

Effective Protection and I

Max Corden*

Abstract: Corden outlines the development of the concept of effective protection, describing the influence on his thinking of the Canadian economist, Clarence Barber. He discusses the use of effective protection in policy-making in Australia, before assessing the contributions of Harry Johnson and Bela Balassa. In conclusion, Corden reflects on the Australian context in which these ideas originated.

Informed and detached biography is better than autobiography, which may be better informed but, inevitably, is less detached. This paper is an exercise in mini-autobiography, a little bit of history of thought.¹ I shall try to be detached, but perhaps it is best to say *caveat emptor*. So, readers, beware! I shall assume that the reader knows what ‘effective protection’ is about. If not, the basic idea can be found in any textbook of international economics, and more fully in Corden (1966, 1971) and Greenaway and Milner (2003).

In January 1958 I returned to Australia from London, and took up my first academic position, as Lecturer at the University of Melbourne. I had already written one article about the cost of protection, inspired by the Brigden Report on the Australian tariff (Brigden *et al.* 1929). My article was published in the *Economic Record* (Corden 1957).

Australia still had comprehensive import licensing in 1958. This system, established in the balance of payments crisis of 1952, was ended in 1960, when tariffs became again the (almost) sole means of restriction of imports.² At the June 1958 congress of Section G of ANZAAS (the predecessor of the annual conference of Australian economists) I presented a paper on ‘Import Restrictions and Tariffs: A New Look at Australian Policy’, in which I proposed replacing import restrictions with a uniform tariff. It was published in the *Economic Record* (Corden 1958). The relevant point to make here is that this paper had nothing to say on input-output relations and hence on what later came to be known as ‘effective protection’. I saw myself as applying standard economic principles to current Australian issues. I had learnt these principles at the London School of Economics (LSE) and through my reading, and had been most influenced by James Meade’s book *Trade and Welfare* (Meade 1955). James Meade was my supervisor at the LSE, and I read the proofs of this book while a student.

1 The Inspiration: Consulting about Textile Protection

Around 1960 the chief executive officer of the Tariff Board (Alan Carmody) suggested to the managers of a company that produced printed cotton piece goods that they should hire me to help them produce a coherent case for protection, or at least organise the relevant facts coherently. I do not have a copy of my report nor do I recall what I wrote. I do remember that I was paid, and also was taken out to dinner at a high-class (or so it seemed at the time) restaurant in a hotel that the firm’s owners also owned. Their application for protection had been turned down

several times by the Board. I summarised the full story of this industry's (or firm's) unsuccessful battle for protection in Corden (1962, pp. 55-7). This consulting work made me aware of the importance of vertical relationships among products, and specifically that a tariff on an input reduces protection for value added of the final product. In my later lectures and writings my examples of effective protection always came from the textile industry. I believe that this consulting work started me off on the 'effective protection road'.

2 Effective Protection: A New Concept?

In the early sixties, while at Melbourne University, and from 1962 while at the ANU, I wrote a number of papers on Australian tariff policy. I soon arrived at the conclusion that my earlier idea of a uniform tariff, at least as a guide to tariff-making, should be combined with the concept of effective protection. With a fixed exchange rate the ideal aim would be to get uniform effective protection.³ As a second-best to a uniform tariff I suggested that the Tariff Board calculate the effective protection rate on the Australian value added whenever it considered new protection or reviewed existing protection, and that an upper limit be set to effective protection rates. This approach, with many qualifications and refinements, was set out in an article in the *Australian Financial Review* (22 November 1962). This article was really a successor to my 1958 paper on Australian policy mentioned above, since it was directly focused on recommendations for reform of the protection system.

At about the same time a paper of mine entitled 'The Logic of Australian Tariff Policy' (Corden 1962) was published. It was based on a lecture I gave in 1961 to the NSW Branch of the Economic Society of Australia and New Zealand. In this paper I made some rough calculations of effective rates for several branches of the Australian textile industry. In a footnote I had a formula for effective protection – which is the first formula of the concept that I or anyone else had produced.

