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PREFACE

Pro-competitive regulation is under-going major reform subsequent to the agreement in principle by the Heads of Government to implement the major recommendations of the National Competition Policy Review (Hilmer Report 1993). One component is the review of the role of prices surveillance.

On 2 December 1993 the Assistant Treasurer asked the Prices Surveillance Authority (PSA) to undertake a two year public review of all goods and services subject to prices surveillance, with the exception of those supplied by Australia Post. The public inquiries were divided into four groups with reports due by 2 October 1994, 2 January 1995, 2 June 1995, and 2 December 1995 respectively.

The Industry Commission has reported on a number of aspects of prices surveillance and competition policy in its public inquiries. In November 1992 the Commission brought together its views on competition policy in its discussion paper *Pro-competitive Regulation*.

This submission to the PSA's review builds on that earlier paper with additional research and the findings of recent Commission inquiries that have dealt with prices surveillance. (The paper was finalised before the first suite of PSA reports were published).

SUMMARY

The Industry Commission considers that a general review of prices surveillance is timely.

The economic environment has changed significantly since 1984, when the Prices Surveillance Authority (PSA) was established. A substantial program of microeconomic reform has opened the economy internationally and addressed regulatory impediments to competition in many previously sheltered markets.

A consensus appears to be emerging that prices oversight should be used sparingly, and when pro-competitive reforms are inappropriate. In announcing this review, the Assistant Treasurer said that, where competition is effective, regulatory intrusion into pricing simply adds to costs and prices. He noted that where competition is ineffective, the Government is committed to ensuring that consumers are not exploited.

When is competition ineffective?

In assessing competition, the first step is to define the relevant market. This should not only take into account the domestic sellers of rival brands and the availability of close substitutes, but also the strength of import competition. If a foreign firm has persistent non-trivial local sales and there are no unusual barriers to import expansion, it is just as much a part of the market as local suppliers. The general presumption should be that domestic firms lack market power when they compete in markets that are international in scope. For prices surveillance purposes, markets have tended to be too narrowly defined.

The PSA has stressed the importance of domestic market concentration in assessing the effectiveness of competition. The Commission questions this approach. While domestic market shares disclose what a firm has recently sold, they do not indicate how much business it will lose to rivals, or to new entrants, if it attempts to charge excessive prices.

The potential for expansion of alternative sources of supply is a more potent test of the market power of an incumbent than its current market share. Imposing prices surveillance on firms primarily because they command a dominant share of the domestic market may penalise firms for achieving international competitiveness.

The empirical evidence about the economic effects of concentrated market structures is ambiguous. The higher prices resulting from any market power may be offset by lower costs of production (through scale economies). Market power tends to be wielded not collusively, but by the largest seller in the market, and is often based on cost or price advantages. The empirical evidence also suggests that new competitors do move into markets, with varying degrees of success; and that potential competition is important, even if not as powerful as actual competition. Competitive forces eliminate excess profits over time, although sometimes this process may be slow.

The strong rivalry within the beer, airline and long distance telephone duopolies in Australia illustrate the resilience of competition in concentrated markets. Empirical research suggests that, although the first firm in the market may charge a high price, the entry of one or two other suppliers usually results in effective competition. Once there are three to five suppliers in a market, an additional entrant has little impact on pricing.

Entry barriers that matter

A firm cannot exercise market power for long in the absence of barriers to entry. The PSA states that barriers to entry (apart from regulation) comprise "any advantage possessed by established firms compared to potential entrants." The Commission considers this definition to be too broad, in that it can treat superior efficiency as a barrier to entry. The focus should be on whether there is a long run cost penalty on new entrants compared with established firms.

Apart from regulatory impediments, the barriers to entry that should be of concern are those that involve sunk costs which put new entrants at a distinct risk disadvantage relative to established firms. In particular, product differentiation, economies of scale and scope, vertical integration, and strategic behaviour do not, in themselves, impede entry, unless they involve significant sunk costs.

The PSA should adopt a pay-back period of five years as a benchmark for identifying whether substantial entry barriers exist. Even then, this characteristic alone would be neither a necessary nor sufficient condition for prices surveillance. An adequate number of domestic and foreign suppliers may have already established themselves in the market to ensure competitive pricing.

Prices surveillance is costly

Recent Commission inquiries have found that prices surveillance has had detrimental long-term effects on consumer choice and industry investment; it has restricted the ability of firms to maintain a viable rate of profit through flexible pricing; or led markets to adapt in ways that impose additional costs on consumers. US studies show that price controls have no significant price effects in times of low inflation; result in excessive price reductions in more inflationary times; and cause cost padding.

Developments after airline deregulation in Australia illustrate how pricing oversight can impede innovation in prices and services. The Independent Air Fares Committee had the statutory power to promote efficient pricing and discount fares. Despite this, deregulation was followed by the increased availability and a wider range of discount fares, changes in the frequency and the scheduling of services, and more varied marketing strategies by the airlines.

A role for "CPI minus X" price caps?

The PSA has predominantly used a cost-based approach to price surveillance. As part of the review, the Assistant Treasurer asked the PSA to examine the merits of CPI minus X price caps. While CPI minus X price caps initially have a lesser tendency to promote cost padding and offer more incentives to innovate, these problems can reassert when the cap is periodically reviewed. Moreover, the lack of flexibility in fixed-term arrangements may induce regulators to set price caps that are so high that there is no effective constraint on prices or profits.

The Commission sees some advantages in the use of CPI minus X price caps during transitions from monopoly to competition. A price cap reassures consumers that some safeguards are still in place. Moreover, the productivity gains are predictable and large during the transition period, so regulators are more likely to set a demanding price cap. Once such transitions are over — and in other circumstances, including multiple firm markets — it is doubtful whether CPI minus X price caps have any advantages over cost-based surveillance.

The PSA's review guidelines need a more sequential structure

The PSA does not have a structured approach in its guidelines for reviewing prices surveillance declarations. For example, there is no specified level of seller concentration that may exempt an industry from further attention. When

market concentration is regarded as high enough to justify additional scrutiny from the PSA, the next focus of attention, whether import competition, entry barriers, etc., is not identified.

The Trade Practices Commission's (TPC) November 1992 Draft Merger Guidelines are more successful than the PSA's guidelines in providing a clear indication of the agency's priorities. The TPC's merger guidelines reveal what factors will be taken into account at which stage of the process, and how they will be weighed against each other. An important advantage of the guidelines is that the sequential nature of the five stages allows mergers of no interest to the TPC to be identified at an early stage of analysis, and the investigation may be discontinued before more complex issues, such as entry barriers, need to be considered. The Industry Commission recommends that the TPC's sequential approach be adapted to the analysis of prices surveillance.

Limit prices surveillance to dominant firms

The benefits of prices surveillance for duopolies and oligopolies are low, not only because common perceptions of the degree of market power from tacit collusion have not been borne out by empirical research, but also because the effectiveness of prices surveillance is questionable.

The Commission considers that the balance between the costs and benefits of prices surveillance are such that it should be limited to settings where a single firm:

- has a greater than two-thirds market share; *and*
- has no major rival; *and*
- faces sporadic or trivial imports (import penetration persistently below 10 per cent of the market); *and*
- is sheltered by substantial barriers to entry (and expansion by rivals).

A very preliminary assessment of the nineteen goods and services currently subject to prices surveillance against the above tests suggest that only the services provided by the Civil Aviation Authority and Federal Airports Corporation, harbour towage and the postal services reserved to Australia Post are likely to satisfy all proposed conditions for continued surveillance.

Prices monitoring has a role

The Commission acknowledges that, in some industries, the strict application of these tests may not allay public suspicions about the exercise of market power and the durability of competition.

In such sensitive industries, and in border-line cases of market dominance, there may be a role for prices monitoring, which is a less intrusive form of prices oversight. Moreover, in industries previously subject to prices surveillance, a transitional period of prices monitoring may be a useful device for re-assuring consumers.

1 INTRODUCTION

The Prices Surveillance Authority (PSA) was established in 1984 by the *Prices Surveillance Act 1983* (the Act) as part of the Commonwealth Government's Prices and Incomes Accord. The PSA has described its role as follows:

> The Prices Surveillance Authority's (PSA) mission is to promote price restraint and accountability consistent with competitive market outcomes. ...
>
> The PSA adopts a selective approach to prices surveillance based on the view that the best form of price restraint comes from the effective operation of market forces. The Minister (the Treasurer or Minister Assisting the Treasurer) determines the goods, services and persons subject to declaration under the Act. The stated criteria in the Treasurer's Second Reading Speech were the pervasiveness of wage and price decisions, in combination with a lack of effective competitive market disciplines. ...
>
> The Prices Surveillance Act complements the Trade Practices Act by focussing on the abuse of market power in pricing. While ... the TPC can indirectly influence prices by stimulating competition, the PSA can act directly to deter firms from charging excessive prices. This power is important where:
>
> - market power is entrenched;
> - it will be some time before effective competition is achieved; or
> - new competitors would only reduce efficiency and output (ie. natural monopolies) (1993d, pp. 1-3, 5).

The two statutory functions of the PSA are to consider notifications of price increases by declared companies and, with the approval of the Minister, to hold public inquiries and report to the Minister on those public inquiries. Box 1.1 lists the products and services currently subject to price surveillance under the Act.

Companies declared under the Act must notify the PSA in advance of a price rise. When notified of a price rise, the PSA has 21 days to object, or to indicate that it has no objection to a smaller increase. It can also recommend a public inquiry to the Minister.

While the PSA has no power to enforce a smaller price rise, declared companies have in the past always complied with the PSA's recommendations. There are penalties for non-notification and for raising prices during a public inquiry without the PSA's consent.

Box 1.1: **Existing prices surveillance declarations**

Nineteen goods and services and fifty one firms are currently declared under the Act:

- aviation services (of Federal Airports Corporation and the Civil Aviation Authority)
- beer
- biscuits
- breakfast cereals
- cement (Portland)
- cigarettes
- coffee (instant)
- concrete roofing tiles
- float glass
- glass containers
- harbour towage services
- liquefied petroleum gas (LPG)
- petrol and automotive distillate
- reserved postal services (of Australia Post)
- steel (mill products)
- steel (welded pipes)
- tampons
- tea and tea bags
- toothpaste

Prices surveillance need not extend to all products sold by a declared company; nor need it extend to all firms selling declared products. For example, declarations only cover the largest sellers of coffee, tea, and biscuits and only one of the two sellers of LPG in Western Australia.

Declarations have applied in the past to day-old chicks, dressed table chickens, pre-mixed concrete, jams, marmalades, chocolate, confectionery, cordials, soft drinks, mineral waters, pet foods, high alloy steel products and toilet soap.

When exercising its statutory functions, the Act requires the PSA, subject to ministerial directions, to take account of the need to:

- maintain investment and employment, including the influence of profitability on investment and employment;
- discourage firms from taking advantage of market power when setting prices; and

- discourage cost increases arising from increases in wages and prices that are inconsistent with principles established by 'relevant industrial tribunals.'

The PSA is subject to a number of ministerial directions, the two most important of which are:

- to not generally support price increases in excess of movements in unit costs; and
- that increases in executive remuneration in excess of those permitted under wage fixation principles and decisions announced by the then Australian Conciliation and Arbitration Commission in National Wage Cases should generally not be accepted as a basis for price increases.

Box 1.2: **Prices monitoring**

The PSA also undertakes prices monitoring. This can encompass a broad range of industries or focus on a specific industry. Prices monitoring may involve the PSA examining: CPI data provided by the Australian Bureau of Statistics for 'aberrant' price movements; or looking at the effects of tariff reductions and changes in indirect taxes on consumer prices and retail margins.

Prices monitoring has become an increasingly important activity for the PSA. Specific industries subject to prices monitoring in 1992-93 included interstate aviation, books, child care, cinemas, confectionery, credit cards, furniture, harbour towage, motor vehicle replacements parts, paint, pre-mixed concrete, stevedoring, coastal shipping, sugar, Tasmanian LPG, and textiles, clothing and footwear.

The PSA does not have statutory powers regarding prices monitoring, so it must rely on publicly available information, or the cooperation of firms to provide relevant data (such as on costs and profits). In its submission to the Industry Commission's inquiry into petroleum products, the PSA (1993c) noted that the Act may need to be amended to provide it with statutory powers for conducting monitoring activities as a complement or alternative to its surveillance powers.

The reach of the Prices Surveillance Act extends to corporations and most Commonwealth authorities, but not to unincorporated bodies (except those engaged in inter-state trade). AUSTEL is responsible for prices oversight in the telecommunications industry under separate legislation. Public utilities such as water and power are not covered, since the Act specifically excludes goods and services that are supplied by a state; or by bodies (other than incorporated companies) established for public purposes under the laws of a state; or companies in which a state has a controlling interest (PSA 1993d, p. 14).

Price regulation and the role of the PSA were considered in the *Report of the Independent Committee of Inquiry into National Competition Policy* (Hilmer Report 1993). That report stated that a 'prices oversight' regime should be targeted at those cases where pro-competitive reforms were not practical or sufficient. The Hilmer Report recommended that the regime have the following features.

- *A new declaration process.* Prices oversight could be declared by a Minister when it is in the public interest and the organisation agrees. If the organisation does not agree, prices oversight could be declared by the relevant minister if, after a public inquiry into the competitive conditions in the market, the organisation was found to have 'substantial market power in a substantial market in Australia.'
- *Prices oversight powers should be limited to monitoring or surveillance*. There would be no price control power, and a formal surveillance process would only be appropriate where monitoring was insufficient.
- *Sun-setting of declarations.* Existing declarations would lapse within 2 years unless renewed through the new declaration process. New declarations would lapse after 3 years unless renewed following a public inquiry (Hilmer Report 1993, pp. xxxiii - xxxiv, 276, 281).

In response to the Hilmer Report, the Assistant Treasurer asked the PSA in December 1993 to undertake a systematic two year public review of all goods and services (other than services provided by Australia Post) currently subject to prices surveillance under the Act.

The terms of reference for the review require the PSA to address whether existing declarations are justified in the light of any changes in competition and, if so, the appropriate form of surveillance that should be applied (PSA 1994a, p. 1).[1] In relation to the form of surveillance, the Assistant Treasurer asked the PSA to evaluate the appropriateness of 'CPI minus X' price caps.

The Industry Commission considers this review to be timely. The recent period of low inflation in Australia has made any sudden and unusual price rises prominent to consumers. More importantly, a decade of microeconomic reform has significantly enhanced the competitive environment in which many firms operate, raising questions about the need for prices surveillance. Reforms of particular importance have been tariff reductions; labour market reforms; the removal or downgrading of specific regulatory regimes such as

[1] The reviews of the services provided by the Federal Airports Corporation and the Civil Aviation Authority are to focus on the appropriate form of prices surveillance, rather than whether it is justified (PSA 1994a, pp. 1-2).

those for telecommunications and domestic aviation; and the privatisation and corporatisation of Government Business Enterprises. Some of these reforms have led to more competition in many markets, while others have concentrated on markets characterised by natural monopoly.

In recent years, the Commission has examined the need for prices surveillance in a number of its inquiries. It supported prices surveillance of certain port services (IC 1993b), Australia Post (IC 1992b), and the Civil Aviation Authority and the Federal Airports Corporation (IC 1992a). On the other hand, the Commission found little or no justification for prices surveillance of petroleum products (IC 1994), feed stock for steel pipes and tubes (IC 1992d), and goods provided by the food processing and beverages industries (IAC 1989).

In this submission to the PSA's review, the Commission focuses on two broad questions raised by the terms of reference:

- when is market power a problem of such significance that it justifies government intervention? and
- are the available remedies for curtailing price rises due to market power effective or appropriate?

Although these questions are specifically directed at the PSA's prices surveillance function, they are also relevant to the restrictive trade practices provisions (Part 4) of the *Trade Practices Act 1974*, as administered by the Trade Practices Commission (TPC). The TPC addresses the *causes* of market power – that is, the practices which lead firms to exert a substantial influence over prices. The PSA, on the other hand, addresses the *effect* on prices of the exercise of market power.

While the Commission is concerned with the broad issues of relevance to the role of prices surveillance generally, this submission uses a number of specific examples to illustrate its points. Particular reference is made to the instant coffee industry. This industry was subject to a comprehensive public inquiry in 1992 by the PSA (1992b).

The nature of market power, and practical means of detecting it, are discussed in Chapter 2. The merits and limitations of the available measures for prices surveillance are assessed in Chapter 3. The discussions in both chapters are informed by a dynamic view of competition in real markets.

Chapter 4 contains the Commission's conclusions about the need for prices oversight. A sequence of tests are recommended for making decisions about prices surveillance in particular market circumstances.

