-outsider' models of the labour market. In such models, the actions of employers and those with jobs ('insiders') contribute to the unemployed ('outsiders') remaining out of work (see Lindbeck and Snower 1986; Blanchard and Fisher 1989, pp. 438–455).

7 A version of the ORANI model used by the Commission in a number of applications used this assumption (see Dee 1989 for details, and IC 1995b and IC 1996a for applications).

The labour and capital markets interact through the possibility of substitution. Because, in the long run, real wages adjust and employment is constant, the capital intensity of the economy increases compared to a situation where real wages had increased less and some employment had been created. If employment had been allowed to increase, with a smaller increase in real pre-tax wages, then the overall effects on real GDP would be larger. Further, if both capital and employment are held constant, then the effects on GDP would be smaller.

P6 Import substitution

An important factor in determining the size of gains from reducing the tariff and the consequences for the import-competing industry, is the degree of substitutability between the imported and domestically produced commodities.

If the domestically produced good does not have attributes that differentiate it from imported goods, then reducing the tariff can cause a significant switch towards imports.

This effect is controlled by the Armington elasticity (Armington 1969, 1970).[8] This elasticity is defined as the proportionate change in the ratio of imports to domestically produced goods, relative to a proportionate change in the ratio of domestic to import prices. A high value means that the imported commodity is a close substitute for the domestically-produced good. A reduction in the tariff in such a case would cause a relatively large increase in the ratio of imports to domestic product sales, with a corresponding decrease in the output of the domestic industry.[9]

Large elasticities result in relatively large aggregate gains from tariff reductions as consumers and using industries are able to substitute more easily toward cheaper imports than if small elasticities are used. Large elasticities also result in larger increases in import volumes and larger reductions in domestic output, than small elasticities.

The size of the Armington elasticity is affected by the degree of commodity aggregation. In general, the finer the disaggregation, the greater the substitution

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8 This is also referred to as the elasticity of substitution between imports and domestically produced commodities.

9 Typically in partial equilibrium analysis, the Armington elasticity is infinite, reflecting perfect substitutability between the imported and domestically produced goods. In computable general equilibrium models, values in excess of 10 reflect near-infinite substitution possibilities.

elasticity. Armington elasticities are econometrically estimated using partial equilibrium models, in which movements in domestic and import prices are used to explain changes in the ratio of imports to domestic goods used in the economy. These studies are conducted at variable levels of aggregation. Partial equilibrium models using fine commodity disaggregations often produce elasticity estimates that are too large for the more highly aggregated commodity groups used in economy-wide models.

Econometric estimates are model specific. Ideally, parameters used in the MONASH model would be estimated from an econometric model which accounted for all the variables and influences accounted for in the MONASH model. However, such econometric estimation is not possible because of the large size of the model. Therefore, econometric estimates derived from models smaller than MONASH are used as a guide in the choice of values for the Armington elasticities used in the MONASH model. Such econometric estimates provide lower bounds for the values used in MONASH.

The Armington elasticities on TCF products used for this study are shown in Table P1. The elasticities have been adjusted upwards to reflect the prices paid

Table P1: Adjusted Armington elasticities of substitution between domestic and foreign TCF commodities used in the version of the MONASH model used in this report

Commodity	*Adjusted Armington elasticity - intermediate demand by industry*	*Adjusted Armington elasticity - consumption demand*
Wool scouring and cotton ginning	0.6	0.6
Man-made fibres, yarns and broadwoven fabrics	7.0	7.0
Cotton yarns and fabrics	7.0	7.0
Woollen and worsted yarns and fabrics	3.2	4.1
Textile finishing	2.3	3.9
Textile floor coverings	2.8	3.4
Canvas, ropes and other textile products	2.0	2.4
Knitting mills	7.0	7.0
Clothing	4.2	6.8
Footwear	7.0	7.0

Source: MONASH model

by using industries and consumers (see explanation below). The adjusted elasticities are based on Manion and Fallon's (1981) 'standard' elasticities. These 'standard' elasticities arose from a review of empirical research, and are based on the detailed econometric estimates of Alaouze, Marsden and Zeitsch (AMZ).[10]

