

**ECONOMIC MODELLING OF THE POST-2005  
TEXTILE, CLOTHING AND FOOTWEAR  
ASSISTANCE ARRANGEMENTS**

This report was prepared for  
the Productivity Commission  
by Econtech Pty Ltd.

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## Executive Summary

The Productivity Commission (PC), as part of its inquiry into Post-2005 Textiles, Clothing and Footwear Assistance Arrangements, commissioned Econtech to model the economic and regional impacts of alternative post-2005 assistance arrangements for the Textiles, Clothing and Footwear (TCF) industry. The PC modelling scenarios vary the main forms of TCF industry assistance – TCF import tariffs and the Strategic Investment Program (SIP).

Scenario 1 is concerned with the economic effects of further reducing TCF tariffs. Currently TCF tariff rates substantially exceed the general tariff rate of 5 per cent, as seen in the first column of Table 1. Under existing government policy, TCF tariffs are to be cut from 1 January 2005 but will still be above the general tariff rate, as shown in the second column of Table 1 – this is incorporated in the Baseline Scenario. In Scenario 1, TCF tariffs are reduced further to align them with the general tariff rate, as in the third column of Table 1. The differences between economic outcomes in Scenario 1 and the Baseline Scenario show the economic effects of extending existing government policy by aligning TCF tariffs with the general tariff rate.

**Table 1**  
**TCF Tariff Rates (per cent)**

	Current	1 January 2005 (Baseline)	aligning with general rate (Scenario 1)
Clothing; finished textiles	25.0%	17.5%	5.0%
Cotton sheeting and fabrics; carpet; footwear	15.0%	10.0%	5.0%
Sleeping bags; table linen; footwear parts	10.0%	7.5%	5.0%

Source: Productivity Commission

Scenario 2 is concerned with the economic effects of abolishing SIP. SIP is estimated to provide \$678 million in assistance to the TCF industry over the five years to 2005 – this level of assistance is incorporated in the Baseline Scenario. Current SIP legislation expires on 1 July 2005. In Scenario 2, SIP is abolished. The differences between economic outcomes in Scenario 2 and the Baseline Scenario show the economic effects of abolishing SIP.

Scenario 3 is concerned with the economic effects of both further reducing TCF tariffs and abolishing SIP. So in Scenario 3 TCF tariffs are reduced to align them with the general tariff rate and SIP is abolished. The economic effects of these measures are seen by examining the differences between economic outcomes in Scenario 3 and the Baseline Scenario.

The assistance arrangements under each scenario are summarised in Table 2.

**Table 2**  
**Post-2005 Assistance Arrangement Scenarios**

	Baseline	Scenario 1	Scenario 2	Scenario 3
TCF tariff rate:				
Clothing; finished textiles	17.5%	5.0%	17.5%	5.0%
Cotton sheeting and fabrics; carpet; footwear	10.0%	5.0%	10.0%	5.0%
Sleeping bags; table linen; footwear parts	7.5%	5.0%	7.5%	5.0%
SIP assistance	\$678m	\$678m	\$0m	\$0m

Source: Productivity Commission

The economic modelling was undertaken using Econtech's Murphy Model 600 Plus (MM600+), which is a long-term computable general equilibrium (CGE) model of the Australian economy. MM600+ includes a detailed treatment of the TCF industry, including distinguishing 6 TCF industries producing 57 products.

## Main Simulation Results

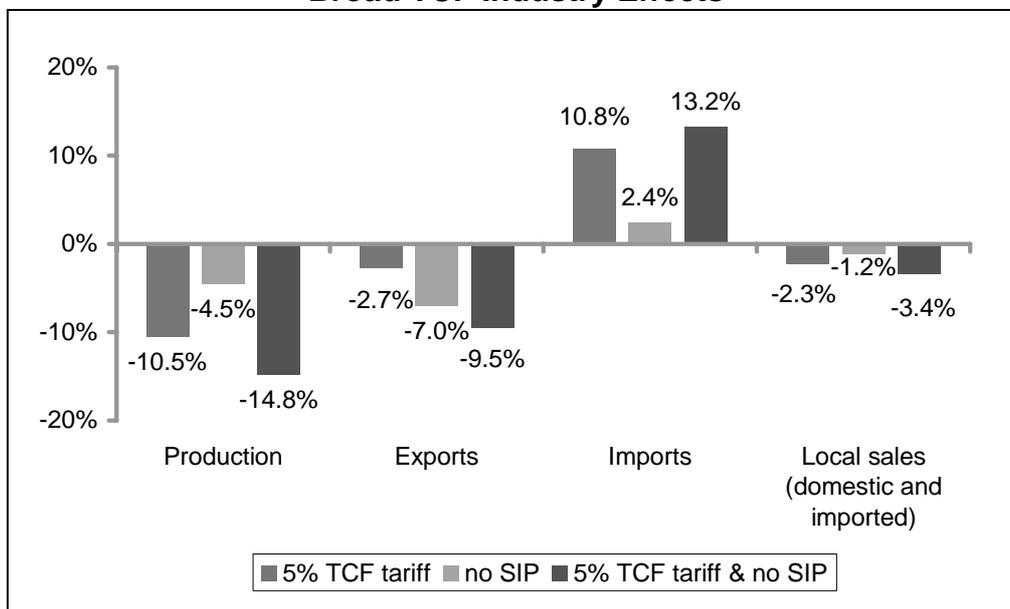
Under all three alternative scenarios, reductions in TCF industry assistance lead to gross gains in consumer living standards. As explained later, gross annual consumer living standards are conservatively estimated to rise by between \$16 million and \$95 million.

The scenario results also show that reducing or eliminating TCF industry assistance has a slightly positive effect on GDP. Within that outcome, there are losses in production in the TCF industry that are more than matched by gains in other industries.

## Broad TCF Industry Effects

Reducing the assistance to the TCF industry is expected to mean that TCF industry production is lower than in the Baseline Scenario. Reducing TCF tariffs makes imported TCF products cheaper, while abolishing SIP funding of the local industry makes locally produced TCF products dearer: both these developments lead to lower demand for the production of the local TCF industry. Lower TCF industry production leads to similar percentage reductions in TCF industry employment.

**Chart 1**  
**Broad TCF Industry Effects**



These results do not mean that production is lower in the economy generally. Rather the reductions in TCF industry production are more than fully offset by gains in other sectors of the economy. So as shown later, at the national level total production is increased.

Similarly, these results for the TCF industry do not mean that national employment is lower. The level of national employment over the longer term depends on the overall efficiency of the national labour market, which is unlikely to be changed by changes to TCF industry

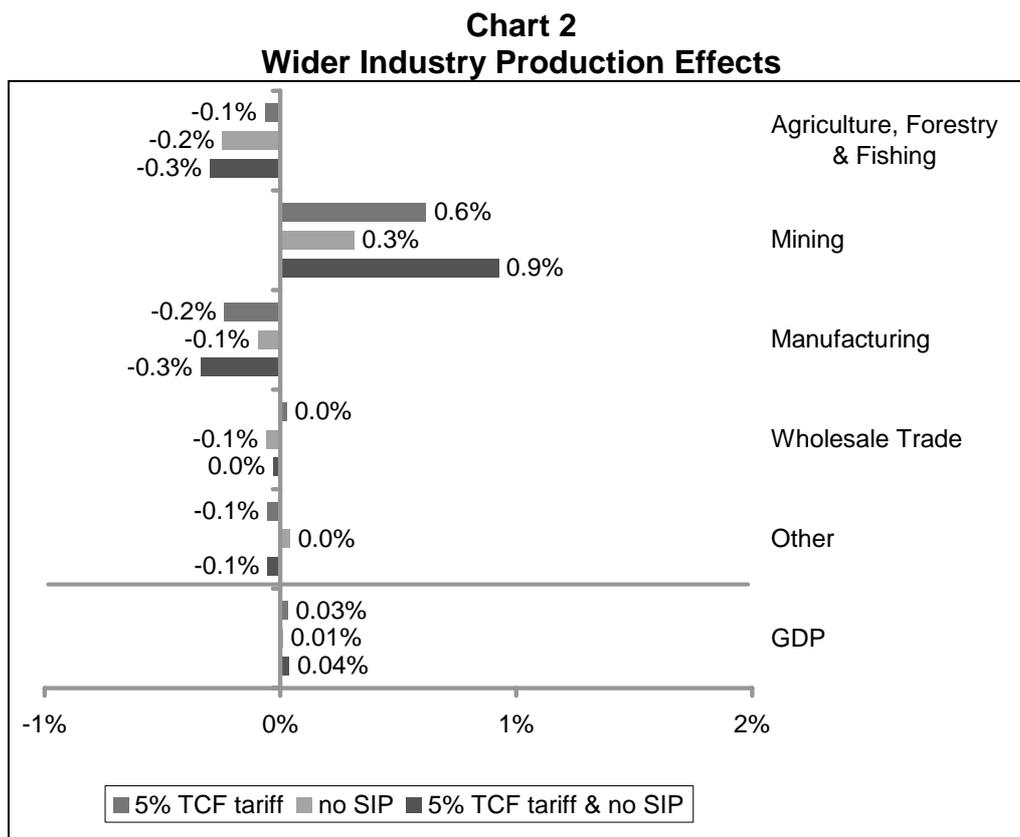
assistance. Thus, national employment is unchanged as a standard modelling assumption in all of the scenarios.

The results in Chart 1 show that two alternative methods of reducing TCF industry assistance — reducing TCF tariffs and abolishing SIP — have different effects on TCF industry production. Reducing TCF tariff rates results in a larger reduction in assistance to the TCF industry than abolishing SIP, and this in turn leads to a greater reduction in TCF production.

Both methods of reducing assistance mainly impact on TCF production through trade flows, rather than through TCF local sales. Trade flows on highly competitive world markets are highly price sensitive, while local demand for TCF products by Australian businesses and consumers is less price sensitive. Not surprisingly, Chart 1 shows that reducing TCF tariffs leads to a bigger rise in TCF imports, while abolishing SIP funding leads to a bigger loss of TCF exports.

### Wider Industry Effects

While reducing TCF assistance leads to lower production in the TCF industry, it leads to higher production in other industries. Indeed, Chart 2 shows that the overall effect on GDP is slightly positive under each scenario. This implies that the losses in TCF industry production are being more than matched by gains in production elsewhere.



The loss in TCF industry production is reflected in the loss of total manufacturing production in Chart 2. However, the fall in the net balance of exports and imports in the TCF industry leads to a lower Australian dollar, driving gains in the net balance of exports and imports, and hence in production, for other trade-exposed industries.

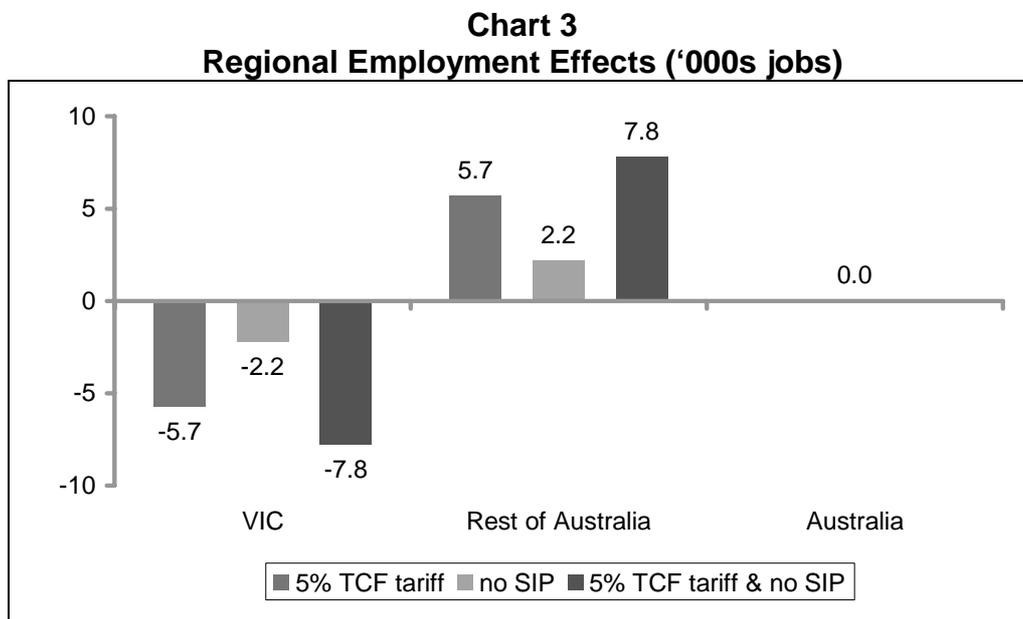
Thus Chart 2 shows that this depreciation will stimulate production in export-orientated industries such as mining by improving their international competitiveness. The expansion in these industries will flow through to downstream manufacturing industries including minerals processing and iron and steel manufacturing. The depreciation of the exchange rate will also benefit import-competing industries such as motor vehicles and parts as competing imports become more expensive.

Agriculture is another export-oriented industry that is likely to benefit from the lower exchange rate. However, other influences offset this effect. With the reduction in output in the TCF industry, there is reduced demand for inputs from the agriculture industry, such as cotton and wool. Thus, while on one hand the agricultural industry benefits from increased export potential, on the other hand it faces a reduction in domestic demand.

### Regional Effects

By assumption, reduced assistance to the TCF industry does not change national employment in the longer term, as shown in Chart 3. As noted, the longer term level of national employment depends on the overall efficiency of the national labour market, which is unlikely to be changed by changes to TCF assistance.

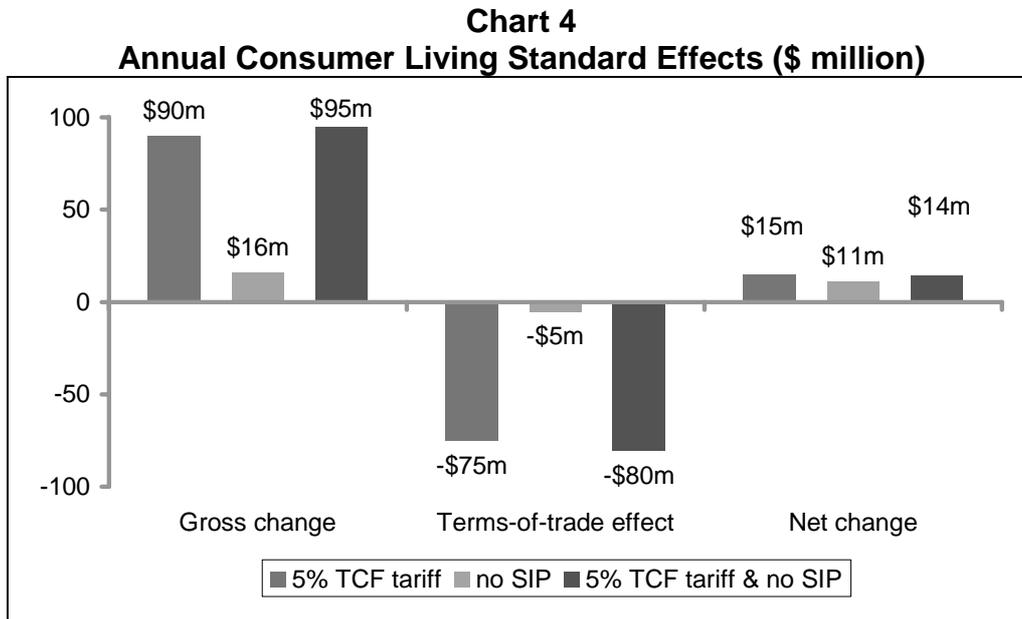
Rather reduced TCF industry assistance is expected to change the regional pattern of employment, as also shown in Chart 3. Job losses in Victoria, where the Australian TCF industry is concentrated, are exactly offset by job gains elsewhere in Australia. The extent of this job shifting is greater under the reduction in TCF tariffs, because this involves a greater reduction in TCF industry assistance.



### Consumer Welfare

Under all three scenarios, reductions in TCF industry assistance lead to gains in consumer welfare or living standards. The tariff cut reduces assistance by more and so leads to a bigger increase in living standards than the abolition of SIP. These effects are shown in Chart 4. It shows that gross annual consumer living standards are conservatively estimated to rise by between \$16 million and \$95 million. These estimates are conservative because

while they take into account gains from improved allocative efficiency, they do not take into account gains from three other sources – improved x-efficiency, reduced lobbying costs and possible flow-on reductions in assistance in other countries.



Reducing special assistance to the TCF industry improves allocative efficiency because resources are reallocated from the TCF industry to other industries such as mining. More generally, with reduced industry assistance, resources move from lower valued uses that were supported by the assistance to higher valued uses that are not reliant on assistance.

On the other hand, reduced TCF industry assistance in Australia, viewed in isolation, leads to falls in Australia's terms-of-trade. This occurs because a lower trade balance for the TCF industry from reduced assistance needs to be offset by a higher trade balance for other industries to restore external balance. The rise in the supply of exports from other industries that is needed to increase their trade balances leads to lower export prices in some markets, lowering Australia's terms-of-trade. Annual national income falls, reducing consumer living standards.

Chart 4 shows how the consumer gain from improved allocative efficiency and the consumer loss from a lower terms-of-trade contribute to the net effect on consumer living standards. For all three scenarios, the terms-of-trade effect partly offsets the gross effect and thus reduces the positive effect on consumer living standards. However, there are two reasons for putting more emphasis on the gross effect, which shows a larger gain in consumer living standards.

First, if other countries are reducing their trade barriers across a broad range of commodities at the same time as Australia, there is no reason to expect a fall in our terms-of-trade. This is because reduced import protection in other countries will lift demand for Australian exports, absorbing the increase in supply. In fact, given that import protection is higher in some other countries than in Australia, a general move towards trade liberalisation is likely to raise rather than lower Australia's terms-of-trade. In that case, the terms-of-trade effect will reinforce rather than offset the gross gain in living standards from improved allocative efficiency.

Second, models such as MM600+ arguably understate export price elasticities of demand to avoid model solution complexities. With higher and more realistic export demand elasticities, the offset from the terms-of-trade effect would be reduced, leaving a larger net gain in living standards from reduced TCF assistance.

Overall, the modelling results in this report suggest significant long-term benefits from further reducing TCF assistance, especially in the context of a move by other countries towards broad-based trade liberalisation.

### Issues in Estimating Consumer Welfare Effects

MM600+ contains three special features that enable it to produce more refined estimates of gains in consumer welfare or living standards from economic reforms such as reductions in TCF assistance.

The first refinement is that MM600+ includes exact measures of gains in living standards or consumer welfare. These measures are the compensating variation (CV) and equivalent variation (EV) of welfare economics. The equivalent variation is the amount that consumers would need to be compensated for the economic reform not to take place. The compensating variation is the amount that consumers would be prepared to pay for the economic reform to take place. Table 3 shows that in practice these measures give the same estimates for the annual welfare gain for each of the three TCF scenarios, if these gains are measured to the nearest million dollars.

**Table 3**  
**Alternative Measures of Consumer Welfare Effects (\$ million)**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
valued at baseline (old) prices	18	11	18
valued at new prices	12	11	12
compensating variation (CV)	15	11	14
equivalent variation (EV)	15	11	14
gross gain	90	16	95
terms-of-trade effect	-75	-5	-80
compensating variation (CV)	15	11	14

Source: MM600+

Often welfare gains are measured more simply, by valuing the changes in consumption levels using either the old policy or new policy prices. As seen in Table 3, this leads to overstatement and understatement of the welfare gains respectively. MM600+ avoids this problem by using the CV and EV measures of changes in consumer welfare.

The second refinement is that MM600+ contains a fine level of product detail, with 57 different TCF products. This is important because the consumer welfare cost of assistance depends both on the average rate of assistance and the diversity of assistance rates. The diversity in TCF assistance rates can only be fully captured by using a fine level of disaggregation.

The importance of using a fine level of TCF product detail to accurately estimate the welfare gains from reducing TCF tariffs to 5 per cent is shown in Table 4. For example, distinguishing only one TCF product captures less than 50 per cent of the gross welfare gain, because it takes no account of the welfare loss from diversity in TCF tariff rates. Even distinguishing 6 TCF products only captures 84 per cent of the welfare gain that is exposed by using the 57 TCF products of MM600+.

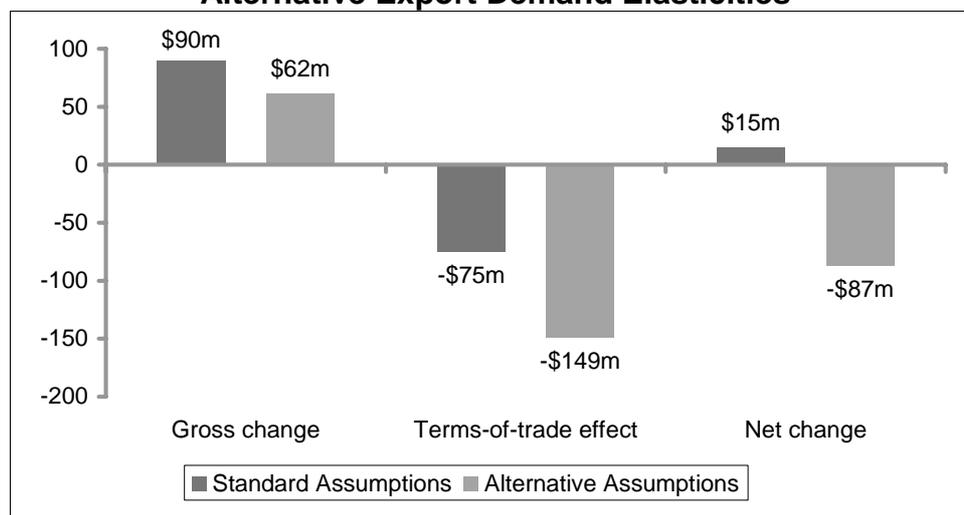
**Table 4**  
**Gross Welfare Gains at different levels of TCF Industry Disaggregation:**  
**Cut in TCF Tariffs to 5%**

Disaggregation Level	Number of TCF products	Gross Welfare Gain (\$ million at \$1998/99 prices)	Share of Product Level Estimate
2-digit ANZSIC	1	45	47%
3-digit ANZSIC	6	79	84%
4-digit ANZSIC	19	89	94%
MM600+ Product Level	57	95	100%

Source: MM600+

The third refinement is that MM600+ has been used to estimate the sensitivity of the estimates of the gain in consumer welfare to alternative lower estimates of export demand elasticities. The gains in consumer welfare under the two sets of assumptions about export demand elasticities are compared in Chart 5 for Scenario 1, which involves reducing TCF tariffs to 5 per cent. As seen in the chart, the effects on consumer welfare are less positive under the alternative assumption of lower export demand elasticities, as explained below.

**Chart 5**  
**Consumer Welfare Effect from 5% TCF Tariff Rate:**  
**Alternative Export Demand Elasticities**



A reduction in TCF tariffs to 5 per cent is a trade expanding policy that will lead to a higher level of exports generally. Under lower export demand elasticities, a bigger fall in export prices is required to induce a given expansion in export volumes. Thus lower export demand elasticities lead to a bigger fall in the terms-of-trade for trade expanding policies. As a result of this bigger fall in the terms of trade, the loss in welfare due to the terms-of-trade effect is significantly higher under the alternative low export demand elasticities compared to under the standard elasticity assumptions. In fact, the loss in welfare due to the terms-of-trade

effect means that the net welfare effect is negative under the (implausible) alternative assumption of lower export demand elasticities. In contrast, the net welfare effect under the standard (plausible) assumption is positive.

## Issues and Policy Implications

The estimates in this report of the gains from removing special assistance from the TCF industry are conservative. The estimates take into account gains from improved allocative efficiency, but do not take into account gains from three other sources – improved x-efficiency, reduced lobbying costs and possible flow-on reductions in assistance in other countries.

Nevertheless, the estimated gains from improved allocative efficiency are positive and ongoing for all three policy options to reduce assistance to the TCF industry. This supports the case for adopting the goal of eliminating special assistance to the TCF industry, even before making subjective allowances for the likely gains from the other three sources besides allocative efficiency.

Consideration of the issues on the timing of reducing assistance suggests that assistance should continue to be reduced, but at a slower rate than in the past. In that regard, the modelling provides useful information on the extent of the long-term gains compared with the short-term job shifting – this is important in assessing the rate at which assistance should be reduced. However, other issues affecting the choice of timing such as the impact on jobs mismatch and the effects of uncertainty about future assistance rates are outside of the scope of the modelling.

Overall, the modelling results are not inconsistent with a policy of reducing TCF tariffs to 5 per cent by, say, 2010. This would remove the current special tariff assistance afforded the TCF industry. At the same time it would slow down the rate at which TCF tariffs fall in the first decade of this century, compared with the preceding decade. The comparative falls in percentage points are 20 c.f. 30 per cent for clothing, 10 c.f. 30 per cent per cent for footwear, 10 c.f. 25 per cent for fabrics and 5 c.f. 15 per cent for table linen.

