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SOME MEASURES OF LEVELS OF PROTECTION IN AUSTRALIA'S RURAL INDUSTRIES

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The present paper considers briefly some conceptual issues associated with the measurement of protection and presents estimates of the level of protection[1] received by a number of Australia's rural industries. It then discusses briefly some factors relevant to the interpretation of these measures, particularly in making comparisons between protection accorded to agriculture and that accorded to secondary industry.

In considering the estimates of protection levels provided, it is necessary to recognise two things: first, that the estimates are very approximate, doing little more than suggest orders of magnitude; second, that they have a limited meaning and must be used with caution. Providing these limitations are recognised, such estimates can serve a useful function; the alternative to attempts at explicit quantitative measurement is frequently implicit quantitative assessment based on imperfect or incomplete information.

I. *Some Conceptual Issues*

(a) What is "Protection"?

The meaning of "protection" and more particularly the meaning of any set of measures of protection, is neither precise nor unambiguous. This applies more particularly where, as widely among Australian agricultural industries, a substantial part of total production is exported and where, as is common with agricultural products both here and overseas, a wide range of protective devices are employed.

Protection means, essentially, protection from competition. In the sense that the term is most commonly used it means protection through government action from import competition. The aim of such protection is usually to enable the domestic price of the product, and in consequence the level of returns to the factors engaged in the production of that product, to be maintained at a level above that which would otherwise be possible. Government action, of course, is not the only source of protection from import competition. The cost of freight and other charges necessary to bring imports into the domestic market provides

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[1] In the present context, by *level* of protection is meant the effect on the return received for the product at the point at which the protection is operative. As such it can be distinguished from what has been referred to below as the *degree* of protection, which relates to the effect on the returns to the factors of production engaged in a particular productive process associated with the product. Cf. A. Loveday, "The Measurement of Tariff Levels", *Journal of the Royal Statistical Society*, Vol. XCII, Part IV, (1929). In broad terms this distinction is analogous to the distinction drawn between "apparent" and "effective" protective rates of tariff duty. (See W. M. Corden, "The Tariff", Chapter 6 in Alex Hunter (Ed.), *The Economics of Australian Industry*, Melbourne University Press, 1963).

protection; similarly domestic producers may be able to operate in combination to restrict imports such as, for example, by tying up distribution facilities. Nor does protection always relate to competition from imports. For some agricultural products, protection to the price on the export market is provided by bilateral or multi-lateral commodity arrangements, including preferential access or duty rights. Similarly organised marketing arrangements within a market provide protection from competition among producers.[2]

While we are concerned here primarly with the protection provided directly or indirectly by government action against import competition it is not always self-evident where the dividing lines between the various types of protection may be drawn.

(b) The Basic Method of Estimation

Where the measure providing protection from imports is a customs duty or a bounty, as is commonly the case for the products of secondary industry, it would be possible to take the *ad valorem* duty rate or the *ad valorem* equivalent of a specific duty or bounty as a measure of the level of protection provided. This would have certain limitations; it assumes, for example, that the duty is fully used, in the sense that, assuming equality in all other respects between the competing import and domestic products, the price of the domestic product exceeds the import price by the full amount of the duty. Nevertheless it would represent a satisfactory first approximation for many purposes.

In the case of agricultural commodities where restrictions of a non-tariff nature are used together with, or instead of, tariffs or bounties it is necessary to find alternative ways of measuring the level of protection afforded to these products. One measure of the extent of the difference between prices producers actually receive and the prices which they would receive at the same point in the absence of barriers to trade can be obtained by measuring the margin between the price received by producers and the price at which the goods are traded internationally.[3] This has been the basis on which a number of studies of the level of agricultural protection have been made, both overseas, e.g. by the Economic Commission for Europe,[4] and locally, e.g. for the dairy industry,[5] and the sugar industry[6]. A similar approach has been used here.

[2] Whole-milk marketing arrangements in Australia are a combination of organized marketing and protection against imports from outside the producing- and marketing-region.

[3] "In principle, the best way of measuring the degree of total protection given to any line of agricultural production in any country by the combination of protective devices used in that country would be to measure the percentage by which the price (including any subsidy) received by the domestic producer exceeded the price at which the product was available from foreign suppliers or could be sold to foreign consumers". *Trends in International Trade, A Report by a Panel of Experts,* (Haberler, Meade, Tinbergen, De Campos), G.A.T.T., Geneva, 1958, pp. 83-84.

[4] *Economic Survey of Europe in 1960,* United Nations, Geneva, 1961, Chapter III, pp. 17-26 and 50-63.

[5] R. I. Downing and P. H. Karmel "Protection of the Australian Dairy Industry", *Economic Record,* Vol. 36, (August 1960); H. R. Edwards "Government Assistance to Butter Fat Producers", Chapter VII of N. T. Drane and H. R. Edwards, (Eds.) *The Australian Dairy Industry, An Economic Study,* Melbourne University Press, 1960.

[6] D. J. Stalley, "The Sugar Industry", Chapter 2 of Alex Hunter, *op. cit.*

(c) "Real" and "Transfer" Costs of Protection

It is emphasised that what is being measured in this way is the transfer cost from consumers and/or tax-payers to producers of the protected product. In this sense, it does not attempt to measure at all the real cost of this protection to the economy. For the economy as a whole, transfer payments have no real costs[7]. The real costs of protection to an industry are the sum of a consumption cost incurred through the distortion of consumer choice, and a production cost through the effect on relative product returns and the consequent effect on resource use[8], though in a dynamic setting these may be offset partially or wholly if there are significant external economies of scale.

Measures of the transfer cost of protecting an individual industry will include the real cost of protection and may be a guide to the extent of these real costs but the relationship need not necessarily be a close one for two reasons. First, there is the possibility that indirect benefits may accrue from the protection accorded to the industry: for example as mentioned above there may be external economies which occur as a result of the expansion of the protected industry, or the reduction in imports may reduce the supply price of the imported product. Second, the real consumption cost of protection depends upon the elasticity of demand, being greater the more elastic the demand curve; similarly, the real production cost increases, the more elastic the supply curve of the protected industry.