The Commission considers that the adjusted Armington elasticities in Table P1 are the most appropriate for assessing the impact of changes in TCF industry assistance.[11] Both the standard and adjusted estimates are high relative to other recent econometric estimates derived from foreign data (for example, Reinert and Roland-Holst (1992), estimated small Armington elasticities for the US. Kapuscinski and Warr (forthcoming) also found small elasticities for the Philippines).[12]

The Commission's preferred estimates result in larger changes in import penetration and domestic output of TCF commodities than would be the case if the low estimates usually found in empirical research were used. Because the Commission's Armington elasticities are already high compared to others, a very strong case would need to be made for using even higher estimates.

Higher estimates than those currently used by the Commission would generate larger falls in domestic TCF production as the relative price of imports to Australian made products fell. However, such estimates would also imply greater gains for the economy as a whole as consumers and industry switched towards cheaper imports.

How the 'standard' econometric estimates were adjusted

Table P2 shows 'standard' Armington elasticities used in the MONASH model. These are taken from Manion and Fallon (1981), who modified AMZ's partial equilibrium estimates after reviewing the plausibility of modelling results which

[10] See Alaouze, Marsden and Zeitsch (1977, p. 66), Alaouze (1977a, p. 33) and Alaouze (1977b, p. 40).

[11] The maximum adjusted elasticity has been limited to 7.0, after Commission research found that values in excess of this yielded results which were difficult to reconcile with changes in observed levels of imports in the historical simulation.

[12] Econometric estimates of Armington elasticities are country specific. These two studies are cited simply to show that other TCF elasticity estimates are low. Using Philippines or US elasticity estimates in a model of the Australian economy could significantly mis-specify the sensitivity of import demand to changes in the relative prices of domestic and foreign goods.

used the AMZ estimates in the economy-wide ORANI model (the predecessor of MONASH).

Table P2: Armington elasticities of substitution between domestic and foreign TCF commodities, econometric estimates and 'standard' values in MONASH model

Commodity	*Alaouze Rapid adjustment model*	*Alaouze Partial adjustment model*	*'Standard' MONASH values*
Wool scouring and cotton ginning	na	na	0.4
Man-made fibres, yarns and broadwoven fabrics	2.0	3.4	4.7
Cotton yarns and fabrics	-0.1	2.4	4.7
Woollen and worsted yarns and fabrics	1.4	1.6	2.0
Textile finishing	na	na	2.0
Textile floor coverings	0.8	2.0	2.2
Canvas, ropes and other textile products	1.6	1.6	1.6
Knitting mills	1.9	na	1.9
Clothing	2.6	2.1	2.8
Footwear	na	na	6.8

Source: Alaouze (1977a), Table 3.1; Gretton (1990)

The research of AMZ in the late 1970s remains the most detailed econometric study of domestic/import substitution elasticities available for Australia. For textiles, clothing and footwear, they obtained a variety of long-run estimates reflecting different definitions of TCF industries and different estimating methods. At the input-output level (that is, for MONASH commodities 32 to 41), the study produced two sets of long-run estimates which are shown in the first two columns of Table P2.[13] Estimates of domestic/import substitution elasticities for manufactured goods as an aggregate centre around 2.[14]

The MONASH model requires estimates that reflect consumers' and using industries' choices between imports and domestically produced goods. The

[13] See Table 3.1 in Alaouze (1977a). Alaouze (1976) estimated the Armington elasticity of footwear products to be 3.5.

[14] This was reconfirmed in a recent study by Menon (1995). For most TCF commodities, Armington elasticities implied by Menon's estimates of 'activity elasticities' were lower than those reported in AMZ (1977).

AMZ study aimed to use relative *basic prices*[15] between imports and domestically produced goods to estimate Armington elasticities. However, such data were unavailable and the price data actually used by AMZ were:

- wholesale prices for domestically produced commodities; and
- the sum of free-on board (FOB) prices and duties for imports.

These price concepts probably introduced a bias in the AMZ estimates, which makes correction difficult. However, the estimates were assumed to be close to those that would be obtained for basic prices and scaled to obtain estimates consistent with the MONASH model's requirements.