## Introduction

The Productivity Commission (PC), as part of its inquiry into Post-2005 Textiles, Clothing and Footwear Assistance Arrangements, commissioned Econtech to model the economic and regional impacts of alternative post-2005 assistance arrangements for the Textiles, Clothing and Footwear (TCF) industry. The PC modelling scenarios vary the main forms of TCF industry assistance – TCF import tariffs and the Strategic Investment Program (SIP).

Scenario 1 is concerned with the economic effects of further reducing TCF tariffs. Currently TCF tariff rates substantially exceed the general tariff rate of 5 per cent, as seen in the first column of Table 1. Under existing government policy, TCF tariffs are to be cut from 1 January 2005 but will still be above the general tariff rate, as shown in the second column of Table 1 – this is incorporated in the Baseline Scenario. In Scenario 1, TCF tariffs are reduced further to align them with the general tariff rate, as in the third column of Table 1. The differences between economic outcomes in Scenario 1 and the Baseline Scenario show the economic effects of extending existing government policy by aligning TCF tariffs with the general tariff rate.

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Source: Productivity Commission

Scenario 2 is concerned with the economic effects of abolishing SIP. SIP is estimated to provide \$678 million in assistance to the TCF industry over the five years to 2005 – this level of assistance is incorporated in the Baseline Scenario. Current SIP legislation expires on 1 July 2005. In Scenario 2, SIP is abolished. The differences between economic outcomes in Scenario 2 and the Baseline Scenario show the economic effects of abolishing SIP.

Scenario 3 is concerned with the economic effects of both further reducing TCF tariffs and abolishing SIP. So in Scenario 3 TCF tariffs are reduced to align them with the general tariff rate and SIP is abolished. The economic effects of these measures are seen by examining the differences between economic outcomes in Scenario 3 and the Baseline Scenario.

This report uses Econtech's Murphy Model 600 Plus (MM600+) to estimate the effects of further reductions in assistance. MM600+ is a long-term CGE model of the Australian economy. MM600+ includes a detailed treatment of the TCF industry, including distinguishing 6 TCF industries producing 57 products. It also includes a detailed treatment of import tariffs and production taxes for 672 products.

This report is structured as follows.

- Section 1 discusses the main features of the MM600+ economic model used to model the various scenarios.
- Section 2 outlines the various scenarios, including the Baseline Scenario and Scenarios 1 to 3.

- Section 3 presents the results of Scenario 1, that is, reducing the tariffs in the TCF industry to 5 per cent under the *5% TCF Tariff Scenario*.
- Section 4 presents the effects of Scenario 2, that is, abolishing the SIP scheme under a *No SIP Scenario*.
- Section 5 presents the effects of Scenario 3, that is, both reducing the TCF tariffs to 5 per cent and abolishing the SIP scheme under the *Reduced TCF Assistance Scenario*.
- Section 6 analyses and compares the gross and net gains in consumer welfare in the three scenarios.
- Section 7 examines the sensitivity of the results to varying a key assumption – the levels of export demand elasticities.
- Section 8 places the results of this report in its policy context.

While all care, skill and consideration has been used in the preparation of this report, the scope of this report is based on the strict instructions of the Productivity Commission and it is designed to be used only for the specific purpose set out below. If you believe that your instructions are different from those set out below, or you wish to use this work or information contained within it for another purpose, please contact us.

The specific purpose of this report is to model the economic and regional impacts of one set of alternative assistance arrangements for the TCF industry that might apply after 2005.

The findings in this report are subject to unavoidable statistical variation. While all care has been taken to ensure that the statistical variation is kept to a minimum, care should be taken whenever using this information. Should you require clarification of any material, please contact us.

## 1 Economic Modelling

The economic modelling of the post-2005 assistance arrangements for the TCF industry was conducted using Econtech's MM600+ model. MM600+ is a long-term CGE model of the Australian economy that models a long-run equilibrium. MM600+ is highly detailed, distinguishing 672 products produced by 108 industries. This makes it six times more detailed than any comparable model.

The high level of product detail means that many policy changes can be analysed without the need for further disaggregation of the product detail. It also means that the gains from some micro-economic reforms can be more fully captured.

### 1.1 Key Features

MM600+ has many features that are important for this analysis as follows:

- it fully incorporates the New Tax System (NTS) and models the GST treatment of each of its 672 products, and 24 other indirect taxes;
- it includes a production tax for each of the 672 products, which enables the production subsidies under SIP to be modelled;
- it also includes an tariff for each of the 672 products, which enables TCF tariffs to be modelled;
- it contains a high level of detail of the TCF industry, with 6 TCF industries producing 57 products. The 6 industries are listed below.
  - Textile fibres, yarns and woven fabrics
  - Textile products
  - Knitting mill products
  - Clothing
  - Footwear
  - Leather and leather products;
- it allows for the substitution effects triggered by changes in the prices of goods and services. For example, on the production side of the economy, MM600+ allows for substitution between:
  - labour and capital;
  - different types of capital inputs such as motor vehicles, computers, buildings etc;
  - different forms of primary energy, including black coal, brown coal, and LPG;
  - local and export destinations for sales; and
  - of particular importance for this report, imports and local sources of supply of goods and services.
- it is set up to achieve budget neutrality in alternative ways. The default swing fiscal instrument, which is used in this report, is income tax, and the alternative swing fiscal instrument is GST;
- it generates results for specific regions within Australia. Specifically, MM600+ produces estimates of changes in production and employment across 23 regions and it makes an important distinction between traded and non-traded industries; and

- it provides valid measures of changes in consumer welfare or living standards based on compensating and equivalent variations so that possible tariff options for the TCF sector beyond 2005 can be correctly evaluated in terms of the public interest.

At the same time, as with any exercise estimating the economy-wide effects of policy changes, the results are indicative rather than precise. This is because there is a margin of uncertainty around the true values of key economic parameters. This means that results are better quoted using one or (at most) two significant figures, instead of three or four.

## 1.2 Key Long-Run Assumptions

MM600+ models a long-run equilibrium. In the long-run, economic agents optimise, all markets are in equilibrium, and assets and liabilities follow sustainable paths. Some of the key assumptions involved are as follows.

- *Profit maximisation:* the representative business in each industry chooses inputs and outputs to maximise profit subject to prices and a production function exhibiting constant returns to scale. This involves choosing inputs of capital and labour and outputs for the local and export markets.
- *Labour market equilibrium:* in the long-run the labour market is assumed to attain equilibrium, so that economic shocks, such as changes in TCF industry assistance, have no lasting effect on total employment. Rather, only the distribution of total employment across industries is affected.
- *External balance:* in the long-run net liabilities to the foreign sector must follow a sustainable path. This assumption is implemented by setting the trade balance equal to the cost of servicing payments on foreign-owned capital. The real exchange rate needed to achieve this outcome is determined by MM600+.
- *Budget balance:* in the long-run the budget balance must be sustainable. Specifically, in MM600+ the government budget is assumed to be in balance. It is necessary to designate a swing fiscal policy instrument to achieve that outcome. In this report the rate of tax on labour income is used as the swing fiscal policy instrument, which is the standard assumption, although the GST rate can also be used.
- *Private saving:* in the long-run the level of private sector saving and associated asset accumulation must be sustainable. Further, one potential problem with long-run models is that saving (i.e. sacrificing present consumption for future consumption) can appear artificially attractive, because the model results show the gain in future consumption but not the sacrifice of present consumption. To address both of these issues, saving is held constant in MM600+ by fixing the quantity of capital that is owned locally.

## 1.3 Trade Elasticities

As mentioned in the Key Feature section above, MM600+ also models how changes in relative prices affect economic choices, leading to changes in the industry pattern of production and employment. In modelling economic choices, values need to be assigned to the elasticities that govern the sensitivity of each choice to changes in relative prices. Of particular interest to this project are the assumptions made about the trade elasticities that govern the sensitivity of export and import demand and supply to changes in relative prices. A short discussion of these trade elasticities is included below, with a full list of the TCF trade elasticities provided in Attachment B.

*Import demand: substitution between imports and local supply*

In MM600+, as in other models such as the Monash Model, allowance is made for substitution between imported and local sources of supply for each importable commodity for each of three categories of end use. The categories of end use are: recurrent inputs; business investment; and other components of final demand. The values of the Armington elasticities governing this substitution were originally based on those used in the Monash Model in 1997, but some have been modified in the light of experience with MM600+.

*Export supply: substitution of local producers between supplying export and home markets*

In modelling export supply, MM600+ distinguishes between the production of a commodity for the home market and production for the export market. For each commodity, an elasticity of transformation links production for the two markets.

To the extent that a commodity's transformation elasticity is set to less than infinity (the value implicit in the ORANI model), an allowance is made for some friction in switching supply between the two markets. This friction may arise because some exported commodities are tailor made for export, or are more narrowly defined than the corresponding home commodity e.g. Australian consumers may eat all types of apples while we may only export Fuji apples to Japan — this affects the ability to switch supply between the two markets.

Based on model simulation experiments, the exports elasticity of transformation has been set to 0.5 for water transport and black coal, 1.5 for other minerals, and 2.5 for all other exports.

*Import Supply*

As a small country, Australia is assumed to be a price taker when purchasing imports from world markets. That is, the elasticity of supply of imports to Australia is assumed to be infinite.

*Export demand*

Because Australia is a small country, it is assumed to be close to being a price taker in supplying exports to world markets. So the standard export demand elasticity, which is used for most products, is set to the high value of -12. A lower value of -4 is used for wool, where Australia has market power, and tourism, where product differentiation is important. For some other exports, Australia has an element of market power or product differentiation, and the assumed export demand elasticities lie between -4 and -12. The pattern of elasticities for minerals and minerals processing were developed in 1998 in consultation with Malcolm Gray, a commodities consultant engaged by the Minerals Council of Australia.

**1.4 Features for Estimating Effects on Consumer Welfare**

As demonstrated in this report, MM600+ has three important features which mean that it provides an advanced analysis of the crucial issue of the effects of reducing TCF assistance on consumer welfare or living standards.

- i. MM600+ pays particular attention to the correct measurement of changes in consumer welfare. It uses the compensating variation and equivalent variation from welfare economics. These are alternative rigorous measures of the gain in real consumer spending. The significance of this issue is considered in section 3.6.
- ii. MM600+ distinguishes 57 different TCF products. This fine level of disaggregation is important for capturing the diversity in TCF tariff rates. The special assistance currently afforded to the TCF industry reduces consumer welfare not only because the overall level of assistance to TCF is high, but also because there is a high degree of diversity in the rate of assistance between different TCF products. This is demonstrated in section 3.7.
- iii. MM600+ can show the sensitivity of the sensitivity of its estimates of the effects on consumer welfare to varying a key assumption – the levels of export demand elasticities. This is undertaken in section 7.

At the same time, the estimates in this report of the gains in consumer welfare from removing special assistance from the TCF industry are conservative. The estimates take into account gains from improved allocative efficiency, but do not take into account gains from three other sources – improved x-efficiency, reduced lobbying costs and possible flow-on reductions in assistance in other countries. See section 8 for a discussion of this issue.

For more information on MM600+, download the model documentation from Econtech's web-site ([www.econtech.com.au](http://www.econtech.com.au)).

## 2 Industry Assistance Scenarios

The specific purpose of this report is to model the economic and regional impacts of the key alternative assistance arrangements for the TCF industry that might apply after 2005.

### 2.1 TCF Industry Assistance Scenarios

The Inquiry commissioned Econtech to model four alternative TCF industry assistance scenarios. These four Scenarios are shown in the table below.

**Table 2.1**  
**Alternative Policy Settings**

	Baseline	Scenario 1	Scenario 2	Scenario 3
TCF tariff rate:				
Clothing; finished textiles	17.5%	5.0%	17.5%	5.0%
Cotton sheeting and fabrics; carpet; footwear	10.0%	5.0%	10.0%	5.0%
Sleeping bags; table linen; footwear parts	7.5%	5.0%	7.5%	5.0%
SIP assistance (over 5 years)	\$678m	\$678m	\$0m	\$0m

Source: Productivity Commission

- **Baseline Scenario.** The Baseline Scenario models the Australian economy under the TCF industry assistance arrangements that will apply from 1 January 2005. As shown in the “Baseline” column of the table, from that date TCF industry tariffs are to be reduced to 17.5 per cent for clothing and finished textiles, 10 per cent for cotton sheeting, fabric, carpet and footwear and 7.5 per cent for sleeping bags, table linen and footwear parts. This Scenario also assumes that SIP funding is continued at the current level of \$678 million over five years. The Baseline Scenario is the base case against which the alternative assistance scenarios are compared.
- **5% TCF Tariff Scenario.** Under Scenario 1, TCF tariffs are reduced across-the-board to the general rate of 5 per cent.
- **No SIP Scenario.** Under current legislation, SIP is to end on 30 June 2005. Scenario 2 models the effects of abolishing the SIP scheme.
- **Reduced TCF Assistance Scenario.** Scenario 3 combines Scenarios 1 and 2. That is, TCF tariffs are reduced to 5 per cent and SIP is abolished.

### 2.2 Modelling Outputs

For each scenario, this report provides estimates of the following:

- effects on key macroeconomic aggregates such as annual consumer living standards, gross domestic product (GDP), the real exchange rate, real after-tax wage and investment;
- production, employment and trade effects for the TCF industry, reporting results separately for each part of the industry;
- employment, production and trade effects of all other industries, including the broader manufacturing industry; and
- regional production and employment effects for 23 regions, including the main TCF manufacturing regions in Victoria.

Detailed results for each scenario are contained in Attachment A.

### 2.3 1993/94 Input-Output Tables

The economic modelling results presented in this report are based on data contained in the 1993/94 input-output tables. The latest input-output tables are for 1996/97, but both sets of tables paint a similar picture of the TCF industry. For example, imports account for 35 per cent of TCF industry supply in the 1996/97 input-output tables compared to 36 per cent in the 1993/94 input-output tables. This comparison is shown in Table 2.3, below.

**Table 2.2**  
**Imports as a Share of Supply**

	TCF Industry
1993/94 input-output tables	36%
1996/97 input-output tables	35%

Source: ABS Input-Output tables

Given these similarities for the TCF industry, we do not anticipate that the results obtained using the 1993/94 input-output tables would be significantly different to results obtained using the 1996/97 input-output tables.

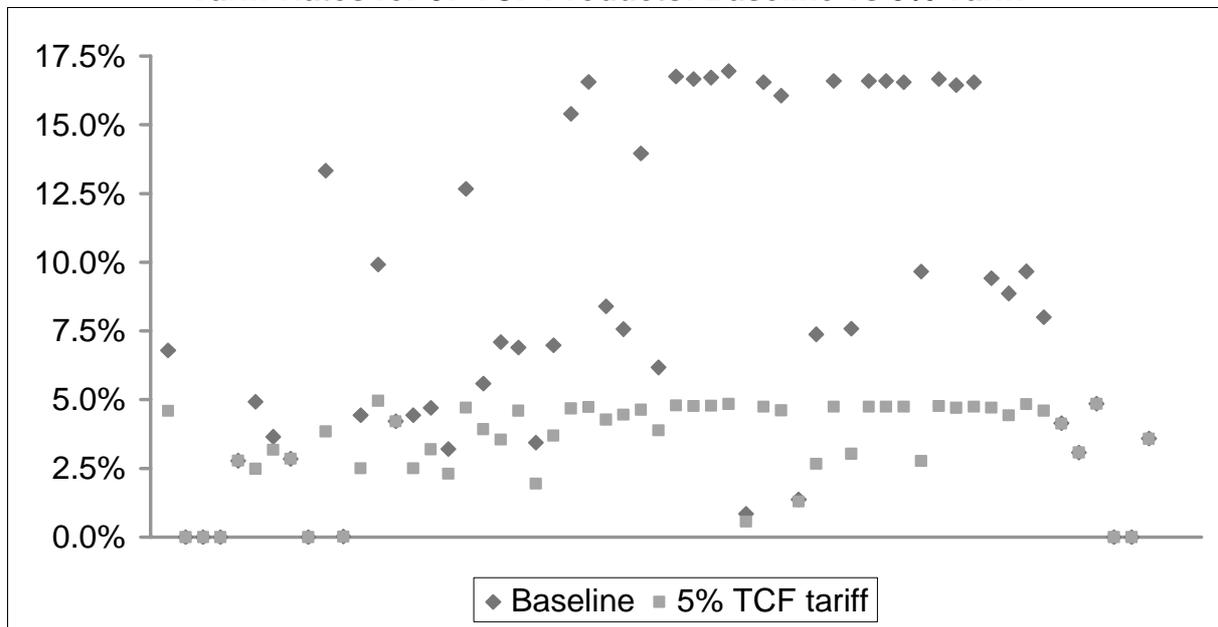
Further, the regional module of MM600+ uses labour force survey data from the 1998/99 Australian Bureau of Statistics Labour Force Survey. This data is more up-to-date than the latest input-output table. By using this data, MM600+ is able to capture the regional changes in TCF activity better than if it relied on input-output data.

### 3 Scenario 1: Cutting TCF Tariffs to 5%

In Scenario 1, TCF tariff rates are cut to the general tariff rate of 5 per cent. Specifically, TCF tariffs are reduced from their 2005 rate in the Baseline Scenario of 17.5 per cent for clothing and finished textiles, 10 per cent for cotton sheeting, fabric, carpet and footwear and 7.5 per cent for sleeping bags, table linen and footwear parts to an across-the-board new rate of 5 per cent in Scenario 1.

For modelling purposes, these changes in TCF tariff rates need to be applied to the 57 TCF products appearing in the MM600+ Model. Chart 3.1 compares the tariff rate for each of the 57 products between Scenario 1 and the Baseline Scenario. For ease of reference, Table 3.1 averages these TCF tariff rates to present them at the broader level of 6 TCF industries.

**Chart 3.1**  
**Tariff Rates for 57 TCF Products: Baseline vs 5% Tariff**



**Table 3.1**  
**Modelled Assistance Rates: 5% Tariff Rate Scenario**

		cif tariff rates: Baseline	cif tariff rates: 5% TCF tariff
221	Textile Fibre, Yarn and Woven Fabric Manufacturing	3.5%	2.2%
222	Textile Product Manufacturing	6.4%	3.4%
223	Knitting Mills	13.5%	4.6%
224	Clothing Manufacturing	13.9%	4.1%
225	Footwear Manufacturing	8.7%	4.7%
226	Leather and Leather Product Manufacturing	1.2%	1.2%

Source: Weighted Average rates calculated from Productivity Commission data

It can be seen both in Chart 3.1 and Table 3.1 that the TCF tariff rates that are applied in the model are a little under the statutory tariff rates that are referred to above. There are two reasons for this.

First, generally TCF tariffs do not apply to all of the items in a particular TCF product category. For example, because of this lack of full TCF tariff coverage, the average tariff rate for clothing manufacturing in 2005 is expected to be 14.6 per cent, not 17.5 per cent.

Second, while in MM600+ imports are valued on a c.i.f. basis, statutory tariff rates are expressed as a percentage of f.o.b. import values. So for modelling purposes, tariff rates need to be adjusted to be expressed as percentages of c.i.f. import values. Tariff rates that have been adjusted for modelling purposes in this way are slightly lower than the standard tariff rates. The Productivity Commission supplied Econtech with these adjusted tariff rates.

Tariffs on imports of clothing again serve as an example. As stated above, the average standard tariff rate for clothing is 14.6 per cent. This standard tariff rate applies to f.o.b. values. When it is re-expressed as a percentage of c.i.f. values, which unlike f.o.b. values include freight and insurance, it falls to 13.9 per cent, as seen in Table 3.1.

Table 3.1 shows that, under the 5% Tariff Rate Scenario, the tariff rates in all three digit industries in the TCF industry are reduced significantly. There is one exception and that is in the Leather and Leather Products industry, with the average tariff rate in this industry relatively low already and not expected to change under the 5 per cent tariff scenario.

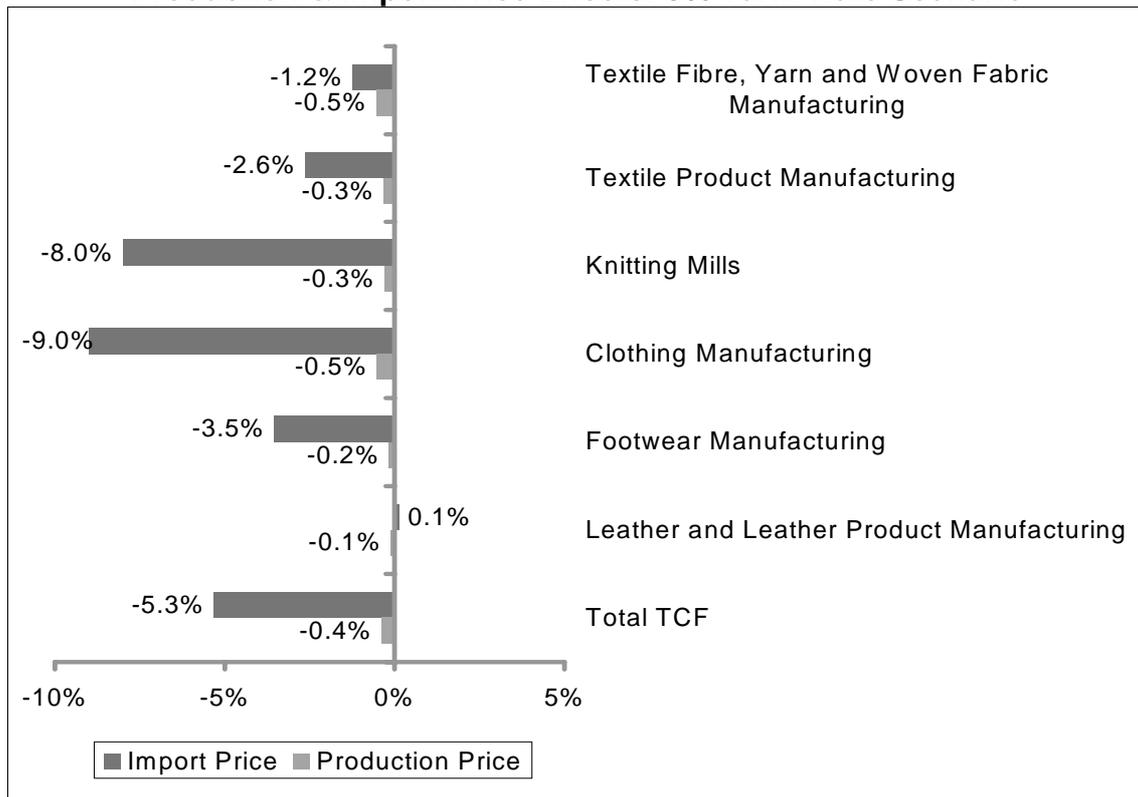
The results of this scenario show that reducing TCF industry assistance has a slightly positive effect on GDP. Of most importance is the finding that reducing TCF industry assistance leads to a gain in consumer living standards, as considered in the latter part of this section.

### 3.1 Detailed TCF Industry Effects

#### Local Production and Import Price Effects

Reducing the assistance to the TCF industry by cutting TCF tariffs to 5 per cent will directly affect the prices of imported textiles, clothing and footwear. These import price effects are shown in Chart 3.2 below.

**Chart 3.2**  
**Production & Import Price Effects: 5% Tariff Rate Scenario**



The chart above shows that the simulated tariff cut leads to substantial falls in the price of imported TCF products. The price falls are the largest for clothing and knitting mill products because the clothing tariff, which applies widely in both industries, has the biggest cut (from 17.5 to 5 per cent). This reduction in the import price of TCF products is also expected to flow through to a reduction in production costs for downstream industries.