(d) Forms of Protection

There is some value for the purposes of this paper in attempting to distinguish between the effects of three different forms of protection.

(i) *Natural Protection*

Natural protection is provided in the domestic market by freight and other costs of importing. These costs are real costs; consequently natural protection reflects a real, and not an imposed, cost. Whether the consumer or the producer receives the benefit of the difference between the export price and the landed cost of imports will depend largely upon the level of internal competition. Other things being equal, producers acting together can charge a price up to the import price of the product, (presumably they would only do so if they considered demand for their product relatively inelastic) without making importing profitable and without government action. In agricultural industries the ability of the producers to restrict competition in the domestic market in this way or, in other words, to protect themselves from internal competition, is more commonly made possible by government action enforcing or facilitating controlled marketing arrangements.

[7] Apart from costs of administration and, in the case of subsidies and other forms of budgetary assistance, the disincentive effects of raising the necessary revenue.

[8] Cf. W. M. Corden, "The Calculation of the Cost of Protection", *Economic Record,* Vol. 33, No. 64, (April 1957). R. M. Parish has attempted to measure these real costs of the protection accorded to the dairy industry. See R. M. Parish "The Costs of Protecting the Dairy Industry", *Economic Record,* Vol. 38, No. 82 (June 1962).

(ii) *Trade Protection*

Protection may be provided to the industry in the domestic market by means of action, usually government action, to reduce import competition, whether by tariff or by non-tariff barriers. The effect of this form of protection may be seen in the margin between the domestic price of the product and the cost, free of duty, at which the product is, or could be, landed in the domestic market[9].

These two forms of protection relate directly to domestic sales of the product and have a direct effect on prices paid for the product in the domestic market, i.e. the transfer is made directly from the consumer to the producer.

(iii) *Direct Support*

It might be arguable whether bounties and subsidies fall strictly within the definition of protection as given. Nevertheless, it is useful to treat the payments to butterfat, wheat and cotton producers as protection since they are alternatives to protection as under (i) or (ii) above. In so far as the consumer is concerned, the transfer in these cases is indirect, i.e. he (together with non-consumers) pays as a taxpayer rather than as a consumer.

A further form of protection has already been noted; that provided in foreign markets by international marketing arrangements, multilateral or bilateral. It is not the intention here to consider this form of protection in any detail.

There can be more than one measure of protection and each is equally meaningful in its own way; the measure selected for a particular purpose will be determined by that purpose. Some consideration is given to this aspect below.

(e) The Nature of the Protected Industry

The effect of protective measures upon individual industries will depend partly upon whether the industry is an export industry or not, and partly upon whether or not sales of the product in the domestic market are made under competitive conditions.

(i) *Export Industries*

Broadly speaking, for an export product the domestic price under competitive conditions among both buyers and sellers would approximate to the return from exporting; at any price above this, supplies would be withdrawn from the export market to the domestic market until such time as the returns from both markets were more or less the same. This would apply irrespective of any barriers to imports. In an export industry with organised domestic marketing, returns from the domestic market could be increased, at least per unit sold, up to

[9] It may be worth noting that it need not be positive. Under a situation of price control in the domestic market at a level of prices below that obtainable on the export market, the domestic market will only obtain supplies up to demand at the controlled price if there are trade controls, whether explicit or implicit, on exports. This was the situation for a number of the agricultural industries in the early post-war years.

equivalence with the import supply price including the price effect of any barrier to imports.

Generally, then, it is possible to ignore, for purposes of the detailed estimates, export industries which are protected from import competition by tariff or non-tariff import controls, but in which the industry does not operate as a single seller. The principal industries in which these conditions apply are shown in Table I.

TABLE I

Levels of Tariff Duty[a] applicable to Imports of Selected Agricultural Commodities—Export Industries subject to Competitive Domestic Marketing

Commodity	Preferential Countries		M.f.n. Countries	
	1950	1963	1950	1963
Citrus fruits, lb.	⅜d.	⅜d.	1d.	1d.
Prunes, lb.	4½d.	4½d.	6d.	6d.
Dried Tree Fruits, lb.	4½d.	4½d.	6d.	6d.
Oats, cental.	1s. 1½d.	1s. 1½d.	1s. 6d.	1s. 6d.
Honey, lb.	1⅛d.	1⅛d.	2d.	2d.
Apples, cental.	2s. 3d.	2s. 3d.	6s. 0d.	6s. 0d.
Pears, cental.	2s. 3d.	2s. 3d.	6s. 0d.	6s. 0d.
Beef and Veal — fresh or smoked, lb.	1½d.	1½d.	2½d.	2½d.
Beef and Veal — cold processed, lb.	1½d.	1½d.	3d.	3d.
Mutton and Lamb — fresh or smoked, lb.	1½d.	1½d.	2½d.	2½d.
Mutton and Lamb — cold processed, lb.	1½d.	1½d.	3d.	3d.
Wool	Free	Free	Free	Free

(a) For all items, except wool, primage duties of 5%, B.P.T., (10% m.f.n.) were applicable in both time periods. The items shown, where the produce of New Zealand, are subject to B.P.T. duties with the exception of oats, beef and veal, and mutton and lamb; all are exempt from primage duty.

Under the assumed conditions, the barriers to imports shown for these industries are unnecessary. In practice this need not be completely true. For example, in the circumstances of the wide geographical spread of the Australian industry and market, it is possible that a domestic price in, say, the Sydney metropolitan market, which gave the same return to the industry as the export market could be one which gave the New Zealand industry a better return, due to more favourable transport costs, than New Zealand's other export markets. Again, it is perhaps a more common situation that the available protection limits imports of types or grades of the commodity not produced domestically but which if imported would substitute for the domestically produced commodity. These protective measures relating to the domestic market of export industries similarly constitute protection against dumped or subsidised exports.