In the MONASH model, end-users face different prices to wholesalers or importers. The difference between the two prices is called 'margins'. The MONASH model takes account of margins — markups, sales taxes and margins services (such as transport and insurance, wholesale and retail) — that make prices faced by purchasers of a commodity higher than those received by its producer.

By adjusting the 'standard' elasticities to take account of margins, appropriate Armington elasticities for secondary users, such as industries using TCF commodities as intermediate inputs and consumers, are derived.

The adjustment involves multiplying the 'standard' elasticity estimate by the ratio of the margins-inclusive commodity value to its basic price value (for further discussion, see Gretton 1990 and IAC 1986b, pp. W17–W24). For example, the wholesale and retail margins on clothing are such that consumer prices are around 170 per cent higher than the basic prices faced by wholesalers. This is reflected in the adjusted Armington elasticity for consumers, shown in Table P1, which has a value of 6.8 compared with the 'standard' elasticity value of 3.9. In contrast, when clothing is purchased as an intermediate input by industry, only wholesale margins are paid, so the adjusted elasticity is 4.2.

P7 Aggregation and distortions

The economy-wide effects of reducing one specific tariff or another form of assistance can be sensitive to the distortions in other sectors. *A priori* however, it is not known whether they compensate or reinforce the direct resource misallocation caused by the assistance. The following discussion is couched in

[15] The *basic price* of an imported commodity is its duty-inclusive cost, insurance and freight (CIF) price. The basic price of a domestically produced commodity is its factory-gate price. The data used by Alaouze, Marsden and Zeitsch approximate these concepts.

terms of a tariff change, but it is equally applicable to any assistance measures that affect the allocation of resources in the economy.

If reducing an industry-specific tariff encourages an expansion in the activities of sectors that happen to be disadvantaged by other distortions, then it can lead to efficiency gains in addition to those associated with the reallocation of resources away from the industry losing the protection. In such a case the tariff reduction helps correct resource misallocation caused by the other distortions. If, however, it encourages an expansion in the activities of other highly protected industries, this can lower the overall gains associated with reducing the tariff. In this case the tariff reduction exacerbates a resource misallocation caused by the other distortions.

In addition, if there are other distortions (for example, wholesale taxes on textiles and yarns) on an industry with a tariff, then reductions in the tariff will produce larger gains because other distortions amplify the effect of the tariff. The MONASH model takes into account most of the distortions facing TCF and other industries. It therefore provides a more accurate picture of the gains from reductions in assistance than models where this treatment is less detailed or omitted. Models which fail to take this into account will understate the gains to the economy from reducing one of the distortions (the tariff) on the industry.

Tariff rates and other economic distortions, such as those caused by wholesale taxes and subsidies and indirect taxes on labour and capital, vary between commodities. Further, commodities affected by these distortions may have different cost structures and different elasticities of substitution between imports and domestically produced goods. In this situation, the higher the level of aggregation, the greater the level of aggregation bias and the greater the error in measuring the true impact of the tariff. This is because aggregating industries disguises the differences in the degree of substitutability between groups of imports and domestically produced goods for sub-groups of the commodity and the variations in taxes, subsidies and other distortions between these sub-groups.

This issue has long been recognised — see Dixon (1978), Corden (1975, p. 57), (Magee 1972) and Johnson (1960). More recently, Arce and Reinert (1994) and Wigle (1988) have shown how US and Canadian estimates of the benefits of tariff reduction may be biased downwards because of model aggregations that fail to capture these effects.

MONASH is the most disaggregated model of the Australian economy currently available. In its standard form it contains 112 industries and 115 commodities.

The TCF sector is represented as ten industries,[16] each producing a single commodity.

P8 Assistance to TCF industries

Assistance to TCF industries can be classified into five types, in addition to that arising from the tariff:

- by-laws, tariff concession orders (TCOs) and overseas assembly provisions (OAPs) allowing reduced tariff entry on intermediate inputs;
- Import Credit Scheme (ICS);
- production bounties;
- capital grants programs; and
- other industry specific assistance.