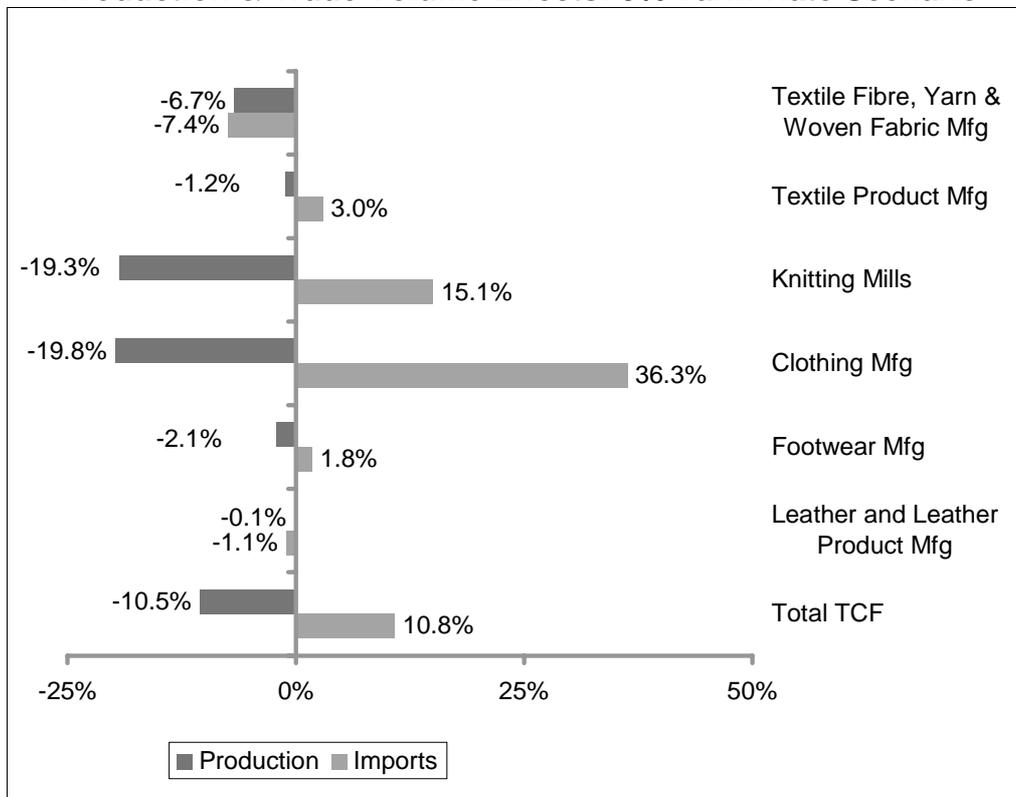
The prices of locally-produced TCF products are also expected to fall. These price falls occur because local TCF producers use some imported TCF products as inputs into their production process. Thus, TCF tariff cuts lower part of their costs and these savings flow through in the form of lower prices.

#### Local Production and Trade Volume Effects

Lower import prices will lead to substitution in demand away from locally-produced TCF products and towards imported TCF products. As Chart 3.3 shows, the overall volume of locally produced TCF products is estimated to fall by 10.5 per cent while imports are estimated to rise by 10.8 per cent. Within this result, the TCF products that are most affected are those that are currently the most assisted, as they are exposed to larger reductions in

assistance when all TCF tariffs drop to 5 per cent. This explains the relatively large effects on imports and production for Clothing and Knitting Mills.

**Chart 3.3**  
**Production & Trade Volume Effects: 5% Tariff Rate Scenario**



These effects on production and import volumes depend on the assumed sensitivity of demand to changes in relative price. As shown in Attachment B, the elasticity of substitution between imports versus local production for all TCF industry products ranges from 2 for textile and leather products to 7 for most textile fibres and yarns, knitting mill products and footwear. The weighted average elasticity of substitution for all TCF products is 4.

The role of these elasticities in the results can be shown with an example, women's dresses, skirts and slacks. The import price of this clothing category is estimated to be lower by 10.6 per cent than in the baseline, while the domestic price is estimated to be lower by 3.5 per cent. This implies a fall of 7.2 per cent in the relative price of imports of this clothing category. So applying the elasticity of substitution between imported versus locally produced women's dresses, skirts and slacks of 4.24 to this percentage change in relative price, gives a predicted percentage change in relative volumes of 30.3 per cent. This matches the actual change in relative volume, which is made up of a rise in import volumes of 30.4 per cent net of a rise in domestic volumes of 0.1 per cent.

### 3.2 Broader TCF Industry Effects

As shown above, reducing TCF tariff rates to 5 per cent is estimated to lower overall TCF industry production by 10.5 per cent and raise TCF imports by 10.8 per cent compared with the Baseline Scenario. This reduction in TCF production is mainly due to impacts on trade flows, rather than through a loss of local sales. Trade flows on highly competitive world

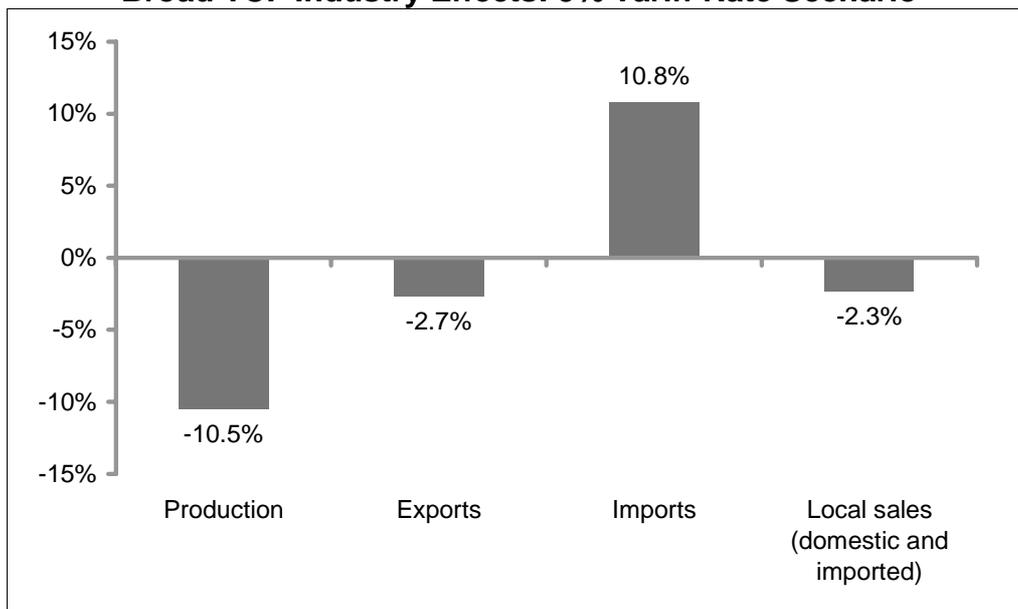
markets are highly price sensitive, while local demand for TCF products by Australian businesses and consumers is less price sensitive.

Lower TCF production leads to lower TCF employment. TCF industry employment is estimated to be lower by almost 7,000 jobs from a base of around 64,000.

These results do not mean that production and employment are lower in the economy generally. Rather the reductions in TCF industry production and employment are offset by gains in other sectors of the economy. As shown later, at the national level, total production increases slightly, while total employment is unaffected, by assumption. In the longer term the level of national employment depends on the overall efficiency of the national labour market, which is unlikely to be changed by changes to TCF industry assistance.

Local sales (defined as domestic plus imported TCF products sold in the domestic market) fall by a relatively modest 2.3 per cent. This reflects largely offsetting effects on sales on the domestic market of intermediate and final TCF products. On the one hand, lower production of domestically-produced final TCF products leads to lower local demand for intermediate TCF products (both domestic and imported). On the other hand, lower import prices for TCF products leads to higher local demand for imported final TCF products.

**Chart 3.4**  
**Broad TCF Industry Effects: 5% Tariff Rate Scenario**



Just as the effects on import volumes can be explained using the assumed values for import elasticities, the effects on export volumes can be explained using the assumed values of export elasticities. These export elasticities can be found in Attachment B.

Cotton yarn serves as an example of the role of the assumed export elasticities. For cotton yarn, the export price elasticity of demand is -12, while the elasticity of transformation in production between supplying the export and local markets is 2.5. The role of these elasticities in determining export demand and supply is as follows.

On the demand side, the price of cotton yarn exports in Australian dollars is estimated to be higher by 0.5 per cent than in the baseline, while the exchange rate is estimated to be lower by 0.2 per cent. This implies a rise of 0.3 per cent in the price of exports in foreign currency.

So applying the export demand elasticity for cotton yarn of  $-12$  to this percentage change in price, gives a predicted percentage fall in export volumes of 4.1 per cent, which matches the actual change in the volume of cotton yarn exports.

On the supply side, the price that Australian cotton yarn exporters receive is higher by 0.5 per cent, while the price for cotton yarn on the domestic market is lower by 0.9 per cent. This implies a relative price increase for cotton yarn exports of 1.4 per cent [ $0.5 - (-0.9) = 1.5$ ]. Applying the export supply elasticity of 2.5 to this percentage change in relative price, gives a predicted percentage rise in the relative volume of exports of 3.5 per cent. This matches the actual rise in relative volume, which is made up of a fall in export volumes of 4.1 per cent referred to above, net of a larger fall in domestic supply to the local market of 7.6 per cent.

In summary, the model results are consistent with the assumed elasticities. The results for cotton yarn exports of a price rise in Australian dollars of 0.5 per cent and a volume fall of 4.1 per cent are seen to be consistent with the underlying export demand and supply relationships. More generally, export prices and volumes are determined simultaneously in MM600+ by underlying export demand and supply relationships.

### 3.3 Wider Industry Effects

While reducing TCF tariff rates will lower TCF industry production, it will lead to higher production in most other industries. Indeed, Chart 3.1 shows that reducing the TCF tariff rate to 5 per cent has a small positive effect on GDP. This implies that the losses in TCF industry production are being more than matched by gains in production elsewhere.

The lower TCF production will directly affect industries downstream and upstream of the TCF industry. Lower TCF production will also indirectly affect trade-exposed industries by affecting the exchange rate.

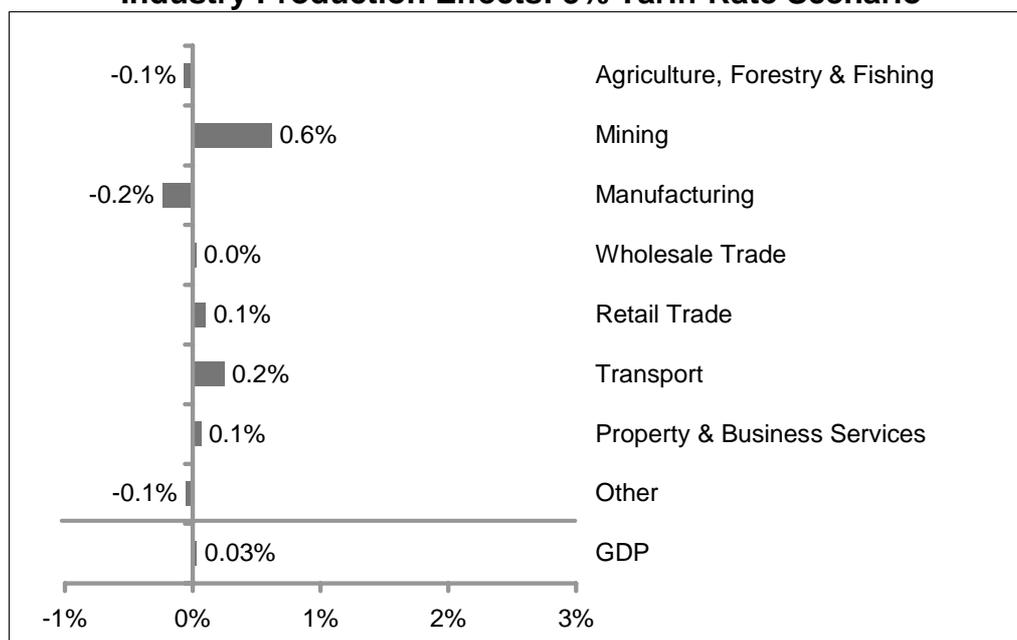
The rise in the volume of TCF imports, shown in Chart 3.4, will potentially reduce Australia's trade balance. To offset this and to restore the trade balance, the exchange rate is estimated to depreciate by 0.2 per cent. This depreciation of the exchange rate will make exports cheaper and imports more expensive and so it will support production in export-oriented industries and import competing industries beyond TCF.

On the export side, as mentioned above, reducing the assistance of the TCF industry will benefit export-orientated industries through a depreciation of the exchange rate. For example, the lower exchange rate will mean that mining industry exports are relatively cheaper and this will lead to a rise in exports of mining products. This flows through to stimulate additional production in the mining industry.

Agriculture is another export-oriented industry that is likely to benefit from the lower exchange rate. However, other influences offset this effect. With the reduction in output in the TCF industry, there is reduced demand for inputs from the agriculture industry, such as cotton and wool. Thus, while on one hand the agricultural industry benefits from increased export potential, on the other hand, it faces a reduction in domestic demand.

Import-competing industries will also benefit from the lower exchange rate. This includes locally manufactured motor vehicles and parts. Import-competing industries benefit because the price of competing imports increases with the lower exchange rate.

**Chart 3.5**  
**Industry Production Effects: 5% Tariff Rate Scenario**



Industries that make extensive use of imported TCF products are also expected to benefit from the lower price of TCF imports. With lower input costs, these industries are expected to increase activity. One example is furniture manufacturing. Lower input costs due to the reduction in TCF import tariff rates, are expected to lead to an increase in both production and employment in this industry. Further details can be found in Table 8A in Attachment A.

The reduction in TCF production is reflected in the loss of total manufacturing production in the chart above. Overall production in the manufacturing industry is estimated to be 0.2 per cent lower than in the baseline. This is due to the lower production of the TCF industry more than offsetting the higher production in other areas of the manufacturing industry such as minerals processing, furniture and motor vehicle parts.

For each industry, the percentage changes in employment are similar to the percentage changes in output. This is because reduced TCF tariffs have little effect on the relative price of labour and capital, and so there is little change in the optimal labour/capital ratio in each industry. Thus, labour and capital inputs will move in line with production in each industry.

### 3.4 Regional Effects

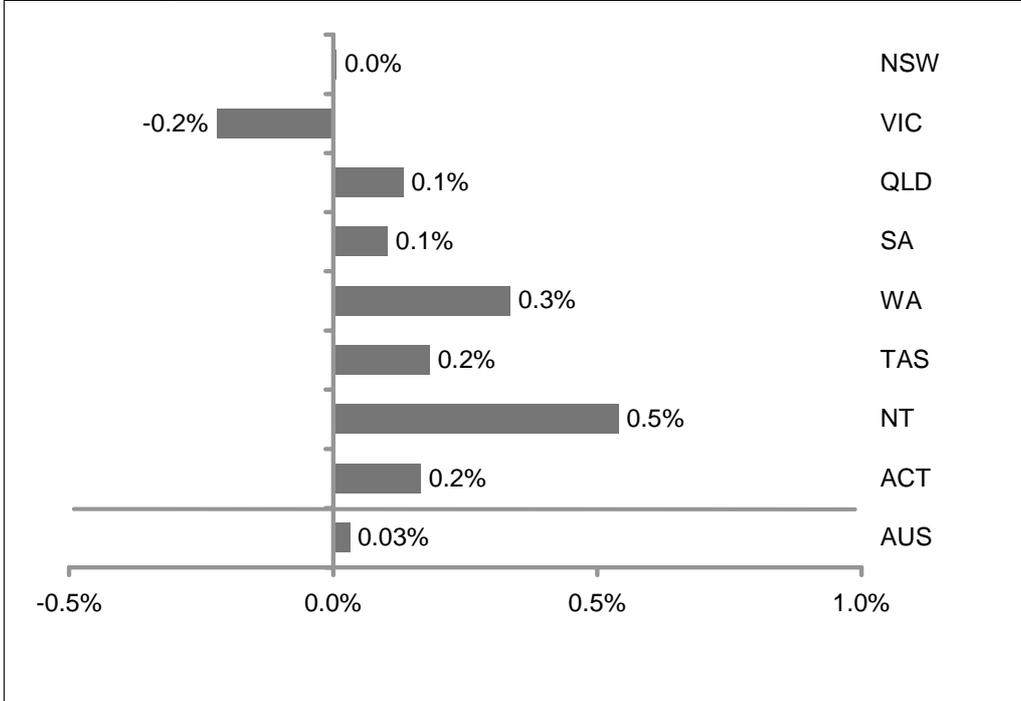
Unpublished ABS data<sup>1</sup> indicates that almost half of TCF employment is located in Victoria. Thus, it is expected that production and employment in this state will be lower as a result of the lower production of the TCF industry, as shown in Chart 3.6. For example, total production in Victoria is estimated to be lower by 0.2 per cent than in the baseline, while employment is estimated to be lower by 0.3 per cent in the same state.

While employment is lower in Victoria, national employment is not affected by the reduced TCF industry assistance (by assumption). The longer term level of national employment depends on the overall efficiency of the national labour market, which is unlikely to be

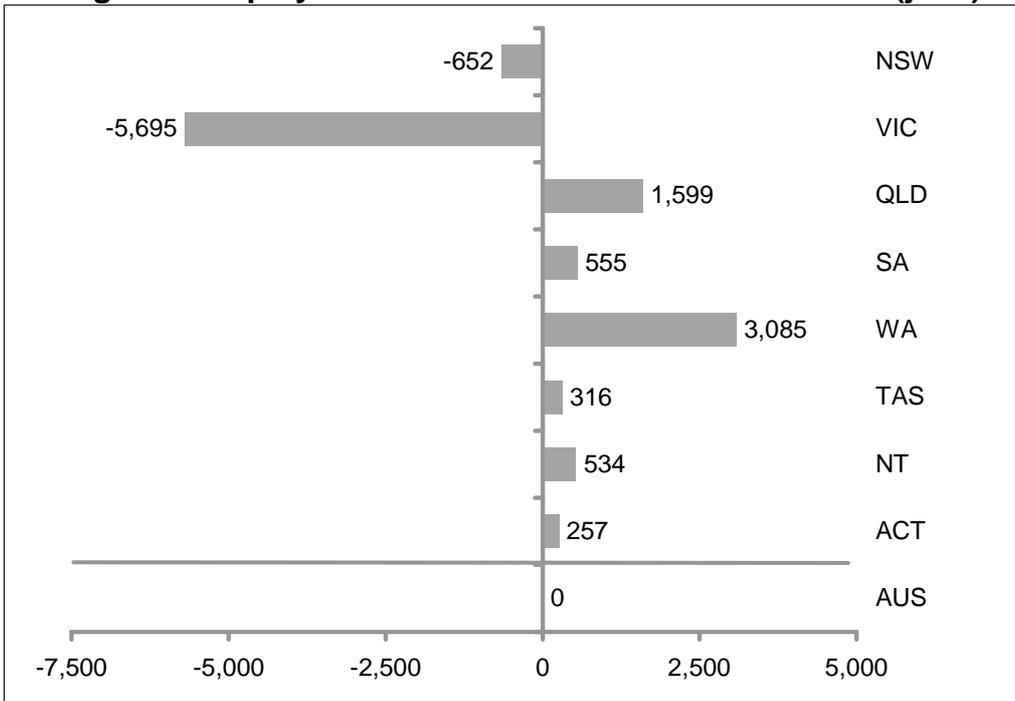
<sup>1</sup> Unpublished data from ABS Manufacturing Industry Survey, 1994/95

changed by changes to TCF industry assistance. Rather, reducing TCF tariffs is expected to change the regional pattern of employment. So the lower employment in Victoria is exactly offset by job gains elsewhere in Australia, particularly in the states where there is currently a proportionately low amount of TCF employment.

**Chart 3.6**  
**Regional Production Effects: 5% Tariff Rate Scenario**



**Chart 3.7**  
**Regional Employment Effects: 5% Tariff Rate Scenario (jobs)**



In Victoria, just under 3,500 jobs are lost in the TCF industry. A further 2,300 jobs are lost in other industries, giving a total jobs loss of around 5,700. While jobs increase in traded industries as these expand across the nation to restore trade balance following the increase in TCF imports, this is more than offset by a loss in jobs in non-traded industries due to regional multiplier effects from the loss in TCF jobs.

Queensland, Western Australia and the two territories experience only small job losses in TCF industries. This is more than offset by the benefit to them of job increases in other traded industries, such as mining, together with the regional multiplier effects of this on non-traded industries. Queensland has a jobs gain of about 1,600, Western Australia, 3,100, and the two territories 800.

Because the TCF industry is about as significant in New South Wales, Tasmania and South Australia as it is in the national economy, and national employment is unaffected by the tariff cuts by assumption, it might be expected that employment in these states would also change little. In fact, there are some effects, which depend on the relative exposure of each state to the parts of the TCF industry that are most affected by the tariff cuts.

NSW is most exposed to the Clothing industry. Output in this industry falls by almost 20 per cent, exceeding the 10.5 per cent fall in output estimated for the whole TCF sector. Because of this high exposure to the Clothing industry, there are job losses of just over 650 in New South Wales.

South Australia is most exposed to the Footwear industry, but has almost no exposure to the Knitting mill products industry, which, along with Clothing, experiences the largest output loss. This lack of exposure to the Knitting mill products industry means that South Australia has job gains of about 560.

Finally, Tasmania is most exposed to the Textiles industry and the Footwear industry, but has almost no exposure to the large output losses in the clothing-related industries. Consequently Tasmania also experiences jobs gains of about 320.

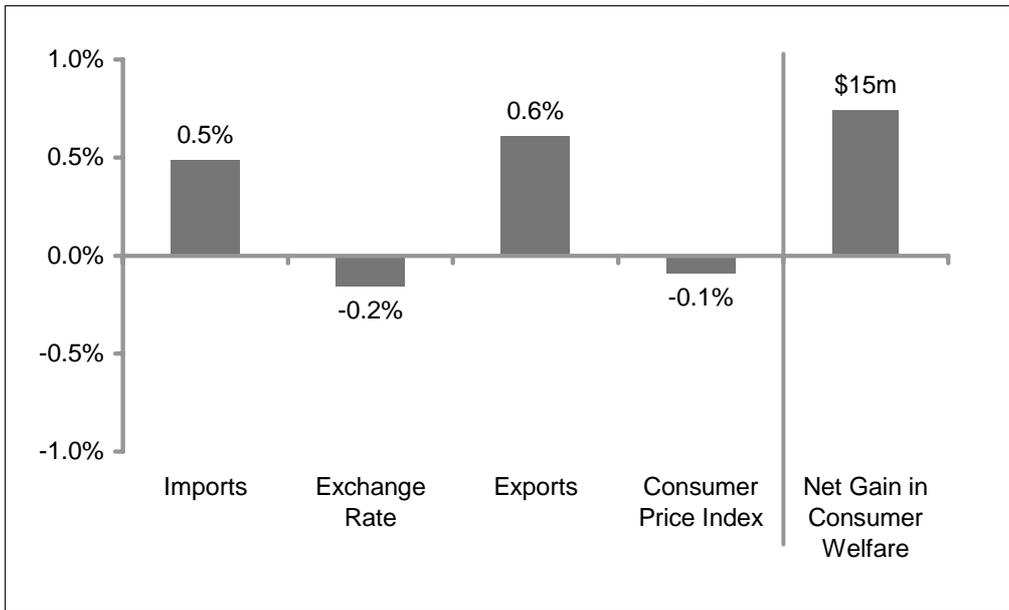
These results essentially show a small shift in the distribution of economic activity in Australia away from Victoria and, to a lesser extent, New South Wales, and towards the other states and territories. The national level of employment is unchanged by assumption. The longer term level of national employment depends on the overall efficiency of the national labour market, which is unlikely to be changed by changes to TCF industry assistance.

### **3.5 National Macroeconomic Effects**

The main effects of lower TCF tariffs on the national economy are now considered.

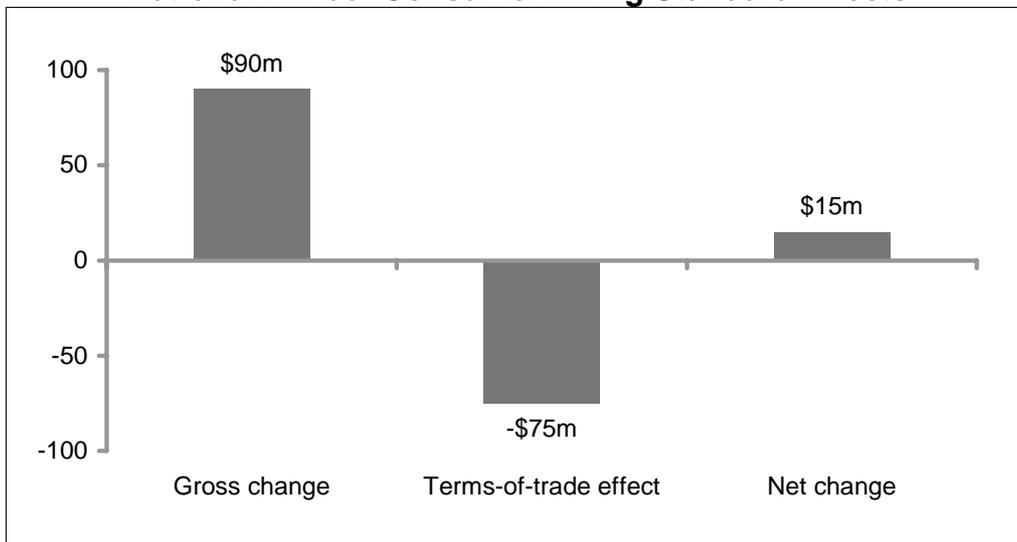
Reducing TCF tariff rates represents a move towards a more open economy. So Chart 3.8 shows increases in both import and export volumes. The increase in total import volumes occurs because higher TCF imports (resulting from lower TCF tariffs) flow through to a rise in the total volume of imports. In response to the potential fall in the trade balance from higher imports, the exchange rate depreciates, leading to higher export volumes.