(ii) *Import Competing Industries*

If the industry produces less than sufficient to meet total domestic demand for its product, the price of the product, determined under competitive conditions among both buyers and sellers, will approximate to the import supply price. At anything below that price, consumers will compete among themselves for the domestic product in preference

to the dearer (on the basis of identical qualities) imported product and so raise the price again. For such an industry, termed here an import-competing industry, the price would be the same whether the industry acted as a single seller or not.[10]

In the Australian situation practically all these industries have some protection provided in the tariff though in some cases it is clearly not substantial. It cannot be assumed that all these industries need this protection nor, despite the implication of the discussion above, that even where not needed it does reflect itself in the returns to the producer. By-law admission of imports as, for example, for hops, in some cases means that the scheduled protective duty is frequently inoperative.

In other cases, such as peanuts and passion-fruit pulp, producers are subject to some competition from imports, subject to concessional tariff treatment, from Papua and New Guinea. For a number of industries, such as potatoes, onions and other fresh vegetables, it is more realistic to consider the Australian market as a number of markets, to only a few of which is the effect of import competition and protection likely to be significant.

Table II lists a number of more or less arbitrarily selected commodities which Australia does not normally export, and which receive protection primarily from tariffs. Against these commodities have been set the *ad valorem* duties or estimates of their equivalents (since most of the duties are specific) for 1950 and those operative at December 1963. They have been divided between those in which the rates have remained unchanged and those where changes have been made in the rates during the period.

Where available, unit values of imports have been used to calculate *ad valorem* equivalents of specific duty rates. The duty rates for 1950 have been applied to average unit values for the three years ended 1950-51, while the current rates have been applied to average unit values of imports for the three years ended 1961-62. It will be clear from the notes to the table that the figures given can in many cases be only rough approximations to the level of the protection provided by the duties, particularly where the duties vary according to the import price. It should be noted, moreover, that primage duties, where applicable, have not been included in the calculations.

Because most of the duties are specific rates, there will be considerable variations in their ad valorem equivalents from year to year, as import values vary. An increase in import values will result in a reduction in the *ad valorem* equivalent; with an unchanged level of domestic prices for the protected product this would mean an improved competitive position for the domestic product despite a reduction in the relative level of trade protection.

Having dealt with these two groups of industries, there remain those for which detailed estimates were necessary: export industries with organised domestic marketing; and import-competing industries where protection is by means other than a straightforward tariff duty.

[10] If there were competition among producers but not among domestic consumers the situation could be different for the import-competing industry since producer prices could conceivably be forced down to the point where the producer would still, but only just, continue to produce. The situation would only differ in this way in an export industry if purchasing for export were similarly non-competitive.

TABLE II

Levels of Tariff Protection: Selected Agricultural Commodities —Non-Export Industries

Commodity	*Ad Valorem* Duties or Calculated *Ad Valorem* Duty Equivalents of Specific Duties (a)			
	Preferential Countries		m.f.n. Countries	
	1950 %	1963 %	1950 %	1963 %
	Items for which rates have not changed during period			
Bananas (d)	18	20	72	79
Figs (e)	35 (b)	27 (b)	47	27
Dates	56½ (b)	42 (b)	56½	42
Lentils — unm'fd.	1 (b)	1 (b)	1	1
Hops	6½	4½	23	14
Potatoes	10½	6	14½ (b)	7½ (c)
Fresh Vegetables n.e.i.	1½	1	2	1
	Items for which rates have changed during period			
Ginger (f)	Free (b)	1½ (b)	12½	14
Passion-fruit pulp (g)	n.s.r.	23	n.s.r.	28
Almonds (h)	24½ (b)	16	49	22½
Onions (i)	20 (b)	14½	27	40½
Peanuts (j)	15½ (b)	39	21	62
Peas — fresh frozen (k)	n.s.r.	2	n.s.r.	6½

Notes: n.s.r. = not separately recorded in import statistics.

(a) *Ad valorem* equivalents calculated from import unit values as follows: rate applicable at 31/12/50 applied to average unit values for 3 years ended 30/6/51; rate applicable at 31/12/63 applied to unit values for 3 years ended 30/6/62.

(b) No imports recorded, in relevant years, from preferential countries; preferential rate applied to unit values of imports from m.f.n. countries.

(c) For reasons comparable with (b) above, m.f.n. rate applied to unit values of imports from preferential countries.

(d) No imports recorded in recent years; calculations for both periods based on unit values of imports into New Zealand. Up to 40,000 centals per annum from Fiji are permitted entry at a preferential duty rate if landed at Sydney or Melbourne.

(e) Duties are those applicable to dried figs.

(f) Duties are those applicable to ginger preserved in brine or syrup.

(g) Up to 45,000 gallons per annum from Papua and New Guinea are permitted entry free of duty under by-law.

(h) Duties are those applicable to almond kernels. Sliding scale duties are operative on this item; figures shown for 1963 are based on actual duty collected.

(i) Preferential duties shown are those applicable to imports from New Zealand.

(j) Imports from Papua/New Guinea are free of duty. Imports during 3 years to 1961-62 averaged some £280,000.

(k) Sliding scale duties apply on imports of fresh frozen peas; figures shown are based on actual duty collections. Duties were imposed basically as an anti-dumping measure. (Imports at 1s. 11d. per lb. or over attract no duty). See Tariff Board *Report*, "Vegetables of the type classifiable under Tariff Item 102", 10/9/58, p. 12.

II. *Technical Problems of Estimation*[11]

(a) Effect on World Prices

It was suggested earlier that a measure of the total protection provided to the domestic industry was the difference between the international price and the domestic price for the product. The factors determining whether in the case of export industries the international price should be the export or the import parity price are discussed in part III. The estimates have been made in relation to both export and import parities. It is necessary to make an assumption, however, that in the event of any significant difference in Australia's trading behaviour with respect to a particular commodity, the international price would remain more or less unchanged. For many commodities this assumption is probably not too inaccurate. For others this may tend to overstate the levels of protection provided. If Australia were to become a net butter importer or to stop exporting sugar, for example, it is unlikely that the world prices of these products would be unaffected.

(b) Basis of Price Comparisons

Since what we are primarily concerned with is the protection accorded to the productive processes undertaken on the farm, the estimates, ideally, should be based upon the effect on returns at the farm gate.

Difficulties of ensuring comparability, however, make it necessary in many cases to make comparisons at a point other than at the farm. In the main, comparisons of f.o.b. and c.i.f. prices of ex-factory and ex-store prices have been used although varying degrees of estimation of the additions or subtractions necessary to bring available price series to a comparable basis have been necessary.

