



**Australian Government**  
**Productivity Commission**

Modelling Economy-wide  
Effects of Future  
TCF Assistance

Technical Supplement

November 2008

---

## Introduction

The report of the Review of the Australian Textiles, Clothing and Footwear Industries, *Building Innovative Capability*, was released on 19 September 2008. It refers to the Productivity Commission's 2008 TCF modelling report (PC 2008a) throughout Volume 1, generally in support of its recommendations, including to maintain currently scheduled tariff reductions. In Volume 2, however, a chapter authored by Dr Richard Denniss — 'Evaluation of the Productivity Commission Modelling of TCF Assistance' — contains an extensive discussion of alleged 'limitations and flaws in applying the PC model'.\*

This note briefly responds to the main criticisms raised in the Denniss chapter, most of which repeat matters raised by him in discussions with the Commission, and addressed by the Commission in its report, as well as in subsequent correspondence. Denniss also reiterates some criticisms by consultants Lateral Economics, Professor Peter Dixon of Monash University, and Econtech, in relation to the Commission's modelling of assistance reductions for the automotive sector. The Commission has already responded to those matters in three technical supplements, available from its website.

## Monopoly power in TCF retailing

It is suggested in the Denniss chapter that in discussion of the 'pass-through' scenarios (that is, the extent to which tariff cuts are passed on by retailers to consumers), the Commission was overly optimistic about the level of competition and pass-through of prices in TCF retail. The Commission's comment is disputed that monopoly pricing sets an upper bound to retail prices, and consequently that pass-through of tariff cuts would be higher in an oligopoly (that is, greater than 50 per cent).

However, this criticism appears to rely on a theory of 'kinked demand curves' which attempts to explain downward price stickiness in oligopolistic markets. The theory has been criticised (by Stigler and others) as lacking predictive power in relation to prices in oligopoly market structures (that is, markets with only a few

---

\* At the time, Denniss was Associate Professor at the Crawford School of Economics and Government, Australian National University and a consultant to the TCF Review. He has since been appointed as Executive Director of the Australia Institute, and Adjunct Associate Professor at the Crawford School.

---

firms). Moreover, it would seem untenable that prices in oligopoly could remain at levels significantly above those of a monopolist for any extended period.

The Commission's analysis of the evidence, or lack thereof, for market power in the retail sector is also criticised. In chapter 5 of its report, the Commission suggested that the observed deviation of the price index for TCF products from the CPI, commencing around 1990 when the Button TCF plan was introduced, provided little support for the notion that tariff reductions have not been substantively passed on to consumers (see figure 5.1 in chapter 5). Although not included in the report, Commission estimates show the nominal tariff equivalent of assistance for TCF declining significantly from the late 1980s through the 1990s, broadly aligning with the deviation of the price series.

The Commission's analysis is criticised by Denniss as being circumstantial and incomplete — not least because the same chart shows no divergence in the price series following the '1974' (actually 1973) tariff reductions. It is correct that prices of TCF products did not fall below the CPI; indeed, they slightly increased relative to the general price index. However, this need not mean that tariff cuts were not passed on:

- Tariffs were reduced by 25 per cent *across the board*, not just for TCF products. It would be expected that this would lower both the CPI and the price of TCF products relative to what they otherwise would have been. Indeed, the tariff cut was largely implemented as a means of restraining inflation.
- While tariffs were reduced, other types of protection were soon applied to the TCF sector in the mid-1970s. Initially 'voluntary' restraints were negotiated with trading partners, followed by the imposition of import quotas. Industries Assistance Commission estimates of the nominal rate of assistance to the TCF industries are higher in the late 1970s than at the start of the decade, with only a small measured dip around 1973.

It is also claimed that the observed deviation of TCF prices from the CPI largely results from 'the deflationary shock from the growth of Chinese imports from the 1990s'. However, there appears to have been no significant change in the growth rate of the value of (total) Chinese imports, either in absolute terms or relative to total imports in the early 1990s. Imports have been increasing at an accelerating rate from the '50s. Whether there was any significant change in the unit price of Chinese imports in the early 1990s is not established.