2 WHEN IS MARKET POWER A PROBLEM?

The main rationale for prices surveillance, as practiced by the PSA, is to control the effects of market power. Firms with market power overcharge – that is, they price above cost. When competition is effective, consumer choice ensures that prices are kept to levels close to costs of production including a 'normal' profit for investors.[2]

This focus on market power is apparent from the second reading speech on the Prices Surveillance Bill 1983. The then Treasurer proposed that prices surveillance apply to markets where effective competition is absent and where price or wage decisions have pervasive effects throughout the economy. The Act directs the PSA to consider in its operations the need to discourage firms from taking advantage of market power when setting prices.

The Assistant Treasurer re-affirmed market power as the policy focus of the PSA when he initiated the current review of prices surveillance declarations:

> Where firms operate in free and competitive markets, Government intrusion into pricing policies simply adds to company costs, which are then passed on to consumers. The review will identify those markets where sufficient competition exists to revoke or modify declarations. However, where effective competition is lacking, the Government remains firmly committed to ensuring that consumers are not exploited through excessive prices (PSA 1994a, p. 25).

Offsetting the benefits of prices surveillance are its costs. The PSA said in its submission to the Hilmer Review that:

> Policy makers must determine when the misuse of market power is sufficient to justify the implementation of prices policy to achieve efficiency. This involves balancing the costs and benefits of prices policy against the costs and benefits of the exercise of market power. The costs of prices policy may include direct costs such as the cost to government and business of administering pricing schemes, and the indirect costs resulting from poorly structured prices policies which could lead to losses in technical, allocative, and dynamic efficiency. The benefits translate to higher economic growth through public confidence, cheaper goods and services, higher output and restrained income claims (1993d, p. 7).

The Act leaves the task of determining whether prices surveillance should apply to ministerial discretion. There is no statutory criterion for selecting

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[2] Normal profit is the amount necessary to attract and retain the resources employed in the industry or, as McCloskey said, the reward for:

> ... taking the bother, knowing the market, seeing the opportunity, assuming the risk (1985, p. 293).

products or persons for surveillance, nor is there a statutory definition of 'market power.'

In the past, the PSA has relied on the concepts of 'lack of effective competition' and 'pervasiveness,' and the statutory requirement to discourage the exercise of market power in price determination, for guidance about the need for declarations (PSA 1992b, p. 108; 1994a, p. 4).

In its issues paper for the review of, for example, the biscuits declaration, the PSA (1994b, p.6) followed the Hilmer Report and stated that it is likely to recommend that prices surveillance is appropriate if declaration is in the public interest and the firm has substantial market power in a substantial market. In deciding if these criteria are satisfied, the PSA (1994a, p. 6) identified the following tasks as relevant:

- defining the relevant market;
- considering whether the market is substantial;
- assessing the state of competition in the relevant market to determine if any firm has substantial market power in that market;
- considering the appropriate remedy to reduce or eliminate substantial market power where it is found to exist; and
- assessing the likely costs and benefits of alternative forms of surveillance where other options are not feasible.

This chapter provides the Commission's views on how substantial market power should be assessed. It involves three related tasks. First, defining the relevant market. Second, assessing the degree of market power held by individual firms. Third, considering if the collusive exercise of market power is likely.

2.1 Defining the relevant market

The purpose of market definition is to draw a line around those firms that are sufficiently in competition that a price increase by one seller would cause enough consumers to switch to the other seller(s) so to make the price rise unprofitable.

> Hence, market definition, if it is to be an aid to analysis, has to place in the relevant market those products and services and firms whose presence and actions can serve as a constraint on the policies of the alleged monopolist (Fisher 1979, p. 13).

Markets are defined in geographic and product terms. In the Commission's view, the delineation of the relevant market should take account of:

- the number of sellers of rival brands;
- the availability of close substitutes; and
- the strength of import competition.

Rival brands and close substitutes

The key to market power is how much business is lost if a firm increases its price. Faced with a higher price, consumers can turn to rival brands or substitute products or services. A price increase by a small firm does not affect the market price because there are plenty of other firms to pick up the abandoned business. However, if the price rise is by the seller, or group of sellers, that account for most sales, consumers may find it difficult to locate alternative sources of supply.

Close substitutes are important in market definition because, as the PSA notes:

> Close substitutes ... by their availability, place a ceiling on the extent to which an organisation can raise its prices (1994a, p. 8).

The degree to which a similar product or service will be substituted by consumers for one which has increased in price is measured by the 'cross-elasticity of demand,' while the capability of other producers to produce a substitute product is the 'cross-elasticity of supply.'[3] The higher are these cross elasticities, the more it is likely that similar products or production capacity should be counted in the relevant market. Low cross-elasticities of demand and supply imply that there can be a large increase in price before there is a significant loss of sales, so that raising prices can have a positive effect on profits.

The PSA has observed that:

> In assessing substitutability in demand, cross price elasticities of demand are relevant. That is, the relative effect of a change in price of a rival's product on the demand for the declared product is examined. The key question is: if one

[3] The cross-price elasticity of demand relates the quantity demanded of one product to the price of another. The cross-price elasticity of supply relates the quantity supplied of one product to the price of another.

The price elasticity of demand (or own-price elasticity) measures the responsiveness of quantity demanded of a product to a change in its price. The price elasticity of supply measures the responsiveness of the quantity supplied of a product to changes in its price.

> organisation was to raise or lower its price by a small amount, would a large proportion of its custom switch to (from) a rival's product. Whilst empirical measures of demand elasticities can be difficult to obtain and [may be] inconclusive, the PSA will have regard for such measures in making judgements on the degree of substitutability between products (1994a, p. 8).

Traditional approaches have considered that a firm facing high demand elasticities (both with respect to the firm's own price, and the prices of other firms) is subject to a high degree of competition. Similarly, firms facing low elasticities have been seen as having significant market power, as most consumers will not switch away from their products in response to a price increase. However, this traditional approach may be flawed and should be viewed with caution.

As discussed in the Appendix A, evidence of either a high or a low elasticity of demand is inconclusive in determining whether firms have significant market power. Recorded elasticities obscure the fact that firms with market power undertake behaviour that alters measured elasticities from the levels that would prevail in a competitive market.

High elasticities of demand show either that market power is being exercised in full, or that substitutes are so plentiful that overcharging (pricing above cost) will lose most of the current sales of the firm concerned. In other words, they point to vigorous competition or full exploitation of market power. Low elasticities may be evidence of market power, but beg the question - if such power exists, why isn't it being exercised?

Depending on how market definition is handled, suspicions of market power can be endemic or irrelevant. It requires only a little creativity to define a market in such a way that almost any industry is 'concentrated':

> Market definitions are such notoriously elastic constructs that anyone pre-disposed to worry about monopoly will not want for sources of concern, and anyone with a contrary inclination will sleep easily (Easterbrook 1981, p. 25).

The courts have earned a reputation for market definitions that, to many outside observers, have little correspondence to the actual boundaries of effective competition. In *AMH Pty Ltd v. TPC (1989)*, the Federal Court held that there was a distinct market for fat cattle in north Queensland. This decision was reached despite extensive inter-regional trade; large-scale substitution between fat cattle, feed lot cattle, and store (unfattened) cattle; and the cost penalty of transporting cattle to Southern Queensland often being less than 5 per cent of cattle value (IC 1992c, p. 14).

The courts have tended to accept narrowly defined markets. The use in market definition of what Fisher (1987, p. 23) called the "parlance of businessmen ('the Chicago drug-store market,' 'the high-fashion shoe

market')" can generally simplify what otherwise may appear unresolvable and avoid lengthy processes and arbitrary decisions.

Biscuits is an example of narrow market definition by both the courts and the PSA. In *Arnott's Ltd and Ors. v. TPC (1990)*, the Federal Court rejected submissions that there are separate markets for sweet and chocolate biscuits, but it also rejected the proposition that biscuits compete with salted snacks and confectionaries (PSA 1994b, p. 8). In its 1987 report on biscuit prices, the PSA also focused on a 'market for biscuits' even though it noted that:

> ... the range of substitutes for manufactured biscuits may cover most snack foods, including nuts, cakes and cake mixes, confectionery, and preserved fruits, ice-cream, and bread and other bakery products such as pastries (1987, p. 11).

Import competition

Import competition is a further important consideration in market definition. Although some markets are smaller than a city, others are truly global.

There is no reason to treat national borders with any more respect than state or city boundaries when defining the geographical limits of a market.

> Many Australian producers face import competition which, in principle, augments and strengthens competition. Import competition also raises doubts about the validity of market share based solely on domestic production data and other domestic structural indicators of "competition" (Corones 1994, p. 249).

An inappropriate treatment of imports misses the most pronounced current change in the nature of competition in many Australian markets. For example, in *Queensland Wire Industries v. BHP (1989)*, the High Court considered that the relevant market boundaries were defined by Australian production of steel and steel products. The Court held that BHP misused its market power by refusing to supply a steel product known as Y-bar. This market definition has appeared not to have withstood the test of time: after winning the case, Queensland Wire Industries decided to import Y-bar from South Korea.

Some indication of the relevance of imports in constraining the domestic prices of goods can be inferred from Figures 2.1 and 2.2. Figure 2.1 shows that import penetration of manufacturing industry groups, (defined at the ASIC two digit level), ranges from under 10 per cent (food and beverages industry) to over 60 per cent (textiles industry).

Chart 1: Import penetration ratios for manufacturing industry, 1991-92

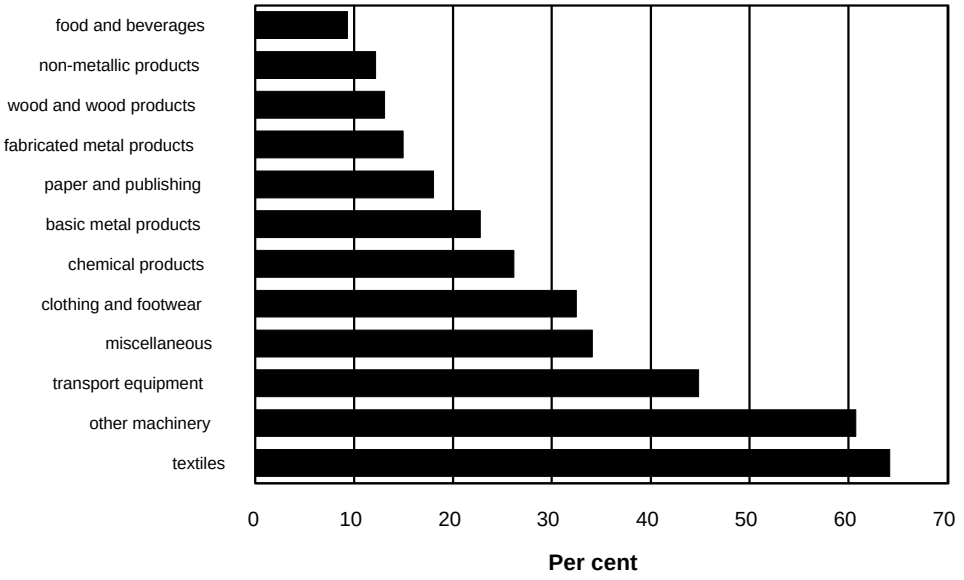
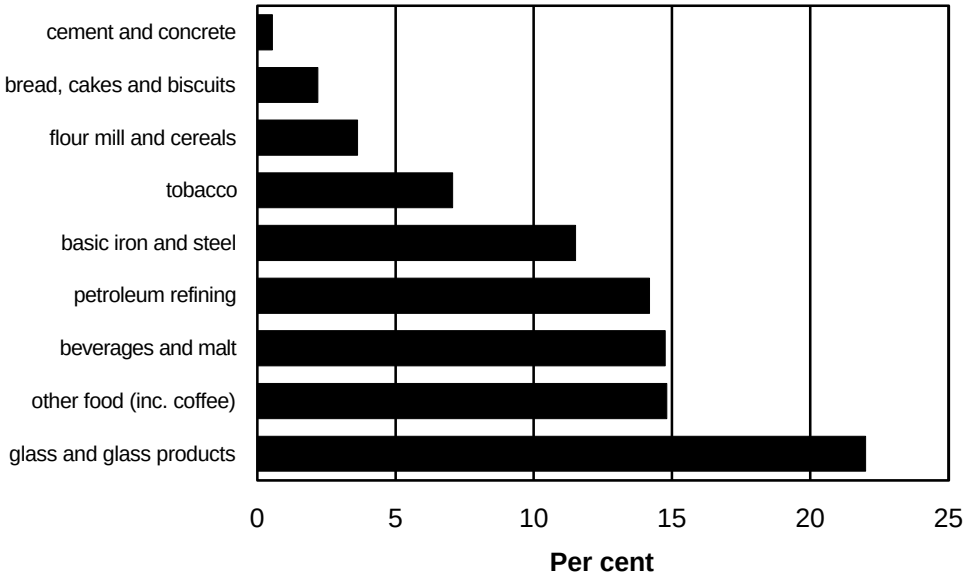


Chart 2: Import penetration ratios for selected manufacturing industry sub-groups, 1991-92



Source: ABS Catalogue No. 5464.0 Foreign Trade, Australia: Magnetic Tape Service.

Figure 2.2 shows the import penetration for manufacturing industry sub-groups (defined at the less aggregated three digit ASIC level) covering most firms and products currently subject to surveillance. The import penetration ratios range from just over zero per cent (cement and concrete) to over 20 per cent (glass and glass products). Overseas firms need not currently sell in Australia to exert a competitive influence here. Figures 2.1 and 2.2 suggest that many products subject to existing declarations are in tradeable markets and therefore their domestic prices are susceptible to the threat of imports.

While potential import competition constrains the abuse of market power, actual imports make foreign sources of supply a more tangible and credible threat. Persistent non-trivial imports show that foreign firms have already overcome transport cost, tariff, distribution and other distance related hurdles to selling in Australia. Australia is a small country, so it should be relatively easy for a firm to buy what it requires without affecting the prevailing international price or stretching overseas production and shipping capacity. Thus, once a foreign firm has made some local sales, it should be able to alter international distribution patterns to divert more supplies, at no appreciably higher cost, in response to excessive domestic prices (Landes and Posner 1981, pp. 963-68).

A foreign supplier is often better placed than local firms to expand sales. Foreign suppliers already have production assets in place overseas, a range of market-tested products and their scale economies do not normally hinge on any single market. Local firms may have to increase production, or build new capacity, before they can service new business.

However, the PSA is correct to note that:

> The existence of tariff and non-tariff barriers, transport costs and other impediments to imports may constrain the extent to which imports can compete with domestic products in the market (1994a, pp. 12-13).

A large market share for imports may still leave unanswered questions about the extent to which imports can compete effectively. First, import barriers must be considered, but as noted below, these have fallen and there are no longer any quantitative restrictions. Second, importers may be part of an international distribution cartel, or their marketing strategies may be constrained by parent company ties – although these are exceptions, rather than the rule. Third, it is possible that trade policy, exchange rates or transport costs may change. However, as these fluctuations are in both favourable and unfavourable directions, in the absence of special information, no net effect is a reasonable assumption. Finally, if the market is for differentiated products, an expansion of imports may require a switch from niche to mass marketed

products or require investment in larger distribution and marketing facilities (Hay and Walker 1993, p. 44).

If a foreign firm has a product that is comparable to the local product; has persistent non-trivial local sales; faces no unusual barriers to import expansion; and has available production and distribution capacity to divert sales; that foreign firm should be treated no differently from domestic suppliers with regard to market definition. That is, the overseas firm is just as much a part of the market as local suppliers, and its world-wide production and spare capacity should be included in the domestic market for the purpose of computing the market shares of local firms. The inclusion of relevant overseas excess capacity is especially important because this can be quickly brought into production to supply the domestic market (Landes and Posner 1981, pp. 964-66).

The market share threshold for imports to be regarded as persistent and non-trivial is a subjective decision. Nonetheless, an initial numerical benchmark is necessary for further discussion.

On the one hand, an import penetration ratio of 15 per cent is a high threshold because it is slightly below the import penetration ratio for motor cars – an industry widely accepted as global in nature. Moreover, in the TPC's November 1992 Draft Merger Guidelines, mergers in concentrated industries which result in post-merger market shares of 15 per cent trigger further scrutiny. A post-merger market share of this magnitude may imply that the firms concerned are already such important players that their merger may substantially lessen competition.

On the other hand, a threshold of 5 per cent may be too low in some cases due to niche products and a succession of one-off shipments. However, this does not imply that there is no foreign competitive discipline at even low levels of import penetration. For example, Hay and Walker observed (regarding the TPC's Draft Merger Guidelines) that:

> In some instances, the market share of imports may understate their competitive impact. Supply may be infinitely elastic at the world market price plus transportation costs and tariffs, placing an import parity cap on domestic prices. In some markets, this may result in a very low market share for imports as domestic firms price to maintain market share; however, if a merged firm tried to raise domestic prices they may face a flood of imports. This is particularly likely in markets for homogeneous goods not subject to import quotas. In these markets, it may be relatively straight forward to establish the presence of effective competition (1993, p. 44).