(c) Processed Products

Many commodities are traded largely or solely in a processed form. Where the basis of comparison of international and domestic prices is at a point beyond the processing stage, the question arises of the extent to which the protection being measured applies to the processing of the product, rather than to the production of the product in its basic form. No way was found, for the purpose of the present estimates, of separating the total of the protection provided between the two levels of production but this aspect will need to be considered subsequently when discussing the economic and technical conditions of supply of the protected products in the context of the protection provided. No account has been taken of the production of by-products such as, for example, skimmed milk and molasses.

(d) Effect of Quality Variations

As far as possible attempts have been made to compare comparable qualities of products, although in many cases it is not possible to do this. In particular the question arises for some products that if imports were being made it would of necessity be a different quality which was being imported; this would be the case with wheat where no internationally traded wheat is exactly comparable with Australian f.a.q.

[11] It is not possible in the space available to provide a detailed description of the methods and sources used in the calculation of the estimates for each commodity. In addition to the general comments given in this section, an example of methods and sources for one commodity, wheat, is given in the Appendix.

wheat[12]. Rather than make adjustments to the price of the overseas product on the basis of quality differences revealed in prices, differences which are themselves subject to quite wide variations over time, the import parity has been estimated, in a number of cases, on the basis of the export f.o.b. price of the domestic product plus freight and other charges from the most likely source of import supply.

(e) Effect of International Arrangements

The effects of international agreements can only be taken account of imperfectly. Where, as in the case of sugar, price differences occur in different markets as a consequence of the agreements it was possible to make an estimate of the protective effect of such agreements. Where, as for wheat, prices to all markets are affected in more or less the same way, no attempt has been made to estimate the protective effect of the international marketing arrangement.

(f) Protection from Substitutes

For some commodities, competition from substitutes is limited or controlled. The major examples are the production quotas on table margarine and the duties on imports of saccharin. The estimates given below for butter and sugar include the effect of this protection, though it is not possible to isolate it.

(g) Other forms of Assistance to Agriculture

Protection to agriculture is basically a means of supporting the income of farmers. Although it is the major method by which this is achieved it is not the only one; indirect methods are also employed. The measures presented here take into account only those methods which affect directly the prices received by the farmer for the product. It would be possible to take account of such indirect methods as applied simply to individual commodities—in practice they generally apply more widely making it difficult to isolate the effects on individual commodity prices.

(h) Quarantine Regulations

Some products such as poultry meat, eggs, wheat, etc., are subject to quarantine or health regulations when imported into Australia. While not the aim of such measures, an incidental effect may be to provide some degree of protection from imports. Since the protection provided in this way would be reflected in the level of domestic returns to producers, the effect of the quarantine and health restrictions would show up, for those commodities to which such regulations apply, in the detailed estimates of total protection provided in Part III[13].

[12] While it could be argued that comparison should be made with the product which would in fact be imported as an alternative to the domestic product, this raises the problem that although the market value of the quality difference may be different to domestic consumers than that revealed in the international price, nevertheless consumers would presumably be experiencing some gain or loss in quality of which account would have to be taken.

[13] In one sense it would be possible to question whether, in fact, the imported commodity and the domestic product in these circumstances are the same product. They have been treated as the same product in the present exercise but it is worth noting that part of the transfer cost to the industry concerned may reasonably be considered a cost of meeting the health objectives embodied in the regulations.

III. *Estimated Protection Levels*

(a) Export Industries with Organised Domestic Marketing

Table III provides estimates for export commodities in which domestic selling arrangements are substantially in the hands of marketing boards, and returns to the producers equalised. These are set out as averages for three three-year periods within the period between 1946-47 and 1962-63.

The estimates in the table have been made on three bases: *Column I* compares the actual situation with a postulated situation of competitive pricing on the domestic market. It shows for each industry the ratio of total actual returns to total sales valued at export parity, expressed as a percentage, i.e.

$$\frac{\text{Total actual returns}}{\text{Total sales valued at export parity}} \times 100$$

Column II assumes that, in the absence of trade protection or government financial assistance, the import parity price would be obtained in the domestic market. This may be interpreted as measuring the extent to which, with an unchanged level of production and exports, total returns to the industry would have changed if there had been no trade protection and direct financial assistance but the product of the industry had been sold on the domestic market at a price equivalent to a free of duty import supply price. Actual returns are in this column expressed as a percentage of the sum (a) domestic sales valued at import parity and (b) actual returns, i.e.

$$\frac{\text{Total actual returns}}{\text{Total domestic sales valued at import parity } \textit{plus} \text{ total actual export returns}} \times 100$$

In Column III, the level of trade protection and/or direct support, although calculated on the basis of an import parity price, is shown as a percentage of a world (export f.o.b.) price, i.e.

$$\frac{\text{Actual returns from domestic sales (including direct support) less domestic sales valued at import parity}}{\text{Domestic sales valued at export (f.o.b.) values}} \times 100$$

All direct support payments have been included, including those which are related to quantities exported, to indicate the level of tariff which would be necessary to provide the same total level of returns (domestic consumption assumed unchanged) in the absence of the direct payments. While, in this sense, the measure is in an identical form to protection provided to secondary industry[14], the subsequent discussion will indicate that care needs to be taken in making direct comparisons in this way.

An alternative form of presenting these estimates, as given in Columns I and II of Table III, is used in Table IV where the absolute value of the transfer cost of protection is shown.

Column I is an estimate of the total protection received by the industry from all sources. Column II is an estimate of the trade

[14] Tariff rates apply, broadly, to the export f.o.b. price of the import product in the country of origin.