**Chart 3.8  
National Effects: 5% Tariff Rate Scenario**



Reducing TCF industry assistance leads to an annual gain in consumer living standards. As shown in Chart 3.8 above, annual consumer living standards (consumer welfare) are expected to rise by \$15 million if the TCF tariff rates are reduced to 5 per cent. This is discussed further below.

**Chart 3.9  
National Annual Consumer Living Standard Effects**



Reducing the TCF tariff rates to 5 per cent leads to a gross annual gain in consumer living standards, as shown in Chart 3.9. The gross gain of \$90 million is the result of improvements in allocative efficiency. TCF tariffs provide protection for domestic TCF industries. This means that resources are drawn away from efficient uses in unprotected industries and in to a less efficient expansion of the local TCF industry. With a reduced level of assistance from import tariffs, these resources are more efficiently allocated across other industries. That is, with reduced industry assistance, resources move from lower

valued uses that were supported by assistance to higher valued uses that are not reliant on assistance.

On the other hand, reduced TCF industry assistance in Australia, viewed in isolation, leads to falls in Australia's terms-of-trade. The rise in the supply of exports to restore trade balance leads to lower export prices in some markets. This terms-of-trade effect reduces annual national income and so consumer living standards are lower by \$75 million than in the baseline.

Chart 3.9 shows how the consumer gain from improved allocative efficiency and the consumer loss from a lower terms-of-trade contribute to the net effect on consumer living standards. Importantly, the terms-of-trade effect partly offsets the gross effect, reducing the positive effect on consumer living standards. However, there are two reasons for putting more emphasis on the gross effect, which shows a much greater gain in consumer living standards.

First, if other countries are reducing their trade barriers across a broad range of commodities at the same time as Australia, there is no reason to expect a fall in our terms-of-trade. This is because reduced import protection in other countries will lift demand for Australian exports, offsetting the increase in supply. In fact, given that import protection is higher in some other countries than in Australia, a general move towards trade liberalisation is likely to raise rather than lower Australia's terms-of-trade. In that case, the terms-of-trade effect will reinforce rather than offset the gross gain in living standards from improved allocative efficiency.

Second, models such as MM600+ arguably understate export price elasticities of demand to avoid model solution complexities. With sufficiently high export demand elasticities, the terms-of-trade effect would be reduced.

### 3.6 Different Measures of Consumer Welfare

MM600+ includes exact measures of gains in living standards or consumer welfare. These measures are the compensating variation (CV) and equivalent variation (EV) of welfare economics. The equivalent variation is the amount that consumers would need to be compensated for the economic reform not to take place. The compensating variation is the amount that consumers would be prepared to pay for the economic reform to take place.

Table 3.2 shows that in practice the CV and EV measures give the same estimates for the annual welfare gain, if these gains are measured to the nearest million dollars.

**Table 3.2**  
**Alternative Measures of Net Welfare Effects (\$ million)**

	Welfare Effects
valued at baseline prices	18
valued at new prices	12
compensating variation (CV)	15
equivalent variation (EV)	15
gross gain	90
terms-of-trade effect	-75
compensating variation (CV)	15

Source: MM600+

Often welfare gains are measured more simply, by valuing the changes in consumption levels using either the old policy or new policy prices. As seen in Table 3.2, this leads to overstatement and understatement of the welfare gains respectively. MM600+ avoids this problem by using the CV and EV measures of changes in consumer welfare.

### 3.7 Gross Gain in Consumer Welfare and Level of Disaggregation

In the preceding section, the gross gain in annual consumer welfare from reducing TCF tariffs from their scheduled rates in 2005 to 5 per cent was estimated at \$90 million using MM600+. In the section, this estimate is first compared with a simpler estimates based on a partial equilibrium approach, to both check and confirm the MM600+ estimates. Second, this section investigates the level of product disaggregation that is needed to obtain a reliable estimate of the gross gain.

The consumer welfare cost of assistance depends both on the average rate of assistance and the diversity of assistance rates. The diversity in assistance rates can be fully captured by using a fine level of disaggregation. This diversity in assistance rates is pronounced in TCF and was shown in Chart 3.1 above, which shows the different TCF rates for different TCF products in MM600+, both in the Baseline and under lower TCF tariffs. Chart 3.1 shows how reducing TCF tariffs to 5 per cent not only reduces the average TCF tariff rate, but also greatly reduces the diversity of TCF tariff rates – both changes boost consumer welfare.

The gross gain in economic welfare from a reduction in TCF tariff assistance can be approximated in a partial equilibrium setting using the following formula. This formula corresponds to the deadweight loss triangles that are familiar from textbooks.

$$\text{Welfare Gain} = \sum_{i=1}^n \{ [t1(i) + t2(i)]/2 \times wp(i) \times [im2(i) - im1(i)] \}$$

In this formula, the contribution to the approximate gross welfare gain from a given TCF industry (industry i), is calculated by applying the average of the tariff rates before and after the tariff cut.

$$[t1(i) + t2(i)]/2,$$

to the resulting increase in the volume of its imports,

$$im2(i) - im1(i),$$

valued at world or c.i.f. import price

$$wp(i).$$

In the formula, these contributions are added together for all TCF industries to arrive at total welfare gain.

This formula for approximating the gross gain in economic welfare from tariff reductions can be used to check the MM600+ estimate of the gross gain for Scenario 1. That scenario involved a cut in TCF rates down to 5 per cent from the rates scheduled to apply in 2005. Applying the formula to the MM600+ results gives an approximate gross gain of \$95 million, as shown in the last row of Table 3.3. This agrees closely with the MM600+ estimate of a gross gain of \$90 million that was reported in the preceding section.

This provides confirmation of the basis for the MM600+ estimate of the gross gain. While it is an exact estimate based on general equilibrium modelling, a similar result is obtained using the approximation formula designed for a partial equilibrium setting. That is, the MM600+ estimate is consistent with standard economic analysis based on deadweight loss triangles.

The second purpose of this section is to investigate the level of product disaggregation that is needed to obtain a reliable estimate of the gross gain in welfare. This was investigated by progressively aggregating the MM600+ results, and applying the welfare gain formula at the different levels of disaggregation. The results are shown in the rows of Table 3.3.

**Table 3.3**  
**Gross Welfare Gains at different levels of TCF Industry Disaggregation**

Disaggregation Level	Number of TCF products	Gross Welfare Gain (\$ million at \$1998/99 prices)	Share of Product Level Estimate
2-digit ANZSIC	1	45	47%
3-digit ANZSIC	6	79	84%
4-digit ANZSIC	19	89	94%
MM600+ Product Level	57	95	100%

Source: MM600+

The results in the table show the importance of having a reasonable level of TCF industry disaggregation when trying to accurately estimate the gain in economic welfare from a reduction in TCF tariff assistance. As mentioned earlier, this disaggregation is needed to capture the diversity in TCF assistance rates.

The table above shows that the gross welfare gain is seriously understated if it is analysed at the broad 2 digit ANZSIC level, which has only one TCF category. The estimated gain is only \$45 million, less than half of the gain estimated more accurately at the product level with its 57 TCF categories.

The results improve as they are calculated at a more disaggregated level. The results are still significantly understated at the 3-digit level of 6 TCF products (\$79 million versus \$95 million). However, the estimated welfare effects are only marginally understated if they are calculated at the 4-digit ANZSIC level of 19 products (\$89 million versus \$95 million).

While the table is useful to illustrate the importance of disaggregation when examining the effects of a reduction in TCF protection, the results are illustrative only. This is because they are an approximation to partial equilibrium estimates of the gross welfare effects. The MM600+ results presented in section 3 show exact general equilibrium estimates of the gross and net welfare effects. Thus, while Table 3.3 illustrates the effect of different levels of disaggregation on the accuracy of results, the MM600+ estimates should be used as they show the more accurate estimates of welfare effects.

### 3.8 How Significant is the Gross Gain in Consumer Welfare?

How significant is the estimated gross gain in annual consumer welfare of \$90 million? The significance issue can be considered from at least four different angles.

The first angle is whether the gain is “significant” in the statistical sense. The size of the estimated gross gain is broadly proportional to the assumed values for the elasticities of substitution between imported and locally produced TCF products, which are set out in Attachment B in the column of the table headed “import demand”. There is uncertainty about the precise values of these elasticities, but not about their direction or orders of magnitude. Varying the values of these import elasticities within a plausible range could cause the estimated annual gross gain to vary between about \$60 million and \$120 million. This means that the estimated gross gain is statistically significant i.e. there is no doubt that it is positive.

The second angle is whether the gross gain is “significant” in the sense that it is large enough to matter. A gain of \$90 million may not seem significant if it were a one-off gain. However, it is actually an annual gain of \$90 million, and so is received every year in perpetuity. Its capital value is therefore much higher at \$1 billion to \$2 billion, depending on the rate of time discount that is used. So the size of the gain becomes significant enough to matter as it cumulates with the passage of time.

The third angle is whether the gross gain is large relative to the size of the policy change. Comparing the gross gain of \$90 million with the associated loss in TCF tariff revenue of \$276 million (which is offset in the model simulation by a matching increase in labour income tax), gives a so-called marginal excess burden of 33 cents in the dollar. By comparison, in MM600+ labour income tax has no excess burden, and excess burdens of over 20 cents in the dollar are generally unusual. So the TCF tariff has a high marginal excess burden. Thus the gross gain of \$90 million is significant relative to amount of tax revenue involved i.e. relative to the size of the policy change. A marginal excess burden of 33 cents in the dollar marks the TCF tariff as a highly inefficient method of raising revenue.

The fourth angle is whether the gross gain is the correct yardstick for assessing whether the gains are significant. The net gain is smaller than the gross gain, but in section 3.5 it was suggested that, on balance, the gross gain is a better yardstick. On the other hand, and more importantly, the modelled gross/net gains only take into account allocative efficiency gains, and there are at least three other sources of potential gains not taken into account in the modelling. These other sources of gain are explained in section 8.1.

In summary, the estimated annual gross gain of \$90 million can be considered significant in that:

- in the statistical sense it is significantly positive;
- over time, the annual gains cumulate to have a significant capital value of \$1bn to \$2bn;
- the annual gross gain is significant relative to the size of the policy change (measured by the change in TCF tariff revenue), because the marginal excess burden of the TCF tariff is estimated at a high 33 cents in the dollar of revenue; and
- there are three other potential sources of gain not included in the modelled gross gain of \$90 million, but which also need to be taken into account in an overall assessment.

## 4 Scenario 2: No SIP Scenario

The No SIP Scenario is concerned with the economic effects of abolishing the Strategic Investment Program (SIP). SIP is estimated to provide \$678 million in assistance over the five years to 2005 – this level of assistance is incorporated in to the Baseline Scenario. Current SIP legislation expires on 1 July 2005. In the No SIP Scenario, SIP is abolished. The differences between the economic outcomes in this scenario and the Baseline Scenario show the economic effects of abolishing SIP.

It is estimated that currently SIP provides assistance that is equivalent to production subsidies that average 1.3 per cent across the whole TCF industry. The equivalent subsidy rates vary between the TCF industries, with the table below showing that these subsidies range between 0.5 per cent and 2.0 per cent.

**Table 4.1**  
**Modelled Assistance Rates: No SIP Scenario**

		prod'n tax rates: Baseline	prod'n tax rates: no SIP
221	Textile Fibre, Yarn and Woven Fabric Manufacturing	-2.0%	0.0%
222	Textile Product Manufacturing	-1.6%	0.0%
223	Knitting Mills	-0.7%	0.0%
224	Clothing Manufacturing	-0.7%	0.0%
225	Footwear Manufacturing	-1.8%	0.0%
226	Leather and Leather Product Manufacturing	-0.5%	0.0%
22	Total TCF	-1.3%	0.0%

Source: Weighted Average rates calculated from Productivity Commission data

The results of this scenario show that abolishing SIP has a slight positive effect on GDP. Of more importance is the finding that abolishing SIP leads to a gain in consumer living standards, as considered in the latter part of this section.

### 4.1 Detailed TCF Industry Effects

In MM600+, the SIP scheme is modelled as a production subsidy. The table above shows the equivalent rates of subsidy for each of the ABS three-digit TCF industries. While MM600+ contains even more detail than these six industries, information on the levels of SIP funding could not be provided at any more detail. As such, the level of detail of the results in this report is constrained by the level of the SIP data that is available, not by the level of detail in the MM600+ model.

The No SIP Scenario models the effects of abolishing SIP, using the current level of annual funding as a starting point. Thus, Table 4.1 shows production subsidies of between 0.5 and 2.0 per cent in the Baseline scenario moving to zero in the No SIP Scenario.

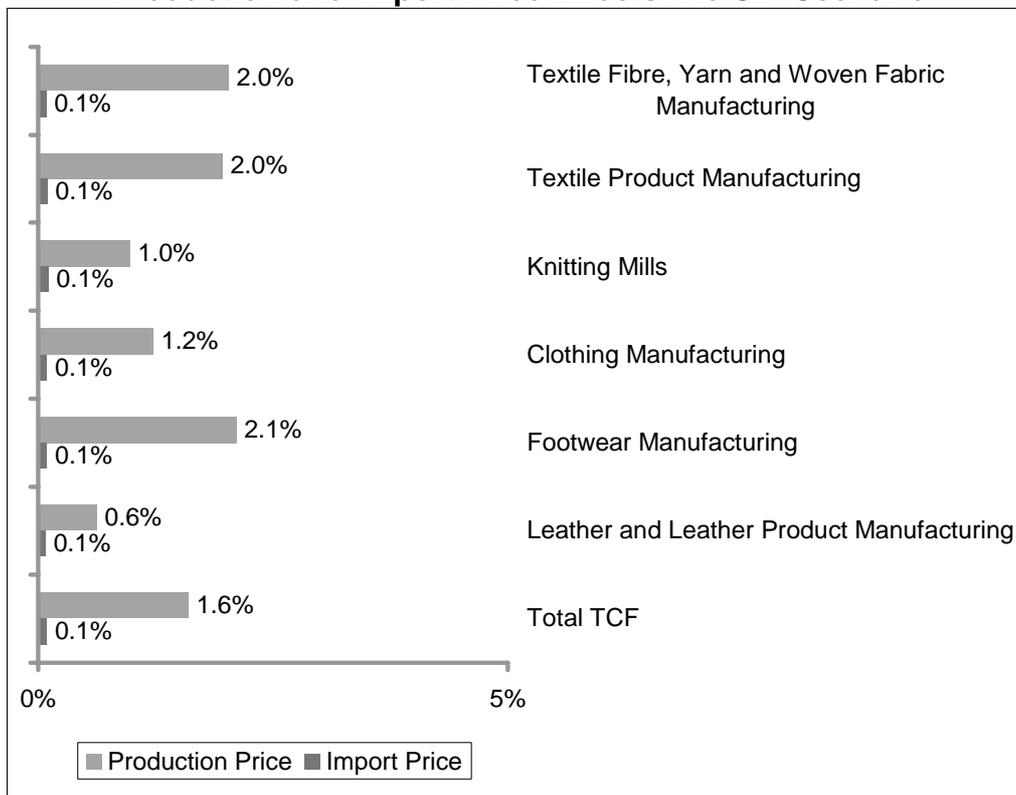
The abolition of these production subsidies increases the prices of TCF products that are locally produced. These price effects, and the resulting volume effects, are discussed further below.

## Local Production and Import Prices

Abolishing SIP will have varying effects on the prices of TCF products, as shown in Chart 4.1. This is because SIP provides varying degrees of assistance to the different TCF industries. Where SIP assistance is higher – in the Textile Fibre, Yarn and Woven Fabric Manufacturing, Textile Product Manufacturing and Footwear Manufacturing industries – the local production price of these products will rise by at least 2.0 per cent, as local production of these products is no longer receiving assistance. Where SIP assistance is not as high, the prices of the remaining locally produced TCF products will also rise, but not to the same extent.

The prices of all imported TCF products are estimated to be higher than in the Baseline Scenario. The price increase of 0.1 per cent across the board is the result of the depreciation of the Australian dollar, which is required to restore external balance in the face of deterioration in the competitiveness of the local TCF industry.

**Chart 4.1**  
**Production and Import Price Effects: No SIP Scenario**



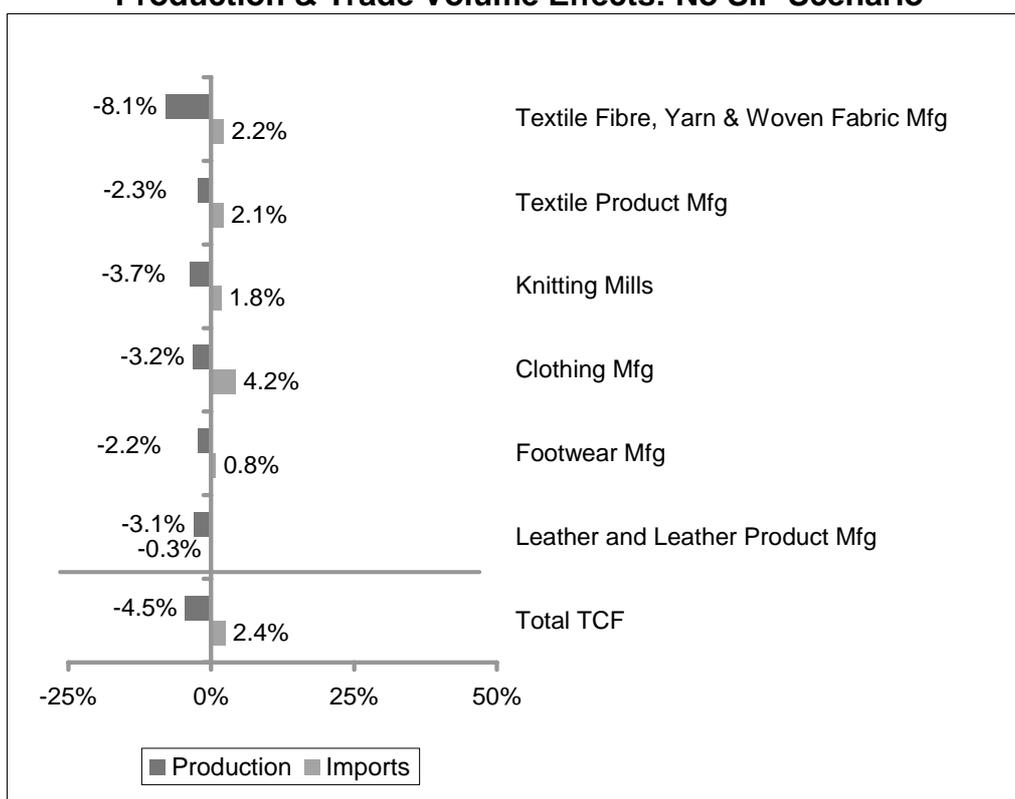
## Local Production and Trade Volume Effects

The increase in domestic price of some TCF products will encourage a move away from locally manufactured TCF products toward imported TCF products. Chart 4.2 shows the expected change in the volume of local TCF production and imports.

These effects on production and import volumes depend on the assumed sensitivity of demand to changes in relative price. The elasticity of substitution between imports versus local production for all TCF products is shown in Attachment B.

The role of these elasticities in the results can again be shown with an example, women's dresses, skirts and slacks. The import price of this clothing category is estimated to be higher by 0.1 per cent than in the baseline, while the domestic price is estimated to be higher by 1.0 per cent. This implies a fall of 0.9 per cent in the relative price of imports of this clothing category. So applying the elasticity of substitution between imported versus locally produced women's dresses, skirts and slacks of 4.24 to this percentage change in relative price, gives a predicted percentage change in relative volumes of 3.6 per cent. This matches the actual change in relative volume, which is made up of a rise in import volumes of 3.7 per cent net of a rise in domestic volumes of just under 0.1 per cent.

**Chart 4.2**  
**Production & Trade Volume Effects: No SIP Scenario**



## 4.2 Broader TCF Industry Effects

Abolishing SIP is expected to mean that TCF industry production will be lower than in the Baseline Scenario, as shown in Chart 4.2. The abolition of SIP also mainly impacts on TCF production through trade flows, rather than through local sales. Abolishing SIP funding reduces TCF exports.

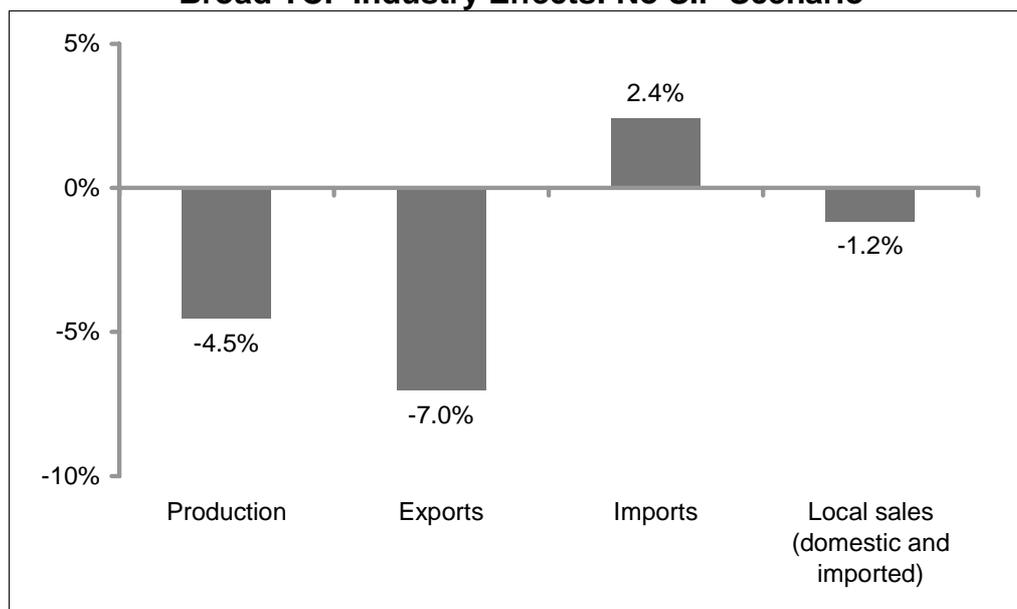
TCF industry production is estimated to be lower than in the baseline by 4.5 per cent as imported TCF products become relatively cheaper compared to locally produced TCF products. Lower TCF industry production leads to a fall in TCF industry employment, which is estimated at a loss of around 2,700 jobs.

These results do not mean that production and employment are lower in the economy generally. Rather the reductions in TCF industry production and employment are offset by gains in other sectors of the economy. As shown later, at the national level, there is a modest increase in total production, while total employment is unaffected, by assumption. The

longer term level of national employment depends on the overall efficiency of the national labour market, which is unlikely to be changed by changes to TCF industry assistance.

The lower local production feeds through to lower local sales (defined as domestic plus imported TCF products sold in the domestic market). Although imports of TCF products are estimated to rise, the fall in Australian production, and consequently in sales of Australian TCF products in the domestic market, more than offsets this rise in imports and local sales are estimated to fall by 1.2 per cent.

**Chart 4.3**  
**Broad TCF Industry Effects: No SIP Scenario**



Just as the effects on import volumes can be explained using the assumed values for import elasticities, the effects on export volumes can be explained using the assumed values of export elasticities. These export elasticities can be found in Attachment B.

Wool serves as an example of the role of the assumed export elasticities in this Scenario. For wool, the export price elasticity of demand is -4, while the elasticity of transformation in production between supplying the export and local markets is 2.5. The role of these elasticities in determining export demand and supply is as follows.

On the demand side, the price of wool exports in Australian dollars is estimated to be higher by 1.7 per cent than in the baseline, while the exchange rate is estimated to be lower by 0.1 per cent. This implies a rise of 1.6 per cent in the price of exports in foreign currency. So applying the export demand elasticity for cotton yarn of -4 to this percentage change in price, gives a predicted percentage fall in export volumes of 6.4 per cent, which matches the actual change in the volume of wool exports.

On the supply side, the price that Australian wool exporters receive is higher by 2.2 per cent, while the price for wool on the domestic market is higher by 1.5 per cent. This implies a relative price increase for wool exports of 0.7 per cent [ $2.2 - 1.5 = 0.7$ ]. Applying the export supply elasticity of 2.5 to this percentage change in relative price, gives a predicted percentage rise in the relative volume of exports of 1.9 per cent. This matches the actual rise

in relative volume, which is made up of a fall in export volumes of 6.4 per cent referred to above, net of a larger fall in domestic supply to the local market of 8.3 per cent.