The most widely read of my publications in this field was Corden (1963). This was a lengthy chapter called 'The Tariff' in *The Economics of Australian Industry*, a book edited by Alex Hunter. I had a long exposition of the effective protection concept in this chapter, with a formula that was essentially the same as the one in Corden (1962). An Appendix consisted of various case studies, where effective protective rates were calculated or guessed at.

3 Enter Clarence Barber

My long exposition of effective protection in Corden (1963) had a footnote attached, of which the first sentence read as follows: 'The distinction between apparent and effective protection was first elaborated in an important article by C.L. Barber, "Canadian Tariff Policy" in the *Canadian Journal of Economics and Political Science*.' Where, then, did Barber (1955) fit into this story?

I had read Barber's lengthy and very clear article on Canadian tariff policy when I was at the LSE. I was interested in Barber's discussion of the relationship between population increase and tariffs, which was closely related to the Australian discussion pioneered by J.B. Brigden, and expounded in the Brigden Report (to which he referred). It is this passage in the article that I remembered. I had forgotten Barber's discussion of effective protection. At the same time I did not think I was discovering anything original when I expounded effective protection in

my various Australian papers since – as I mentioned earlier – I really saw myself as just applying standard international economics to Australia. I did not specifically recall (but discovered later) that there was also a reference to the effective protection idea in two places in Meade's *Trade and Welfare*. Meade had explained it briefly but not highlighted it.

After the circulation of a draft of the 1963 paper, a colleague from Melbourne University, A.R. (Bert) Prowse (who had just moved to the Department of Trade in Canberra), directed my attention to Barber's article, to which I had not referred in the draft. I looked up Barber's article, and there it was: 'effective protection'. More significant, from where did I get the terms 'effective' and 'apparent' that I had used? They were not in Meade. But, here they were, in Barber's article.

It is thus quite clear that Barber's concept had stuck in the back of my mind. He had several pages expounding it and some of its implications. The idea was not buried in his article but was quite prominent. And he invented the term 'effective level of protection'. He did not have a formula, as I did, but it was implicit. He, unlike Meade, gave the concept prominence. He also used interchangeably the terms 'formal' and 'apparent' for what later came to be called 'nominal' tariffs. Surely not by coincidence I had also used the term 'apparent' in my Australian papers.

Later on, after my *Journal of Political Economy* article (Corden 1966) made the concept and its many implications internationally known, numerous people wrote to me about earlier references to the general idea. The main point was that economists had long been aware that tariffs on inputs have adverse effects on using industries. I researched this thoroughly and wrote an appendix entitled 'Effective Protection: Some History' in *The Theory of Protection* (Corden 1971b). There is no need for me to summarise it, except to note that one of the clearest early expositions was by an Austrian economist, in Schüller (1905, pp. 149-50).

4 How Effective Protection Entered the Australian Policy World

I will be brief about the Vernon Report (Vernon *et al.* 1965) because it had very little long-term influence. In 1964 a committee was established to review the Australian economy. It was the brainchild of Sir John Crawford, a prominent figure in Australia who had been Secretary of the Department of Trade and now was a professor at the ANU, and who became deputy chairman of the Committee. The report of the Committee had a substantial chapter on tariff policy, which was probably the only chapter that did make some impact.⁴ At the start the Committee asked me to write a short note on what research in the tariff field needed to be done. Among other things I suggested calculation of effective rates of protection. These calculations were made primarily by Ron Gray, who was on loan to the Committee from the Department of Trade. They were the first substantial calculations made in Australia and, indeed, anywhere.⁵ The policy recommendations in the Report of the Committee were complex and heavily qualified, but broadly followed my own recommendations on second-best or third-best policies.

The next stage was the enthusiastic adoption by the Tariff Board of effective protection as a key measurement and guide to tariff policy. It may have been influenced by the Vernon Report, and certainly was influenced by my writings. My rather pragmatic views on Australian tariff policy in general were set out systematically and at length in my 1967 Fisher Lecture, published in the

Australian Economic Papers (Corden 1967). The reason the Board, and especially Bill Carmichael (see below), took note of my ideas with enthusiasm is that members of the Board and some staff were actively looking for guidance at a time when the inadequacy of existing principles and procedures was recognised.