TABLE III

*Estimates of Protection Levels—Agricultural Export Industries: Selected Years; Ratios**

Commodity	Column I			Column II			Column III		
	Averages for 3 years ended:			Averages for 3 years ended:			Averages for 3 years ended:		
	1948-1949 %	1955-1956 %	1962-1963 %	1948-1949 %	1955-1956 %	1962-1963 %	1948-1949 %	1955-1956 %	1962-1963 %
Butter (b)	98	125	159	89	114	139	−22	23	73
Cheese (b)	102	122	134	87	105	111	−28	9	22
Wheat	79	101	107 (c)	73	93	102 (c)	−81	−22	11 (c)
Sugar	89	114	135	78	104	126	−39	10	72
Eggs	102	125	153	85	108	119	−27	13	30
Currants, Sultanas, Raisins	103	113	118 (a)	97	108	113 (a)	− 8	27	40 (a)
Barley (d)	80	104	107 (a)	77	97	100 (a)	−72	−14	− 2 (a)
Rice (e)	97	109	114	94	104	109	−25	10	23

* All figures have been rounded to nearest whole number.

(a) Estimates shown are for three years ended 1961-62.
(b) Includes bounty—see text.
(c) Includes Commonwealth contribution to Wheat Stabilization Fund—see text.
(d) Relates to barley produced in South Australia and Victoria only.
(e) Relates to rice produced in New South Wales only.

TABLE IV

Estimates of Protection Levels—Agricultural Export Industries: Selected years; Absolute Values

Commodity	Column I			Column II		
	Average 3 years ended: 1948-49	1955-56	1962-63	Average 3 years ended: 1948-49	1955-56	1962-63
	£m.	£m.	£m.	£m.	£m.	£m.
Butter (b)	0·7	17·7	33·3	− 4·5	10·4	25·1
Cheese (b)	0·1	2·1	3·5	− 0·8	0·6	1·4
Wheat	−27·0	2·2	12·6 (c)	−35·9	−18·4	4·0 (c)
Sugar	− 2·2	6·2	17·6	− 5·2	2·1	13·8
Eggs	0·5	4·7	18·5	− 2·1	1·7	3·9
Currants, Sultanas, Raisins	0·1	0·7	1·3 (a)	− 0·1	0·5	1·0 (a)
Barley (d)	− 2·2	0·6	0·8 (a)	− 2·8	− 0·5	− 0·05 (a)
Rice (e)	− 0·05	0·4	0·7	− 0·1	0·1	0·5

Notes: as for Table III.

protection and direct government support accorded to the production of the commodities shown[15].

[15] It should be noted that the sum of trade protection and direct support may be less than the direct support taken by itself. In the case of wheat, for example, the Commonwealth Government's contribution to the Wheat Industry Stabilization Fund in 1962-63 was £11·6 million; the estimated total of trade protection plus trade support for that year, however, was £7·2 million. In effect this means that there is a margin between the domestic price and the price at which wheat could profitably be imported. No account has been taken of any change in the volume of wheat which could have been disposed of on the domestic market at prices above the actual levels.

(b) The Negotiability of the Import Supply Price

A question mentioned above was whether it is realistic to take a subsidised price as an opportunity cost of importing rather than producing domestically: for instance, would New Zealand be willing to supply butter to Australia below the domestic cost of production in New Zealand? It has been assumed for the purposes of the estimates in Tables III and IV, that it would be possible to purchase butter from New Zealand at prices operative in the United Kingdom. It must be recognised, however, that irrespective of whether she would be willing to supply at a price below domestic cost of production, she would be able to charge above the equivalent of the United Kingdom price to the extent that a margin existed between the price at which she could supply and the supply price of any alternative supplier.

The question of the range within which the import supply price can be negotiated may be important for a number of commodities. In a simple market situation where exporters send their products to, say, London for sale and importers purchase from London, exporters receive the London price less freight, while importers pay the London price plus freight. In this situation there is an incentive to by-pass London, in which case there is also considerable scope for bargaining between exporter and importer. If a new importer enters the scene geographically adjacent to an import supply area, the scope for bargaining is enlarged. Consequently estimated import supply prices based upon export prices plus costs of importing from the closest possible supplier could be somewhat different to the price which would have to be paid in the event of importing[16].

In the Australian situation, freight costs, in particular, tend to be relatively substantial; a more realistic estimate of import parity prices should perhaps consist of a range of prices. The lower limit of this range would be the world export f.o.b. price plus costs of freight, etc., from the nearest alternative supplier. (This is what the import parities used for the calculations in Tables III and IV are designed to represent). The upper limit of the range would be the c.i.f. price in a world market (i.e. it would approximate to the lower limit of the range), plus freight, etc., from this world market to Australia.

An indication of the effect of taking the upper limit of this range as the import supply price is given in Table V, which shows columns II of both Table III and Table IV recalculated in this way.

In broad terms it is probably reasonable to accept that the transfer cost of trade protection and direct support to the industry concerned is somewhere within the ranges given in Table V.[17]

[16] In the case of sugar sold outside the Commonwealth Sugar Agreement, for example, the export price, although based on the London price, differs from market to market according, importantly, to the relative freight costs. To import sugar, it is possible that Australia would have to pay the c.i.f. London price plus freight to Australia.

[17] One further qualification is required. It has been necessary for some products to estimate import parity prices from export values for the Australian product, and some element of this negotiability of supply prices will have been included in the calculations. To the extent that in the sales of Australian commodities to adjacent markets—New Zealand, Pacific Islands, perhaps even Japan—some part of the gain in transport costs relative to alternative markets and sources of supply, has been appropriated by exporters, this will show up in export f.o.b. prices used and will consequently result in an import parity price—both at the lower and upper limits—higher than would actually be the case. This effect is not thought to be significant.

TABLE V

The Range of Import Parity Prices and its Effect on Protection Levels: Average 3 years 1962-63[a]

	Percentage		Absolute	
	Lower Limit (i) %	Upper Limit (ii) %	Lower Limit (iii) £m.	Upper Limit (iv) £m.
Butter	139	123	25·1	16·9
Cheese	111	87	1·4	— 2·8
Wheat	102	98	4·1	— 4·5
Sugar	126	118	13·8	10·1
Eggs	119	97	3·9	— 0·7
Dried Vine Fruit	113	108	1·0	0·7
Barley	100	94	— 0·05	— 0·8
Rice	109	109	0·5	0·2

(a) For dried vine fruit and barley, average 3 years ended 1961-62.