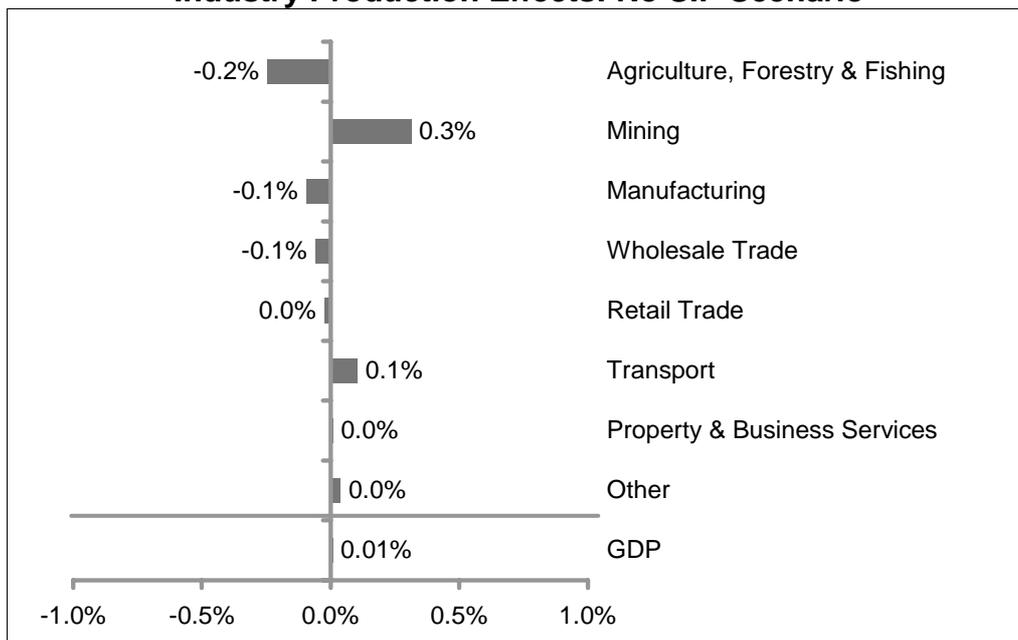
In summary, the model results are consistent with the assumed elasticities. The results for wool exports of a price rise in Australian dollars of 1.7 per cent and a volume fall of 6.4 per cent are seen to be consistent with the underlying export demand and supply relationships. More generally, export prices and volumes are determined simultaneously in MM600+ by underlying export demand and supply relationships.

### 4.3 Wider Industry Effects

While abolishing SIP leads to lower production of the TCF industry, it also leads to higher production in the rest of the economy, as shown in Chart 4.4. This can be seen through the fact that removing SIP has a modest positive effect on GDP.

The lower TCF industry production will directly affect industries downstream and upstream of the TCF industry. The lower production will also indirectly affect trade-exposed industries by affecting the exchange rate.

**Chart 4.4**  
**Industry Production Effects: No SIP Scenario**



The lower TCF industry production will have upstream effects on industries that supply the TCF industry. For example, the production of synthetic colouring agents is estimated to fall by 1.5 per cent as the removal of SIP and the fall in local TCF production feed through to reduce the demand for synthetic colouring agents.

On the export side, reducing the assistance of the TCF industry will benefit export-orientated industries through a depreciation of the exchange rate. For example, the lower exchange rate means that mining industry exports are relatively cheaper and, thus, exports of mining products rise. This flows through to stimulate additional production in the mining industry.

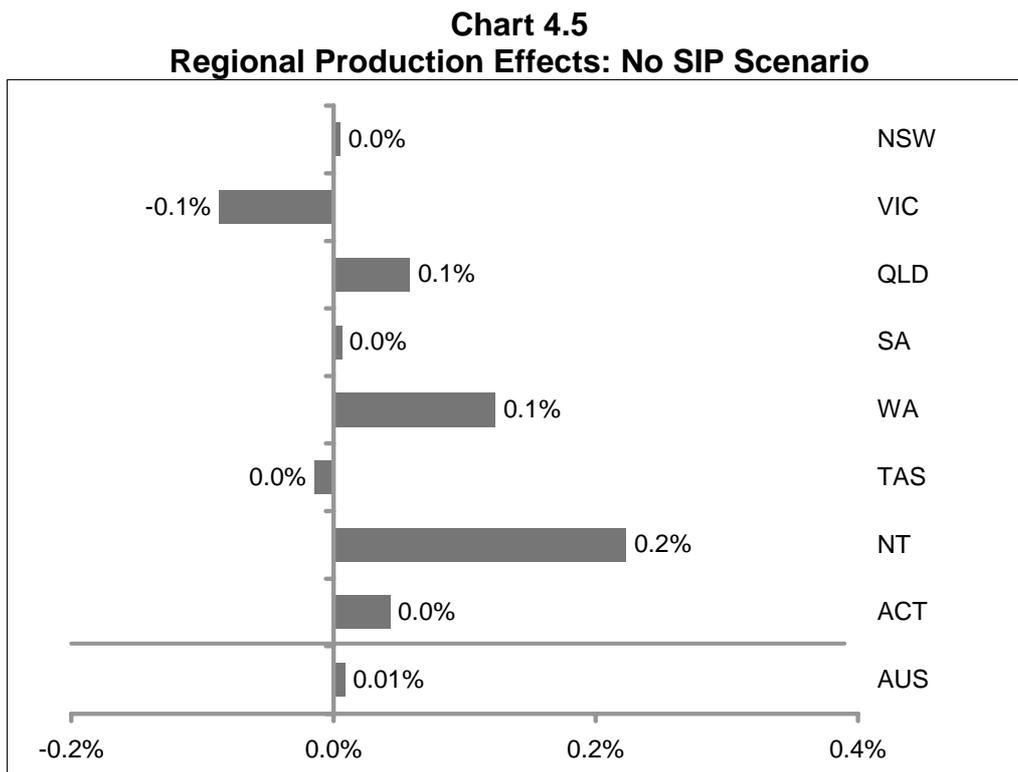
Agriculture is another export-oriented industry that is likely to benefit from the lower exchange rate. However, other influences offset this effect. With the reduction in output in the TCF industry, there is reduced demand for inputs from the agriculture industry, such as cotton and wool. Thus, while, on one hand, the agricultural industry benefits from increased export potential, on the other hand, it faces a reduction in domestic demand. The chart below shows that, overall, Agriculture production is expected to fall by 0.2 per cent.

The depreciation of the exchange rate also supports production of import-competing industries. For example, local production of motor vehicles and parts is estimated to be higher as competing-imports become more expensive with the lower exchange rate.

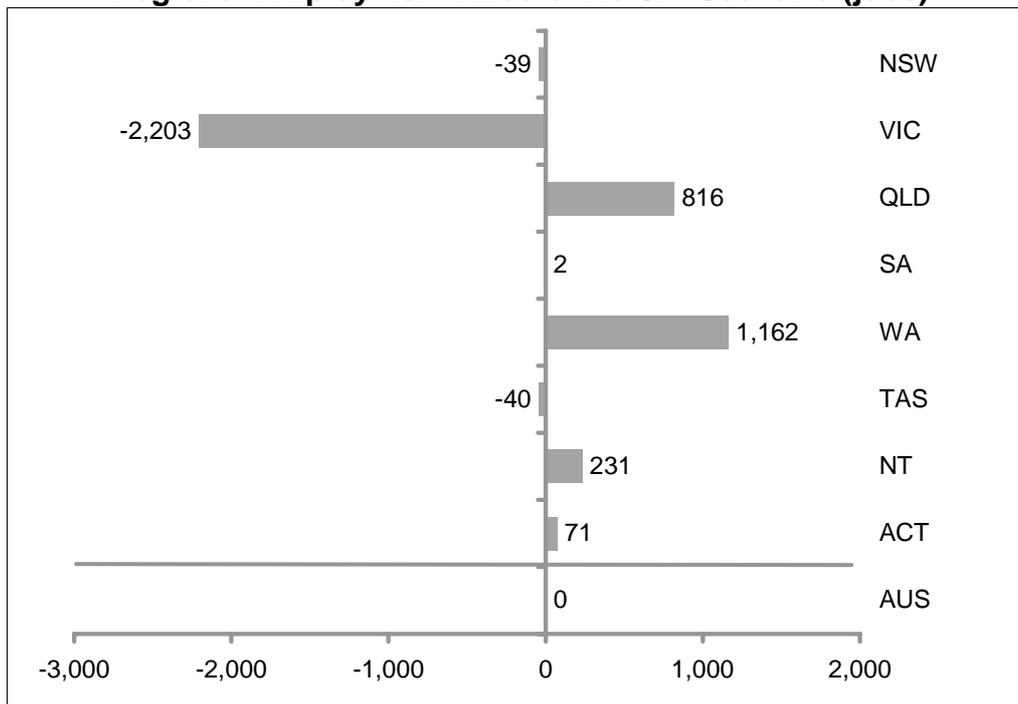
Overall production of the manufacturing industry is estimated to fall by 0.1 per cent. This is from lower production of TCF products and inputs used to make TCF products, more than offsetting the gains in other areas of manufacturing such as motor vehicle parts.

#### 4.4 Regional Effects

It is expected that production and employment in Victoria will be lower as a result of the removal of SIP. Chart 4.5 shows that production and employment in Victoria are both estimated to fall by around 0.1 per cent.



**Chart 4.6**  
**Regional Employment Effects: No SIP Scenario (jobs)**



Similarly to Scenario 1, abolishing SIP does not affect national employment (by assumption). The longer term level of national employment depends on the overall efficiency of the national labour market, which is unlikely to be changed by abolishing SIP.

Abolishing SIP is expected to change the regional pattern of employment, as shown in the chart above. Job losses occur in Victoria where the Australian TCF industry is concentrated, and are exactly offset by job gains elsewhere in Australia (in line with the assumption of fixed national employment in the longer term). That is, the loss of employment in Victoria is part of a reallocation of fixed national employment across regions.

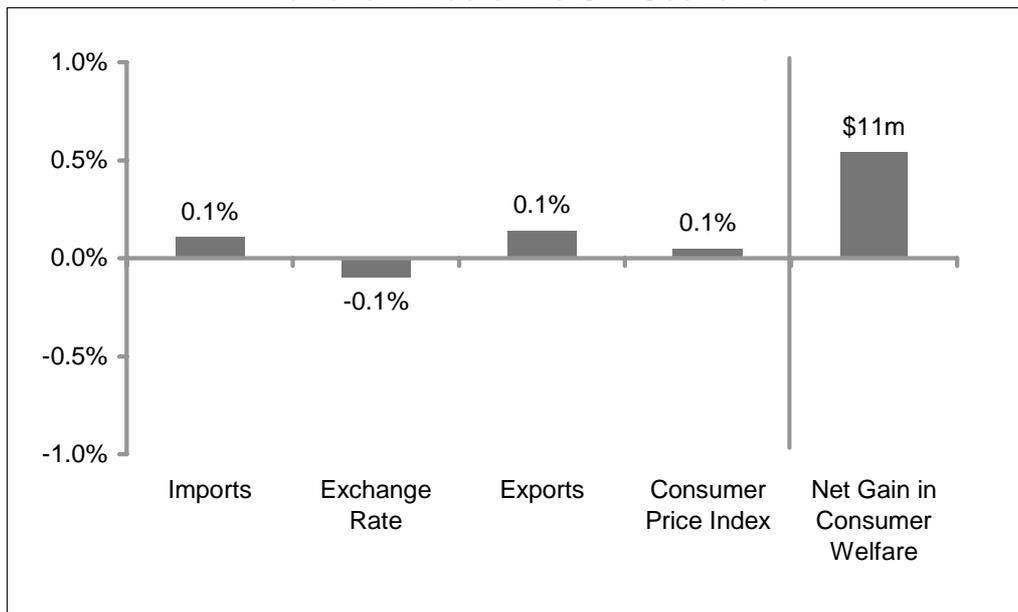
#### **4.5 National Macroeconomic Effects**

The reduction in industry assistance in the TCF industry, leads to an increase in both imports and exports. As discussed in Section 4.1, an increase in the price of domestic TCF production encourages a move away from domestically produced TCF products towards imported TCF products. This, in turn, boosts the overall level of imports in the economy.

As discussed in Section 4.3, an increase in imports will lead to a depreciation of the exchange rate, which benefits export-orientated industries. As such, total exports are also expected to increase.

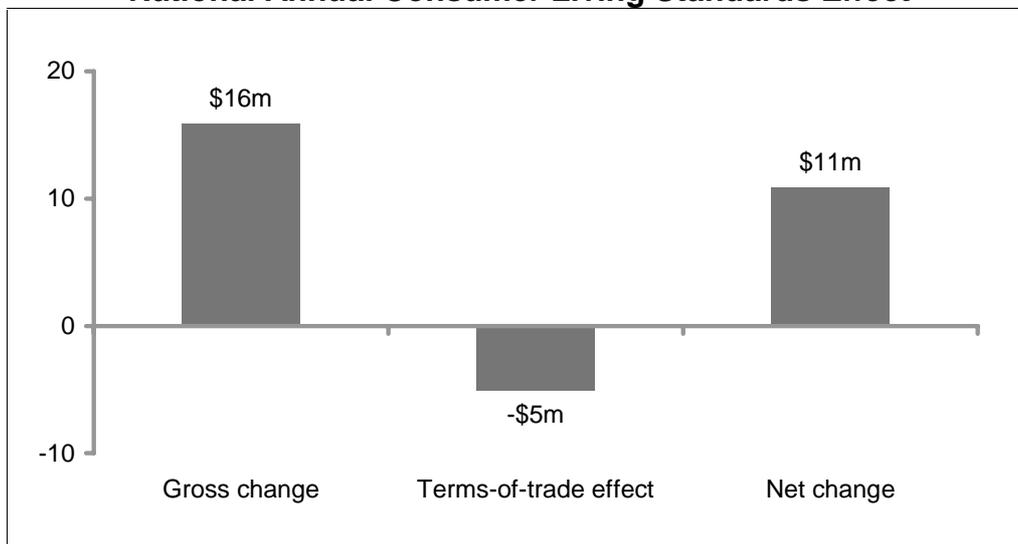
Chart 4.7 shows imports increasing by 0.1 per cent, reducing the exchange rate by 0.1 per cent, which, in turn, boosts exports by 0.1 per cent.

**Chart 4.7**  
**National Effects: No SIP Scenario**



By abolishing the SIP scheme, consumer living standards are expected to rise. As shown in Chart 4.7 above, annual consumer living standards (consumer welfare) are expected to rise by \$11 million if SIP is abolished. This is discussed further below.

**Chart 4.8**  
**National Annual Consumer Living Standards Effect**



The abolition of SIP leads to a gross annual gain in consumer living standards. As shown in Chart 4.8 above, gross annual consumer living standards rise by \$16 million as a result an improvement in resource allocation. For example, labour and capital resources of the TCF industry move away from lower-valued to higher-value uses.

Abolishing SIP also leads to fall in consumer living standards through a fall in the terms-of-trade. Specifically, annual consumer living standards fall by \$5 million.

Chart 4.8 shows how the consumer gain from improved allocative efficiency and the consumer loss from a lower terms-of-trade balance contribute to the net effect on consumer living standards. Importantly, the positive gross effect is somewhat offset by the terms-of-trade effect, leaving a slightly smaller positive effect on consumer living standards from abolishing SIP. However, as noted in Section 3.5, there are two reasons for putting more emphasis on the gross result of a more positive gain in consumer living standards.

- First, if other countries are reducing their trade barriers across a broad range of commodities at the same time as Australia, there is no reason to expect a fall in our terms-of-trade.
- Second, models such as MM600+ arguably understate export price elasticities of demand to avoid model solution complexities, which tends to overstate the terms-of-trade effect.

## 5 Scenario 3: Reduced Assistance Scenario

The Reduced Assistance Scenario combines the two previous scenarios to show the effects if the TCF tariffs were all reduced to 5 per cent and the SIP was abolished. So in Scenario 3, TCF tariff rates are reduced to align them with the general tariff rate and SIP is abolished. The economic effects of these measures are seen by examining the differences between economic outcomes in Scenario 3 and the Baseline Scenario.

The changes in both the tariff rates and SIP are shown in Table 5.1, which converts the reduced TCF assistance into model inputs.

This Scenario results in slightly larger reduction in assistance to the TCF industry as did the previous two scenarios. This combined scenario shows the price of production increasing, while the price of imports reduces. This has a significant effect on production and import volumes, and also on consumer welfare.

**Table 5.1**  
**Modelled Assistance Rates: Reduced Assistance Scenario**

		cif tariff rates: Baseline	cif tariff rates: 5% TCF tariff & no SIP	prod'n tax rates: Baseline	prod'n tax rates:5% TCF tariff & no SIP
221	Textile Fibre, Yarn & Woven Fabric Mfg	3.5%	2.2%	-2.0%	0.0%
222	Textile Product Manufacturing	6.4%	3.4%	-1.6%	0.0%
223	Knitting Mills	13.5%	4.6%	-0.7%	0.0%
224	Clothing Manufacturing	13.9%	4.1%	-0.7%	0.0%
225	Footwear Manufacturing	8.7%	4.7%	-1.8%	0.0%
226	Leather and Leather Product Mfg	1.2%	1.2%	-0.5%	0.0%
22	Total TCF	8.0%	3.3%	-1.3%	0.0%

Source: Weighted Average rates calculated from Productivity Commission data

### 5.1 Detailed TCF Industry Effects

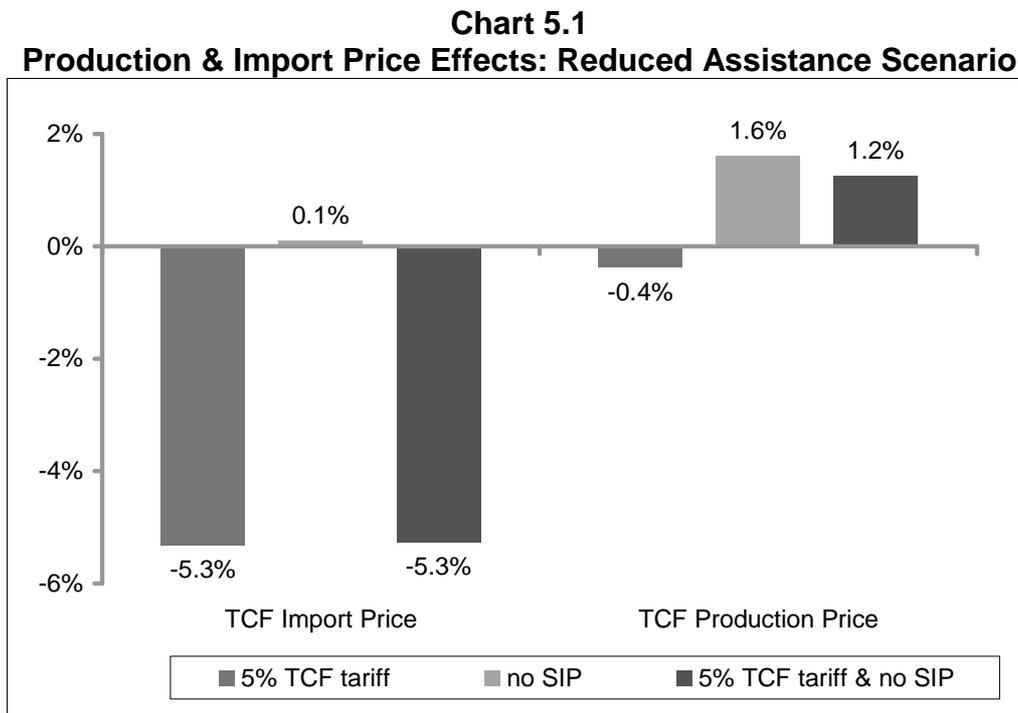
#### Local Production and Import Price Effects

Reducing the TCF tariff rates to 5 per cent will lead to a reduction in the price of TCF imports. Cheaper TCF imports will mean that industries that use imported TCF products will have lower production costs. These downstream industries include domestic TCF industries. As such, a reduction in the price of TCF inputs is expected to lead to a smaller reduction in the price of domestic TCF production.

On the other hand, the removal of SIP will mean that domestic production is more expensive, flowing through to an increase in the price of local TCF production. This, in turn, will lead to a substitution away from local production towards imports. Subsequently, the price of all imported TCF products will increase as a result of the depreciation in the Australian dollar, which is required to restore external balance.

The reduction in the TCF tariff rates has a much larger effect on prices in this industry than the removal of the SIP. Thus, the reduction in the price of imports, as a result of the tariff reduction, is only slightly offset by the increase in the price of imports that is caused by the

removal of SIP. Further, the reduction in the price of domestic production, as a result of the tariff reduction, is more than offset by the increase in the price of domestic production that is caused by the removal of SIP. These effects are shown in Chart 5.1.



With both the tariff reduction and the abolition of SIP, the price of TCF imports is expected to fall by around 5.3 per cent, while the price of local TCF production is expected to increase by about 1.2 per cent.

#### Local Production and Trade Volume Effects

As discussed for the two separate simulations, the price changes shown in Chart 5.2 will induce substitution between locally manufactured TCF products and imported TCF products. The effects of this substitution on the volume of imported and locally produced TCF products can be observed in Chart 5.2.

**Chart 5.2**  
**TCF Production & Trade Volume Effects: Reduced Assistance Scenario**

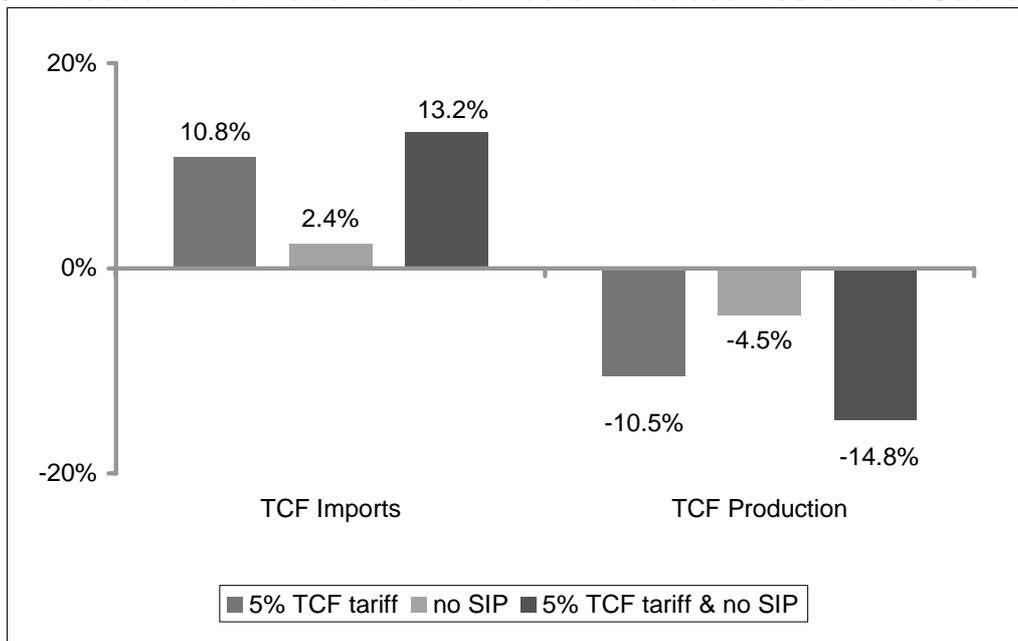
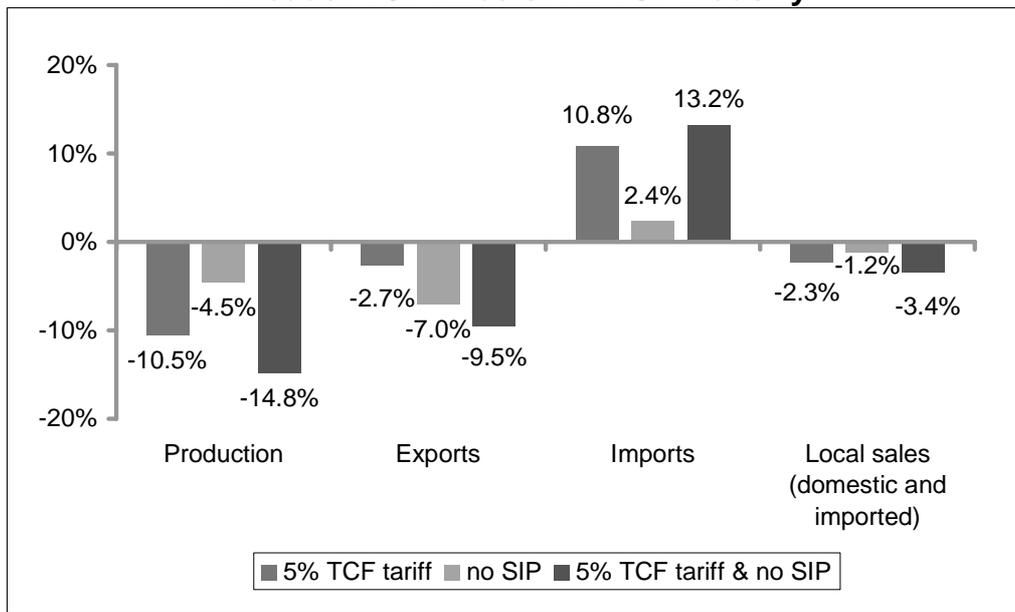


Chart 5.1 showed that, under all three scenarios, a reduction in TCF industry assistance leads to a rise in the relative price of local production. This, in turn, stimulates a greater substitution of imports for locally produced TCF products. With both the tariff reduction and the abolition of SIP, TCF imports are expected to increase by 13.2 per cent, while local TCF production is expected to fall by around 14.8 per cent.