The key persons in the Tariff Board transformation were two. The first was Alf Rattigan, the innovative and forceful chairman of the Tariff Board, who had been appointed originally by the protectionist Minister of Trade, John McEwen, in the belief that he would be a compliant insider. Instead, Rattigan sponsored a complete rethink of criteria for tariff-making and for reviews of existing tariffs. The gradual change in policy and the radical institutional changes that took place I cannot summarise briefly here. It is enough to say that comprehensive effective protection calculations became an important feature of Tariff Board work and of its successor, the Industries Assistance Commission, and affected recommendations for tariff changes. The effective protection concept was expanded to 'effective rates of assistance', which incorporated the effects not just of tariffs but also of subsidies of various kinds, as well as of import quotas. Details can be found in various *Annual Reports* of the Tariff Board (Anthony 1999, chapter 2) and Productivity Commission (2003). Particularly impressive was the emphasis on 'disparities' (or dispersion) of effective rates, with regular calculations of dispersion within manufacturing (using standard deviation as a measure) being made. This was quite novel for any government or agency, anywhere in the world.

The second key person was Bill Carmichael, at first the development officer of the Tariff Board and later Executive Commissioner, and eventually Chairman of its successor organisation, the Industries Assistance Commission. He was really the driving force behind many of these changes, especially the introduction of effective protection into policy. I can personally report that in 1966 he and I had many sessions together in Canberra analysing the concept and considering the implications of various calculations. Incidentally, he was also instrumental in introducing general equilibrium modelling into Tariff Board reports and sponsoring research in that field.

5 How Useful has the Emphasis on Effective Protection been in Australia?

It is a reasonable assumption – though subject to many qualifications – that the cost of protection is greater, firstly the greater is the average effective rate of protection of protected industries or activities relative to low- or zero-protected activities (notably export industries or activities), and secondly the greater is the variation of effective rates within the protected sector. Indeed, as is well known, exporting has tended to get negative effective protection because of positive nominal protection for many of the inputs into exporting, while export subsidies and tax concessions (if any) did not compensate them. The calculation of effective rates showed that effective rates were often far higher than nominal rates of protection, suggesting that the cost of protection was also higher. Of course, the cost of protection depends on other factors as well, notably elasticities of supply, externalities, and so on. Effective rates also showed much greater dispersion than nominal rates. These calculations thus played a useful role in bringing out the probable high cost of protection and so encouraging the general movement to reform.

That is the long-term positive side from a policy point of view. But there is another point to make. The elaborate discussion about tariff benchmarks, how

uniform effective rates should be, whether there should be upper limits to effective rates, and indeed whether it is better to use effective rather than nominal rates for policy, has been a temporary phenomenon. It has been a stage in history that has now passed in Australia. It has been a stage when the rigidity of the exchange rate and the political limits to radical changes – notably a big move to get rid of tariffs and similar devices – were powerful. This was the world of the second-best.

Since 1983 the exchange rate has floated, and opinion in both Australia and many other countries has shifted to accepting the role of market forces and the benefits of (more or less) free trade. The process of getting rid of the whole of this complex, distorting, human-capital-intensive and time-consuming system has been gradual, and is not yet complete, but there is now less to measure, and less point in measuring it. Once it is accepted that it is best to get rid of all these interventions, the main concern must be about the political feasibility of doing it in various stages rather than designing second-best intervention systems that, hopefully, are expected to be very temporary anyway.

I regard protection as a disease. For some years I specialised in the study of the disease, and of ways of reducing its adverse effects. In addition, I, and many others, have been advocating cures for the disease – which essentially consist of removing tariffs and other restrictions and appropriately adjusting the exchange rate (or allowing it to adjust in the market). Once the cures have become accepted there is less need to study the disease, other than as an historical phenomenon.