(c) Import-Competing Industries

Estimates of levels of protection are provided in Table VI for three commodities for which domestic production is insufficient to meet total domestic demand and for which there are, or have been, special factors associated with the protection provided.

TABLE VI

Agricultural Protection to non-Export Industries: Selected Years[(a)]

(Figures are averages for 3-year periods ending with the year shown)

Commodity	Column I			Column II			Column III		
	Percentage (b)			Total Value (c)			Ad Val. Equivalent (d)		
	1949-1950 %	1955-1956 %	1962-1963 %	1949-1950 £m.	1955-1956 £m.	1962-1963 £m.	1949-1950 %	1955-1956 %	1962-1963 %
Cotton	n.a.	138	177	n.a.	0·1	0·3	n.a.	44	86
Linseed	122	100	109	0·04	(e)	0·1	24	—0·4	10
Tobacco	n.a.	162	149	n.a.	1·4	4·5	n.a.	69	53

(a) Because of the lack of data for the earlier years of the period it was not possible to provide an estimate for the three-year period 1946-47 to 1948-49 as in the earlier tables; for one commodity, linseed, it was possible to provide an estimate for the three-year period ended 1949-50.
(b) Total returns as percentage of total sales valued at import parity.
(c) Total returns less total sales valued at import parity.
(d) Average returns per unit less import parity expressed as a percentage of export parity.
(e) Negligible but negative.
n.a. = not available.

As the price of these products, irrespective of any special factors, would tend to approximate to the price of imports, estimates have been presented only of the difference between actual returns and calculated returns based upon import parities.

IV. *The Purpose of the Estimates*

Measures of the transfer cost of protection are recognised as having less meaning in an absolute sense than when regarded as a basis for comparisons[18]. Frequently such measures are regarded as the basis for intra-country comparisons, whether between sectors or between industries within a sector, or perhaps, and less clearly, inter-country comparisons, at a point of time or over a period. It is not unusual for measures of protection to agriculture in Australia to be compared directly with the levels of protection provided to secondary industry, the operative tariff rates being taken as the measure of protection in the latter case. For comparisons of this nature not to be misleading it is necessary to ensure that the respective measures are in fact comparable.

(a) The Significance of the Exchange Rate

In any international comparisons of measures of protection the exchange rate position needs to be taken into account; an undervalued or overvalued currency can materially affect such comparisons. In the Australian situation, comparisons over time need also to be based on a recognition of the change in the Australian exchange rate position in the period covered by the measures presented. In the immediate post-war years the Australian currency demonstrated some degree of undervaluation. During the 1950's the currency manifested various symptoms of overvaluation. This was particularly so at times of severe import licensing; consequently, at these times, the effective level of agricultural protection in the domestic market was much lower than that shown by the figures in the tables. In the period of undervaluation, on the other hand, the apparent disadvantage of sales on the domestic market was less than that indicated. (Alternatively where the protection was positive at that time, the level of protection was greater than that shown).

The exchange rate at any point of time will also reflect the level of protection operating generally on domestic industry. In the absence of any form of trade protection to Australian industry it is clear that the external value of the £A would be significantly lower. The level of protection to agricultural export industries is consequently exaggerated.

(b) Comparisons of Protection to Primary and Secondary Production

Before considering some important qualifications to any direct comparisons of this nature, some attention needs to be given to the question of whether for these purposes the export or import parity price should be the basis of the measure of the transfer cost of protection to agricultural industries; that is, should the comparisons be based upon the first column of Tables III and IV, or upon the second and third columns? Put in this way it can be seen that the question really relates to whether, for this purpose, protection to agriculture should include the effect of the organisation of the domestic market to take advantage of the natural protection.

In the absence of any restrictions on imports, and without any direct support payments, returns to the domestic industries, ignoring any changes in returns produced and sold, would fall by the amounts shown

[18] W. M. Corden, "The Calculation of the Cost of Protection", *loc. cit.* pp. 50-51.

in column II of Table IV. On the other hand, the amount which represents the difference between columns I and II, the protection provided by the organisation of the market alone, would remain unchanged, even though imports of competing products were completely unhindered, other than by importation costs.

The protection resulting from organisation of the market is certainly protection of a kind, but is not due to any action taken with respect to imports. It is comparable with price maintenance, and other forms of market arrangements by which manufacturing industries limit competition among themselves, but the effects of these are not taken into consideration when measuring the protection afforded to secondary industries.

Broadly speaking, when the Tariff Board recommends a protective duty it tends to provide for a duty which will equate, approximately, the landed duty paid price of imports with the cost of efficient domestic production[19]. While this duty, when in the form of an *ad valorem* rate, is then expressed as a proportion of the f.o.b. cost, the essential point is that the Board, (and again this is a broad generalisation), aims to offset with duty the amount by which the landed import price is below the domestic selling price of the locally produced article. It relates, moreover, purely to the domestic market.

Secondary industry includes both industries which sell competitively and industries which are organised as single or a few sellers. It includes industries which supply only part of the domestic market and industries in which installed capacity is in excess of domestic market demand. It includes industries which export some part of their production. Calculations of the protection received by these industries based upon comparisons of export prices and the actual returns to the producers would generally give a measure of protection substantially higher than that reflected in the tariff schedule.

(c) The Significance of Market Organisation

The significance of the discussion of natural protection, and the extent to which advantage can be taken of this by industries protected in this way, is that it is invalid to compare a measure of the protection provided to a primary industry with a tariff rate applicable to a secondary industry when in the case of the primary industry the measure includes the gain from appropriating some or all of the natural protection available. Comparisons between the levels of tariff protection on secondary industry products and any estimates of *ad valorem* equivalents of protection to primary industries should be based on estimates which either both exclude or both include the effect of market organisation.

(d) So-called "World" Prices

For many of the commodities being considered here, substantial protection to domestic production in overseas countries is the rule rather than the exception. Under these circumstances it might have been preferable to have compared the domestic price, not with the actual level of prices in world markets, but with the level at which the price would have been in the absence of any protection throughout the world on the commodity in question. World market prices for many, if not all, of the commodities, the domestic production of which is

[19] Cost in this sense includes what the Board regards as a reasonable margin of profit.

protected in Australia, would have been higher than the existing world market price in the absence of this widespread protection.