For example, BHP supplies almost all of the domestic market of steel pipe and tube feed stock. Although actual imports are small, BHP's local prices

range between import and export parity, with an occasional premium for the security of local sourcing (IC 1992d).

In the light of the above discussion, the Commission considers that an import penetration rate of 10 per cent is a reasonable indication that, in the absence of quotas or other special factors holding back more imports, foreign suppliers have established a significant market presence. Although it is necessary for foreign suppliers to be supported by a local distribution network capable of handling more sales, they do not need to be capable of servicing the entire market. All that is required is for the overseas suppliers to exert a competitive discipline similar to that of domestic firms. That is, the ability to take up, at no appreciably higher cost, enough of the abandoned business of the firm which has increased its price so that the increase is unprofitable and must be rescinded.

A 10 per cent import penetration threshold should also apply to markets characterised by product differentiation. A higher threshold may classify markets with extensively differentiated products (such as cars) as domestic in scope. This is counter-intuitive because import competition has caused great upheaval in the Australian car manufacturing industry for several decades.

It is unlikely that local firms selling in a product differentiated market would set a price that surrenders a large share of sales to foreign competitors. Excessive domestic prices in product differentiated markets will encourage foreign competitors to mass market their existing niche products. Once a foreign competitor has established a major presence in a product differentiated market, rivalry is much more intense because it occurs along numerous price and non-price margins.

Instant coffee is an example of a market that should be presumed to be international in scope. The PSA (1992b, pp. 104-106) found that Nestlé had 70 per cent of Australian instant coffee sales in 1991, while Unifoods and Cadbury Schweppes offered weak competition, and imports were less of a threat. The PSA (1992b, pp. 43-49) reported, however, that there was next to no import duty; there was world-wide over-capacity; there were many overseas suppliers of good quality processed coffee for house-brands; freight costs were minor; and there were two major international consumer product companies not in Australia – one of whom is test marketing in New Zealand.

It is difficult to view the instant coffee market as anything other than international in scope. Cadbury Schweppes and the smaller importers have already overcome transport cost, tariff, and distribution hindrances to under-cut Nestlé on price to secure a fifth of the market, and, according to the PSA

(1992b, p. 43), there is little evidence of cost or regulatory constraints on the expansion of imports.[4] Persistent and substantial imports of (lower priced) instant coffee suggest that if Nestlé were to set prices that are in excess of quality differentials, its rivals would be able to respond effectively with additional imports.

In sum, the Commission considers that, unless there are unusual barriers to expansion, markets where imports have more than a 10 per cent penetration for several years are international in scope. Both domestic and foreign production contribute to the determination of international prices which have a direct impact, through the possibility of sales diversion, on Australian prices. The general presumption should be that a domestic firm lacks market power when it competes in markets that are international in scope.

The Commission cautions that an import penetration rate below 10 per cent should not be used to determine finally whether a market is international in scope, particularly for homogeneous products.

As the PSA (1994a, p. 13) notes, exports also have relevance to this question. If a product can be exported, subject to tariffs, quotas and like barriers, normally it should be possible to import a comparable product. Access to appropriate distribution networks is necessary, nonetheless this threat should make the world price plus transport differentials the upper limit on local prices. In addition, a change in export prices will cause a diversion of sales to or from the local market increasing or depressing domestic prices. For example, although MIM Holdings Pty Ltd produces 65 per cent of Australia's copper, and exports over half of its output, its price for domestic sales is only slightly above that set daily in the London Metal Exchange (IC 1992d).

2.2 Assessing the degree of competition and market power

After defining the market, the next step is to assess the degree of market power exercised by firms either individually or collectively. This is no easy task.

> After 20 years of analysis and decision making [by the courts] the methodology for evaluating the effect of conduct on competition in Australia is becoming a little clearer. It may not have been entirely clear when the [Trade Practices] Act was first passed. It still may not be as clear as many people would hope. Despite the clarification given by the 1992 amendments, assessing the effect or likely

[4] Instant coffee import penetration ratios are about the same as another Australian industry that is widely regarded as international in scope – motor car manufacturing.

> effect of conduct on competition is a daunting and expensive exercise in evidence gathering for all concerned (Corones 1994, p. 264).

The PSA and the Hilmer Report have stated that market power would need to be 'substantial' in order for prices surveillance to be justified (see chapter 1). Some degree of market power is unavoidable and, as regulation is not costless, there is little choice but to ignore it. As Stigler observed:

> It is not enough to prove that a given industry is not competitive. The crucial question is: how far do conditions in the industry depart from competition (1947, pp. 215-16).

The dynamic nature of competition

Indicators of competition and market power have traditionally included high seller concentration and substantial barriers to entry. These static indicators are based on a text-book model of 'perfect competition.' Few real markets fit this ideal of many sellers, well informed buyers, and a standard product. The Treasury has observed that:

> Clearly, the simple model of perfect competition omits important features of markets. Differentiated products and brand loyalties are the norm, not the exception. Economies from larger production units or from carrying on a range of activities in one business (economies of scale and scope) are common. ... in many instances, industry structure resembling perfect competition cannot, in the real world, be engineered by governments without great cost. ...
>
> Competition is multi-dimensional in that all the features of goods and services – not just price, but quality, means of delivery and other aspects – impact on the value consumers place on the package offered to them. Competition is dynamic in that it is necessary to be continually changing in order to provide better offers to consumers than rivals are offering. It is necessary to move forward or be overtaken (1991, p. 6).

Competition is a ruthless process. A firm that cuts costs and expands sales injures rivals, sometimes fatally. The firm that slashes costs the most can capture the greatest sales and inflict the greatest injury. The deeper the injury to rivals, the greater the potential benefits to consumers in terms of lower prices and new products.[5] Failure and disappointment are routine consequences of market rivalry. A wide variety of firms, product ranges, and industry structures will emerge or be displaced over time. Schumpeter argued that:

> [The] competition which counts [is] from the new commodity, the new technology, the new source of supply, and the new type of organisation (the

[5] From *Ball Memorial Hosp., Inc v. Mutual Hosp. Ins.* 784 F. 2nd. 1325, 1338 (7th Cir. 1986).

> largest-scale unit of control for instance) – competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives. This kind of competition is much more effective than the other [price competition of similar firms] as a bombardment is in comparison with forcing a door (1950, p. 84).

Product differentiation in the ready-to-eat (RTE) breakfast cereal industry is a germane example of the dynamics of competition. The PSA (1994a, pp. 15-18) is concerned that product differentiation may make it harder for new firms to gain a market foot-hold due to brand loyalty. Moreover, the PSA suggested that non-price competition may be an inferior form of rivalry. In the RTE breakfast cereal review, a key issue was:

> What is the effect of non-price competition such as advertising, product differentiation and the release of new products on competition in the supply of RTE cereals? Is non-price competition an effective alternative to price competition in ensuring that consumers are not exploited (PSA 1994c, p. 7).

Similar claims were made in the US Federal Trade Commission's unsuccessful antitrust case against the leading producers of RTE breakfast cereals. The Federal Trade Commission alleged that the incumbents introduced a proliferation of brands to leave few viable market niches for new firms. However, as argued by Shughart:

> It is difficult to understand why the ability of existing firms to satisfy consumers' wants is viewed as somehow less desirable than having the new products supplied by entrants. ... advertising and product differentiation can yield no advantages for one firm over another unless consumers find such activities appealing. ... the main lesson of the cereals case, then, is that the threat of entry may sometimes induce established firms to supply consumers with the variety of products they demand (1990b, p. 123).

In the Commission's view, it would be unusual for sellers to limit their competitive efforts exclusively to prices. The presence of a variety of sellers offering old, new and differentiated RTE breakfast products implies that the market is more accurately reflecting the diverse requirements of consumers than would the provision of a cheaper standardised RTE breakfast product.

Left to their own devices, RTE breakfast cereal manufacturers compete in a variety of ways, some of which are mutually exclusive, such as offering the lowest price versus highest quality product. Consumers will purchase the particular RTE breakfast food that offers the mix of price, quality and ancillary features that best suit their diverse tastes and incomes. New entry is often premised on exploiting product niches neither cultivated (nor noticed) by market pioneers.

> Competition depends on movement: consumers can turn to other vendors, producers can turn to new sources of supply or build new plants in different places. Inputs into production move, finished goods move, capital and labour move. ... the market economy does not look like Adam Smith's atomistic competition ... The question is not whether we achieve perfect competition but how to use the power of competition to deal with the costs of monopoly (Easterbrook 1994, pp. 127-28).

The available empirical evidence suggests that new competitors do move into markets, with varying degrees of success; that potential competition is important, but is not as powerful as actual competition; and that competitive forces, including technological change, eliminate excess profits over time, although the rate of decay in profits may be slow (Gilbert 1989, pp. 116-125; see Box 2.1).

While fully fledged monopolies and oligopolies exist in all modern industrial economies, the best evidence is that, for the most part, concentrated market structures have had a modest adverse impact on pricing performance, and yield scale economies as a counter-weight (Scherer and Ross 1990, chapters 11 and 18).[6]

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[6] Australia lacks data at a sufficient level of disaggregation to conduct reliable empirical research into the relationship between market structure and performance. The first recommendation of the Griffith's Report (1989, p. 21) was that the TPC and the Australian Bureau of Statistics take action to collect data that is suitable for such research. Therefore, in assessing the empirical relationship between market structure and performance, the Commission drew mainly on US studies.

The US studies are persuasive, and have international application because of their quality and the disaggregation of the data involved. By contrast, studies from more open economies, such as the UK, France, Italy, and Belgium, show no relation between profits and seller concentration (Schmalensee 1989, p. 975). However, the US studies are less vulnerable to the statistical biases and measurement problems that cloud studies of market structure and performance in more open economies.

The USA is so large that it can be regarded as a semi-closed economy and, as a result, empirical research is subject to less bias from ambiguities such as the strength of actual and potential import competition. For example, the US Justice Department's Antitrust Division defines two-thirds of the relevant markets that attract its scrutiny as domestic to the USA (Willig 1991b).

A further reason for regarding the US results as having international relevance is that underlying production technologies, costs and demand appear to drive concentration levels everywhere. In particular, the same industries tend to be highly concentrated in the large industrialised countries (Schmalensee 1989, p. 992). In addition, industries that are relatively concentrated in Canada and the UK are also concentrated in Australia (Caves, Ward, Williams and Wright 1987, pp. 30-31). Although comparisons are difficult, it appears that the level of industrial concentration in Australia is at or slightly above the average for larger industrialised countries, but below that of Canada (BIE 1990, p. 40).

In the remainder of this section, industry concentration and barriers to entry are examined in the light of the dynamics of real competition and its impact on the evolution of market structures.

Box 2.1: The impact of potential competition.

Opinions are divided about the relative strength of actual and potential competition. After deregulation, the US airline industry has been the subject of intensive study, in part, to resolve this controversy.

For example, Borenstein (1992, p. 53) found that the entry of a second and third actual competitor each resulted in an average fall of 8 per cent in price. However, potential competition was no substitute for actual competition. A potential competitor had from one-tenth to one-third of the competitive impact of an actual competitor.

On the other hand, Evans and Kessides (1993, pp. 461-62) found that both actual and potential competition were powerful. Although the lack of actual and potential competition would result in higher prices, market power was small, and the only significant impact on prices for individual routes was generated by moving from monopoly to duopoly — prices declined by 3.3 per cent. Adding a third and fourth actual competitor decreased prices by 1.5 per cent and 0.5 per cent respectively. The largest price effect from potential competition is derived by adding one potential competitor; the pricing effects of additional potential competitors taper quickly. Moreover, adding the first potential competitor has the same price effect as adding the first actual competitor.

Market power and market share thresholds

There has been a long tradition in Australian and US competition law of associating market power with very large market shares. The PSA has placed itself within this tradition:

> *While the existence of market power is very much a structural matter*, assessment of the abuse of market power and its likely effects requires an examination of the conduct and performance of market participants. ... collusive or parallel behaviour is more likely to occur in a market with a small number of organisations. To be able to exercise market power by itself, an organisation will generally need to supply a large share of the market (1994a, pp. 11-12; emphasis added).

The Commission questions this approach. While market shares disclose what firms have recently sold, they do not indicate how much business a firm will lose to rivals, or new entrants, if it attempts to raise its prices. A firm with a historically large market share will still have trivial market power if smaller rivals can expand rapidly, or new entry can occur quickly.

> The fundamental question is whether competitors are able to grow. Thus, consider a firm that has a very large share of a particularly defined market. It may very well be that such a firm is merely efficient and has achieved that share by charging low prices. Alternatively, we may be looking at a case of innovative competition in the initial period when the mouse trap has been invented. Should

> we infer monopoly power from a large share in such cases? The answer is no, not necessarily. The right question to ask is whether that large share would survive an attempt to charge high prices and earn monopoly profits. If the share is maintained solely because of low prices or better products, then we are looking at what competition is supposed to do and not a monopoly (Fisher 1979, p. 18).

By stressing the particular importance of market structure, the PSA tends to make the extent of competition depend on whether or not sales are concentrated in a few hands. Posner explains the fragile nexus between large market shares and reasonable suspicions of market power as follows:

> Three firms having 90 per cent of the market can raise prices with relatively little fear that the fringe of competitors will be able to defeat the attempt by expanding their own output to serve customers of the three large firms. An example will show why. To take away 10 per cent of the customers of the three large firms in our hypothetical case, thus reducing those firms' aggregate market shares from 90 percent to 81 percent, the fringe firms would have to increase their own output by 90 percent (from 10 to 19 per cent of the market). This would take a while, surely, and would force up their costs, perhaps steeply — the fact that they are so small suggests that they would incur sharply rising costs in trying almost to double their output, and that it is this prospect that keeps them small. ... This analysis, however, collapses if customers can turn to suppliers who (or products that) have been excluded from the market [definition].[7]

For example, under a broader definition that subsumes biscuits into the snack-foods market, no firm has close to market power. Soft drinks have long since displaced tea and coffee as the number one household drink after milk. In the five billion dollar non-alcoholic beverages market, soft drinks sales were $1.43 billion, while coffee sales totalled $357 million, and tea sales amounted to $187 million in 1993 (Hurst 1994).[8]

Various classification systems have been used to distinguish the degrees of industry concentration. The objective is to specify a minimum market share threshold before further inquiries are justified, however, assessments of seller concentration are highly subjective.

- EPAC (1993) considered an industry to be highly concentrated if the four firm market share was over 40 per cent.

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7 *United States v. Rockford Memorial Corp.*, 898 F. 2d 1278, 1283-84 (7th Cir. 1990).

8 Narrow market definitions are not unique to Australian regulators. For example, the US Federal Trade Commission, in challenging a merger between Nestlé and Stouffer, defined the market as 'high-priced non-ethnic frozen entrees'. The Antitrust Division of the US Justice Department has opposed mergers in the markets for 'vandal-resistant plumbing fixtures,' potato chips, 'independent book stores in Cleveland,' and 'artificial Christmas trees over 2 feet tall' (Shughart 1990a; 1990b).

- In its 1992 Draft Merger Guidelines, the TPC classifies an industry as highly concentrated if the four firm market share is over 75 per cent.
- According to the 1992 United States Merger Guidelines (DOJ and FTC 1992), an industry is considered highly concentrated if the four firm market share is more than 70 per cent, and moderately concentrated if between 50 and 70 per cent.
- Weiss (1989) considered that concentration makes little difference to prices when the four leading firms account for less than half of sales.
- According to Shepherd (1982), industry is highly concentrated if the four leading firms account for greater than 60 per cent of market share, moderately concentrated if between 40 and 60 per cent, while concentration is low if their market share is below 40 per cent.[9]

The study by EPAC (1993) illustrates the Commission's concerns with the use of seller concentration ratios as proxies for competition. Industry concentration in all Australian industries (except agriculture and general government) were examined in 1990-91 and it was concluded that there was a high average level of concentration (see Figure 2.3). This conclusion was based on the following observation:

> The largest four enterprises account for over 40 per cent of total [domestic] turnover in 13 of the 37 industry groups. Of these 13 industries, six are industries in which Government Business Enterprises (GBEs) dominate (EPAC 1993, p. 2).

The impression gained from EPAC's study that Australian industries are highly concentrated or oligopolistic is misleading. Not only was that study based on a relatively conservative definition of what amounts to high concentration, the data were based on ASIC industry groups which do not always mirror market boundaries.

Setting aside the market definition problem, if a classification system of industry concentration such as Shepherd's was used, only 6 of the 37 industries would be considered highly concentrated (communications, air, water, rail transport, water and drainage, and oil and gas), and 7 industries moderately concentrated (metallic minerals, coal, non-metallic minerals, basic metal products, transport equipment, electricity and gas, and insurance). It is notable that the highly concentrated industries are characterised by natural monopoly, extensive regulation, or public ownership. This suggests that industry concentration measures based on Shepherd's classification may better target areas where market power is likely.