6 Harry Johnson into the Picture

I now return to the history of thought.

In 1964 Harry Johnson gave a lecture in Geneva on effective protection, later published as Johnson (1965). This was the most comprehensive theoretical paper on that subject up to that time. Apart from expounding the basic idea, he pointed out particularly how the concept helped to explain the so-called ‘escalation of tariff structures’, a phenomenon that had been widely observed. (‘Escalation’ referred to nominal tariff rates being usually zero on raw materials and fuels, higher on semi-manufactures, and highest on final products.) He also discussed the implications of the concept for trade negotiations. Johnson referred both to Barber (1955) and to Corden (1963), and they are certain to have influenced him. It is also worth noting that he was a Canadian. But he had an outstanding ability to see where the gaps in the field of international economics were and where the field was going. Thus one should not be surprised that he picked up this topic. He also played a major role in stimulating the first two fairly comprehensive empirical studies of effective protection, namely Balassa (1965) and Basevi (1966), the first of which was published in the *Journal of Political Economy*, which he edited. I was told by Johnson that he drew Balassa’s attention originally to the concept, while Basevi was a student of Johnson’s.

Later Balassa initiated large-scale studies of effective protection in many developing countries and made much use of the concept, usually under the auspices of the World Bank. His major project was reported in Balassa (1971). One might say that, while Bill Carmichael played the major role in the practical application and dissemination of the concept in Australia, Balassa played a similar role internationally. It is not surprising that the names of Barber, Corden, Johnson and Balassa have always been associated with this newly fashionable concept.

7 My Best-known Article

In 1964 I submitted an article on effective protection to the *Economic Journal*, which was rejected in 1965. I then sent it to Harry Johnson, who was both a good friend and, as I have just noted, an editor of the *Journal of Political Economy*. He made many suggestions for improvements, and, after being refereed, it was published in his journal in 1966. It was a good thing that the *Economic Journal* had rejected it (even though the referees of the *Economic Journal* did not perceive the significance of the main idea) because the final *Journal of Political Economy* version (Corden 1966) was much better.

This article was not about policy, like my Australian articles, or about institutional description, but was positive economics, and, above all, about measurement theory. I cannot summarise it here, except to note that it opened up a number of issues, including the meaning of a scale of effective rates as an indicator of how the protection system affected the movement of domestic resources (a general equilibrium issue), the treatment of non-traded inputs (a crucial measurement issue), and the ‘substitution problem’, namely how the assumption of fixed coefficients inherent in all input-output calculations distorted the results when there was actually substitutability both between different inputs and between inputs and value added of a particular activity. The article began with a neat summary of the implications of effective rates, all done with very elementary mathematics. It immediately became the standard article on the subject, and has been one of my best-known articles ever since.⁶

8 International Impact

In late 1964, before this article was published, I visited many universities in the United States thanks to a Carnegie travelling fellowship. This was my first visit to the United States. I gave seminars on effective protection. The response was striking, especially from graduate students writing dissertations on developing countries. Earlier Harry Johnson had also been giving seminars on this subject, and the topic was in the air. He may even have mentioned my early work that had been published in Australia. These seminar visits by Johnson and myself, and then my *JPE* 1966 article, influenced the choices of dissertations by many students and, indeed, in the following years many articles were published, both theoretical and empirical, which resulted from this particular boom – or intellectual fashion, as some might say.

The various measurement problems or issues I had raised in my 1966 article were endlessly analysed but, more important, an opportunity was provided for students to do empirical dissertations of a relatively simple (but laborious) kind, namely calculating effective rates of protection for their own countries. This was connected with the gradual awareness that high protection was a particular feature of developing countries’ economies, and possibly one cause of their low levels of development. It created an empirical basis for the belief that protection rates were often very high, and thus led eventually to the later pressures for reducing protection. Also, the effective protection figures drew attention to the high dispersion of effective rates as compared to nominal rates. In all this, the work of Bela Balassa at the World Bank played a crucial role. He must be regarded as the key figure in international empirical work while my article was the key theoretical article.