Against this, the fact that this protection is so widespread, that it has been operating for some time, and that it is unlikely to be reduced significantly in the future, is relevant. For a single country it may pay to accept the existence of protection overseas as an economic fact of life. This would mean that the import supply price which has to be taken into account in deciding whether the cost of domestic prodoction is economic—in the short-term static sense—is the existing price at which imports could be obtained rather than the price which would have existed under completely free trade conditions in all producing countries.[20]

No attempt has been made to consider what the price levels for the various commodities would be in the absence of protection in any producing country. The price which has been used is that obtaining on world markets at any point of time. Nevertheless it is useful for illustrative purposes to take advantage of an attempt made by one writer to estimate the level at which the long run equilibrium price of sugar would have been in 1959 in the absence of protection to sugar production in any producing country. R. H. Snape has "guessed" that in such circumstances the f.a.s. Cuba price of raw sugar would have been about 4-4½ U.S. cents per lb. compared with the world price actually operating at that time of about 3 U.S. cents per lb.[21] On the basis of this hypothetical world price, the home price of raw sugar in Australia in 1959 would have been only a few per cent above export parity, and would have been less than the cost of imported sugar.

(e) The Anti-dumping Element

The little more than tenuous connexion between costs of production and the prices at which many of these commodities are traded internationally raises another issue relevant to comparisons with tariff levels applicable to secondary industry. A widespread feature of international trade in primary commodities is that traded prices are well below costs of production in the exporting country. In similar circumstances for a secondary industry product, duties of an anti-dumping or counter-vailing nature would commonly be imposed. These provide the protection against the special pricing arrangements which are not uncommon for manufactured products; they are not, however, considered as part of the normal protection afforded to domestic production of the product.

In the case of primary products, although the practice of dumping or subsidising exports is more common, that of applying anti-dumping or counter-vailing duties, for a number of reasons—an important one

[20] To take a hypothetical example, butter prices in U.K. (virtually the world market), have for some years ranged around 300/- stg. per cwt. Suppose that, in the absence of protection of any significance to any dairy industry in the important producing countries, the world price of butter would be about 450/-. stg. per cwt. Which of these two prices should be taken as the basis of comparison for present purposes would depend upon how stable the lower price was expected to be. If it could be confidently predicted that supplies would always be available at about 300/- stg. per cwt., this would have strong claims to be considered as the opportunity cost of domestic production.

[21] R. H. Snape, "Some Effects of Protection in the World Sugar Industry", *Economica*, N.S., Vol. 30, No. 117 (February 1963) pp. 66-67.

being the difficulty of determining the cost of production—is much less common. Consequently, duties or other barriers to imports must, in many cases, be considered partially, at least, as anti-dumping duties.

(f) The Variability of Primary Product Prices

Most of the changes in the levels of protection as shown in the estimates presented have resulted from changes in world price levels. The generally downward movement in price levels over the past decade has resulted in substantial increases in the levels of protection —in many cases from a negative level in the early years. Shorter term movements have also resulted in considerable variations from year to year in a number of items.

The downward movement in prices of a number of Australia's export commodities has been reversed in the last year or two. While official figures were not available for many of the commodities, it is possible, for some, to make reasonably good estimates for 1963-64. The effect of this upswing for the major commodities is shown in Table VII.

TABLE VII

Estimated Levels of Protection on Major Export Products 1963-64

Product	Trade Protection plus Direct Support	
	Percentage of Total Returns (a)	£m. (b)
Butter	123	18·3
Cheese	92	—1·1
Wheat	96	—9·9
Sugar	107	6·9

(a) Equivalent to Column II in Table III.
(b) Equivalent to Column II in Table IV.

(g) The Degree of Protection

As already suggested, identical levels of protection as measured do not mean that the degrees of protection provided are equal. There are a number of considerations relevant to comparisons of degrees of protection and only the broader aspects will be considered here.

Normally, protection is provided at a point in the productive or distributive process beyond the farm gate; the subsequent processes may consist of simple handling and transporting or include, in addition, substantial processing of the product. It is not impossible, and in some cases probable, that some part of this protection is effectively provided to the factors of production engaged in processing or distributing the product rather than those engaged in the on-farm productive process. It is difficult to be precise in determining which of the various factors engaged in a particular production process receive most benefit from any protection available to it. Many considerations are involved, including importantly the relative bargaining strengths of particular factor groups. This also applies in the case where more than one productive process is involved before the product reaches the stage at which protection is available.

Again, some part of the available protection would be taken by the suppliers of inputs to farmers; some part of this protection to these suppliers would be taken by their suppliers and so on.

Although it would no doubt be possible, conceptually, to examine the contribution made by every factor of production to the final selling price of the product and allocate the gain from protection as appropriate, such an allocation would be very approximate, if not hypothetical, and is not necessary for present purposes. Apart from noting that some part of the total protection available to a particular farm product is appropriated by—or perhaps, in view of the time sequence of events, is a consequence of protection to—inputs used in its production, while some part may in fact benefit factors engaged in subsequent handling and processing, we shall merely consider the general question of the contribution of the farmer to the final product and the relevance of this to the measures of protection provided.

The information available for the purpose of assessing the contribution of the farm enterprise to the value of the final product in any particular case is insufficient for any estimates of this nature to be other than indicators of broad orders of magnitude, and attempts have been made for only a sufficient number of commodities to illustrate the general principle.

These estimates, given in Table VIII, have been constructed from various sources, but mainly from B.A.E. cost of production data. They are based upon the contribution of the farm sector to the value of the final product at the point used in the present exercise, which is normally at, or close to, the point at which protection is available. Thus, for sugar, for which prices in the estimates given above were on a raw sugar ex-mill basis, approximately 30 per cent of the value of the product has been contributed by the sugar mills.

TABLE VIII

Estimates of the Contribution of the Farm Enterprise to the Final Value of the Product

Commodity	Estimated Net Value of on-farm Production % of Final Product Price
Butter	60
Cheese	60
Wheat	50
Sugar	40
Cotton	60

Assume, for the immediate purpose, that the protection being considered is wholly applicable to the farm enterprise producing the commodity in question; had the calculations made earlier indicated that these products were receiving equal *levels* of protection, i.e. had the percentages in column III of Table III been the same for these products, the *degree* of protection, or the extent to which the returns to the factors of production engaged on-farm were affected by the protection given, would be different; they would differ in inverse relationship to the figures in Table VIII.