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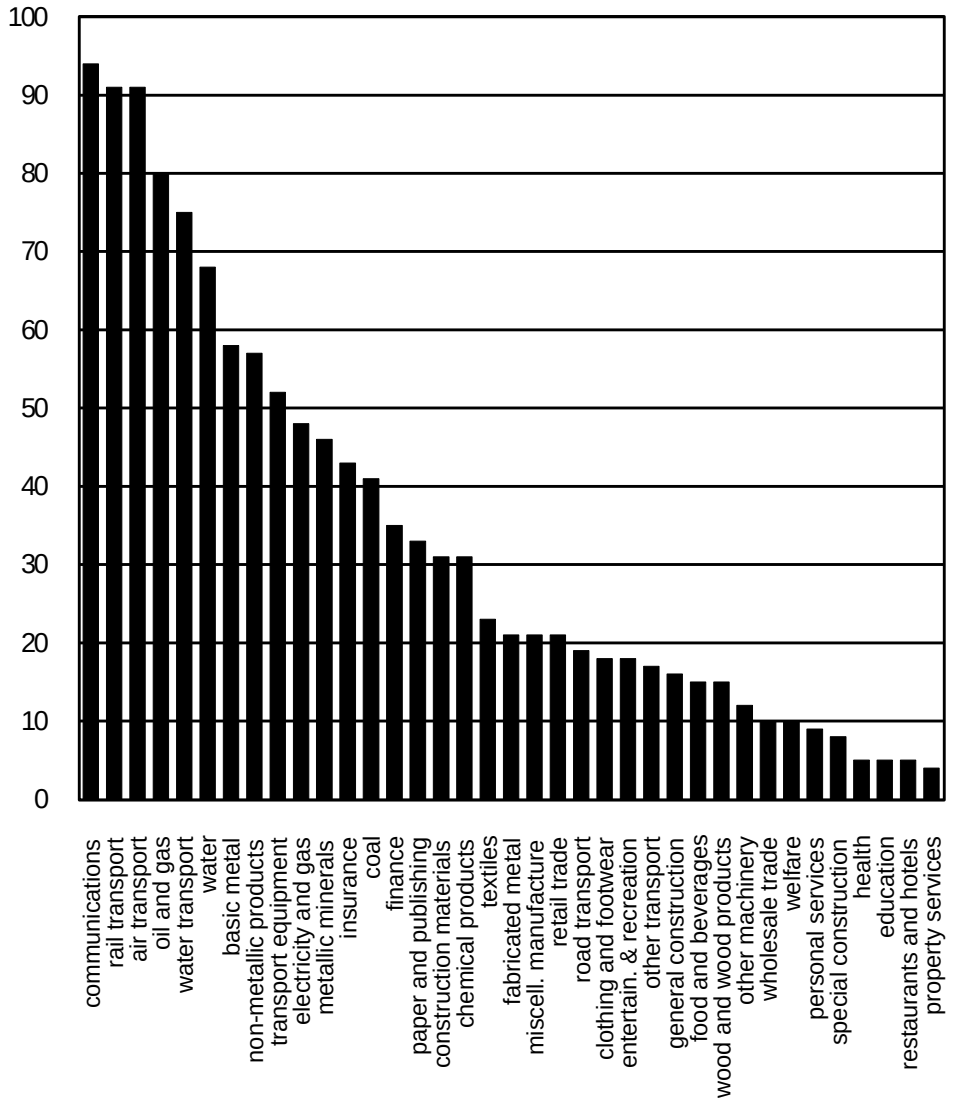
[9] Section of Antitrust Law of the American Bar Association (1986, pp. 182-201) has a survey of views on the market share threshold that signals high concentration.

The PSA's (1994a, p.8) view, albeit qualified, that the existence of market power is largely a matter of market structure, carries a risk that its assessment of competition will begin and end with market definition. The PSA should regard high seller concentration as a particularly ambiguous signal about the effectiveness of competition.

Figure 2.3: Concentration in Australian Industries, 1990-91 (largest four firms' share of turnover)



Source: EPAC (1993) using specially commissioned ABS data.

The proposition that a concentrated market structure — at some level — leads to poor industry performance has come under such broad attack that few believe that it now provides a substantial empirical basis for competition policy (Hay and Werden 1993, p. 174). For example, the Section of Antitrust Law of the American Bar Association has said that:

> To the extent that there is a consensus within the economics profession, it is that an accurate analysis of an industry must take into account other factors in addition to market concentration. Conditions of entry are especially important (1986, p. 188).

Both high and rising, and high and falling seller concentration have been found to be associated with dynamically superior price and productivity performance (Peltzman 1977, 1987; Salinger 1990). For example, manufacturing industries that experience large increases or decreases in seller concentration tend to show above-average increases in productivity and below-average increases in price. More importantly, the relation, if any, between profits and seller concentration is statistically weak, is usually small, is unstable over time and space, vanishes in many multi-variate studies, and can reflect the superior efficiency of larger firms, market power, or both (Schmalensee 1987b, p. 806; 1989, pp. 973-90).

Coase, in commenting on the perceived wisdom of the time, said:

> ... [the positive relationship between seller concentration and excess profits] is rather puzzling. If the elasticity of supply to the industry was high, or the elasticity of demand for its products was high, one would expect no relation between concentration and profitability. And if fewness of producers is supposed to bring greater profits as the result of collusion, there are many factors other than fewness of numbers which affect the likelihood of successful collusion. So, it is rather strange that there was any detectable relationship at all (1972, pp. 68-69).

At best, a highly concentrated market structure is a threshold requirement for further investigation. It is necessary for the PSA to sift through much more evidence to distinguish routine suspects from firms that actually have market power. The absence of rivals that are able to quickly move into a market, or are able to increase their existing production, are much more important tests of substantial market power.

The lower are entry barriers, and the shorter are the delays on effective new entry, the less is the market power of existing sellers, and the less relevant are current market structures to assessing competition. Only when there are no significant alternative actual and potential sources of supply, and no substitutes from the consumers' perspective, does a very large market share represent a good signal of power over price.

Barriers to entry

Market power can be self-destructive. High profits eventually attract new entry, so incumbents cannot exercise market power for long in the absence of barriers to entry or natural monopoly.

The PSA states that barriers to entry (apart from regulation) comprise:

> *... any advantage possessed by established firms compared to potential entrants.* This advantage may allow the incumbent to raise prices without inducing entry. A barrier to entry may be a cost that must be borne by a potential entrant that is not borne by established organisation (1994a, p. 14; emphasis added).

The PSA's approach appears to be too broad in that it can treat superior efficiency as a barrier to entry. Other definitions of barriers to entry focus on the different opportunities facing incumbents and entrants.

> Accordingly, a barrier to entry must be something that interferes with competition. It must be something that allows incumbent firms ... to charge non-competitive prices and earn supra-normal profits.
>
> It follows that not everything that makes entry appear difficult or uninviting is necessarily a barrier to entry. The mere necessity of building a plant when incumbents have already built theirs is not such a barrier (although associated economies of scale with sunk cost can be). Neither is the necessity of advertising or creating a reputation automatically a barrier. To be a barrier, the phenomenon involved must permit incumbents to earn supra-normal profits on the whole process of getting into the market and continuing to act, without inducing others to enter and bid those profits away (Fisher 1987, p. 33).

There is no injury to consumer welfare when the superior efficiency of established firms impedes entry by the less competent. A natural hurdle to entry into any market are the many efficiencies that flow from the past investments by incumbents. For example, the PSA has said that:

> An important aspect of the instant coffee market is Nestlé's apparent high levels of efficiency as a producer compared with other producers and its ability to take advantage of economies of scope and of scale. Nestlé products also appear to be perceived as generally superior in quality to other suppliers, although there may be exceptions, such as Moccona. New entry on an efficient scale of operation would appear to be limited by these factors. (1994e, p. 9).

Although the PSA appears to view these advantages as suggestive of barriers to entry, an alternative view is that Nestlé is simply more efficient: it can sell instant coffee at a better price, relative to quality, than its current or potential rivals. The PSA itself has observed that:

> ... Nestec SA, the Nestlé group's research and development subsidiary, has been responsible for a number of important instant coffee manufacturing improvements and inventions in recent years, and is undoubtedly a leading force in this field. With the help of their proprietary technology, and their experienced plant staff,

> Nestlé have developed manufacturing processes to optimise the flavour and aroma of their manufactured instant coffee throughout the manufacturing process. Amongst these are computerised software to ensure blend consistency, roasting and grinding techniques to optimise quality and extraction respectively, and company designed concentration, drying and agglomeration systems ... The other instant coffee suppliers in Australia do not have access to such sophisticated and innovative manufacturing techniques, and do not pursue quality standards to the extent that Nestlé does. As a result, they are unable to compete with Nestlé in terms of quality. While Cadbury Schweppes and Unifoods are part of multinational corporations like Nestlé, they do not have instant coffee research subsidiaries of the size and calibre of Nestec SA (1992b, p. 55).

A normal consequence of the market process is that some competitors prove more efficient than others. Some firms will always be first, or will perform better, in lowering costs, or developing new or better products. Such firms dominate an industry until others rise to the their standards of efficiency.

The PSA appears to have classified the ability of Nestlé to be more efficient and innovative than its rivals as a barrier to entry:

> When existing firms are efficient and possess valuable plants, equipment, knowledge, skill, and reputation, potential entrants will find it correspondingly more difficult to enter the industry, since they must acquire those things. ... But these difficulties are natural; they inhere in the nature of the tasks to be performed. There can be no objection to barriers of this sort (Bork 1978, pp. 310-11).

The Commission considers that defining a barrier to entry should be about setting up a standard to identify factors which prevent market forces from eroding positions not based on efficiency. Long run cost inequalities between incumbents and potential entrants provide the correct focus. In particular, can the competitive advantages of incumbents be duplicated at a comparable cost by newcomers? Baumol, Panzar and Willig define a barrier to entry as:

> ... anything that requires an expenditure by a new entrant into an industry, but imposes no equivalent cost on an incumbent (1982, p. 282).

Product differentiation, economies of scale, scope and vertical integration, strategic behaviour, and capital and sunk costs have been listed by the PSA (1994a, pp. 14-16) as barriers to entry. They are considered below, along with barriers to imports.

Product differentiation

Product differentiation can make it more difficult for new entrants to attract market share by offering a lower price if an incumbent enjoys brand loyalty. For example, a new instant coffee supplier may need to invest in extensive advertising to establish a market identity (PSA 1992b, pp. 41-42).

Market power is a matter of degree and many markets subject to product differentiation are robustly competitive. For example, there are numerous markets where product differentiation is far more sophisticated than in any that are subject to prices surveillance:

> Consumers differentiate durable, complex equipment by brand. Purchasers are presumably not indifferent between Chrysler and Ford automobiles, or between IBM and Compaq computers. Therefore, *depending on numerous factors*, the firms that manufacture such equipment have modest amounts of market power. ... But there is no reason to think that antitrust tribunals can regulate moderately competitive product differentiated markets better than competition can. ... the focus of competition in such markets is often on factors other than price. Firms try to capture customers through such non-price offerings as the best or most responsive service network, the best warranty protection, or the most reliable equipment. Excessive antitrust scrutiny could penalise firms for engaging in the kind of competition that is often the most robust in concentrated markets for durable technical equipment (Hovenkamp 1993, pp. 1447-52; emphasis added).

The market power from product differentiation may not only be slight, it may be more apparent than real because competition merely takes a different form. For example, the higher profits from the more popular product niches encourage races for their early identification and, thus, an earlier supply of consumers' more pressing requirements. The costs of early supply should dissipate much of the supra-normal profits from product differentiation, and what is left over are the prizes for those who are faster.

As the Treasury has observed:

> It is the rule rather than the exception that firms have some discretion over prices they charge. This is because goods are usually not perfect substitutes and competition arises from the availability of a range of more or less close substitutes. In this environment, marketing executives search for niches of consumer demand that are not filled or imperfectly met. Competition at this extensive margin is strong and dynamic, even though firms will often lack competitors in the static sense of producers of exactly the same product.
>
> Thus the presence of some control by a firm over price setting and the absence of many producers of the same product may be consequences of the healthy process of competition, rather than indications of its absence (1991, p. 9).

Although market pioneers have first choice of product niches, latecomers can fill others. What is important when assessing entry barriers is whether new entrants face expenditures in addition to those incurred by existing firms to differentiate their products. Latecomers may have to contend with brand loyalty, but have the advantage of a more informed customer base, and with leap-frogging in technology, they may have lower product development costs.

Moreover, while every new product must prove its worth to consumers, and considerable investment may be required to develop a new product, little

expenditure may be required to imitate a successful brand. In addition, industry pioneers may have faced higher costs due to the greater uncertainty of entering unknown and untested markets. Indeed, it is not obvious whether the market pioneers or latecomers have the tougher job.[10] For example, Nestlé held its 70 per cent market share against rival brands of instant coffee that stress a lower price (PSA 1992b, pp. 36-42). In contrast, Johnson and Johnson has lost about a third of its market in women's sanitary products mostly to the higher priced Libra Fleur range (PSA 1994d, p. 5).

Brand loyalty slows new entry only to the extent that buyers find the established products to be superior.

> Prices and qualities of goods have primary sway over most markets. Some buyers will be faithful to enterprises for reasons other than price, quality, and service, but they are usually too few and too shallow in their faith to allow an enterprise to prosper if it fails to perform well in the basic functions of business (Stigler 1988, p. 96).

If buyers have more confidence in established products, and prefer not to accept the risks and costs in searching for possibly equally good but less well-known alternatives, the higher profits of reputable firms are the fruits of past investments in product development. A good reputation is an asset not only to the firm, but also to the buyers who rely on it as an assurance of quality and reliability. Building a reputation is a routine cost of developing a business.

Economies of scale and scope

The PSA (1994a, p. 14) suggests that scale and scope economies may require firms to incur the risk of entry on a large scale.[11] For example:

> A new entrant to the Australian instant coffee manufacturing industry [would need to] spend at least $19 million on plant and equipment with a capacity of at least 2,500 tonnes a year. Annual demand of at least 1,875 tonne would be needed to achieve a minimum efficient level of utilisation in the smallest available plant,

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[10] A new interpretation of product differentiation is that the anti-competitive threat comes not from the incumbent but from the new entrant — the fast-second. For example, IBM has been slow in taking the first steps in introducing new technologies. Examples are the first general-purpose computer, time-sharing, full solid-state circuitry, supercomputers, minicomputers, and personal microcomputers. IBM's real reputation is as a fast-second that pursues crash research and development programs and aggressive marketing strategies to catch up. IBM is such an effective fast-second that some think this strategy may be anti-competitive because innovating firms may be inadequately compensated for their break-throughs (Scherer 1987).

[11] Economies of scale refers to the reduction in the average unit costs from increasing output to some level. Economies of scope refers to the reduction in average unit costs from producing a mix of output.

> or 16.0 per cent of the estimated total Australian current production. This proportion is equivalent to the combined 1991 sales volume of Unifoods and Cadbury Schweppes ... However, in order to gain the benefits of full economies of scale, a new entrant would need to be producing around 40 per cent of total Australian production. ... this is likely to pose a more substantial barrier to entry in Australia compared to the UK, where economies of scale can be achieved with around 10 per cent of the market. ... Thus a new entrant would need to be confident of achieving at least the combined current sales of at least the second and third largest supplier before investing in production equipment (PSA 1992b, p. 40).

The Australian coffee market is smaller than the UK's, so there is room for fewer producers. However, Unifoods survives at production levels well below the 16 per cent of domestic production regarded by the PSA as the minimum to sustain new entry. In addition, possible apprehensions about scale economies have not deterred a major US instant coffee company from test marketing in the smaller New Zealand market. Both of these considerations imply that the minimum viable scale for instant coffee production is smaller than that suggested by the PSA.[12]

More importantly, there is room for only so many firms in every market, and if minimum efficient scale is large relative to current demand, the number of efficient firms will be small. Demand and cost conditions jointly dictate the efficient number, size and product range of firms in all markets:

> Some economists will say that the economies of scale are a barrier to entry, meaning that such economies explain why no additional firms enter. It would be equally possible to say that inadequate demand is a barrier to entry (Stigler 1968, p. 67).

Once a new entrant has invested in an efficient plant, organisation, and product range, there should be no cost inequalities between it and the incumbents. There is no entry barrier because there is a point in every market where further entry is unprofitable.

The Commission's approach to scale and scope economies does not imply, however, that a newcomer would be immediately as profitable as an established firm. The costs of building a business are legitimate investment expenses that are borne by new and old firms alike and it is common for new businesses to take several years to break even. However, as discussed later, scale and scope economies may interact with sunk costs to constitute a barrier to entry.