Only the first three are considered to be significant quantitatively and are modelled. Tariffs are modelled as general taxes that apply to all users. By-laws, TCOs and OAP concessional entry are modelled as industry-specific taxes. The ICS and production bounties are modelled as producer subsidies.

By-laws, TCOs and OAP

Tariff concessions that are reserved for specific industries constitute assistance for those industries because they discriminate against other industries.

The effects of the by-law, TCO and OAP entry allowances on the industries are captured as concessional tariff rates for TCF industries. The revenue forgone from these concessional tariffs is equivalent to a subsidy on inputs to TCF industries.

Import Credit Scheme

The Import Credit Scheme (ICS) is discussed in detail in Chapter 9. The scheme is designed to encourage exports by allowing a proportion of certain types of exports to qualify for import credits. These eligible exports earn credits which

[16] In the MONASH model, the TCF sector comprises: Wool scouring and cotton ginning; Man-made fibres, yarns and broadwoven fabrics; Cotton yarns and household textiles; Textile finishing; Textile floor coverings; Canvas, ropes and other textile products; Knitting mills; Clothing; and Footwear. The Leather and leather product manufacturing industry is accounted for in the model, but is not reported because of data limitations.

can be used to buy duty-free imports of intermediate inputs. Alternatively, the credits can be sold to other TCF firms who then obtain the rights to duty-free imports. The price of credits is very close to their original value, therefore the firms earning the credits are the beneficiaries of this assistance program.

The Commission models the ICS using information on the proportion of exports that are eligible for credits and the scheduled phasedown of the program. The scheduled program phasedown means that the proportion of eligible exports that qualify for ICS credits are to be reduced every year until 2000 and the scheme abolished on 30 June 2000.

Bounties

Production bounties are subsidies whose value is linked to the value of production of a commodity. In the past, bounty schemes applied to three TCF products — Bed sheeting, Printed fabric and Textile yarns. The value of these decreased from $83.6 million in 1986-87 to $5.9 million in 1995-96. Payments under these schemes ceased in 1996-97 (they are accounted for in the basecase scenario to produce projections from the year 1993-94).

Capital grants programs

Given its relatively small size, assistance through various Textile Clothing and Footwear Development Authority capital grants programs — totalling $266.7 million between 1988 and 1994 — was not modelled.

Other industry-specific assistance

The last category of assistance is not modelled because:

- the value of assistance is small ($17.2 million over the period 1996-97 to 1999-2000, spent on the *TCF 2000 Development Strategy*);
- it is not known how this assistance is distributed across TCF industries; and
- it is uncertain whether this assistance package (currently under review) will be continued.

The Commission's estimates of the impact of lowering assistance do not fully capture all the industry-specific assistance given to TCF industries. State and Local government assistance restricted to TCF industries has not been included in the Commission's modelling.

P9 Rent seeking

Pre-existing assistance may create *rents* (that is, income above that which is necessary to induce production). Industries will spend considerable resources in trying to capture such rents through political lobbying or extensive public relations programmes. The resources spent in trying to capture these rents are generally considered to be wasted, because they are not devoted to increasing the productive capacity and wealth of the nation, but merely redistributing existing wealth. Krueger (1974) referred to this lobbying activity as 'rent-seeking'.

To the extent that rent-seeking takes place, but is not included in models, the benefits of reducing industry assistance are understated.

P10 Firm and industry efficiency

Reductions in industry assistance increase competition experienced by manufacturers of import competing commodities. This competition can provide incentives for the domestic producers to explore new market opportunities, implement innovative ways of doing business, improve their efficiency and lower their cost of production. [17]

The benefit arising from these forces is often termed the *dynamic* efficiency gain from tariff reduction. Corden (1975, pp. 81–83) states that these benefits are thought to be large and are not usually captured in measures showing the benefits of tariff reductions. As a consequence, the estimated benefits of reducing the tariff is likely to be understated. Chapter 10 analyses participants' views on the impact of reducing assistance to TCF industries on firm and industry efficiency.

In the study undertaken for this inquiry, there is no assumption that there is an increase in efficiency associated with changes in assistance arrangements. In the basecase there are improvements in productivity over time, but the same improvements are assumed in each tariff scenario modelled.