Similar considerations would apply to comparisons with levels of tariff protection to manufactured products. For example, the net value of production of all secondary industry (excluding Heat, Light and Power) was about 40% in 1947-48 and 41% in 1959-60.[22] While

[22] Commonwealth Statistician, *Secondary Industries Bulletins.*

clearly the distribution of particular processes within secondary industry will differ significantly from the average for all secondary industry, the magnitude of the differences between primary and secondary industry suggests that they are an important factor to be taken into account in considering relative levels of protection. For example, where the basis of comparison is between products to which the average for secondary industry given above did apply, and, say, butter, a more accurate comparison would be between the duty on the industrial product and the protection on butter reduced by one third.

V. *Conclusion*

It has not been the purpose of this paper to consider the reasons, economic and non-economic, for the protection provided to agricultural industries in Australia, nor to consider the effects of such protection on industries concerned, other than in the immediate sense of the effect in each year upon the returns to the industry.

The estimates are clearly the result of considerable statistical approximation. There are in any case considerable conceptual limitations to the uses to which such estimates may be put. Subject to these limitations, however, such estimates can be useful provided they are interpreted with caution. Attention has been drawn to a number of important factors relevant to a consideration of levels of agricultural protection in Australia. In particular, this paper has pointed to the dangers of a too simple comparison of the protection accorded to agriculture with that accorded to secondary industry.

APPENDIX

Example of Method of Calculation and Sources: Wheat

General

Protection to the production of wheat in the post war period has consisted essentially of an assured return to producers supported by complementary Commonwealth/State legislation. This return, applicable to domestic sales plus a fixed volume of exports, was to be met by a home price based partly on the cost of wheat production and from payments out of a Stabilisation Fund. Originally raised by levies on export returns, this Fund was exhausted in 1959-60; the Commonwealth, in that and subsequent years, has made payments to the Fund in fulfilment of its financial commitments under these arrangements.

Wheat imported into Australia would be subject to a tariff duty—unless permitted by-law entry—and would have to meet certain quarantine requirements. Even without these it would seem that imports of wheat, at least in the main centres of population, would have been uneconomic for almost the whole of the period from 1946-47 to 1963-64.

Notes and Sources

All data refer to the wheat pool associated with crop year shown. A crop year or season ends 30th November each year.

All prices have been brought to a f.o.r. main ports basis. It has been assumed that the Australian f.o.b. price is comparable with the price (net of importing charges) at which Australia could import wheat.

Freight has been based on freight costs from the U.S.A. as representative of costs from likely suppliers.

1. *Total Returns from Sales of Wheat:* Net receipts on f.o.r. main ports (bulk) basis.
   Source: Wheat Board Gazette; various issues.

2. *Adjustments for Payments to or from Stabilisation Fund:* Payment of industry monies to and from the Stabilisation Fund has been excluded as transfer payments within the industry which do not affect the question of protection. Payments out of the Fund corresponding to the payments made by the Commonwealth Government to the Fund have been included. Direct financial assistance has been assumed to apply wholly to domestic returns.

3. *Export Prices (Export Parity):* Net realizations per bushel from export sales of wheat and flour (in wheat equivalent).
   Source: B.A.E. *Wheat Situation,* various issues.

4. *Volume of Wheat sold (all markets):* Total receivals by Wheat Board, less weight of bags and losses due to waste and moisture.
   Source: Wheat Board Gazette, various issues.

5. *Estimated freight and other import charges:* Based on actual freight rates and other costs for wheat shipped in 1962 adjusted to bring to equivalent to shipment from United States ports (east coast).
   Previous and subsequent years obtained by assuming movement comparable with Swedish dry charter shipping rate index.
   Sources: Bureau of Agricultural Economics; I.M.F. *International Financial Statistics.*

6. *Volume of Domestic Sales:* Sales on domestic market for all uses..
   Source: Wheat Board Gazette, various issues.

7. *Realisations on Export Sales:* Total net realisations from export sales of wheat and flour (wheat equivalent).
   Source: Ibid.

8. *F.o.b. export price:* To (7) above has been added an average charge of 1½d. per bushel for loading and handling.

TABLE A.1

Wheat: Estimates of Protection Levels

Year	I	II	III	IV	V
	£m.	£m.	%	%	%
1946-47	−30·9	−40·0	59·9	53·6	−87·2
1947-48	−28·3	−36·5	84·1	80·4	−80·2
1948-49	−21·8	−31·1	82·4	76·6	−73·7
1949-50	−27·7	−36·2	83·1	79·0	−72·3
1950-51	−29·9	−38·4	78·9	77·5	−67·5
1951-52	−15·8	−26·8	87·4	80·4	−50·8
1952-53	−11·5	−20·5	92·5	87·3	−40·0
1953-54	0·0	8·4	100·0	93·8	−21·2
1954-55	3·6	− 5·9	103·7	94·4	−16·4
1955-56	0·7	−10·9	100·6	91·4	−29·5
1956-57	− 2·3	−15·0	97·3	84·7	−36·9
1957-58	0·6	− 8·2	101·1	87·4	−21·5
1958-59	2·8	− 5·0	102·1	96·4	−14·0
1959-60	6·7	− 2·0	105·7	98·4	− 5·0
1960-61	12·5	4·1	107·4	102·3	11·0
1961-62	9·9	1·1	106·2	100·6	2·9
1962-63	15·4	6·8	107·9	103·4	19·4

Notes:

Column I: Total returns (adjusted for stabilization payments)—Total sales valued at export parity. (Equivalent to Column I of Table IV).

Column II: Total adjusted returns—(Wheat sold domestically valued at import parity and export realizations). (Equivalent to Column II of Table IV).

Column III: Equivalent to Column I of Table III.

Column IV: Equivalent to Column II of Table III.

Column V: Equivalent to Column III of Table III.