9 Two more Articles, and a Book

I supplemented my 1966 article later, while at Oxford, with two other articles, namely in *Oxford Economic Papers* (Corden 1969) and in *Journal of International Economics* (Corden 1971a). The 1969 article was designed to counter the false view that effective protection was essentially a partial equilibrium concept. I showed, with a diagram, that relative effective rates, not absolute levels, mattered, and that this was a general equilibrium concern. One calculates effective rates in order to form a view about general equilibrium effects. In the 1971 article I tried to sort out the extremely complex aspects of the ‘substitution problem’. I believe I was successful.

I found that, under certain circumstances, calculated effective rates may overstate ‘true’ rates – this being an index number problem – and under certain other circumstances the whole concept of ‘value added product’, which was central to the idea of effective protection, falls apart. The conceptual problem would arise if substitution effects were ‘biased’. The issue was whether these circumstances were empirically likely. One must distinguish *possible* from *probable*. Strong theoretical criticisms of the concept had been made, mostly resting on the ‘substitution problem’, and throwing doubt on the usefulness of making all these calculations. I tried to narrow down the seriousness of these criticisms – which were valid in theory, in the same way as criticisms of other measurements, such as price indices and measurements of GDP, were valid – even though such measurements continue to be made.

There seemed to be many misunderstandings, and also a need to sort out and explain more thoroughly many aspects of this new body of theory, and that led me to start my book, *The Theory of Protection* (Corden 1971b), written in Oxford in 1969 and 1970. It was meant to replace the 1966 article, though in practice both became standard references.

In the book I was particularly concerned to explore the general equilibrium implications. More broadly, the motivation for my theoretical work, as presented finally in the book, was this. Standard tariff theory used to be either narrow partial equilibrium or two-product general equilibrium. To be realistic it needed to be multi-product general equilibrium. One needed to allow for many products, where relative nominal and effective tariff rates would influence the patterns of consumption and of output. And, in addition, one needed to allow for the vertical or input-output relationships among products, this being the aspect that the effective protection concept was meant to illuminate. I must also note again that these issues are not limited to the study of tariffs but are also relevant to studying the effects of taxes and subsidies of various kinds, notably export taxes and subsidies. Furthermore, as has been shown in the calculations made within the Tariff Board and its successor organisations, the effects of import quotas can also be translated into effective protection form.

Years later, in Corden (1985), I published a retrospective assessment of the various theoretical issues. Recently Greenaway and Milner (2003), in a comprehensive review, have made a more thorough assessment of why effective protection estimates have been so widely used in spite of the criticisms of the concept by some theorists. I agree with the Greenaway-Milner judgements. Above all, as I have remarked above, the critical theorists who questioned the basic concept needed to distinguish what is *possible* from what is *probable*.

10 Some Final Remarks

I have discussed the implications of the new concept for policy and for measurements. I conclude here with some general reflections.

One has to explain why the idea of effective protection was not systematically incorporated into the international trade theory literature until the late nineteen sixties.⁷ Various suggestions can be made. In so far as the effect of input tariffs was noted, the concept of the 'compensating tariff' (the nominal tariff that keeps effective protection at zero when an input tariff is positive) was enough. The concept of the effective rate only acquires its real significance in a general equilibrium context.⁸ Why, then, did it not find a place in general equilibrium international trade theory as it had been developed over the years. The answer here may be that this theory had, for ease of exposition, been dominated by the two-commodity model. Furthermore, it had focused on the free trade versus protection issue and the exploration of 'arguments for protection'. But, while effective protection is very relevant for second-best tariff-making, the development of the concept has not uncovered any new first-best arguments for or against tariffs, and the idea of second-best tariff-making was relatively new.