It is also suggested by the author that the appreciation of the \$A against the \$US from 2001 to mid-2008 contributed to the reduction in the price of TCF products from China. The significant appreciation in this period is likely to have affected prices to some extent. However, as the chapter highlights, exchange rate movements

---

tend to be passed on more slowly, reflecting their volatility, and the Australian dollar has since fallen from its highpoint in the middle of the year. Moreover, this period does not include the period when the price series diverge, but instead reflects the period of the greatest currency appreciation in the last 25 years. Moreover, exchange rate changes affect prices of all tradeable goods and, thus, the CPI might be expected to move in the same direction as TCF prices (just as the two indexes moved together with the across-the-board tariff cut in 1973).

The Commission acknowledges that it did not present an exhaustive discussion of the many factors potentially affecting the divergence of the price series presented in figure 5.1 of its report, but the material presented in the TCF Review report does not demonstrate that cuts in TCF assistance have not been passed on to Australian consumers.

## **Productivity improvements**

It is asserted that the modelled gains from productivity improvements are more robust than, and of similar magnitude to, the gains from tariff cuts. However, this disregards the uncertainty attached to the productivity shocks. While it is true that the results of the tariff cut scenarios are more sensitive to model parameters, the values for the productivity shocks requested by the TCF review are arbitrary. The main issue for proponents of industry assistance measures is to demonstrate the link between proposed measures and productivity improvements. There is, however, more solid evidence that productivity improvements may be linked to tariff cuts, meaning that the two are not necessarily mutually exclusive.

Though some weight is placed on the productivity simulation results, it is also suggested that they are counterintuitive, mainly because TCF employment declines when the sector's productivity improves. Commission staff explained these results in correspondence with the Review Secretariat following the release of the report. In short:

- a productivity improvement reduces the amount of labour required to produce a unit of output;
- a productivity improvement also reduces the output price, which leads to increased demand and output expansion, which in turn increases demand for labour.

For the TCF sector, the modelling — which uses the most up-to-date input–output data for the industry and the economy — indicates that the second effect is not large enough to outweigh the first. This is because TCF market demand is not responsive enough, mainly because the sector is not export-focussed. For these reasons, the

---

results are consistent with economic theory as well as the market characteristics of the local TCF sector.

### **Displaced workers, labour mobility and adjustment costs**

The Commission's report is criticised in the Denniss chapter for questioning whether 30 per cent of displaced TCF workers would become permanently unemployed, and the Commission's 2003 TCF report is cited in support of a claim that TCF workers may have difficulty finding new jobs.

In chapter 5 of its 2008 report, the Commission observed that the labour market at the time was strong (with an unemployment rate below 5 per cent), which would tend to reduce adjustment costs for displaced workers. In addition, it was noted that the reference case scenario (which modelled scheduled tariff assistance reductions) did not assume that all displaced TCF workers would find jobs — new jobs created could be filled by other unemployed persons, leaving the aggregate level of employment unchanged (so-called labour market 'churning'). Moreover, assistance reductions are being implemented gradually according to an announced schedule, in large part to ease adjustment costs for employees and businesses. This means that it is likely that some adjustment has occurred in anticipation of scheduled assistance reductions.

There is related criticism of the model's assumption about labour mobility — that is, that labour moves freely in response to opportunities to earn higher wages. The counter-claim is that TCF workers have lower than average mobility because of personal characteristics. This is a common criticism of long-run comparative static simulations where all factors can adjust. The Commission's report acknowledges that adjustment costs should be subtracted from modelled gains. However, for reasons including those just mentioned, its assessment was that these transitional costs would not outweigh the ongoing benefits from assistance reductions.

### **Diminishing returns to tariff cuts**

As tariffs approach zero, there are diminishing additional benefits from each successive tariff cut. However, for each *percentage point* reduction in tariffs, the adjustment costs to the industry are likely to be approximately the same. While the diminishing marginal benefits from tariff cuts are fully incorporated into the model, detailed adjustment costs are not. As noted above, adjustment costs should be taken into account, though they would not be large enough to outweigh the ongoing economic gains. It also should be noted that the 'reference case' simulation results

---

did not take into account potential gains from any productivity improvements or other cost savings that might flow from assistance reductions.

### **Combining simulations**

The view is expressed in the Denniss chapter that when several scenarios are combined, the gains would be quite small. However, this view neglects that the results from different scenarios (reflecting quite different types of ‘shock’) are not additive. Indeed, in a model such as that used by the Commission, the various simulations interact with each other. This is most evident in the case of the scenarios involving displaced TCF workers and partial pass-through: if pass-through were actually incomplete, the domestic industry would contract less and fewer workers would be displaced.