[12] Cadbury Schweppes and the small sellers import their requirements (PSA 1992b, pp. 33-35).

Vertical integration

The PSA (1994a, p. 15) is concerned about the exclusionary potential of vertical integration. If there are economies in vertical integration, a new entrant may need to enter at each stage of a market to avoid a cost disadvantage.

Vertical integration is a fact of economic life and it is usually pro-competitive. If it is cheaper to do for yourself something that others were formerly paid to do, further vertical integration will make the firm a more effective competitor. Organisation is a pre-condition to competition; and just about every conceivable form of organising production and distribution is employed by business.

While the cost savings from vertical integration may require a new firm to enter at more than one stage in a market, vertical integration does not imply that newcomers and established firms are not on an equal cost footing, that is, that there is a barrier to entry. Demand and cost conditions dictate the efficient size and extent of vertical integration of firms in every market. Moreover, vertical integration is not free; if it is undertaken for exclusionary purposes, it may spur, rather than bar new entry, because it makes the newly integrated firm internally inefficient.

The threat of vertical integration also increases competitive pressures on distributors and suppliers. They know that if they charge too much for their services, the retailer or manufacturer may produce them for itself. For example, generic brands — the result of backward vertical integration by large retailers — account for 12 per cent of all grocery sales in Australia (Ragg 1994).

The rise of generic brands has relevance to another aspect of vertical integration listed by the PSA as a possible barrier to entry in the reviews of the coffee, tea and biscuits declarations: access to shelf space at supermarkets (PSA 1994e, p. 15; 1994f, p. 13; 1994b, p. 13). In particular, the proliferation of generics suggest that there is adequate space for new entry because the brands of market leaders are already under-represented on many supermarket shelves. For example, in the PSA's (1992b, p. 44) previous review of the instant coffee declaration, Nestlé complained that retailers promoted their own house brands to the detriment of its products. Although Nestlé has a market share of about 70 per cent, its research suggests that it is allocated about 50 per cent of shelf space in supermarkets. These factors led the PSA to observe that generics may be the strongest competitive threat to the established brands of instant coffee (PSA 1992b, p. 45).

Sunk costs

The PSA (1994a, p. 15) is concerned that capital requirements associated with scale and scope economies, and vertical integration may impede new entry if there are sunk costs. These are costs that can never be recovered if entry fails.

Some investment expenses are sunk while others are fixed. This distinction is important. A cost is fixed if it does not vary with the level of output. An example is the monthly rent on office space. Fixed costs differ from sunk costs in that they are commitments that can be avoided if the business ceases operation.

Sunk costs are irreversible commitments. They are costs that a firm cannot avoid even if it ceases production. For example, some plant and equipment, distribution networks, advertising campaigns, and brand names are so specialised that they have little or no re-sale value if the firm closes. An operational definition of a sunk cost is the difference between the purchase price and the maximum re-sale price of the asset.

If both new and existing firms have had to incur equal outlays that are sunk at the time of their entry into an industry, there is no cost inequality (or entry barrier) as such (Baumol, Panzar and Willig 1982, p. 291).

The special hurdle for new firms with sunk costs is that entry on a large scale in a concentrated market may result in a more than anticipated fall in the price:

> .... "contestable markets" ... presumes the existence of "hit and run" entrants who are able and willing to enter an industry whenever profit opportunities arise. Such entry makes sense if the potential entrant has little at risk. ... The key ... is how quickly prices move in response to new entry. ... If prices move quickly in response to entry, then hit and run entry becomes very risky if there are any sunk costs (Gilbert 1989, p. 112).

Sunk costs provide an advantage to being first in a market. While market pioneers would like to receive suitable recompense for their sunk costs, bygones are bygones. If an investment cannot be recovered, even in the event of bankruptcy, the associated costs will not influence current decisions.

The basic concern is that latecomers know that the market pioneer is willing to charge a price that does not cover its sunk costs. Without entry, the incumbent may enjoy supra-normal profits, but if entry occurs, both the newcomer and the established firms incur losses (Shughart 1990a, p. 123).

A potential entrant must decide to invest wealth that it will not get back if post-entry prices fall by more than expected and the attempted entry fails. In particular, if prices fall after new entry, an incumbent firm is viable for as

long as its marginal revenue exceeds its marginal costs. In contrast, a prospective entrant must take its sunk costs into account because it has not yet borne them. Thus, new entry is less attractive unless there is a premium to compensate for this additional risk. Market pioneers, by definition, do not face risks arising from the ability of incumbents to ignore their sunk costs when setting prices (Baumol, Panzar, and Willig, 1982, pp. 290-91).

The Canadian Bureau of Competition has argued that:

> In addition to the various start-up costs that new entrants are often required to incur ... potential entrants may face significant sunk costs as a result of a need to:
>
> [i] make investments in market specific assets and in learning how to optimise the use of these assets;
>
> [ii] overcome product differentiation-related advantages enjoyed by incumbent firms; and/or
>
> [iii] overcome disadvantages presented by the strategic behaviour of incumbent firms.
>
> Each of these potential sources of sunk costs can create significant impediments to entry by presenting potential entrants with a situation where they must factor greater costs into their decision making than incumbent firms that have already made their sunk cost commitment, and can, therefore, ignore such costs in their pricing decisions. This asymmetry typically presents potential entrants with a recognition that they face greater risks and a lower expected return than what is faced by incumbent firms. In general, risk and uncertainty increase, and the likelihood of significant entry decreases, as the proportion of total entry costs accounted for by sunk costs increases (1991).

Strategic behaviour

A new entrant's expectations about the reaction of incumbents to entry can be an entry barrier in itself (PSA 1994a, p. 15). In particular, an incumbent firm may determine its own sunk costs with a view to deterring new entry with strategic over-investments and under-investments.

> The original intuition here, often associated with Joe Bain, was that under suitable if vaguely specified cost and demand conditions, incumbents could profitably diminish entry incentives (Peltzman 1991b, p. 206).

Strategic investments intentionally compromise productive efficiency in order to protect an established market position. Although there are costs from carrying excess capacity, the pay-off may be lower but more secure excess profits. Sunk investments in excess capacity may lead potential entrants to expect new entry to trigger aggressive price cutting. An incumbent firm with large sunk costs has more to lose if there is successful new entry, so it has

stronger incentives to fight, and may have the capacity to do so at a relatively low marginal cost. However, as Shughart observed:

> Two general points about entry-deterring strategies are worth making at the outset. First, it costs something to block entry. ... [Second, if] the outsiders are less efficient (have higher costs) than the insiders, conscious attempts to deter entry are unnecessary. Similarly, if the outsiders are more efficient (have lower costs) than the insiders, then entry-deterring strategies will be ineffective. Thus the possibility that established firms in an industry can jointly undertake actions that prevent the entry of new firms into an industry is of concern only if such actions block the entry of *competent* rivals (1990a, pp. 127-28).

Although there is evidence that the incumbent firms in some markets do respond aggressively to new entry as it occurs, the empirical support for the proposition that established firms act *strategically* to discourage potential entry is largely anecdotal (Gilbert 1989, pp. 118-25). The empirical literature also gives mixed signals about the strategic use of sunk costs:

> ... the technological characteristics of most industries are such that a single firm could not commit to a production level that prevented entry, even if it had desired to do so. For most industries, the fact that some costs are sunk is not sufficient for a single firm to maintain observed levels of output, and this is a necessary condition to deter entry. ... The available studies constitute only fragile evidence that established firms take potential entry into account when developing their competitive strategies (Gilbert 1989, p. 118).

In practice, it is hard to tell which investments are strategically motivated to deter new entry. For example, rational competitors will carry excess capacity to serve seasonal peaks. New entry may coincide with technological advances or more optimistic expectations about the growth of demand. Either way, entrants and incumbents expand capacity and sharpen their marketing strategies in order to seize new opportunities rather than to fight each other.

An additional practical complication when there are multiple incumbents, such as in the beer, petroleum, snack foods and beverages industries, is that strategic investments have to be undertaken by all major sellers. Strategic investments compromise productive efficiency.

If a strategic investment in excess capacity is undertaken other than on a market-wide basis, non-participating incumbent firms will obtain a wind-fall cost advantage. Inter-firm agreements over much simpler issues such as price fixing are notoriously unstable and short-lived and, importantly, they do not require lasting changes in the internal workings of the firms concerned.

Bork has observed that incumbent firms will encounter considerable difficulties if they attempt to co-ordinate their efforts to deter new entry with sunk costs, fight entry as it occurs, and re-coup the intervening losses:

> ... a conspiracy to predate would be incalculably more difficult [than predation by a single firm]. The conspirators would have to allocate losses during the fighting and also allocate the gains afterward. Aside from the dangers of entry, there would be the very real dangers of cheating by some of the conspirators and of the detection of the illegal price-fixing necessary for the conspirators to recoup their losses and make additional returns (1993, p. 66).

Co-ordinated strategic investments incur up-front costs; they have a dubious legal status under the Trade Practices Act; and the pay-offs are distant and uncertain. The complexities of inter-firm co-ordination about the strategic use of sunk costs may mean that they are a minor issue in industries that have more than one significant incumbent firm.

A benchmark for identifying significant barriers to entry

Antitrust law enforcement agencies in the USA, the European Union and Australia are tending to focus on long run entry conditions, and in particular, whether new entry is timely, likely and sufficient to constrain the market power of incumbents (Ordover and Willig 1993, p. 148; Jones and Gonzalez-Diaz 1992, pp. 143-44; Hay and Walker 1993, pp. 44-45).

The Commission considers that the practical importance of sunk costs can be clarified by shifting the focus from type or size of an asset to the length of time before there is successful new entry into a market in response to non-competitive pricing. In particular:

> Analysing entry in terms of barriers can be misleading in that many so-called barriers are often nothing more than requirements for entry that entrants with varying degrees of ability can meet. Requirements that may reduce the probability of entry are those with significant (relative to the scale of the business) fixed costs that cannot be substantially recovered through resale in the event of exit. Highly specialised and costly production equipment for which there is no resale market is an example; delivery trucks would not be a good example because they can be readily used in a number of different businesses (Tollison, Kaplan and Higgins 1991, pp. 91-92).

It may be more informative to develop a benchmark to analyse the speed, likelihood and effectiveness of entry in response to non-competitive prices. For example, the PSA has said regarding entry barriers into the instant coffee industry that:

> ... the new entrant needs to establish its presence. Confidential information supplied by all three declared companies suggested that a new entrant would need to spend in excess of $2 million in advertising and promotion over the first year or

> two. ... Such promotional expenditures constitute sunk costs ... (1992b, pp. 41-42).

It is not clear whether a $2 million advertising campaign is a small or large outlay for new entrants. As the PSA observes:

> If there are few sunk costs, unsuccessful entry does not result in a substantial penalty and potential entrants are less likely to be deterred (1994a, p. 15).

Does the desire of investors to recoup $2 million in advertising related sunk costs represent a small or large charge against future cash flows in the coffee industry and for how long? An assessment of the prospects for entry depends not only on determining that entry is possible, but also that it is likely:

> Theory has demonstrated the crucial role of sunk costs ... but it has not indicated how large sunk costs must be or how long investments must be committed in order to deter entry. ... Experience teaches that entry can be a powerful engine for competition ... experience also teaches that market power may be exercised for a long time despite the possibility of entry (Hay and Werden 1993, pp. 174-75).

The Commission considers that a maximum pay-back period on sunk costs is a useful way of determining whether new entry is especially difficult or risky.

The specification of a pay-back period for sunk costs would help to identify significant impediments to new entry from, for example, scale and scope economies or product differentiation. Since the early 1980s, the Antitrust Division of US Department of Justice has used the pay-back periods on sunk investments to clarify entry conditions (Willig 1991, pp. 305-11).

No investor would embark on a venture with sunk costs unless there is a reasonable expectation of re-payment from later profits. Sometimes new entry involves sunk costs that can be recovered after a short period of trading. In some markets, sunk costs may take years to recover. The longer the lags in achieving successful new entry, the more costs that may have to be sunk, the more likely that entry costs may increase over that paid by incumbents, the more likely are unexpected changes in market conditions, and the more time that incumbents have to react to entry. At some point the pay-back period on the sunk costs are so long that new entry is especially risky (Hilke and Nelson 1993, pp. 369-78).

The re-coupment period on sunk cost is the demarcation line in the US Merger Guidelines between firms that can engage in low-cost ‘hit-and-run entry’ and prospective entrants who must make a long term commitment to an industry and incur significant sunk costs in the process.

> Sunk costs are ‘significant’ if they would not be recouped within one year of the start of production of relevant products, assuming [a] 5 per cent increase in prices in the relevant market. A useful rule-of-thumb for the test of the significance of

> sunk costs may be this: where the annual revenues derive from the base price (usually the prevailing market price) are approximately equal to the annual long run costs of production, sunk costs are significant under the Guidelines' definition if and only if they exceed about 5 per cent of either figure (Ordover and Willig 1993, p. 142).

However, it has been argued that the US Merger Guidelines are unrealistic when they set re-coupment in more than one year as the test for significant sunk costs and two years as the benchmark for timely and effective new entry. Two leading commentators have observed that:

> ... planning and executing entry in many industries can take well over two years; I agree with Fisher that a longer test period may be appropriate (Schmalensee 1987a, p. 53).

For example, Hilke and Nelson (1993, pp. 379-84) surveyed over 200 US industries and found that roughly two-thirds had entry lags of longer than two years when the entrant starts from scratch.

The Commission suggests that a pay-back period on sunk costs of five years may be a more appropriate benchmark for identifying significant entry barriers. Given the normal planning and construction lags of new ventures and the tendency for businesses to run at a loss during their start-up period, five years is a common milestone in judging the commercial success or failure of ventures.[13] It is also the case that the majority of new firms close within five years. However, this does not stop new entrants contributing a significant proportion of production (Carlton and Perloff 1994, p. 112).

The relevance of sunk costs is qualified by the likely price impact of new entry. For example, the second firm in a market is likely to have a significant price impact, whereas somewhere between the third and fifth firm in a market, there may be little or no price impact from additional entry (Carlton and Perloff 1994, p. 112).

The risk from sunk costs is that, following large scale new entry, the fall in post-entry price may be much larger than planned. Once there are already a number of incumbents, the price impact of new entry is unlikely to be large and unpredictable, so there is little danger of new entrants with sunk costs being caught unawares by unforeseen events.

[13] The investment horizon for some industries is much longer than five years. The infrastructure of the energy, communications and transport industries are capital intensive, industry-specific and durable. Investors must incur large sunk expenditures which have pay-back periods which are often decades long (PSA 1994g, pp. 33-34).

Barriers to imports

Important barriers to imports include regulation (for example, quotas and quarantine restrictions) and natural protection. Natural protection exists where transport costs are high relative to production costs, or where there is a lack of information about import opportunities. Moreover, as noted earlier, in some markets the expansion of imports may be constrained by the operations of international cartels or through parent company ties.

Tariffs and, in many cases, natural protection can raise the costs of importing, without constituting an absolute barrier. In these cases, imports will still provide some discipline on domestic pricing over time, although not as much as otherwise. The removal of import quotas and the phasing down of tariffs for many goods have heightened the discipline of the world market on domestic prices.

Many goods or services that are currently imported were previously thought to be non-traded because of natural protection. For example, Portland cement, steel pipes and tube, and clear float glass have been subject in recent times to anti-dumping complaints. Imported 'dumped' Portland cement, for example, was able to secure 15 per cent of the Victorian market (Anti-Dumping Authority, 1992).

Summing up

Many of the barriers to entry identified by the PSA are surmountable in time, although sometimes the wait may be protracted. Moreover, product differentiation, economies of scale and scope, vertical integration, and strategic behaviour do not, in themselves, result in a cost inequality between incumbents and entrants.

The barriers to entry that might be of concern are those involving costs which put new entrants at a distinct risk disadvantage relative to established firms; and regulatory barriers such as quotas and statutory monopolies.

The PSA could usefully adopt a pay-back measure for sunk costs as a benchmark for assessing the significance of factors it regards as barriers to entry. A five year pay-back period for sunk costs would identify those barriers to entry that are substantial.

2.3 Co-ordinated behaviour among sellers

An issue arises as to whether the collusive exercise of market power – a problem commonly associated with domestic oligopolies – is a sufficient problem to justify prices surveillance:

> One needn't be a hairsplitter (though it helps) to worry about whether competition exists in effective measure if there are only a few business firms in an industry. Why couldn't and wouldn't they agree to set highly profitable prices, especially if they did not fear the appearance of new rivals? And suppose, as I believe to be the case, agreement is unlikely to work at all well with ten separate firms, and hence with more than ten, what about independent rivalry if there are only two or three (Stigler 1988, p. 93)?