An additional consideration is that, until Leontief, economists did not think systematically in input-output terms. Essentially, the theory of effective protection is the application of the elementary innovation of inter-industry economics to trade theory. This application took place with a lag because the importance of tariffs, and hence academic interest in them, revived only since the mid-fifties. If we ask why the idea of effective protection did not find a systematic place in the writings of Viner, Ohlin, Haberler and Meade, we might just as well ask why one had to wait for Leontief to give us systematic input-output economics. Here it should be added that in the nineteen nineties a literature on international 'production fragmentation' has developed which focuses on the role of input-output relations in determining the pattern of international trade in intermediate goods and, especially, in services.⁹

Let me finally come to some more personal reflections relating to the fact that my initial work was done in Australia.

I began much of my work on Australian tariff policy and, to a lesser extent, on effective protection, during the four years after I returned from the LSE to the University of Melbourne. I was, of course, teaching courses. I did this work on tariff policy in my spare time, and my teaching responsibilities were sufficiently low to make this possible. Since I did no massive empirical work I did not even need a research assistant. The pilot empirical work on effective protection that was published in Corden (1963) I did myself. Above all, I did not have to apply for any extra funds from a funding body. I did not have to submit a research proposal, nor show that I was doing work of 'national interest', or something like that. I would have had difficulty writing a research proposal since I did not really know where I was going. I just proceeded one step at a time. Of course, it turned out to be work of considerable 'national interest', advancing the nation's productivity and welfare, at least in my view. Furthermore, all the publications were initially in Australian, and not international, journals or books.

Finally, I was able to do innovative work of international interest while sitting in a peripheral country and a peripheral University. I went to my first international conference (in Hawaii) in 1964, after six years in Australia. I developed my ideas while thinking about Australia, and later these ideas and concepts turned out to be relevant for many other countries, especially developing

countries. It was not necessary to be sitting in Cambridge, UK, or Cambridge, Massachusetts, or Chicago, to make this kind of impact. Indeed, by thinking about Australia rather than the latest fashions in the major centres, I had more chance of being original. I did not set out to be original, but that is how it turned out. I set out to understand and perhaps even influence Australian policy in a field that I had been studying at the LSE. My original interest in this area was provoked by a chance reading of the Brigden Report (1929), and was further stimulated by reading the newspapers when I returned to Australia in 1958. A similar case is that of Robert Mundell, who developed new policy models for countries with flexible exchange rates and high capital mobility that, at the time, were relevant only for his own country, Canada. (Only Canada, of all developed countries, had a floating exchange rate; the US dollar was fixed to gold.) But, in later years, Mundell's models have become absolutely central for all major countries, and many smaller ones as well. Indeed, it is not necessary to be 'sitting' in the peripheral countries; it is necessary only to be thinking about them, wherever one is sitting.

* 504/1286 High Street, Malvern, Victoria 3144, Australia. Email: wmcorden@inet.net.au

Notes

- 1 I am indebted to Robert Dixon for suggesting that I embark on this somewhat egocentric exercise. I have also benefited from his comments on a draft.
- 2 In some later years import quotas were still significant for the textiles-clothing-footwear (TCF) group and for the motor vehicles and components group.
- 3 Later I analysed this argument more rigorously and showed that there were considerable qualifications to it (Corden 1971, chapter 8), though it may still have been a useful starting point.
- 4 Further details can be found in the various reviews of the report in the *Economic Record*, March 1966, and in Corden (1968).
- 5 Balassa's pioneering calculations (Balassa 1965) were published in the same year. See my references to his important contributions below.
- 6 Up to 2004 it received 126 citations, according to the social science citation index. As I note below, eventually it was effectively replaced by my book, *The Theory of Protection*, which received 231 citations. (One other article of mine, a joint one with Peter Neary on Dutch Disease, received more, namely 160 citations, than the *JPE* 1966 article.)
- 7 This paragraph and the next comes, with some changes, directly from the Appendix on the history of effective protection in *The Theory of Protection* (1971), a book that is now out of print.
- 8 As I have noted earlier, this idea is expounded fully in *The Theory of Protection*.
- 9 See especially Jones and Kierzkowski (1990) and various contributions in Arndt and Kierzkowski (2001).

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