## 5.2 Broader TCF Industry Effects

By both reducing the TCF tariff rates to 5 per cent and abolishing SIP, TCF industry production is expected to fall significantly. As seen in Chart 5.3, industry production is estimated to be lower by 14.8 per cent. Further, employment of the TCF industry is also estimated to be lower by around 9,500 jobs in the TCF industry.

**Chart 5.3**  
**Broader TCF Effects: All TCF Industry**



Not surprisingly, the largest effects on TCF industry production are expected if both the tariff is reduced and SIP is abolished. For example, while reducing the tariff is estimated to lead to a loss in production of about 10.5 per cent, this rises to about 14.8 per cent if SIP is also abolished.

Local sales of the TCF industry are estimated to be lower by 3.4 per cent if both TCF tariffs are reduced to 5 per cent and SIP is abolished. Chart 5.3 compares the details of the fall in local sales for all three scenarios. Importantly, all three methods of reducing assistance mainly impact on TCF production through trade flows, rather than through a loss of local sales. For example, the chart shows that local sales of the TCF industry are estimated to fall only moderately under all three scenarios.

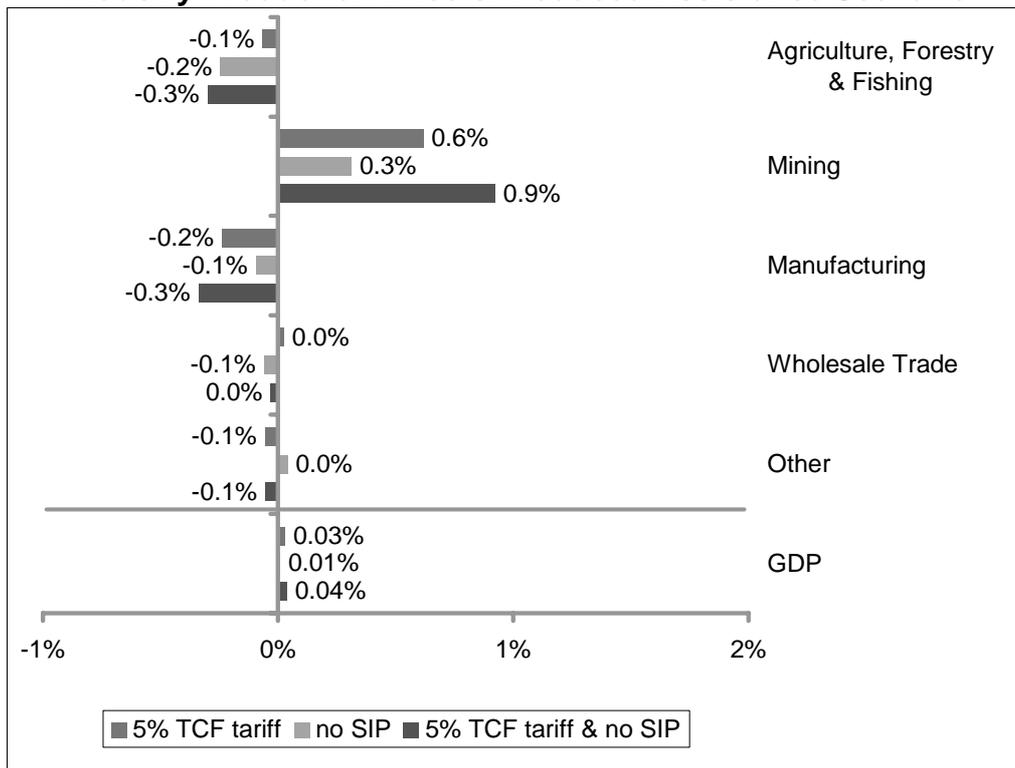
Comparing the first two scenarios, reducing TCF tariffs to 5 per cent leads to a larger rise in the volume of imports than abolishing SIP. The chart above shows that reducing the tariffs leads to a rise in the volume of imports of 10.8 per cent while abolishing SIP leads to a rise of only 2.4 per cent. This is because reducing TCF tariffs will make imported TCF products cheaper while abolishing SIP leads to a rise in the price of imports.

On the other hand, the No SIP Scenario leads to a greater fall in exports compared to the 5 per cent tariff scenario. This is because under the No SIP Scenario, all funding is abolished so average production subsidies for TCF products fall to zero. Under this scenario, the volume of exports is estimated to fall by 7 per cent as exports of TCF products are directly affected by this subsidy cut.

### 5.3 Wider Industry Effects

While reducing TCF assistance leads to lower production in the TCF industry, it leads to higher production in the rest of the economy. Indeed, Chart 5.4 shows that the effect on GDP is slightly positive, which implies that the losses in TCF industry production are being matched or more than matched by gains in production elsewhere.

**Chart 5.4**  
**Industry Production Effects: Reduced Assistance Scenario**



The loss in TCF industry production is reflected in the loss of total manufacturing production in Chart 5.4. However, the fall in the net balance of exports and imports in the TCF industry leads to a lower Australian dollar, driving gains in the net balance of exports and imports, and hence in production, for other trade exposed industries.

Thus the chart shows that this depreciation will stimulate production in export-orientated industries, such as mining, by improving their international competitiveness. The expansion in these primary industries will flow through to downstream manufacturing industries including minerals processing and iron and steel manufacturing. The depreciation of the exchange rate will also benefit import-competing industries such as motor vehicles and parts as competing imports become more expensive.

Agriculture is another export-oriented industry that is likely to benefit from the lower exchange rate. However, other influences offset this effect. With the reduction in output in the TCF industry, there is reduced demand for inputs from the agriculture industry, such as cotton and wool. Thus, while, on one hand, the agricultural industry benefits from increased export potential, on the other hand, it faces a reduction in domestic demand.

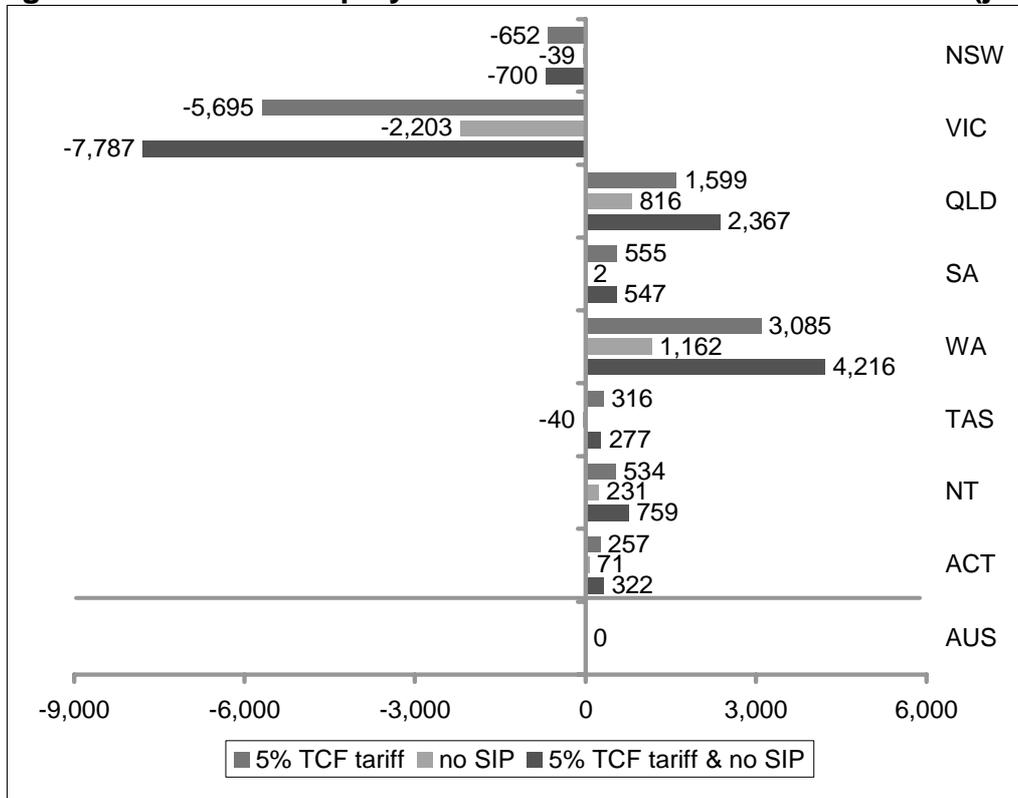
#### **5.4 Regional Effects**

It is expected that production and employment in Victoria will be lower as a result of the lower production of the TCF industry. For example, total production in Victoria is estimated to be lower by 0.3 per cent than in the baseline, while employment in Victoria is expected to be down by almost 7,800 jobs.

Reducing TCF industry assistance is not expected to affect national employment (by assumption). This is because the longer term level of national employment depends on the

overall efficiency of the national labour market, which is unlikely to be changed by changes to TCF industry assistance. Consequently, it is assumed that reducing TCF industry assistance only changes the regional pattern of employment. So the lower employment in Victoria is exactly offset by job gains elsewhere in Australia, as shown in Chart 5.5.

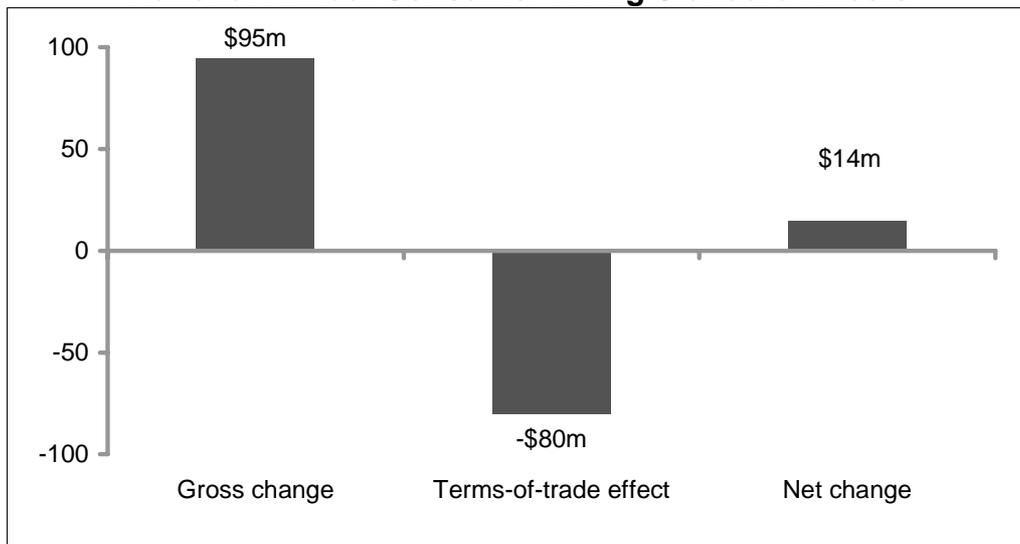
**Chart 5.5**  
**Regional Effects on Employment: Reduced Assistance Scenario (jobs)**



## 5.5 National Macroeconomic Effects

The Reduced TCF Assistance Scenario models the economy-wide effects of simultaneously reducing the TCF tariffs to 5 per cent and abolishing SIP funding. The reduction in TCF industry assistance is expected to lead to higher gross annual consumer living standards, as shown in Chart 5.6. The gain of \$95 million is the result of improved allocative efficiency from reducing assistance of the TCF industry.

**Chart 5.6**  
**National Annual Consumer Living Standard Effects**



The reduction in TCF industry assistance, when viewed in isolation, reduces Australia's terms-of-trade. As a result of this fall, annual national income falls, which leaves consumers worse off by \$80 million compared to the Baseline Scenario.

In net terms, annual consumer living standards are higher by \$14 million compared to the Baseline. So the benefits from reducing TCF assistance are lower if there is no move towards broad-based trade liberalisation in other countries. However, as noted in Sections 3.5 and 4.5, there are a number of reasons for putting more emphasis on the result of a gross gain in consumer living standards.

These effects are discussed further in the following section.

## 6 Contribution of Assistance Changes to Consumer Welfare

As discussed in the previous section, the Reduced Assistance Scenario models the economy-wide effects of simultaneously reducing all TCF tariff rates to 5 per cent and abolishing SIP funding. This section further analyses the separate contribution to the results of both of these changes in terms of their effect on gross consumer living standards, their terms-of-trade effect and the net effect on consumer welfare.

Chart 6.1 shows that there is a larger gain in gross consumer welfare (or living standards) for the 5% TCF Tariff Scenario. This is because reducing TCF tariffs result in a larger reduction in assistance to the TCF industry than abolishing SIP. This, in turn, leads to greater improvements in allocative efficiency.

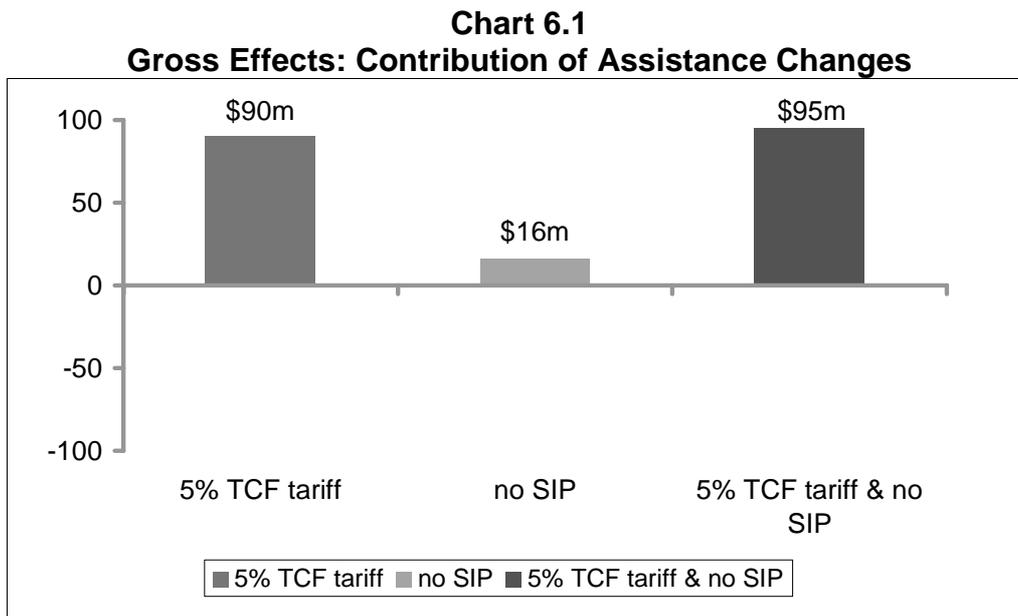


Chart 6.1 also shows that gross gains in consumer living standards of the two measures implemented together is significantly different to the total gross gain if each measure is considered separately.

The reason for this is that there is diminishing marginal gains in allocative efficiency from reductions in TCF industry assistance. If assistance is high, resources in the assisted industry are being used highly inefficiently at the margin, and a given reduction in assistance will provide a large gain in allocative efficiency. On the other hand, if assistance is low, resources in the assisted industry are being used less inefficiently at the margin, and the same reduction in assistance will provide a smaller gain in allocative efficiency.

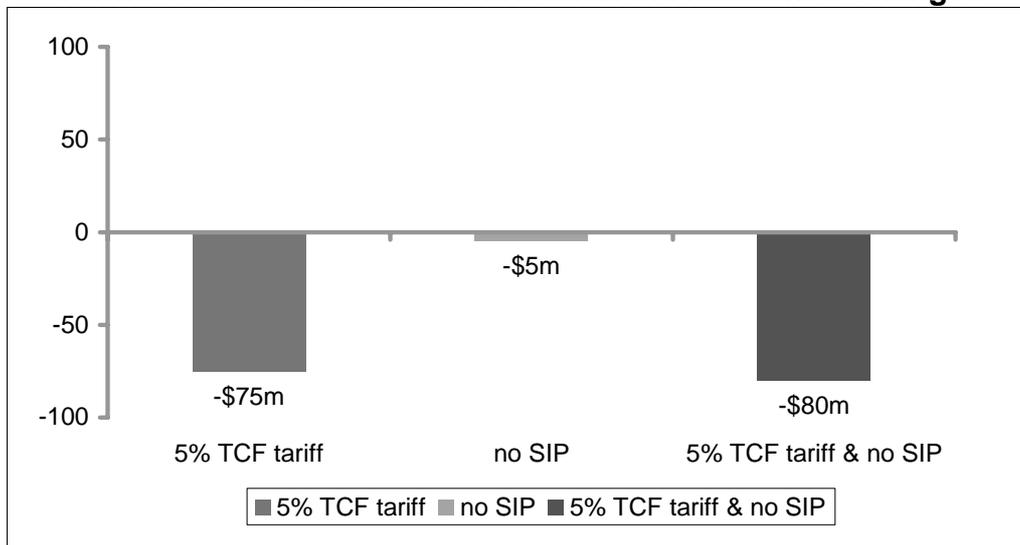
So if each measure to reduce assistance is considered from a starting point where other assistance measures are fully in place, the marginal gain in allocative efficiency will appear larger than if those other assistance measures are not in place. For example, Chart 6.1 shows a gain in allocative efficiency of \$106 million if the separate gains from each of the two measures to reduce assistance are added together, but this shrinks to \$95 million if both measures are implemented together.

Thus measures to reduce assistance have interactive effects on allocative efficiency. This means that it is not valid to estimate the effects of a package of measures by simply adding

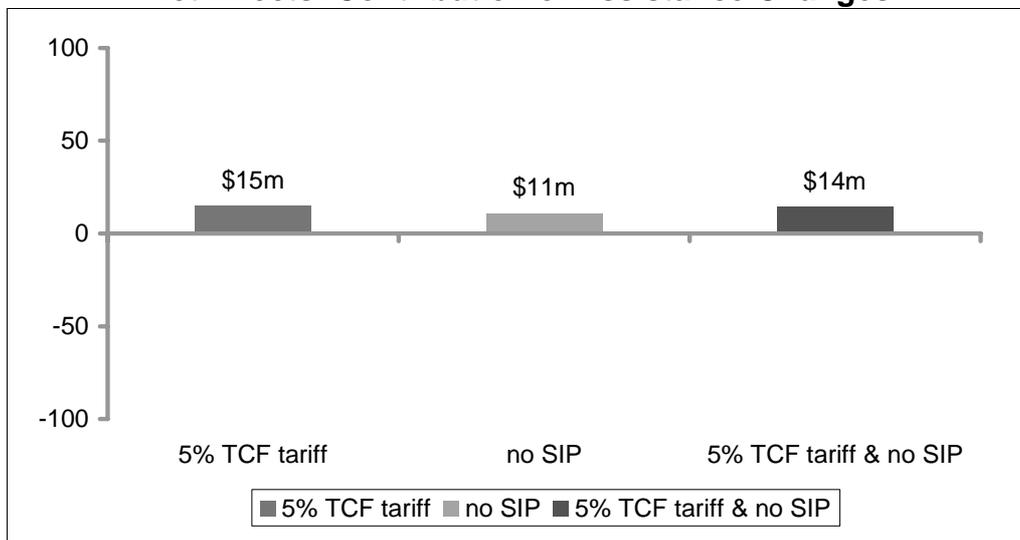
together the allocative efficiency gains of each measure considered separately. Rather, to estimate the effects of a package of measures, both measures have been modelled together in a single scenario.

Reducing TCF tariff rates also leads to a larger terms-of-trade effect than removing SIP, as shown in Chart 6.2. This is because reducing tariffs leads to a more open economy and therefore a greater supply of exports is needed to restore the trade balance, which in turn leads to greater price falls for some exports. In contrast, SIP is effectively a production subsidy, so reducing this subsidy will lead to a smaller rise in the volume of exports across the economy compared to reducing TCF tariffs. For example, reducing TCF tariffs leads to an increase in the supply of exports of 0.6 per cent compared to only 0.1 per cent where SIP is abolished. The chart below also shows that the terms-of-trade effect of both measures implemented together is similar to the total terms-of-trade effect if each measure is considered separately.

**Chart 6.2**  
**Terms-of-Trade Effects: Contribution of Assistance Changes**



**Chart 6.3**  
**Net Effects: Contribution of Assistance Changes**



Both scenarios contribute a gain in consumer living standards. For each scenario, the terms-of-trade effect partly offsets the gross gain in consumer living standards. This reduces the positive effect on consumer living standards, as shown in Chart 6.2. However, as discussed previously, there are a number of reasons for putting more emphasis on the result of a gross gain in consumer living standards under each scenario.

Turning to the net effects, both measures have a positive effect on annual consumer living standards, as shown in Chart 6.3.

Overall, the modelling results in this report suggest significant long-term benefits from reducing TCF tariff rates to below their 2005 level, especially in the context of a move by other countries towards broad-based trade liberalisation.

## 7 Sensitivity Analysis

This report now examines the sensitivity of the results to the assumed export demand elasticity. Export demand elasticities in MM600+ range from -4 for wool, where Australia has market power, and tourism, where product differentiation is important, to -12 for a broad range of exports. The weighted average export demand elasticity in MM600+ is -9 under these standard assumptions.

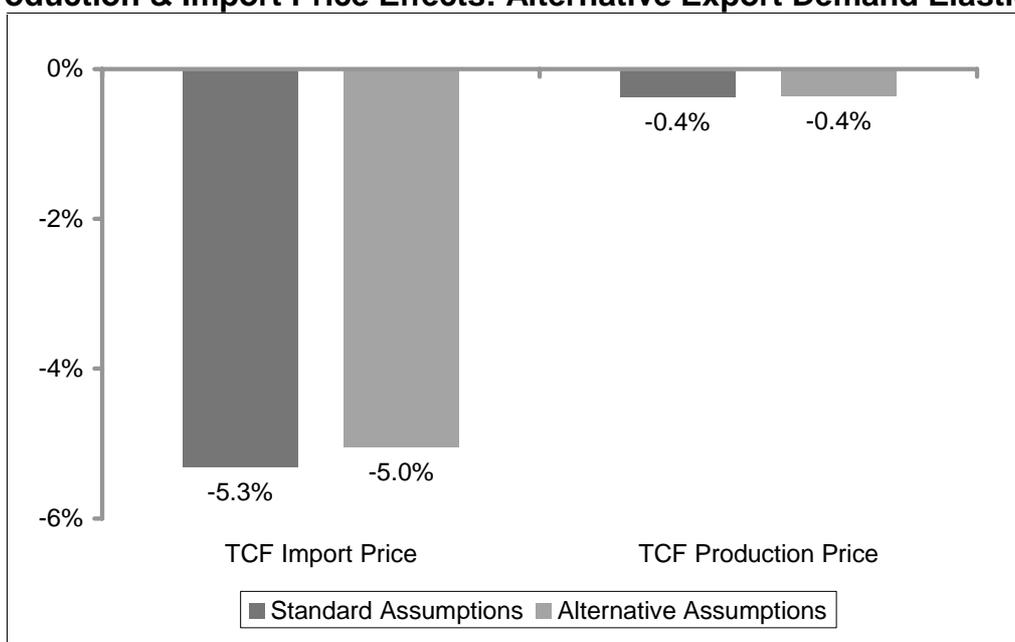
This report looks at the sensitivity of the results if all export elasticities are set to -4, as an alternative assumption. Using lower export demand elasticities means that expanding trade by reducing TCF assistance will lead to a greater fall in Australia's terms-of-trade, eroding welfare gains.

To avoid repetition, this section of the report focuses on the implications of alternative export demand elasticities for Scenario 1, which involves a cut in TCF tariffs to 5 per cent. However, results for all three scenarios under the lower export demand elasticities can be found in Attachment C.

### 7.1 TCF Industry Effects

The effects of cutting TCF tariffs on the TCF industry are fairly insensitive to the export elasticity assumptions. The reduction in the TCF tariff rates to 5 per cent will lead to a similar reduction in the price of TCF imports, irrespective of export elasticities. Cheaper TCF imports will still mean that industries that use imported TCF products will have lower production costs. Thus Chart 7.1 shows no significant difference in the TCF products price changes under the standard MM600+ export demand elasticity assumptions and under the alternative export demand elasticity of -4.