Co-ordinated interaction between sellers has two forms. The first is under the auspice of a cartel. The second, if market conditions are ripe, is the development of implicit understandings about prices.

However, a higher price is not likely to last long, or even be reached, unless each seller expects that deviations from the new price will result in reprisals. In a concentrated market, each seller may come to understand that changes in their own price will trigger similar or magnified responses by rivals that may cause the supra-competitive prices and profits to be lost. The faster and the surer are these reactions, and the more severe and long-lasting is the resulting drop in price, the more likely that an acquiescent environment will emerge where higher prices persist for a significant time (Ordover and Willig 1993, p. 145).

Cartels can be attacked under the Trade Practices Act, so the residual target for prices oversight is tacit co-ordination. The lack of an overt agreement puts this form of price fixing beyond the reach of that Act (see Box 2.2).

The details of oligopolistic co-ordination are poorly defined There are a proliferation of oligopoly models and these are acutely sensitive to the way problems are defined and to the assumptions made. The principal result of oligopoly theory is that almost anything can happen (Fisher 1989, 1991). For example, in a market with two firms, a variety of theoretical possibilities can arise, including perfect competition (pricing at marginal cost), depending on how the two rivals view their mutual interdependence. There has been so little progress with oligopoly theory that:

> The theoretical inspiration for this literature was and is no more than the vague notion that the departures from competition should be more pronounced the more an industry's output is concentrated in a few firms (Peltzman 1991b, p. 208).

Box 2.2 Tacit co-ordination and the Trade Practices Act

The Trade Practices Act prohibits price fixing arrangements between competitors. Australian case law suggests that an essential requirement of an arrangement is the meeting of minds and that this should give rise to mutual obligations or expectations. Although parallel pricing behaviour might be inevitable in oligopolistic industries, there appears to be insufficient evidence to establish that the necessary understandings have arisen (Corones 1990, p. 222).

It is not easy to distinguish competitive from collusive pricing. First, a simultaneous price rise may reflect industry-wide cost changes or rising demand. Secondly, identical prices would be expected in any industry where buyers have good information and the products of each seller are the same. Third, uniform price movements may stem from firms following the prices of the largest firm because it may be better equipped to detect changing market conditions.

Competition law enforcement agencies that attempt to detect tacit collusion would have to undertake continuous monitoring of prices in concentrated industries. This would require repeated difficult determinations of whether an unreasonable increase has occurred (Scherer 1977, pp. 983-84). It is doubtful that practical standards could be developed for the court room environment of incomplete facts, disputed interpretations, and limited judicial training in economics (Kovacic 1992, p. 304).

It is difficult to construct an effective penalty for tacit collusion. An injunction is impractical because so many factors affect price that it is impossible to ascertain if the order of the court is being obeyed or not. If a fine is imposed, those subject to penalty can rightly ask what precisely did they do wrong in the past, and what conduct are they to refrain from in the future (Breyer 1977, p. 67). How is it possible to order a business to set its prices without regard to those of its direct rivals?

Attempts to prosecute oligopolies by attacking specific business practices that may surround tacit collusion such as advance public notice of price changes and uniform delivered pricing have failed in the courts because such practices have both pro-competitive and anti-competitive explanations (Hay 1989; Corones 1990, p. 222). For example, in the 1970s, the US Department of Justice and the Federal Trade Commission pursued ambitious, innovative cases involving tacit collusion (and strategic entry deterrence). Despite the commitment of those agencies' best resources to litigation that lasted for up to a decade, the cases failed. (Kovacic 1992, p. 304).

The consensus view is that cases against tacit collusion are not worth pursuing because they will degenerate into expensive contests that turn on which expert economic witness is more credible — enforcement authorities would do better to focus their efforts on searching for cartels (Corones 1990, pp. 203-23).

For example, the hallmark of co-ordinated interaction is that it is profitable for each firm only if all or almost all other sellers participate. This is because:

> If three of the four significant firms in a particular market agree to eliminate some form of competition among themselves, they remain subject to the competition of the other firm in the market. As a practical matter, agreements to eliminate competition are almost always formed on a market-wide basis, precisely because they would otherwise be doomed to defeat by the competition of any firm that is not party to the agreement (Ginsberg 1991, p, 100).

The exercise of collective market power will not be stable unless sellers agree on prices and production shares; on how to divide the profits; on how to enforce the agreement; on how to deal with cheating; and on how to prevent new entry:

> The cartel is in the unenviable position of having to satisfy everyone, for one dissatisfied producer can bring about the feared price competition and the disintegration of the cartel. Thus a successful cartel must follow a policy of continual compromise (Patinkin 1947, p. 200).

However, markets are complex and vary in their pre-disposition to collusion.[14] It is now common practice to examine the stabilising and destabilising forces in individual markets and to recognise that competitive behaviour may be observed with high seller concentration if destabilising forces predominate (Schmalensee 1983, p. 82). For example:

> ... when sellers are few in number, there are incentives for them to recognise their interdependence and to cooperate in policies that lead to maximum group profits Institutions such as outright collusion, price leadership, pricing by rule of thumb, and focal point pricing facilitate the maintenance of prices above the competitive level. ... [However,] there are important limits on the ability of monopolists and oligopolists to hold prices at highly profitable levels. Oligopolistic co-ordination may break down owing to conflicts over the most suitable price, heterogeneity of products, the pressure of under-absorbed fixed costs, secret price cutting, or simple cussedness on the part of some maverick producer. To this list we now add long-run substitution and the threat or actuality of entry by new competitors. Both place a ceiling — sometimes a low one — on producers' pricing discretion (Scherer and Ross 1990, p. 410).

While a cartel is difficult to organise, the obstacles to tacit co-ordination are even more pronounced. A large industry must make an intricate pattern of decisions at any time for the many product and geographic areas in which it operates, and these decisions must be revised fairly often.

A tacit understanding between sellers about prices may only induce them to compete on non-price grounds, which are generally too subtle and too numerous to be constrained by an unarticulated agreement. Hay and Werden have said that:

> The most telling objection to all oligopoly models is that they are too simplistic, ignoring essentially dynamic and strategic aspects of competition (1993, p, 174).

[14] A market is most pre-disposed to collusion if there are: a few major sellers; there are many buyers; new entry is slow; a standard product is sold; price competition is more important than other forms of competition; and demand is static or declining over time and is fairly insensitive to price increases (Posner 1992, pp. 287-88; see also IC 1992c, p. 35).

Formal cartels meet to agree on prices and on how to deal with internal defection, outside competition, new entry, changing market conditions and technological change.[15] Face-to-face communication allows the greatest opportunity to talk over differences, and if there is a compromise, all participants know the new plan. Tacitly colluding sellers face all the same co-ordination problems of cartels, including the recruitment of all significant sellers, so the firms concerned must find a credible substitute for overt communication about their solution.

Williamson (1975, p. 240) illustrated the complexities of tacitly displacing competition with a study of co-ordination *within* a single multi-division enterprise. The resulting model contained about a 1000 variables and 750 constraints. Williamson observed that replicating such an agreement through tacit collusion in the more complex environment between independent firms "boggles the mind." This led Williamson to conclude that:

> ... it is naive to regard oligopolists as shared monopolists *in any comprehensive sense* — especially if they have differentiated products, have different cost experiences, are differently situated with respect to the market in terms of size, and plainly lack a machinery by which oligopolistic co-ordination, except of the most primitive sort, is accomplished and enforced. Except, therefore, in highly concentrated industries producing homogeneous products, with non-trivial barriers to entry, and at a mature stage of development, oligopolistic interdependence is unlikely to pose antitrust issues ... In the usual oligopoly situation, efforts to achieve collusion are unlikely to be successful or, if they are, will require ... explicit communication ... (1975, p. 246).

The extent of tacit co-ordination is ultimately an empirical issue.[16] The initial evidence of extensive tacit co-ordination consisted of several hundred studies undertaken between 1950 and the early 1970s which found that, in most cases, industry profits rise with seller concentration. This correlation was regarded as a consequence of market power. By the end of the 1970s, however, the interpretation of the correlation between profits and high concentration was regarded as ambiguous. The above-normal profits could be the result of superior efficiency, market power, or both. By the end of the

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[15] Cartels attempt to overcome potential cheating by, for example, bid rigging, common sales agencies, pooling of revenue, territorial allocations and the exchange of price and other information (Landes 1984, pp. 75-76).

[16] Specific evidence of effective collusion includes unusually stable market shares; regional price variations that cannot be explained by differences in costs or demand; a sudden unexplained increase in industry profits, followed by a gradual decline; a sudden unexplained increase in price coupled by a reduction in output; a declining market share among the leading firms in an industry; market-wide resale price maintenance; market-wide price discrimination; and a high elasticity of demand at the current price (Posner 1992, pp. 288-89; see also IC 1992a, p. 35).

1980s, further more sophisticated studies demonstrated that most, if not all, of the correlation between profitability and concentration was almost surely spurious (Scherer and Ross 1990, p. 411).

The more recent view of oligopolies is that the complications that stand in the way of successful inter-firm co-ordination are such that tacit collusion seems unlikely to occur unless the oligopolists undertake overt actions to circumvent these complicating factors (Hay 1982, 1989; Salop 1986):

> ... Prices often hover closer to cost than one would predict from an analysis that takes into account only the fewness of sellers, ignoring co-ordination obstacles and long-run constraints. These more subtle structural and behavioural variables help explain why pricing performance in modern industrial markets has on the whole been fairly satisfactory despite significant departures from the structural ideal of pure economic theory (Scherer and Ross 1990, p. 410).

Australia's experience with highly concentrated industries suggests that competition is resilient in oligopolistic industries. For example, the PSA (1991b, p. 36) found that the pre-mixed concrete industry behaved competitively despite high levels of seller concentration and extensive vertical integration among the three major suppliers. Moreover, barriers to entry and exit were minor due to the low level of technology required for efficient small scale production. Although the industry is prone to allegations of price fixing, the PSA (1991b, pp. viii - xi) found that the three major companies have low profits; that there is extensive price discounting and strong competition for market share; and that most markets have a fringe of smaller independent companies.

Similarly, although food and grocery retailing is an oligopoly with most sales occurring through the major supermarket chains, the PSA (1986, pp. 46, 88) found that the sector was generally competitive, and that there was no evidence that above average profit levels would not quickly draw a competitive response. ABARE (1987, p. 3) also found that new firms can enter the food processing and beverages industries without difficulty.

The Industries Assistance Commission (IAC 1989, pp. 67-78) found no reduction in competition in the food processing and beverages industry after extensive regional and state rationalisations had resulted in a few firms having dominant positions in most sectors. Any exercise of market power was constrained by competition from imports, a wide range of good substitutes, and the possible entry of other firms.

Rising seller concentration was common in the food and beverages industries of most developed countries, indicating that relatively uniform forces — such as the influence of underlying technologies, size economies and product

differentiation — were responsible (IAC 1989, p. 68). Lynk said (in regard to the US beer industry):

> For a product like beer, effective competition depends on product taste and quality, packaging, and promotion, all in addition to price. Those who deliver a better product — say through lower prices or a taste more people prefer — will grow, and they will do so in part by displacing the sales of less effective brewers. If firm-specific superiority tends to persist over time, concentration of sales toward these firms will grow over time, limited ultimately by any upper bound on efficient firm size.
>
> This evolution will be accelerated, if as is likely the case here, many firms are below the minimum size now required for efficient operation. If the minimum scale required for long term survival rises, not all firms can grow to optimal scale; some must exit Ordinarily this will occur gradually, as firm-specific (and brewing-specific) capital is used up and not replaced. Concentration will rise as this capacity re-configuration takes place (1984, p. 45).

For example, the recent mergers and takeovers in the Australian beer industry replaced a number of regional and state based firms with two national brewing companies. Aggressive marketing and the development of new products have resulted in the two national brewers competing more vigorously than their numerous state-based antecedents for a share of the declining alcoholic beverages market (IAC 1989, pp. 68-78).[17]

In *Petty v. Penfold Wines Pty Ltd (1993)*, the Federal Court held that the relevant market was the sale of all alcoholic beverages throughout Australia, and noted that there was fierce competition in that market. The Court also held that there was no evidence to suggest that separate markets existed for each of wine, beer and spirits.[18]

Tampons are declared products that are supplied by an oligopoly. When Johnson & Johnson were first declared under the Act in 1986, it had an 81 per cent national market share.[19] It has since lost almost a third of its market share, mostly to Sancella Pty Ltd. The past few years has seen a significant

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[17] The per capita consumption of beer has fallen by 30 per cent since 1976-77 and its CPI weighting has dropped from 4.18 per cent in 1982 to 2.9 per cent in 1994 (CUB 1994, p. 11).

[18] In holding that the relevant market is all alcoholic beverages, the Federal Court rejected submissions from the applicant that there were distinct markets for retail sale of still wine, for champagne, and for fortified wine, as well as three distinct discount retail markets for the same wines. In holding the geographical market to be national, the Court rejected both the applicant's submission that the relevant market was the North Shore of Sydney, *and* the respondent's submission that the relevant market was the whole of the Sydney metropolitan area.

[19] Although there are three suppliers, Johnson & Johnson Australia Ltd is the only declared company.

increase in product innovation in tampons and external sanitary protection and a marked growth in advertising and marketing. Although Johnson and Johnson's main competitor has a range of products (Libra Fleur) with a higher wholesale price, the PSA has observed that competition in the tampons market is increasing, and this may account for the lack of price increases. For example, Johnson and Johnson's last price notification was on 30 June 1992 for cost increases dating over the past two years or more (PSA 1992a, p. 49; 1994d, p. 7; 1994i, p. 5).

If prices surveillance were to have a role outside of monopolies, the domestic airline and long distance telephone call duopolies should be prominent candidates. The recent reforms to these two industries approximate a natural experiment to test the relative merits of regulation and competition in constraining prices in concentrated markets. In particular:

> Opponents [of deregulation] argue that most regulated industries are inherently oligopolistic. As a result, they claim, deregulation causes prices to shoot through the ceiling because smaller firms are driven out of business and remaining ones often collude. They also contend that, without controls, service and quality fall (Carlton and Perloff 1994, p. 900).

The evidence when there is a second firm in the market, is that rivalry is strong and prices fall by far more than what could be promised by price capping:[20]

- in real terms, average air fares were 25.4 per cent lower in the March 1994 quarter than prior to deregulation (PSA 1994i, p. 15); and
- the entry of Optus accelerated the rate of decline in long distance telephone charges — AUSTEL estimates that the cost of a five minute long distance telephone call between Sydney and Melbourne fell by between 14 and 23 per cent in the 12 months to June 1993 (IC 1993a, p. 9).

The Australian experience of strong rivalry within the airline and long distance telephone call duopolies ties in with recent US studies. That research suggests that many oligopolistic industries have little or no collective power to raise prices substantially above costs for extended periods of time.

[20] For example, the 1992-95 price cap for Telstra's long distance phone calls is CPI minus 5.5 per cent per annum. Sub-caps on individual services limit the scope for cross-subsidisation. The sub-caps are CPI minus 5.5 per cent per annum for international calls and CPI minus 2 per cent per annum for connections, rentals and local calls. In addition, the charges for individual services within connections, rentals, local calls and truck calls are capped to rise by no more than the change in the CPI for any one year.

Moreover, market power tends to be held by the largest firm in highly concentrated markets and can rest on superior efficiency:

> Profitability is positively associated with a seller's own market share, but there is little evidence, at least in recent richly disaggregated data, of a positive association between profitability and indices of seller concentration independent of the profit-market share correlation. Evidence of the exercise of market power — the power to raise prices above marginal costs — arises in concentrated industries. That power appears to be wielded not collectively but rather by the leading seller, especially when that firm has a cost or price advantage over its rivals (Scherer and Ross 1990, p. 446).

The Australian experience with the deregulation of concentrated industries cross-checks with that of the USA. The deregulation of US oligopolies resulted in more efficient and lower-priced industries (Winston 1993, pp. 1272-83).

Studies of the US airline and telecommunications deregulation back up the more anecdotal evidence concerning counter-part industries in Australia; that strong rivalry is possible when there are a small number of competitors. As discussed in Box 2.1, Borenstein (1992, p. 53) found that prices drop sharply when a second and a third competitor enter. On the other hand, Evans and Kessides (1993, pp. 461-62) found that the major price change accompanied the move from monopoly to duopoly. The price reductions from adding a third and fourth competitor were slight.

Likewise, the US long distance telephone market appears to be competitive even though it has only three significant carriers (MacAvoy 1992). Since limited deregulation in 1984, AT&T's overall share of long distance phone calls has dropped from over four-fifths to about three-fifths of the market (Noam 1993, p. 443). Competition for business customers has been particularly fierce. AT&T's share of the large business market has halved even though it has consistently set prices for its business services that are below that required under US price cap regulations (Taylor and Taylor 1993, p. 189).