To the extent that Australian TCF producers improve their efficiency as their assistance is reduced, this study underestimates the gains to the economy from reducing assistance.

[17] Following Leibenstein (1966), this managerial effect is referred to as 'X-efficiency'. Corden (1974, pp. 224–231) and Martin (1978) discuss how X-efficiency affects the measurement of the costs of the tariff.

P11 Adjustment over time

In making their decisions, governments are likely to be interested in the long-run impact of changes in assistance, along with their transitional impact over time. Any change in assistance will induce some adjustment and economic restructuring. This involves the creation of jobs and business opportunities in some industries, and the loss of jobs, market share and profitability in others. This adjustment needs to be assessed against the general level of structural change taking place in the economy and industries.

The duration of the adjustment process and the relative size of disruption it causes are important considerations for governments trying to develop policy options that take into account any adjustment issues that may arise.

In the MONASH model, the path of adjustment is affected by the rate at which assistance is reduced, and the operation of the labour and capital markets (which are described in Appendix O). Most of the long-run benefits from reducing assistance are achieved within five years of the change in assistance. This is primarily driven by the time taken for the factor markets to adjust.

There may be some significant adjustment costs associated with reducing assistance — such as job search, retraining of displaced workers and interstate migration — which are not taken into account. To the extent that these are not included, the gains from reducing assistance are overstated. However, these costs will be partially offset by a lessening of the costs associated with unemployed persons who gain jobs in industries benefiting from the policy change.

Research on US tariff reductions suggests that, in aggregate, adjustment costs are small relative to the benefits gained, but adjustment costs in particular industries may be quite high (Baldwin, Mutti and Richardson 1980).

Leamer (1980), in a theoretical study, shows that once adjustment costs are taken into account, pre-announced, gradual tariff reduction *may* be the least cost form of implementation. This is because workers and firms, anticipating the changes in the tariff, have time to switch from one industry to another with relatively little disruption (such as periods of unemployment).[18]

[18] This assumes that industries spend the time between the announcement and the implementation of the change adapting to new conditions, rather than using resources to lobby government to maintain assistance at a high level (see ‘rent seeking’ above).

The key conclusions drawn from these studies are that adjustment costs appear to be small relative to the economy-wide benefits from tariff reductions.[19] This is particularly so when tariff reductions are phased in over time and are anticipated; when they are accompanied by economic growth; when there is inter-industry mobility of labour and capital; and when factor prices are flexible.

P12 Regional disaggregation

In evaluating different options to reduce industry assistance, it is important to consider the regional impacts. That is, how the gains are distributed between State economies and between industries.

There are two alternatives for modelling the regional consequences of a change in economic circumstances (for example, a change in the tariff). One approach, commonly referred to as the *tops-down* approach, is to calculate the effects of the change in economic circumstances on the national economy first and then map these into regions. The alternative approach, commonly referred to as *bottoms-up*, is to model agent behaviour at the regional rather than national level and to calculate the national effects by aggregating the regional effects.

An example of this second approach is MONASH-MRF (Peter *et al*. 1996). MONASH-MRF is a multi-region model which consists of 8 regional models (one for each State and Territory) linked by interregional flows in commodities, factors (labour and capital) and population.

Multi-region models have intensive regional data requirements. For this reason they are typically more aggregated than *tops-down* models (for example, MONASH-MRF distinguishes 13 industrial sectors in each State compared to 113 in MONASH). In addition, the lack of data on inter-regional resource flows often makes it necessary to make informed guesses. The key advantage of multi-region models is that they provide scope for examining the implications of changes in economic circumstances that originate at the regional level. For example, one such model has provided scope for examining the implications for the national economy and for each of the States and Territories of a road infrastructure project in Victoria (see Naqvi and Peter 1996).

Since industry protection is a national policy and because the TCF industries' outputs are highly tradeable, the Commission chose to use the MONASH *tops-down* approach to analyse the regional effects of changes in protection to TCF industries. Given the national nature of the policy and the international nature

[19] These studies do not look at the psychological and emotional costs that a disruption in employment brings to peoples lives.

of the industries the Commission believes there is little to be gained from a bottoms-up regional model with minimal industry disaggregation.

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