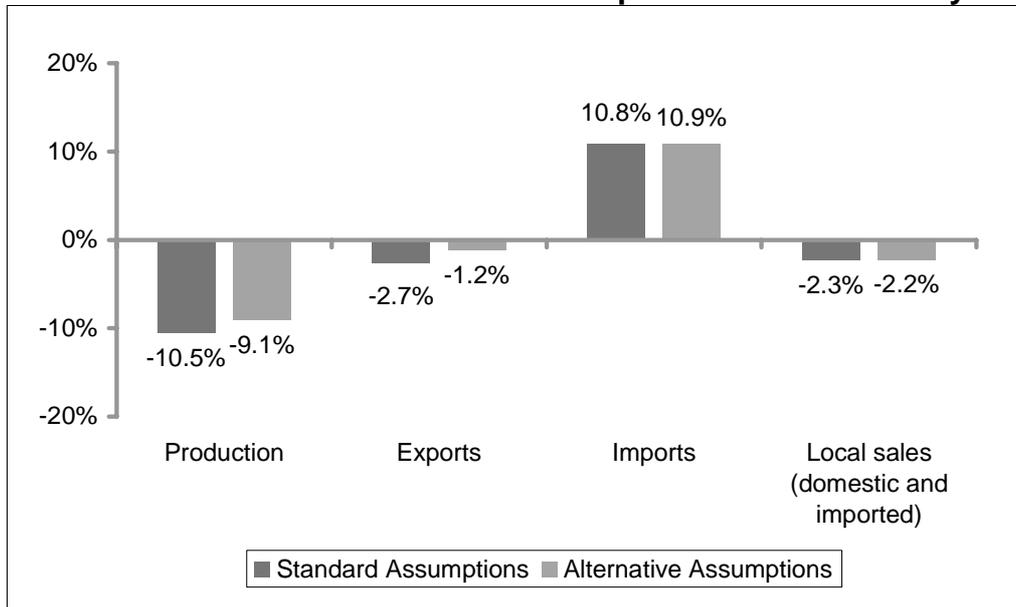
**Chart 7.1**  
**Production & Import Price Effects: Alternative Export Demand Elasticity**



As was the case for the standard simulation, the price changes shown in Chart 7.1 will induce substitution between locally manufactured TCF products and imported TCF products.

With similar price effects, the effects of this substitution on the volume of imported and locally produced TCF products are also similar, as shown in Chart 7.2.

**Chart 7.2**  
**Broader TCF Effects: Alternative Export Demand Elasticity**

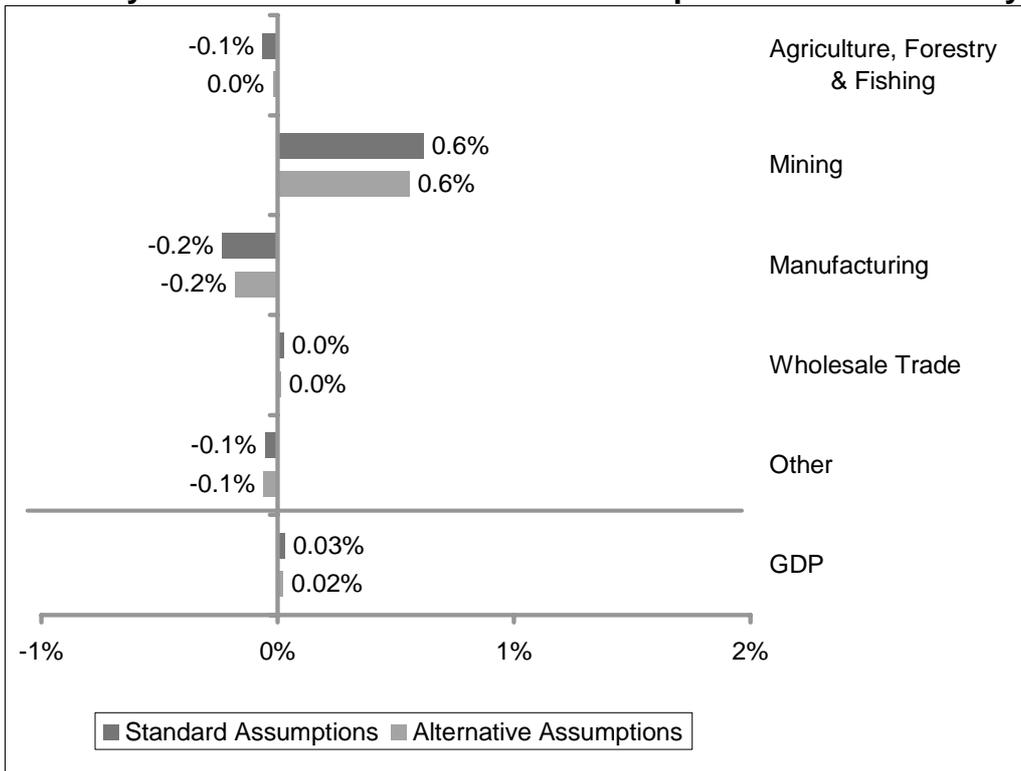


With similar price effects, local sales are also expected to fall by a similar amount under both scenarios. However, the change in the export demand elasticity will lead to a different change in the level of exports. With lower price sensitivity, the fall in TCF exports is dampened.

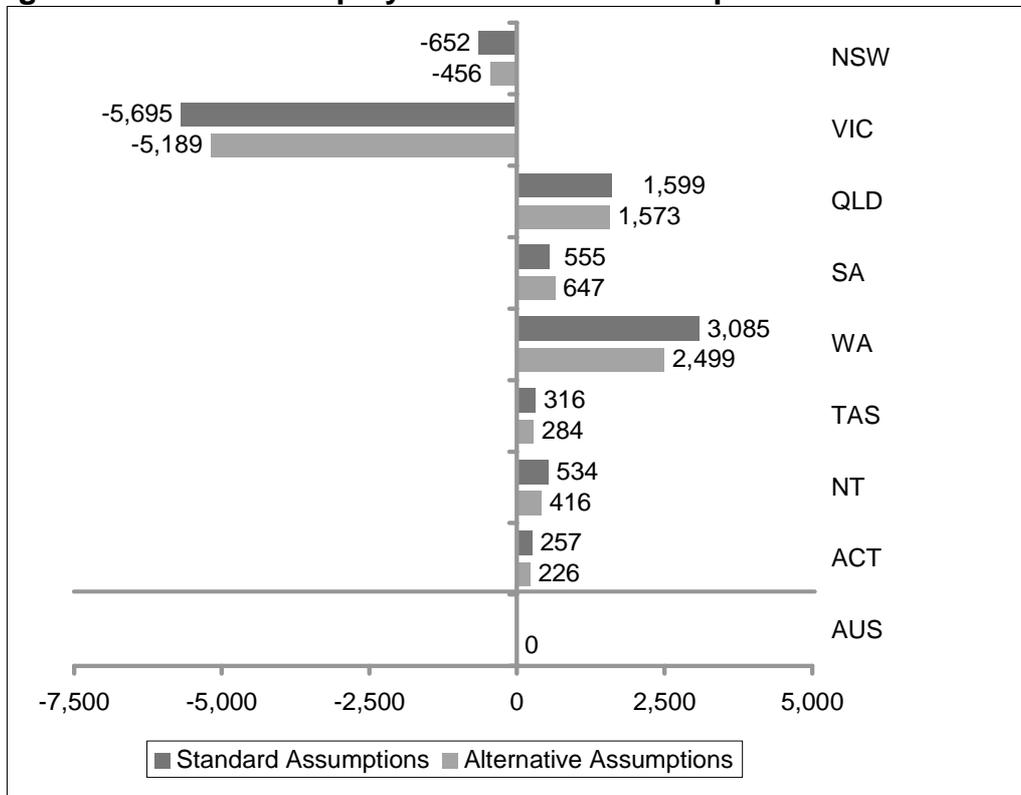
## 7.2 Wider Industry and Regional Effects

The similarity in results between the standard scenario and the alternative scenario continues into the effects of each on other industries. The chart below shows that there is no significant difference between the results under both export demand elasticity assumptions. This is because the change in activity in the TCF industry is the driver behind the changes in activity across other industries and regions. As discussed in the previous section, the change in activity in the TCF industry is similar under both export demand elasticity assumptions. Thus, the change in activity across industries and regions is also similar between the standard and alternative scenarios.

**Chart 7.3**  
**Industry Production Effects: Alternative Export Demand Elasticity**



**Chart 7.4**  
**Regional Effects on Employment: Alternative Export Demand Elasticity**



### 7.3 National Macroeconomic Effects

It is at the macroeconomic level that the different effects of the Standard and the Alternative export demand elasticity assumptions become apparent. As such, this section compares the different results for national welfare effects under both export demand elasticity assumptions for each of the three scenarios. That is, results are presented for both the standard export elasticity assumption and the alternative elasticity assumption for each of the following:

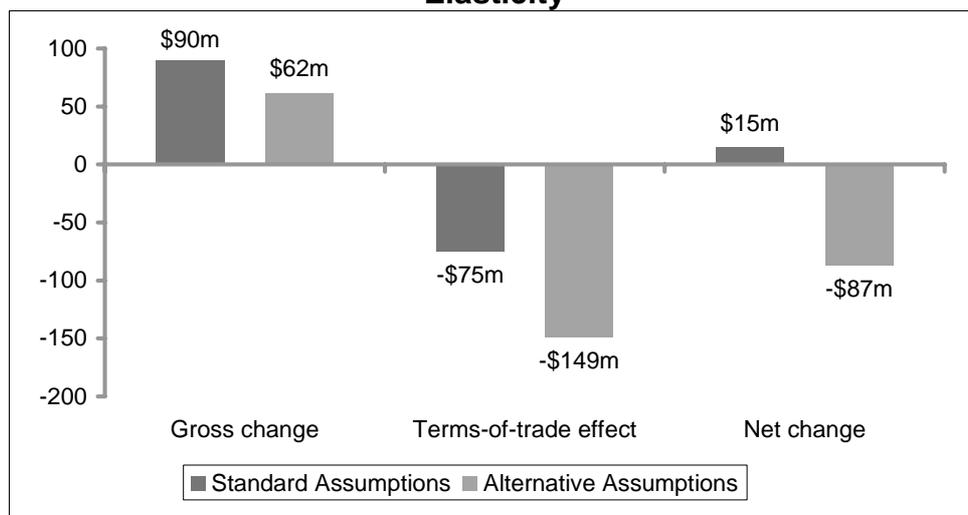
- Scenario 1 (5% TCF Tariff Scenario);
- Scenario 2 (No SIP Scenario); and
- Scenario 3 (Reduced TCF Assistance Scenario).

By way of background, lowering TCF assistance increases TCF imports, potentially lowering the trade balance. To maintain equilibrium in the trade balance, exports generally must rise. This rise in exports is induced through a depreciation of the exchange rate. Put more simply, a reduction in TCF assistance is a trade expanding policy that will lead to a higher level of exports generally.

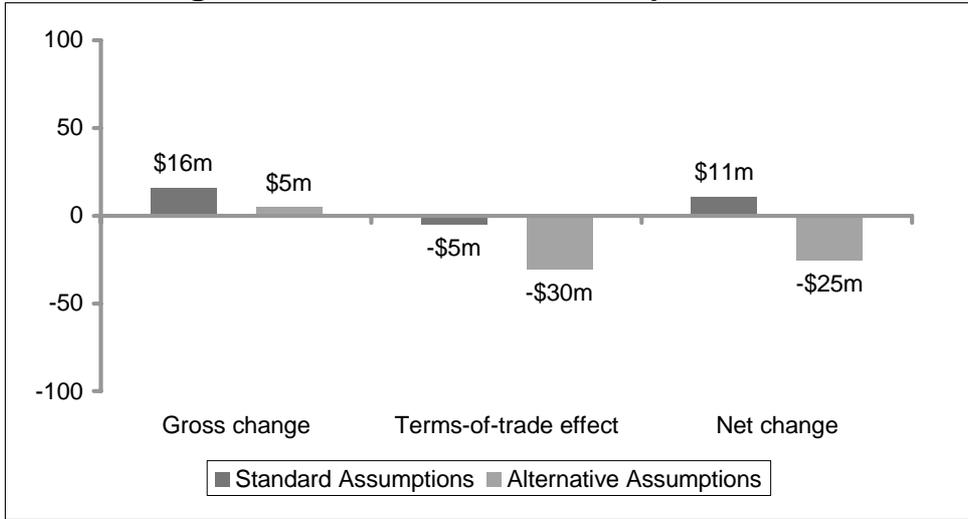
Under lower export demand elasticities, a bigger fall in export prices is required to induce a given expansion in export volumes. Thus lower export demand elasticities lead to a bigger fall in the terms-of-trade for trade expanding policies.

As a result of this bigger fall in the terms of trade, the loss in welfare due to the terms-of-trade effect is significantly higher under the alternative export demand elasticity compared to under the standard assumption. In fact, under all three scenarios, the loss in welfare due to the terms-of-trade effect means that the net welfare effect is negative under the alternative assumption. In comparison, the net welfare effect under the standard assumption is positive for all scenarios.

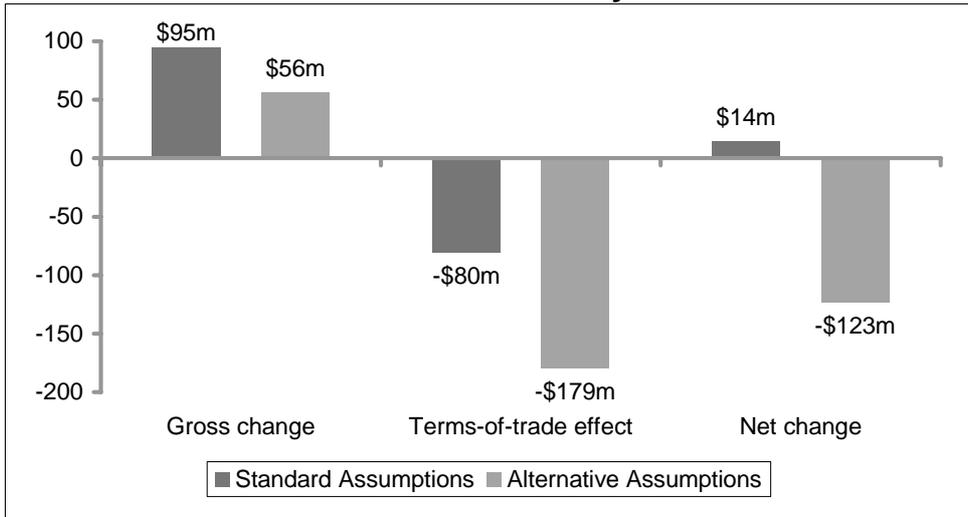
**Chart 7.5**  
**Welfare Change from 5% TCF Tariff Rate: Alternative Export Demand Elasticity**



**Chart 7.6**  
**Welfare Change from no SIP: Alternative Export Demand Elasticity**



**Chart 7.7**  
**Welfare Change from 5% TCF Tariff Rate and no SIP: Alternative Export Demand Elasticity**



## 8 Issues and Policy Implications

The modelling in this report covers some, but not all, of the issues that are important for the future of TCF assistance policy. This section identifies the issues that have been covered and the issues that have not been covered, so that the results of this report are interpreted in context.

Consideration of TCF assistance policy can be divided into two topics. The first topic is deciding on an appropriate goal for TCF assistance levels. The second topic is the time horizon over which that goal should be achieved. These two topics are now considered in turn. The discussion below draws on Murphy (1997)<sup>2</sup>.

### 8.1 Assistance Rates

On the topic of the appropriate goal for TCF assistance, there are four issues.

#### 1) *allocative efficiency*

Reducing TCF assistance can improve allocative efficiency by moving scarce resources such as labour away from lower valued uses that were supported by assistance to higher valued uses that are not reliant on assistance. This report extensively analyses the allocative efficiency benefits of reducing TCF assistance.

The allocative efficiency benefits are best measured as gross gains in consumer welfare on an annual basis. For the policy options that were considered, these gross annual gains were estimated as follows (with net gains in parentheses):

- \$90 million (\$15 million) for reducing TCF tariffs to 5 per cent;
- \$16 million (\$11 million) for abolishing SIP; and
- \$95 million (\$14 million) for reducing TCF tariffs to 5 per cent and abolishing SIP.

These gains were from a starting point of the TCF tariff rates that are to apply from 2005, and current levels of SIP.

#### 2) *x-efficiency*

Reducing TCF assistance may make the Australian TCF industry more outward-looking, spurring improvements in productivity or x-efficiency towards world best-practice, thus reducing waste of scarce resources. The gains in living standards from not wasting resources are larger than the gains from better allocating resources, so x-efficiency effects are potentially more important than allocative efficiency effects.

The size of the impact of reducing TCF assistance on x-efficiency is uncertain. While improvements in x-efficiency can be readily modelled in MM600+, an explicit assumption needs to be made about the size of such improvements. The modelling scenarios specified by the PC for this report do include any assumption about improvements in x-efficiency in the TCF industry. So the modelling makes no allowance for improvements in x-efficiency in the TCF sector.

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<sup>2</sup> Murphy (1997), "Welfare Gains, State Effects and Adjustment Costs of Further Cuts in TCF Tariffs", seminar paper, Research School of Pacific and Asian Studies, 2 September.

### *3) lobbying costs*

The maintenance of special assistance to the TCF industry leads to lobbying for the continuation of such assistance, and may encourage other industries to lobby for similar treatment. The modelling in this report makes no allowance for the likely saving in future lobbying costs from removing special assistance to the TCF industry.

### *4) other countries' assistance*

This report varies TCF industry assistance in Australia only. However, if Australia were to remove its special assistance for its TCF industry, it may slightly improve the prospects of other countries giving up their special assistance both for their TCF industries, and for other industries including agriculture. The benefits to Australia of other countries lowering their trade barriers are very large, as shown in CIE research commissioned by the PC.

## **8.2 Timing of Reducing Assistance Rates**

On the topic of the timing of reducing assistance rates, there are a further four issues.

### *5) balancing long-term gain against short-term pain*

Slower reductions in assistance will lessen the short-term pain from the shifting of jobs from TCF to other industries but will also postpone the long-term gain in living standards from eliminating special assistance to the TCF industry. Thus whether assistance should be reduced slowly or quickly depends on how the short-term pain from job shifting compares with the long-term gain from higher living standards.

This comparison can be illustrated using the policy option of reducing TCF tariffs to 5 per cent. According to the modelling this involves:

- an annual gross gain in consumer welfare of \$90 million from improved allocative efficiency alone; and
- the adjustment pain of a shift of 6,700 jobs from the TCF industry to other industries.

This implies an annual gross gain-to-pain ratio conservatively estimated at \$14,000 per job shift. This gain-to-pain ratio is lower than has been the case for previous reductions in TCF assistance. This is because as an industry's assistance falls, the benefit from further shifting resources from that industry to unassisted industries also falls, while the adjustment costs remain much the same.

This lower gain-to-pain ratio suggests that TCF tariffs should be reduced at a slower rate than in the past. At the same time, it is important that assistance continues to fall because it remains the case that the gains continue indefinitely while the adjustment costs of the associated job shifting are temporary. Further, as noted above, the estimate of the gain, and therefore also of the gain-to-pain ratio, is conservative because it allows for only one of four possible sources of gain.

### *6) jobs mismatch*

Low skilled workers are over-represented both amongst the unemployed and in the TCF sector. Thus some TCF workers who lose their jobs from TCF tariff cuts may be unemployed for a considerable period, increasing the pain from TCF job losses. This

highlights the need for further labour market reform to improve the flexibility of the labour market. A detailed assessment of the jobs mismatch issue would require a model of demand and supply for different occupations which is beyond the scope of this report. Nevertheless, it is safe to assume that further reductions in assistance to the TCF sector may, for a time, exacerbate the existing jobs mismatch involving an oversupply of low skilled workers. This is an argument for slower rather than faster reductions in TCF assistance.

### *7) regional effects*

About one-half of TCF jobs, but only about one-quarter of all jobs, are in Victoria. Thus the TCF sector is about twice as important to the Victorian economy as it is to the national economy. The concentration of TCF job losses in one state, Victoria, will possibly increase the adjustment costs. As expected, the modelling shows that job losses are concentrated in Victoria, where 5,700 jobs are lost. These job losses in Victoria are, by assumption, exactly offset in the long term by job gains elsewhere.

### *8) certainty*

The literature on the irreversibility of investment emphasises that uncertainty is a key factor in discouraging investment, so the decision on TCF assistance should try to minimise uncertainty. So TCF assistance rates should be set down for a long time horizon – at least to 2010. The economic modelling in this report does not allow for the effects of uncertainty.

## **8.3 Conclusion**

The estimates in this report of the gains of removing special assistance from the TCF industry are conservative. The estimates take into account gains from improved allocative efficiency, but do not take into account gains from the other three sources – improved x-efficiency, reduced lobbying costs and possible flow-on reductions in assistance in other countries.

Nevertheless, the estimated gains from improved allocative efficiency are positive and ongoing for all three policy options to reduce assistance to the TCF industry. This supports the case for adopting the goal of eliminating special assistance to the TCF industry, even before making subjective allowances for the likely gains from the other three sources besides improved allocative efficiency.

Consideration of the issues on the timing of reducing assistance suggests that assistance should continue to be reduced, but at a slower rate than in the past. In that regard, the modelling provides useful insights into “gain-to-pain” ratios and regional impacts that are important in assessing the rate at which assistance should be reduced. However, other issues affecting the choice of timing such as the impact on jobs mismatch and the effects of uncertainty about future assistance rates are outside of the scope of the modelling.

Overall, the modelling results are not inconsistent with a policy of reducing TCF tariffs to 5 per cent by, say, 2010. This would remove the current special tariff assistance afforded the TCF industry. At the same time it would slow down the rate at which TCF tariffs fall in the first decade of this century, compared with the preceding decade. The comparative falls in percentage points are 20 c.f. 30 per cent for clothing, 10 c.f. 30 per cent per cent for footwear, 10 c.f. 25 per cent for fabrics and 5 c.f. 15 per cent for table linen.

## Attachment A – Detailed Model Simulation Results

This attachment contains detailed model simulation results for the 5% TCF Tariff Reduction Scenario, the No SIP Scenario and the Reduced TCF Assistance Scenario. These tables expand the results presented in the tables and charts of the preceding sections.