The US evidence that is most relevant to Australia consists of several studies of insular markets comprising a few sellers of professional and retail services (such as doctors, dentists and plumbers). Studies of monopolies, duopolies and oligopolies in geographically isolated towns and small cities in the USA suggest that competitive conduct changes quickly as the number of sellers increase. Although the first firm in the market can charge a high price, the entry of one or two other suppliers usually results in effective competition. Once there are three to five suppliers, the next entrant has little impact on competitive conduct. Most of the increase in competition comes from the

entry of the second or the third firm (Bresnahan and Reiss 1988, 1990, 1991).[21]

The evidence from a variety of highly concentrated industries in Australia and the USA suggests that effective competition in markets with three or less significant rivals is much more than a coincidence. This relationship is sufficiently robust across industries and national borders to throw doubt on the extent of substantial collective market power over declared products such as biscuits, ready-to-eat breakfast cereals, coffee and tea, petroleum products, cigarettes, and toothpaste.

> In general, the best data in support of the proposition that competition is less vigorous in the most concentrated markets derives from rather atypical markets that come closest to the model of perfect competition. One involves Portland cement, where the product is virtually homogenous. Auction markets are another source of concentration-price data. There is evidence that, at least over a certain range, an increase in the number of bidders results in a higher price if the auctioneer is selling and a lower price if the auctioneer is buying. An auction, however, involves an inherently homogenous product. All bidders seek to buy the same item or to supply an item pursuant to the same specifications. The implications of the auction data are of uncertain generality, therefore, because most product markets do not resemble auctions any more than they resemble the model of perfect competition.
>
> There is also some anecdotal evidence in support of the proposition that concentration short of monopoly tends to dampen competition ... Such evidence is not very helpful, however, because there is at least as much anecdotal evidence to the contrary (Ginsberg 1991, pp. 94-95).

The experience of the domestic beer, airline and telephone duopolies, together with the recent US studies, suggest that duopolistic collusion and substantial market power cannot be presumed. That is, while from time to time, there will be shortcomings in the pricing performance of some duopolies — which, in comparison to monopolies, result in modest overcharging of consumers — many other duopolies are competitive. The beer industry is the only major duopoly subject to prices surveillance; however, the PSA's (1992a, p. 41) view is that competition is intense and most price notifications relate to the introduction of new products.[22]

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[21] Most studies of seller concentration and price find a statistically significant relationship that is positive, but small, and many studies yield contrary results (Schmalensee 1989, p. 988; Werden 1991, p. 6).

[22] Lynk (1984) found that competition was the better explanation of rising concentration in the US beer industry. The shift of sales from the smaller to the two largest brewers was due to price reductions; and the increased seller concentration in individual states was irrelevant to the performance of the industry.

3 FORMS OF PRICES SURVEILLANCE

In principle, prices surveillance should only be used where it yields net social benefits. This will depend on the costs of excessive prices, the scope for government action to moderate such excesses, and the direct and indirect costs of intervention. Thus, the nature and effectiveness of prices surveillance is as much at issue as the problem it is intended to address. The form of surveillance takes on added importance where market power is not clear-cut.

For example, the PSA is not perfectly informed, and no regulation is costless to implement and enforce. Moreover, the PSA only considers price rises, so the possibility that the initial price level is excessive, or becomes so as costs fall, is not addressed:

> The Prices Surveillance Act provides for the pre-notification of price increases. However in a low inflation environment, the exercise of market power may be through the withholding of cost reductions. For example, the PSA found that international shipping conferences were failing to pass on the full cost savings generated by waterfront reforms in lower terminal handling charges. The philosophy underlying the Prices Surveillance Act also appears to be one of cost plus pricing (PSA 1993d, p. 21).

Any analysis of prices surveillance must consider the short and long run incentive effects; the suppleness of the regulatory instruments used; the unintended consequences and unavoidable side-effects; the information available to the PSA; and the responses of the regulated firms. There are also compliance costs (such as the cost to firms of providing information to the PSA) and administration costs (such as the budget of the PSA).

The Industry Commission has commented on the costs of prices surveillance in several past inquiries. For example, in *Raw Materials Pricing for Domestic Use*, the Commission found that prices surveillance was likely to be detrimental to improved pricing efficiency by steel pipe and tube manufacturers. It may also undermine new investment by restricting the ability of firms to maintain a viable rate of profit through flexible pricing over peaks and troughs in demand (IC 1992d). In its inquiry on petroleum products, the Commission noted a worst case scenario in which PSA intervention could facilitate tacit collusion by providing a benchmark to which prices return after a period of discounting (IC 1994).

The overseas experience with price regulation is not encouraging. For example, studies of the US public utility, transportation and petroleum products industries found that price controls: had no significant effect on prices in times of low inflation; resulted in excessive price reductions in more

inflationary times; caused over-capitalisation and cost padding; and focused on the absolute dollar size of increases and the public profiles of the products rather than efficiency norms (Breyer and MacAvoy 1987, pp. 131-32).

In this chapter, two forms of prices surveillance are examined:

- cost-based prices surveillance (the main form used by the PSA); and
- CPI minus X price caps (which was raised by the Assistant Treasurer as an alternative).

3.1 The PSA's current approach

The PSA (1991a, p. 77; 1994g, p. 20) characterises its current approach as a cost-based (or rate of return) pricing policy. The PSA's focus on an adequate rate of return and unit cost movements flows from the requirements of the Act and a 1985 ministerial direction to generally not support price rises in excess of increases in unit costs.

The PSA's application of what has come to be known as the unit cost direction is not mechanical. The unit cost direction provides for price rises in excess of unit cost increases if this is considered necessary to address low profitability or to maintain investment, and some types of price increases are excluded.

> In the past, the Authority has applied a relatively strict interpretation of the Unit Cost Direction in reviewing notifications ensuring that price movements have been related to cost movements between notifications. Recently, the PSA has been willing to apply more flexible approaches to prices surveillance, which are, nevertheless, still consistent with the Unit Cost Direction. For example, it has applied this direction over a longer time-frame, sometimes for a period covering two or three notifications (PSA 1994g, p. 6).

The PSA's 1987 Guidelines for Pricing Restraint take account of the unit cost direction and other relevant matters. The Guidelines are largely written in general terms, but some are prescriptive, such as the following:

> (4) The Authority is unlikely to endorse price increase proposals that are based on benchmark profit targets unless it is convinced that the targets are compatible with a competitive environment.
>
> ...
>
> (7) For cost increases in excess of general cost movements, detailed analysis and justification will be required. Input cost increases are expected to be offset by input cost reductions whenever applicable.

(8) The Authority will generally be unsympathetic to price increase proposals based on anticipation of cost increases. It will prefer to endorse only known or actual cost increases for inclusion in prices (PSA 1994j, p. 15).

More recently, the PSA (1994j) has devised *Pricing Guidelines for Efficiency and Fairness* which build on the 1987 guidelines. These are based on four general principles:

- pricing decisions should reflect efficient pricing principles including marginal cost pricing, and facilitate best practice operation;
- the basis of pricing decisions should be transparent, with all community service obligations, taxes and subsidies, clearly identified and costed;
- where price regulation is implemented, the basis for decisions should be publicly available to promote accountability and efficiency in pricing outcomes; and
- productivity gains should be shared with consumers as lower prices and improved quality and services (PSA 1994i, p. 1).

There are drawbacks with the PSA's current cost-based approach:

> ... the operation of the Unit Cost Direction has provided limited incentive for cost efficiency, particularly as enterprises operating in less than fully competitive markets can pass on some excessive costs to consumers more easily than enterprises operating in competitive markets. Moreover, where unit costs are still rising, despite productivity gains, the effect of the direction is to ensure that all productivity gains are passed through to consumers. This may discourage firms from undertaking major programs for productivity improvement. To this extent, the Unit Cost Direction may inhibit the achievement of a low inflationary growth path in the longer term (PSA 1994j, p. 11).

These and other problems with cost-based prices surveillance are considered below.

Information requirements

Cost-based prices surveillance is information intensive. For example, it is difficult to ascertain the true cost structures of regulated firms because historic accounting costs rarely reflect contemporary circumstances. Moreover, when there are economies of scale, demand side factors such as peak loads need to be taken into account to ensure full utilisation of capacity. These information requirements are exacerbated where there is joint production of a number of goods and services.

In the course of time, the PSA will inevitably face the need to set prices for new products; respond to the pricing implications of low profits or even loss

making; accommodate new investment; deal with shortages; account for changes in product design and quality; and respond to the avoidance of prices oversight through vertical integration. It follows that to be able to deal with such (normal) business phenomena, the PSA would ultimately need to know everything that the managers of the fifty one declared organisations must know.

In cases where more than one seller is subject to prices surveillance — such as for beer and petrol — the PSA's information quandaries multiply because there are a proliferation of brands, divergences in cost structures and firm sizes, and different capital bases. The PSA's observations regarding the food and grocery retailing sector illustrate this:

> Price surveillance is not exercised currently in relation to retail prices of food and groceries, or other products. The multiplicity of retail outlets is itself a deterrent to such action; the variety of prices charged within the stores of a major chain; and the large number of items stocked in a typical supermarket or food store (some 5,000–6,000) further suggest that detailed surveillance would be administratively unmanageable. ... Case-by-case analysis would probably elicit sufficient information either to ally concern [about possible market power] or to indicate appropriate action by the Authority, but it would be expensive and time consuming (1986, pp. 86-8).

One approach to prices surveillance in a multiple firm market is to derive a price benchmark from the cost structure of the largest firm. The PSA appears to be doing this for toothpaste, coffee and biscuits as price surveillance is limited to the largest seller. While this may lower the information burden for the PSA, and the industry, the benchmark may not account for efficiency differences between the leading and other firms in an industry. The usual goal of prices oversight is to keep prices close to costs. To the extent, however, that the leading seller owes its position to superior performance, its leaner cost structure is a poor guide to the prices that permit less able rivals to maintain adequate profits.

The PSA has no single standard against which to set a benchmark price that ensures an adequate profit margin for each firm in an industry. Natural caution and the statutory requirements regarding the maintenance of employment and investment may relax effective discipline on prices. For example, the PSA's import parity based wholesale petrol price cap is the same for all capital cities, despite differences in the costs of supplying each city. Moreover, the Commission found in its recent inquiry into the petroleum products industry that capital city retail prices, although volatile, were generally only marginally higher than the maximum wholesale price set by the PSA. That is, the strong competition in the capital cities means that the PSA's wholesale maximum is not a constraint on prices.

Price benchmarks based on industry averages have a poor record when applied by other Australian price regulators. For example, price regulation under the two-airlines policy did not prevent relatively low productivity and high and stable profit levels. Moreover, the setting of identical air fares for Ansett and TAA channelled competition into non-price areas and mishandled the implications of market density and distance. For example, fares for long or densely travelled routes were too high, while prices on short or less densely travelled routes were too low (May Review 1986).

Cost padding

If the PSA keeps price rises close to cost movements, it introduces an incentive for firms to cost pad:

> A cost-based approach does restrain profit margins. However, it has the major shortcoming that it puts limited pressure on firms not facing strong competition to achieve cost efficiencies and to improve productivity. Such firms are generally able to pass cost inefficiencies on to consumers. Conversely, their incentive to pursue cost reduction is reduced as any savings will eventually be passed on to consumers through lower prices (Treasury 1993, p. 33)

Moreover, there is an incentive for firms subject to price regulation to deliberately use too much capital relative to labour. Although the rate of profit on capital may be fixed, the stream of profits increases with the size of the capital base of the firm. The May Review (1986), for example, found that the air fare controls administered by the Independent Air Fares Committee encouraged the domestic airlines to employ somewhat excessive numbers of aircraft relative to output levels and the cost of the resulting low-load factors was eventually passed on to consumers as higher prices.

Although the PSA and the now disbanded Independent Air Fares Committee are sophisticated regulatory agencies, it is unlikely that any external supervisory body can succeed in limiting cost padding. For example, although industrial awards provide guidance concerning wage levels, they provide little insight into appropriate staffing levels.

There is little the PSA can do about over-capitalisation because judging the prudence of new investments is subjective and the PSA must respond to price notifications within 21 days. In contrast, US price regulators hold public hearings that can last for several years. These hearings often delve deeply into the cost structures and investment strategies of public utilities. The regulatory agency then approves prices that are based not on present day costs, but on accounting costs from a past and presumably representative year (Breyer 1982, pp. 38-59).

Innovation

A longer term problem for cost-based prices surveillance is that it can chill incentives to innovate. For example, in *Food processing and beverages industries,* the Industries Assistance Commission found that prices surveillance had detrimental long term effects on consumer choice and industry investment (IAC 1989, p. 76).

The PSA must decide if rising profits are due to cost or product innovations, improved market conditions, or newly disguised market power. Differentiating genuine product innovations from sham modifications that dilute product quality to increase profits is not a trivial matter for the PSA. In the two years to June 1993, 159 of the 367 non-petroleum price rise notifications related to new products (PSA 1992a, p. 37;1993a, p. 62).

For example, an important issue in the PSA's 1992 inquiry into the instant coffee industry was the appropriate rewards for innovation:

> .... Nestlé has sustained high and increasing levels of profitability derived from brand loyalty to a superior (both real and perceived) product and superior cost efficiency; the latter deriving both from the company's own efforts and the increased capacity utilisation which in turn has resulted from their increased market share.
>
> While it is reasonable for firms to accrue some reward for their efforts to produce cost efficiently and to provide consumers with high quality products which meet their needs, such very high levels of profitability would not normally be expected to persist in the long run ... new and potential entrants are not yet providing a check on the price setting behaviour of Nestlé ...
>
> Section 17 (3)(b) of the Prices Surveillance Act requires the Authority to discourage the exercise of market power in price determination. Consequently, the Authority is of the view that formal surveillance of Nestlé should be retained at the present time (PSA 1992b, p. 108)

It may not be possible to distinguish more efficient production from the creation of new market power. It is precisely the quest for supra-normal profits and market power that attracts resources into new ways of satisfying consumers. The changing pattern of prices, costs and profits motivates the entry and exit of firms, products and technologies and guides the displacement of old industry structures with new ones. This is why:

> ... disputes about the existence of market power frequently are not simply empirical skirmishes in which one economist's estimate of cross-elasticity is pitted against another. Rather, the debate often goes to the very concept of market power, i.e., what is the economist attempting to measure and what factors are properly considered in assessing whether market power exists (Hay 1992, p. 807).

For example, temporary market power is a common reward for innovation. Although a large market share may engender market power, firms with growing sales promote consumer welfare either by applying more efficient methods of production and distribution to a larger fraction of output, or by rewarding entrepreneurs for producing such benefits in the past.

> ... the combination of information and computer technology has what Chicago economist Sherwin Rosen, in a prophetic 1981 paper, called the "superstar" effect: in many fields modern technology appears to change the nature of competition into a sort of winner-take-all tournament, in which most of the rewards go to a few exceptionally talented or lucky people (Krugman 1994, p. 28).

This dilemma concerning the intertwining of market power, efficiency and innovation is common to competition policy in general:

> For example, consider a new cost-reducing technology which can be most effectively developed by a joint effort of several firms. It is certainly imaginable that, if the cost reduction is big enough, consumer welfare can increase even if the joint venturers are able, say because their static market power is now higher, to prevent price from falling as much as costs. If antitrust policy prevented the joint venture out of some narrow concern for its effects on static competition it would be hindering both progress and, by any sensible definition, competition (Peltzman 1991a, p. 152).

Successful innovators may wind up with most or all of a market, but accrue supra-normal profits only for as long as their new efficiencies offset price discrepancies with their less able rivals. The process whereby an old technology is displaced entails a fall (or at least no increase) in prices because the innovator can win new sales only by under-cutting the higher-cost suppliers. Were this not so, actual and potential rivals could expand using the old technology because of the abnormally high prices. For example, Peltzman (1977) found that, for the most part, profits rose when market concentration increased, not because prices rose, but because prices fell more slowly than costs. The net effect of higher seller concentration was substantial reductions in consumer prices.[23]

The capacity for price regulation to stifle innovation should not be under-estimated. For example, in the past, domestic airlines have been subject to price (and entry) regulation in many countries:

> Many of the fundamental attributes that now characterise the [US] domestic airline industry, such as the hub-and-spoke method of delivery, complex pricing

[23] As already noted in chapter 2, a number of studies suggest that manufacturing industries that experience large increases or falls in concentration tend to show above-average increases in productivity and below-average increases in price (Schmalensee 1989, p. 990).

> schemes, the dominance of many airports by single carriers, the importance of computer reservation systems, and the growth of loyalty-inducing devices such as frequent flyer programs and travel agent commission overrides, did not exist in the regulated airline industry and were not predicted to emerge by proponents or opponents of deregulation. The failure of sophisticated observers to predict these developments demonstrates just how far out of line regulation had taken the industry (Evans and Kessides 1993, p. 450).