### **Economies of scale**

A valid criticism of the CGE models is that they assume constant returns to scale (CRS) production technologies. This point is also mentioned in the Denniss chapter, but its significance is misinterpreted. For example, it is incorrectly stated that it is a fundamental condition for perfect competition in the models. Many models of perfect competition have different scale assumptions, and many imperfectly competitive models embody the CRS assumption.

Additionally, it is suggested that policies aimed at increasing industry productivity through better utilisation of economies of scale (by concentrating the industry) will fail to deliver benefits in models of this kind. This is also incorrect: policies with such an objective can be modelled, but the productivity impact must be specified outside the model, as occurs in most productivity modelling exercises anyway. In chapter 5 of its report, the Commission observed that economies of scale were unlikely to be significant for clothing and footwear production in Australia, which increasingly involved smaller-scale, flexible production of differentiated products targeting market niches.

### **Labour–capital substitution**

An issue raised at the modelling workshop (and repeated in the Review’s report) is the scope for substitution between labour and capital in the TCF industries. Specifically, the Denniss chapter claims that there is a virtually fixed labour–capital ratio (for example, one worker per sewing machine) which could not easily change, whatever may happen to the relative prices of capital and labour. This is an extreme

---

assumption, as many aspects of TCF production have become increasingly capital intensive over time (particularly textiles, but also clothing manufacture). While a manual sewing machine might still require a machinist, some tasks no longer require hand machining, allowing producers to change capital–labour proportions to minimise production costs.

The Commission used the standard MMRF capital–labour substitution elasticity value (of 0.5), which was endorsed at the technical workshop by referee Professor Philip Adams, Director of CoPS. Sensitivity analysis undertaken but not reported shows that applying a capital–labour substitution ratio close to zero (around 0.1) reduces gains from assistance reductions only by about one–third.

### **Export demand elasticity**

The Commission’s modelling is criticised for using a high export demand elasticity (10), which has less adverse terms of trade effects and thus greater welfare gains resulting from a tariff reduction. Similar criticisms by Lateral Economics (2008) and Dixon and Rimmer (2008) are cited. It is suggested that the Commission was not sufficiently cautious when discussing the effect of this assumption. This is contrasted in the Denniss chapter with the approach taken in the Commission’s 2003 report, which stated

But with projected resource allocation gains also now small, assessments of the impacts of the TCF assistance reductions at an economy-wide level tend to swing, with underlying model assumptions playing a disproportionate role ...

The Commission has dealt at length with this matter in a Technical Supplement to its automotive modelling study (PC 2008b). In essence, in the Commission’s assessment, Australia’s global market power is likely to be limited, particularly in the longer term when buyers and rival suppliers have had time to adjust. Nonetheless, the Commission reported sensitivity analysis which halved the export demand elasticity — this still showed net economy-wide gains.

Importantly, the Commission’s automotive report also presented a reconciliation of the 2003 and 2008 modelling. This demonstrated that the 2003 welfare results actually became positive (and comparable with 2008 results) when the model was run over a longer time period.

### **Measuring welfare-adjusted GNE**

There is a brief criticism of the use of ‘adjusted GNE’ as a welfare measure, apparently following the Dixon critique of the auto modelling (which was

---

referenced in the body of the Commission's report). It is claimed that as investment expands, adjusted GNE will not accurately reflect welfare as marginal investment will likely be sourced from overseas. However, for reasons previously explained in a Technical Supplement to its automotive modelling report, the Commission is confident that the treatment of adjusted GNE is correct, based on the theory in the model and the data used to calibrate it. In essence, the model does not assume that investment is entirely foreign-sourced at the margin. The foreign ownership *share* of Australia's capital stock is assumed constant as the capital stock of the economy expands through investment.

## References

- Dixon, P.B. and Rimmer, M.T. 2008, *Welfare Effects of Unilateral Changes in Tariffs on Motor Vehicles and Parts*, (Report commissioned by Lateral Economics), Centre of Policy Studies, Monash University, Melbourne, June.
- Lateral Economics 2008, *Should We Cut Automotive Tariffs?*, Melbourne, June.
- PC 2008a, *Modelling Economy-wide Effects of Future TCF Assistance*, Research Report, Melbourne, July.
- 2008b, *Modelling Economy-wide Effects of Future Automotive Assistance*, Melbourne.
- 2003, *Review of TCF Assistance*, Report no. 26, Melbourne.
- Review of the Australian Textiles, Clothing and Footwear Industries 2008, *Building Innovative Capability*, TCF Review Secretariat, Canberra.