**Table 1A**  
**Detailed TCF Industry Assistance Rates**

	Baseline	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b><i>Tariff Rates:</i></b>				
Textile Fibre, Yarn & Woven Fabric Mfg	3.5%	2.2%	3.5%	2.2%
Textile Product Mfg	6.4%	3.4%	6.4%	3.4%
Knitting Mills	13.5%	4.6%	13.5%	4.6%
Clothing Mfg	13.9%	4.1%	13.9%	4.1%
Footwear Mfg	8.7%	4.7%	8.7%	4.7%
Leather and Leather Product Mfg	1.2%	1.2%	1.2%	1.2%
<b><i>Production Tax Rates:</i></b>				
Textile Fibre, Yarn & Woven Fabric Mfg	-2.0%	-2.0%	0.0%	0.0%
Textile Product Mfg	-1.6%	-1.6%	0.0%	0.0%
Knitting Mills	-0.7%	-0.7%	0.0%	0.0%
Clothing Mfg	-0.7%	-0.7%	0.0%	0.0%
Footwear Mfg	-1.8%	-1.8%	0.0%	0.0%
Leather and Leather Product Mfg	-0.5%	-0.5%	0.0%	0.0%

**Table 2A**  
**TCF Industry Production Price and Import Price Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b><i>Production Prices:</i></b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-0.5%	2.0%	1.5%
Textile Product Mfg	-0.3%	2.0%	1.6%
Knitting Mills	-0.3%	1.0%	0.7%
Clothing Mfg	-0.5%	1.2%	0.7%
Footwear Mfg	-0.2%	2.1%	1.9%
Leather and Leather Product Mfg	-0.1%	0.6%	0.5%
<b><i>Import Prices:</i></b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-1.2%	0.1%	-1.2%
Textile Product Mfg	-2.6%	0.1%	-2.5%
Knitting Mills	-8.0%	0.1%	-7.9%
Clothing Mfg	-9.0%	0.1%	-8.9%
Footwear Mfg	-3.5%	0.1%	-3.5%
Leather and Leather Product Mfg	0.1%	0.1%	0.2%

**Table 3A**  
**Detailed TCF Industry Production Volume and Employment Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b><i>Production (per cent):</i></b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-6.7%	-8.1%	-14.4%
Textile Product Mfg	-1.2%	-2.3%	-3.5%
Knitting Mills	-19.3%	-3.7%	-22.5%
Clothing Mfg	-19.8%	-3.2%	-22.9%
Footwear Mfg	-2.1%	-2.2%	-4.2%
Leather and Leather Product Mfg	-0.1%	-3.1%	-3.2%
<b><i>Employment (jobs):</i></b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-1,074	-1,285	-2,292
Textile Product Mfg	-131	-253	-384
Knitting Mills	-1,138	-216	-1,325
Clothing Mfg	-4,532	-737	-5,247
Footwear Mfg	-114	-119	-225
Leather and Leather Product Mfg	-4	-87	-90

**Table 4A**  
**Detailed TCF Industry Trade Volume Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b><i>Exports:</i></b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-1.4%	-8.3%	-9.5%
Textile Product Mfg	-0.5%	-6.0%	-6.5%
Knitting Mills	-20.1%	-5.3%	-24.7%
Clothing Mfg	-11.1%	-5.0%	-15.9%
Footwear Mfg	-5.3%	-13.4%	-18.0%
Leather and Leather Product Mfg	0.6%	-3.6%	-3.0%
<b><i>Imports:</i></b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-7.4%	2.2%	-5.5%
Textile Product Mfg	3.0%	2.1%	5.1%
Knitting Mills	15.1%	1.8%	16.5%
Clothing Mfg	36.3%	4.2%	40.9%
Footwear Mfg	1.8%	0.8%	2.5%
Leather and Leather Product Mfg	-1.1%	-0.3%	-1.3%

**Table 5A**  
**Broader TCF Industry Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b>Quantities:</b>			
Production	-10.5%	-4.5%	-14.8%
Employment	-10.9%	-4.2%	-15.0%
Exports	-2.7%	-7.0%	-9.5%
Imports	10.8%	2.4%	13.2%
Local sales (domestic and imported)	-2.3%	-1.2%	-3.4%
<b>Prices:</b>			
Production	-0.4%	1.6%	1.2%
Exports	0.3%	1.1%	1.4%
Imports	-5.3%	0.1%	-5.3%
Local sales (domestic and imported)	-2.6%	0.9%	-1.7%
<b>Values:</b>			
Production	-10.8%	-3.0%	-13.8%
Exports	-2.4%	-6.0%	-8.2%
Imports	4.9%	2.5%	7.3%
Local sales (domestic and imported)	-4.9%	-0.2%	-5.1%

**Table 6A**  
**Economy-wide Production Effects (1-digit ANZSIC)**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
A. Agriculture, Forestry & Fishing	-0.1%	-0.2%	-0.3%
B. Mining	0.6%	0.3%	0.9%
C. Manufacturing	-0.2%	-0.1%	-0.3%
D. Electricity, Gas & Water	0.0%	0.0%	0.1%
E. Construction	0.0%	0.0%	0.0%
F. Wholesale Trade	0.0%	-0.1%	0.0%
G. Retail Trade	0.1%	0.0%	0.1%
H. Accommodation, Cafes & Restaurants	0.0%	0.0%	0.0%
I. Transport	0.2%	0.1%	0.3%
J. Communication Services	0.0%	0.0%	0.0%
K. Finance and Insurance	0.0%	0.0%	0.0%
L. Property & Business Services	0.1%	0.0%	0.1%
M. Government Admin. & Defence	0.0%	0.0%	0.0%
N. Education	0.0%	0.0%	0.0%
O. Health & Community Services	0.0%	0.0%	0.0%
P. Cultural & Recreational Services	0.0%	0.0%	0.0%
Q. Personal & Other Services	0.0%	0.0%	0.0%
R. Ownership of Dwellings	0.0%	0.0%	0.0%
GDP	0.03%	0.01%	0.04%

**Table 7A**  
**Economy-wide Employment Effects (1-digit ANZSIC)**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
A. Agriculture, Forestry & Fishing	-95	-593	-649
B. Mining	1,716	892	2,590
C. Manufacturing	-4,695	-1,483	-6,093
D. Electricity, Gas & Water	72	54	123
E. Construction	132	168	286
F. Wholesale Trade	176	-260	-74
G. Retail Trade	829	-151	676
H. Accom., Cafes & Restaurants	86	70	148
I. Transport	1,184	541	1,717
J. Communication Services	68	50	114
K. Finance and Insurance	-29	140	94
L. Property & Business Services	673	140	810
M. Government Admin. & Defence	36	14	49
N. Education	125	204	314
O. Health & Community Services	-184	159	-53
P. Cultural & Recreational Services	-5	27	18
Q. Personal & Other Services	-90	28	-70
R. Ownership of Dwellings	0	0	0
Total	0	0	0

**Table 8A**  
**Furniture Industry Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
Production	0.1%	0.0%	0.1%
Exports	0.6%	0.2%	0.8%
Imports	-0.2%	0.0%	-0.3%
Local sales (domestic and imported)	0.0%	0.0%	0.1%
Employment (jobs)	35	12	47

**Table 9A**  
**Regional Production Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
Sydney	0.0%	0.0%	0.0%
Hunter - Illawarra	0.1%	0.1%	0.1%
North Coast NSW	-0.1%	-0.1%	-0.1%
South Eastern NSW	0.0%	-0.1%	-0.1%
Inland NSW	0.1%	0.0%	0.0%
Melbourne	-0.3%	-0.1%	-0.3%
Gippsland	0.2%	0.1%	0.3%
Western Vic	-0.2%	-0.1%	-0.3%
Murray	-0.2%	-0.1%	-0.4%
Brisbane	0.1%	0.1%	0.1%
Moreton	0.1%	0.0%	0.1%
Southern Qld	0.1%	-0.1%	0.0%
Central Qld	0.3%	0.1%	0.5%
Far North	0.2%	0.1%	0.2%
Adelaide	0.1%	0.0%	0.1%
Balance of SA	0.1%	0.0%	0.1%
Perth	0.3%	0.1%	0.4%
Lower Western WA	0.2%	0.0%	0.3%
Remainder WA	0.6%	0.2%	0.8%
Hobart	0.1%	0.0%	0.1%
Balance of Tasmania	0.2%	0.0%	0.2%
Northern Territory	0.5%	0.2%	0.8%
ACT	0.2%	0.0%	0.2%
Australia	0.03%	0.01%	0.04%

**Table 10A**  
**Regional Employment Effects (jobs)**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
Sydney	-687	145	-565
Hunter - Illawarra	92	156	243
North Coast NSW	-90	-92	-178
South Eastern NSW	-11	-67	-74
Inland NSW	44	-182	-126
Melbourne	-4,806	-1,742	-6,464
Gippsland	175	73	247
Western Vic	-555	-269	-810
Murray	-509	-265	-760
Brisbane	305	445	714
Moreton	193	108	292
Southern Qld	76	-116	-33
Central Qld	871	343	1,205
Far North	154	36	189
Adelaide	413	33	434
Balance of SA	142	-31	112
Perth	1,918	727	2,621
Lower Western WA	241	37	279
Remainder WA	926	398	1,316
Hobart	101	-38	63
Balance of Tasmania	215	-2	213
Northern Territory	534	231	759
ACT	257	71	322
Australia	0	0	0

**Table 11A**  
**National Macroeconomic Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b><i>annual consumer living standards (\$million):</i></b>			
Gross Gain	90	16	95
Terms-of-Trade Effect	-75	-5	-80
Net Gain	15	11	14
<b><i>general effects:</i></b>			
Real After-tax Wage	0.0%	0.0%	0.0%
Exchange Rate	-0.2%	-0.1%	-0.2%
Consumer Price Index	-0.1%	0.1%	0.0%
<b><i>national accounts:</i></b>			
private consumption	0.0%	0.0%	0.0%
gen. gov't road ext. spending	0.0%	0.0%	0.0%
gen. gov't final dd	0.0%	0.0%	0.0%
housing investment	0.0%	0.0%	0.0%
business investment	0.0%	0.0%	0.1%
exports	0.6%	0.1%	0.8%
imports	0.5%	0.1%	0.6%
GDP	0.03%	0.01%	0.04%

**Table 12A**  
**Alternative Measures of Welfare Effects (\$million)**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
valued at baseline prices	18	11	18
valued at new prices	12	11	12
compensating variation (CV)	15	11	14
equivalent variation (EV)	15	11	14
gross gain	90	16	95
terms-of-trade effect	-75	-5	-80
compensating variation (CV)	15	11	14

**Attachment B – TCF Industries, Products and Trade Elasticities in MM600+**

MM600+ contains a high level of detail of the TCF industry, with 6 TCF industries producing 57 products. These TCF industries and products are listed in the table below, along with the trade elasticities for each product.

- The column headed “import demand” contains Armington import elasticities. These refer to the elasticity of substitution between imported and locally produced product.
- The column headed “export demand” contains export demand elasticities.
- The column headed “export supply” contains elasticities of transformation. These refer to the elasticity of transformation of local producers between supplying product to the local and export markets.

**Table 1B**  
**TCF Specific Industries, Products and Trade Elasticities in MM600+**

Industry	Product	Import Demand	Export Demand	Export Supply	
Textile fibres, yarns etc	Labels and badges, textile, with printed lettering or design	2.33	-12.0	2.5	
	Textile finishing nec	2.33	-12.0	2.5	
	Wool, scoured (degreased but not carded, combed or carbonised)	7.00	-4.0	2.5	
	Wool, carbonised	7.00	-4.0	2.5	
	Yarns of continuous synthetic filament or artificial fibres (incl viscose or acetate)(excl elastic sewing thread)	7.00	-12.0	2.5	
	Broadwoven fabric of continuous synthetic fibres (excl pile or chenille)	7.00	-12.0	2.5	
	Narrow woven textile fabrics (incl tape); synthetic tyre cord yarns or fabric	7.00	-12.0	2.5	
	Sewing thread	7.00	-12.0	2.5	
	Yarn of cotton (excl sewing thread, elastic or elastomeric); yarn gimped, chenille and loop-wade	7.00	-12.0	2.5	
	Face washers, cotton towels, and baby napkins of textile fabrics	7.00	-12.0	2.5	
	Broadwoven textile fabric, fibres nec	7.00	-12.0	2.5	
	Broadwoven fabric, woollen	7.00	-12.0	2.5	
	Woollen blankets and rugs (excl electric)	7.00	-12.0	2.5	
	Yarn, spun, woollen nec	7.00	-12.0	2.5	
	Misc. fibres, yarns & fabrics	7.00	-12.0	2.5	
	Textile products	Rope and cable (excl wire), cordage (excl tyre cord yarn), twine or net products	2.00	-12.0	2.5
		Tarpaulins; sails; tents; annexes; textile hosepiping; textile motor vehicle covers	2.00	-12.0	2.5
		Blinds and awnings of textile fabrics (incl canvas) and woven textile materials (incl cotton)	2.00	-12.0	2.5
		Made-up textile products nec	2.00	-12.0	2.5
		Carpets and floor rugs of textile materials; mats and matting (excl grass, sisal or coir)	2.00	-12.0	2.5
Labels and badges, woven		2.00	-12.0	2.5	
Bags, sacks and packets of textile or canvas		2.00	-12.0	2.5	
Misc. textile product mfg		2.00	-12.0	2.5	
Knitting mill products		Hosiery (incl pantyhose, stockings, tights and socks)	2.00	-12.0	2.5
		Pullovers, jumpers, sweaters and cardigans - knitted	7.00	-12.0	2.5
	Fabrics (excl elastic or elastomeric), knitted or crocheted	7.00	-12.0	2.5	
	Knitted or crocheted fabric nec	7.00	-12.0	2.5	
	Curtains in the piece (incl continuous), knitted or crocheted	7.00	-12.0	2.5	
Industry	Product	Import Demand	Export Demand	Export Supply	

B2

	Knitted articles nec, fabric knitted at the same establishment	7.00	-12.0	2.5	
Clothing	Womens and girls shirts and blouses	4.24	-12.0	2.5	
	Womens and girls T-shirts and tank tops	4.24	-12.0	2.5	
	Dresses, skirts, slacks, shorts, tunics, uniforms, jeans, overalls, leotards, coats, capes, suits and ensembles	4.24	-12.0	2.5	
	Womens and girls outer nightwear (incl dressing gowns, robes etc)	4.24	-12.0	2.5	
	Hats and other headgear (incl safety) (excl rubber bathing caps)	4.24	-12.0	2.5	
	Fur and sheepskin articles, (incl clothing) (excl headwear, footwear, handbags, purses and toys)	4.24	-12.0	2.5	
	Swimwear and tracksuits	4.24	-12.0	2.5	
	Clothing accessories (incl shawls, scarves, ties, gloves, belts, headbands)	4.24	-12.0	2.5	
	Leather clothing	4.24	-12.0	2.5	
	Dustcoats, mens and boys trousers (excl suit), shorts, jeans, overalls and work shirts, textile (excl waterproof)	4.24	-12.0	2.5	
	Waterproof, plastic and rubber clothing	4.24	-12.0	2.5	
	Mens and boys suits and uniforms (incl trousers), coats, blazers and jackets (excl leather, plastic or waterproof)	4.24	-12.0	2.5	
	Mens and boys woven shirts (with collars)	4.24	-12.0	2.5	
	Mens and boys outer nightwear (incl dressing gowns, robes, etc)	4.24	-12.0	2.5	
	Foundation garments (incl brassieres, corsets and girdles)	4.24	-12.0	2.5	
		Mens and boys T-shirts and tank tops	4.24	-12.0	2.5
		Woven sleepwear (incl pyjamas and nightdresses) and infants clothing	4.24	-12.0	2.5
		Misc. Clothing	4.24	-12.0	2.5
	Footwear	Footwear with uppers of leather and outer soles of rubber or plastic (excl sports footwear)	7.00	-12.0	2.5
		Sports footwear; rubber thongs	7.00	-12.0	2.5
Footwear with uppers of leather and outer soles of leather or composition leather (excl sports footwear)		7.00	-12.0	2.5	
Misc. footwear		7.00	-12.0	2.5	
		Leather, vegetable or chrome tanned (incl re-tanned), dressed or finished; chamois leathers	2.00	-12.0	2.5
Leather and leather products	Leather (excl dressed or finished)	2.00	-6.0	2.5	
	Hides and skins, pickled or preserved; tanned or dressed skins with hair or wool retained; fellmongered wool	2.00	-12.0	2.5	
	Leather handbags, suitcases, bags, travel sets for personal toilet articles, purses, key cases, wallets and billfolds	2.00	-12.0	2.5	
	Handbags, suitcases, bags, travel sets for toilet articles, purses, key cases, wallets and billfolds (excl leather)	2.00	-12.0	2.5	
	Saddlery and harness, of any material	2.00	-12.0	2.5	

## Attachment C –Detailed Sensitivity Analysis Results

This attachment contains the detailed sensitivity analysis results from reducing the export demand elasticity to  $-4$  for all products. Similar to Attachment A, results are presented for the 5% TCF Tariff Reduction Scenario, the No SIP Scenario and the Reduced TCF Assistance Scenario.

**Table 1C**  
**Detailed TCF Industry Assistance Rates**

	Baseline	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b>Tariff Rates:</b>				
Textile Fibre, Yarn & Woven Fabric Mfg	3.5%	2.2%	3.5%	2.2%
Textile Product Mfg	6.4%	3.4%	6.4%	3.4%
Knitting Mills	13.5%	4.6%	13.5%	4.6%
Clothing Mfg	13.9%	4.1%	13.9%	4.1%
Footwear Mfg	8.7%	4.7%	8.7%	4.7%
Leather and Leather Product Mfg	1.2%	1.2%	1.2%	1.2%
<b>Production Tax Rates:</b>				
Textile Fibre, Yarn & Woven Fabric Mfg	-2.0%	-2.0%	0.0%	0.0%
Textile Product Mfg	-1.6%	-1.6%	0.0%	0.0%
Knitting Mills	-0.7%	-0.7%	0.0%	0.0%
Clothing Mfg	-0.7%	-0.7%	0.0%	0.0%
Footwear Mfg	-1.8%	-1.8%	0.0%	0.0%
Leather and Leather Product Mfg	-0.5%	-0.5%	0.0%	0.0%

**Table 2C**  
**TCF Industry Production Price and Import Price Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b>Production Prices:</b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-0.5%	2.1%	1.6%
Textile Product Mfg	-0.3%	2.0%	1.7%
Knitting Mills	-0.3%	1.0%	0.7%
Clothing Mfg	-0.5%	1.3%	0.8%
Footwear Mfg	-0.1%	2.1%	1.9%
Leather and Leather Product Mfg	-0.1%	0.6%	0.5%
<b>Import Prices:</b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-1.1%	0.1%	-1.0%
Textile Product Mfg	-2.5%	0.1%	-2.4%
Knitting Mills	-7.8%	0.2%	-7.7%
Clothing Mfg	-8.9%	0.1%	-8.8%
Footwear Mfg	-3.4%	0.1%	-3.3%
Leather and Leather Product Mfg	0.3%	0.1%	0.4%

**Table 3C**  
**Detailed TCF Industry Production Volume and Employment Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b><i>Production (per cent):</i></b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-5.5%	-6.6%	-11.9%
Textile Product Mfg	-1.1%	-2.0%	-3.1%
Knitting Mills	-17.1%	-3.1%	-19.9%
Clothing Mfg	-17.4%	-2.7%	-20.2%
Footwear Mfg	-2.1%	-1.9%	-3.9%
Leather and Leather Product Mfg	0.1%	-1.8%	-1.7%
<b><i>Employment (jobs):</i></b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-1,016	-1,231	-2,194
Textile Product Mfg	-122	-224	-345
Knitting Mills	-1,110	-199	-1,289
Clothing Mfg	-4,304	-676	-4,984
Footwear Mfg	-117	-110	-219
Leather and Leather Product Mfg	3	-60	-56

**Table 4C**  
**Detailed TCF Industry Trade Volume Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b><i>Exports:</i></b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-0.2%	-6.4%	-6.6%
Textile Product Mfg	-0.1%	-4.1%	-4.3%
Knitting Mills	-12.7%	-3.2%	-15.7%
Clothing Mfg	-7.2%	-3.3%	-10.5%
Footwear Mfg	-2.2%	-6.3%	-8.3%
Leather and Leather Product Mfg	0.7%	-1.8%	-1.1%
<b><i>Imports:</i></b>			
Textile Fibre, Yarn & Woven Fabric Mfg	-7.0%	2.5%	-4.8%
Textile Product Mfg	2.9%	2.0%	4.9%
Knitting Mills	16.5%	1.8%	18.0%
Clothing Mfg	38.9%	4.4%	43.8%
Footwear Mfg	1.9%	0.8%	2.6%
Leather and Leather Product Mfg	-1.0%	-0.2%	-1.3%

**Table 5C**  
**Broader TCF Industry Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b>Quantities:</b>			
Production	-9.1%	-3.8%	-12.8%
Employment	-9.5%	-3.6%	-13.0%
Exports	-1.2%	-5.1%	-6.2%
Imports	10.9%	2.4%	13.4%
Local sales (domestic and imported)	-2.2%	-1.1%	-3.3%
<b>Prices:</b>			
Production	-0.4%	1.6%	1.3%
Exports	0.5%	1.5%	2.0%
Imports	-5.0%	0.1%	-4.9%
Local sales (domestic and imported)	-2.3%	1.0%	-1.4%
<b>Values:</b>			
Production	-9.4%	-2.2%	-11.7%
Exports	-0.6%	-3.7%	-4.3%
Imports	5.3%	2.6%	7.8%
Local sales (domestic and imported)	-4.5%	-0.1%	-4.6%

**Table 6C**  
**Economy-wide Production Effects (1-digit ANZSIC)**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
A. Agriculture, Forestry & Fishing	0.0%	-0.2%	-0.2%
B. Mining	0.6%	0.3%	0.8%
C. Manufacturing	-0.2%	-0.1%	-0.3%
D. Electricity, Gas & Water	0.0%	0.0%	0.0%
E. Construction	0.0%	0.0%	0.0%
F. Wholesale Trade	0.0%	-0.1%	0.0%
G. Retail Trade	0.1%	0.0%	0.0%
H. Accom., Cafes & Restaurants	0.0%	0.0%	0.1%
I. Transport	0.2%	0.1%	0.3%
J. Communication Services	0.0%	0.0%	0.0%
K. Finance and Insurance	0.0%	0.0%	0.0%
L. Property & Business Services	0.0%	0.0%	0.0%
M. Government Admin. & Defence	0.0%	0.0%	0.0%
N. Education	0.0%	0.0%	0.1%
O. Health & Community Services	0.0%	0.0%	0.0%
P. Cultural & Recreational Services	0.0%	0.0%	0.0%
Q. Personal & Other Services	0.0%	0.0%	0.0%
R. Ownership of Dwellings	-0.1%	0.0%	-0.1%
GDP	0.02%	0.00%	0.03%

**Table 7C**  
**Economy-wide Employment Effects (1-digit ANZSIC) (jobs)**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
A. Agriculture, Forestry & Fishing	58	-487	-396
B. Mining	1,461	719	2,174
C. Manufacturing	-4,199	-1,246	-5,390
D. Electricity, Gas & Water	71	52	121
E. Construction	18	109	117
F. Wholesale Trade	164	-263	-92
G. Retail Trade	636	-200	434
H. Accommodation, Cafes & Restaurants	117	82	193
I. Transport	1,112	480	1,592
J. Communication Services	65	48	109
K. Finance and Insurance	-32	142	94
L. Property & Business Services	551	79	629
M. Government Admin. & Defence	44	19	63
N. Education	236	252	475
O. Health & Community Services	-190	164	-52
P. Cultural & Recreational Services	-7	27	17
Q. Personal & Other Services	-104	23	-88
R. Ownership of Dwellings	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Table 8C**  
**Furniture Industry Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
Production	0.1%	0.0%	0.1%
Exports	0.6%	0.2%	0.8%
Imports	-0.4%	-0.1%	-0.5%
Local sales (domestic and imported)	0.0%	0.0%	0.0%
Employment (jobs)	38	13	50

**Table 9C**  
**Regional Production Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
Sydney	0.0%	0.0%	0.0%
Hunter - Illawarra	0.1%	0.1%	0.1%
North Coast NSW	0.0%	-0.1%	-0.1%
South Eastern NSW	0.0%	-0.1%	-0.1%
Inland NSW	0.1%	0.0%	0.0%
Melbourne	-0.2%	-0.1%	-0.3%
Gippsland	0.2%	0.1%	0.3%
Western Vic	-0.2%	-0.1%	-0.3%
Murray	-0.2%	-0.1%	-0.3%
Brisbane	0.1%	0.1%	0.1%
Moreton	0.1%	0.0%	0.1%
Southern Qld	0.1%	0.0%	0.0%
Central Qld	0.3%	0.1%	0.4%
Far North	0.2%	0.0%	0.2%
Adelaide	0.1%	0.0%	0.1%
Balance of SA	0.1%	0.0%	0.1%
Perth	0.2%	0.1%	0.3%
Lower Western WA	0.2%	0.0%	0.2%
Remainder WA	0.5%	0.2%	0.6%
Hobart	0.1%	-0.1%	0.1%
Balance of Tasmania	0.2%	0.0%	0.2%
Northern Territory	0.4%	0.2%	0.6%
ACT	0.1%	0.0%	0.2%
Australia	0.02%	0.02%	0.03%

**Table 10C**  
**Regional Employment Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
Sydney	-656	145	-537
Hunter - Illawarra	144	169	310
North Coast NSW	-66	-76	-139
South Eastern NSW	6	-55	-45
Inland NSW	116	-138	-11
Melbourne	-4,418	-1,523	-5,892
Gippsland	152	59	212
Western Vic	-486	-227	-704
Murray	-438	-222	-651
Brisbane	281	423	674
Moreton	193	109	296
Southern Qld	124	-79	50
Central Qld	821	309	1,128
Far North	154	37	191
Adelaide	482	81	554
Balance of SA	165	-15	152
Perth	1,558	522	2,069
Lower Western WA	208	20	230
Remainder WA	733	286	1,017
Hobart	94	-37	58
Balance of Tasmania	190	-11	180
Northern Territory	416	164	577
ACT	226	58	280
Australia	0	0	0

**Table 11C**  
**National Macroeconomic Effects**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
<b><i>annual consumer living standards (\$million):</i></b>			
Gross Gain	62	5	56
Terms-of-Trade Effect	-149	-30	-179
Net Gain	-87	-25	-123
<b><i>general effects:</i></b>			
Real After-tax Wage	0.0%	0.0%	0.0%
Exchange Rate	-0.3%	-0.1%	-0.4%
Consumer Price Index	-0.1%	0.1%	0.0%
<b><i>national accounts:</i></b>			
private consumption	0.0%	0.0%	0.0%
gen. gov't road ext. spending	0.0%	0.0%	0.0%
gen. gov't final dd	0.0%	0.0%	0.0%
housing investment	-0.1%	0.0%	-0.1%
business investment	0.0%	0.0%	0.0%
exports	0.6%	0.1%	0.7%
imports	0.4%	0.1%	0.5%
GDP	0.02%	0.00%	0.02%

**Table 12C**  
**Alternative Measures of Welfare Effects (\$million)**

	5% TCF tariff	no SIP	5% TCF tariff & no SIP
valued at baseline prices	-84	-25	-121
valued at new prices	-90	-25	-126
compensating variation (CV)	-87	-25	-123
equivalent variation (EV)	-87	-25	-123
gross gain	62	5	56
terms-of-trade effect	-149	-30	-179
compensating variation (CV)	-87	-25	-123