Developments after airline deregulation in the Australia suggest that regulation by the Independent Air Fares Committee impeded innovations in pricing and services. For example, although the Independent Air Fares Committee Act 1981 strived for efficient pricing and provided for the approval of a wide range of discount fares:

> Deregulation has also seen the increased availability and wider range of discount fares ... changes in frequency/scheduling of services between destinations, increased capacity in the market place and more varied marketing strategies adopted by the airlines all of which have contributed to a substantial increase in the number of passengers carried (PSA 1994h, p. 19).

An unavoidable tension exists between providing the rewards needed to encourage innovation, and passing on the benefits to consumers. The appropriate rewards for innovation are poorly understood, while the costs of error can be high. For example, Williamson (1977) calculated that, in most markets, a 2 per cent cost saving should offset almost any possible market power and allocative inefficiencies (pricing above cost) related to their creation. Constraining the prices of firms with temporary market power is likely to be counter-productive, because it discourages the search for and creation of the cost advantages that underpin this form of market leadership.

The public interest in innovation is such that, at most, the application of prices surveillance should be restricted to firms that hold durable market power. This is because:

> There is little doubt that over the long run new and better ways of doing things do more for economic welfare than so called static efficiency. The benefits of competitive pricing are not nearly so great as the benefits of inventions, new products, new processes, and other innovations (Areeda 1984, pp. 52-53).

A prices surveillance policy that errs on the side of preserving the incentives to innovate by tolerating the exercise of temporary market power has a natural safeguard. This is the capacity of competitive pressures to erode over time the high profits that result from not applying prices surveillance.

Prices surveillance has no similar subtle capacity to erode errors in price regulation. Prices surveillance declarations and the decisions of the PSA that are mistaken regarding high profits and innovation must be recognised as such and corrected. Unless it is clear that market power is not based on

temporary efficiency advantages, it is better to forego prices surveillance and allow market forces to correct errors of omission.

3.2 CPI minus X price caps

A CPI minus X price cap is a price ceiling based on the difference between the rate of increase in the consumer price index (CPI) and a target for productivity improvements (X). Below the cap, the firm usually has complete pricing freedom.[24]

Several Australian firms are currently subject to this type of price cap. For example, the 1992-95 price cap for Telstra is CPI minus 5.5 per cent (AUSTEL 1993a, p. 55). That is, for the period 1992-95, Telstra's prices can rise by no more that 5.5 percentage points less that the annual rate of increase in the CPI. Australia Post, various state electricity and other authorities, and the New South Wales gas industry are also subject to formal and informal CPI-related price caps.

The initial promise of price caps was that they might offer more incentive than cost-based price regulation to reduce costs, because firms can keep any additional profits from innovations (but must also absorb losses) provided that price rises stay within the cap.

> Under traditional forms of rate regulation, rate of return rather than price served as the instrument of control. But it is price and not the suppliers rate of return that directly affects the economic welfare of its consumers. Who can disagree that consumers are better off if the supplier earns 20 per cent on its investment by selling its product at a price of $50, than if the company's profit rate is reduced to 12 per cent, but the price of its product is simultaneously raised to $75.
>
> True, rate of return regulation does ultimately influence prices, more or less indirectly, but the workings of its effects are complex and often even the direction of its influence may be difficult to predict and will not always favour consumers. The tendency, for many years, of rate of return regulation to force firms to charge prices higher than those they themselves proposed, while in part attributable to other considerations, can hardly be described as a triumph of the regulatory protection of consumers. Price cap regulation puts an end to all that by ensuring that the regulatory mechanism pursues the goal of preventing excessive *prices*; it thus pursues the objective that genuinely matters to consumers' economic welfare (Baumol and Willig 1989, p. 3)

Price caps attempt to deal with a key flaw in cost-based price regulation: that any profits attributable to the exercise of market power also denies any legitimate return to superior efficiency, innovation and productivity. There is

[24] The PSA has written two discussion papers on price capping (PSA 1993b; 1994g).

no practical way to discriminate between the high profits from superior performance and high profits from market power, so regulators have tended to prohibit all earnings above a level thought to be normal or adequate (Baumol and Willig 1989, p. 4).

Limiting the profits of firms may satisfy concerns of consumers about excess profits. However, under cost-based surveillance, there is little incentive to keep costs as low as possible because new savings may be clawed back as lower prices.

> Under the current cost-based approach to surveillance of price changes, a declared organisation's prices are primarily assessed on the basis of its own cost performance over the period between notifications. ... The retention by declared organisations of a proportion of productivity gains is not easily accommodated under the existing notification procedures especially when profit margins are adequate. ... the existing cost-based system may not be conducive to cost efficiency and innovation because of the limited reward for the declared company (PSA 1994g, pp. 6-7).

While consumers may pay slightly higher prices in the short term under price capping, they benefit in the longer run from the improved incentives to innovate and reduce costs:

> ... [A price cap] allows firms to earn big profits, provided that they keep prices within the cap. This gives them an incentive to keep costs down. In principle, then, soaring profits are not bad for consumers; they merely show that the privatised firms have become more efficient. And the higher profits may only be temporary; regulators can raise X every few years (*The Economist* 1994, p. 64).

Despite its administrative simplicity, CPI minus X price caps can involve as many informational demands as the unit cost direction. The tasks involved in price capping include: setting initial prices; designing the baskets of products subject to the X; setting and resetting X; deciding how often to update the X; re-evaluating the contents of the product basket; and selecting the appropriate reference price index (Liston 1993, p. 30).

It is common to select CPI as the reference price index because it is familiar to consumers. However, the CPI has a heavy weight of items such as food that have little relevance to particular industries. The PSA (1993b, pp. 16-19) recognises this problem. For example, it has attempted to construct a beer price capping index based on factors more closely aligned with the circumstances of the beer industry. The disadvantage of this beer price capping index is that it reduces cost disciplines because many of the cost factors affecting the beer industry will be directly or indirectly incorporated into the index. The closer is the reference price index to circumstances of a particular industry, the more it reintroduces cost-plus price control. On the

other hand, the further away from the circumstances of the industry is the reference price index, the greater is the importance of the X.

> The fundamental shortcoming of price cap regulation is the danger that the price caps will be set at inappropriate levels. At best, these figures will constitute only approximations to their ideal values ... In practice, these approximations may be highly imperfect as a result of errors, limitations of data or methods, or even because of political or other interference (Baumol and Willig 1989, p. 4)

Much therefore hinges on how the X is set (and reset). Where productivity improvements are over-estimated, the price cap will be too low and will adversely affect profitability and, hence, weaken investor support for the organisation. In the long run, consumers will bear the cost of incorrectly low caps through reductions in investment and foregone innovation. Where the X is under-estimated, the price cap may fail to constrain the potential for excessive price rises and profits. (For example, it may be administratively convenient to set an X that does not jeopardise the survival of higher cost firms).

Clearly, adjustments may need to be made over time, but any scope for mid-term or emergency reviews of the X can undermine the credibility of the price cap as a discipline. Firms may come to learn that increased efficiency will be offset by a higher X next period, while poor cost control results in a lower X and, accordingly, they may alter their performance. If this occurs, the benefits of price capping relative to cost-based surveillance, in terms of the incentives for firms to be efficient and innovative will be eroded.

The experience with price capping in the United Kingdom led Beesley and Littlechild (1989, p. 461) to conclude that it was more effective in constraining prices when regulators had more discretion and fewer requirements to reveal the basis for their decisions.[25] But greater discretion inevitably means less transparency. Tasman Economic Research (1993) noted that negotiations between the industry and the regulators about productivity targets have become an important feature of the United Kingdom's approach. Allowing wide discretion conflicts with one attraction of CPI minus X: that it is a simple and transparent pricing rule, detached from the fine detail, relative political strength, and strategic manoeuvres of firms and regulators.[26]

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[25] The detailed reasons for the initial X set for British Telecom were not published. At the five year review, the X was increased to 4.5 per cent and its duration reduced to four years again without a detailed published explanation (Beesley and Littlechild 1989, pp. 459-60).

[26] For example, the manoeuvring prior to a five year review of a price cap in Arizona included the sale of the regulated firm's power plants to a separate unregulated company with common shareholders, and the signing of controversial long term contracts with interstate suppliers that expire in 2014. In the ensuing conflict,

The major uncertainties associated with setting the X in a price cap led the Commission to conclude in its report on *Mail, courier and parcel services* (IC 1992b) that it would be better to continue with existing practices. This included an informal CPI minus 2 per cent price cap. In its report on *Intrastate aviation* (IC 1992a), the Commission supported prices surveillance, but it observed that price capping should only be considered if meaningful performance measures were not developed for airports, and where existing competitive forces and PSA scrutiny were unable to provide effective safeguards against the abuse of market power.

3.3 Price caps and the transition from monopoly

The advantages of CPI minus X price caps may be limited to industries in transition from regulated monopoly to competition – particularly where the transition arises because of government moves to privatise or corporatise GBEs, or to remove regulatory barriers to entry. Beesley and Littlechild have said that:

> ... [CPI minus X] incorporates a fixed risk period within which gains above the productivity bargain can be kept by the regulated firm(s). These productivity gains are potentially larger at the time of privatisation than subsequently. They are also potentially larger the more rapidly technological conditions are changing ... it follows that the case for [CPI minus X] price control rather than rate of return regulation is strongest in telecoms, gas supply, and electricity supply, where technology is indeed changing. ... At the other extreme, where there is less prospect of a shift in technology and only one firm in the industry, as with the electricity and gas transmission grids, there is less scope for bargaining about the potential for improvements in efficiency and no built-in mechanism to give the regulator scope for bargaining via directly relevant comparisons. Here, the grounds for preferring [CPI minus X] are least strong (1989, p. 471).

In industries in technological or structural transition, a CPI minus X price cap could, if the X is set at a realistic level, lead to the sharing of cost-savings with consumers, give firms a reasonable chance to good profits, spur innovation, and introduce an additional discipline on costs.[27] Mathios and

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Arizona state regulators set a new price cap that appeared to punish the firm for not increasing prices in earlier years. This was followed by reduced dividends and a halving of the share price of the utility (Isaac 1991).

[27] Beesley and Littlechild (1989, p. 471) also suggest that CPI minus X price caps might be used 'where there are many different firms, with leaders blazing the way for laggards to follow.' The X would be a powerful spur to technological catch-up if based on the performance of the more innovative firms in an industry. There are practical limitations on using price caps in this way because it may jeopardise the survival of some firms. The PSA's Act requires it to have regard to the maintenance of investment and employment.

Rogers (1989) used cross-sectional variations in state regulatory practices in the United States telecommunications industry for the period 1983 to 1987 to show that, compared with cost-based forms of pricing, price caps lowered prices by an average of 7 per cent.

However, when there is a low underlying rate of technological change, there is less scope for productivity improvements. The absence of a process for early reviews, and the risk to investor confidence of applications for emergency waivers, may turn CPI minus X price caps into a particularly weak restraint on prices in static industries. This is because regulators cannot rely on a general downward trend in costs to swamp unpleasant surprises in the circumstances of individual firms.

The reduced margin for error may induce regulators to set a cap that is so high that there is no effective constraint on prices or profits. Mistakes in price capping do not cancel out. If the cap is too high, some consumers must do with less, while others will buy substitute products that cost society more to produce. If the cap is too low, investment and production are discouraged, while consumers will switch from substitutes that cost society less to produce than the regulated product; again resources are wasted.

The superiority of CPI minus X price caps may be largely due, or perhaps is confused with, the benefits from the growth in competition. This is because the removal of entry barriers often accompanies price capping plans. If actual or potential new entry engenders effective competition, a price cap should not be binding. In the absence of effective new entry, the regulated firm will have little incentive to price below the cap. In such circumstances, traditional concerns about efficiency and distribution will re-emerge to put pressure on the regulatory agency to introduce more detailed monitoring of prices and profits (Liston 1993).

The application of CPI minus X price caps to multiple firm markets would be ground breaking. As the PSA notes:

> There is relatively little experience with the use of price capping as an alternative or complement to competition policy in industries characterised by more than one firm and where competition is weak. One exception is the white salt industry in the UK which is dominated by two domestic producers and has ineffective import competition (1994g, p. 4).

Recent experiences with price capping in the telecommunications and petroleum products industry illustrate their inferiority to competition, such as it is, in oligopolistic markets.

Since 1989, Telstra's overall price reductions have been equal to that required by the price capping arrangements. However, the more significant price

reductions in 1992-93 have been in areas where Optus entered the market and provided competition (AUSTEL 1992, pp. 54-64; 1993b, p. 99).

The Industry Commission (IC 1994) recently found that there is good evidence of effective competition in the petroleum products industry. Not surprisingly, the PSA's import parity based price cap is often above the actual market price. For example, although the data requirements for the PSA's international parity based price ceilings are significantly less than for a CPI minus X price cap, capital city retail petrol prices, although volatile, were generally only marginally higher than the maximum wholesale price cap set by the PSA.

Braeutigam and Panzar (1993) consider that price capping is most effective as a temporary structure on the path from regulated monopoly to full competition. This is because price caps lose their special cost reducing benefits if applied on a long term basis. Beesley and Littlechild have said that:

> The purpose of [price capping] is to reassure customers of monopoly services that the situation will not get worse under privatisation. It 'holds the fort' until competition arrives and is inappropriate if competition is not expected to emerge. It is a temporary safeguard, not a permanent method of control. The 'on-off' nature of the restriction is precisely what preserves the firm's incentive to be efficient, because the firm keeps any gains beyond the specified level. Repeated 'cost-plus' audits would destroy this incentive and, moreover, encourage 'nannyish' attitudes towards the industry (1983, p. 28).

3.4 Summing Up

The PSA's predominant means of prices oversight is prices surveillance. Surveillance can take two major forms — cost-based and price capping. Both forms have significant costs associated with their use and appear to have been mis-applied in the past.

Both cost-based prices surveillance and CPI minus X price caps are information intensive; and are over-whelmed when there is more than one major firm in the industry. The application of cost-based prices surveillance inhibits innovation and encourages cost padding.

While CPI minus X price caps have initial advantages regarding cost padding and incentives to innovate, these problems reassert themselves at the periodic review of the price cap. Moreover, the reduced margin for error in fixed term arrangements may induce regulators to set price caps that are so high that there is no effective constraint on prices or profits.

CPI minus X price caps seem to have a comparative advantage as a temporary measure in technologically innovative industries that are in transition from monopoly to competition. The productivity gains are predictable and large in such settings, so regulators are more likely to set demanding price caps. In other circumstances, including multiple firm markets, it is doubtful whether CPI minus X price caps would perform better than cost-based prices surveillance.

4 WHEN SHOULD PRICES OVERSIGHT BE USED?

The economic environment has changed significantly since 1984, when the PSA was established. A substantial program of microeconomic reform has opened the economy to international forces and addressed underlying structural problems and regulatory impediments to competition in many previously sheltered markets. This has shifted the balance between the costs and the benefits of prices oversight. And there is a growing consensus that prices oversight only should be used as a last resort, when pro-competitive reforms are inappropriate.

This chapter describes the circumstances in which prices oversight is likely to be efficient and suggests the form of that oversight.

4.1 Prices oversight — monitoring, surveillance or control?

The Hilmer Review recommended that prices oversight be applied to situations where there is substantial market power. Hilmer opposed price control and favoured less intrusive methods of prices oversight until serious compliance problems are encountered. Two forms of prices oversight were recommended:

- *prices monitoring* which requires firms to provide, at prescribed intervals, specified cost and price data regarding declared products to the proposed Australian Competition Commission; and
- *prices surveillance* which requires firms to provide specified cost and price data and seek a non-binding recommendation as to whether the price is consistent with the relevant pricing principles.

It is important for the PSA's reviews of declarations to proceed in two distinct stages. The first is to assess whether the degree of market power is substantial. Where market power is minor or temporary, the process should stop because there is no problem for prices oversight to solve. The second stage is to determine if prices oversight is an effective way of preventing consumers from being exploited by firms that have substantial market power.

The earlier review of cost-based prices surveillance and CPI minus X price capping reveals that both have major limitations. Recent Commission

inquiries have confirmed that prices surveillance has had detrimental long-term effects on consumer choice and industry investment; it has restricted the ability of firms to maintain a viable rate of profit through flexible pricing; or has led markets to adapt in ways that impose additional costs on consumers. In addition, US studies show that price controls have no significant price effects in times of low inflation; result in excessive price reductions in more inflationary times; and cause cost padding.

In view of the inadequacies, limitations and adverse side-effects of prices surveillance, the Commission considers it should be confined to circumstances in which its social costs are likely to be substantially outweighed by the benefits from some curtailment of excessive prices. The processes for making declarations and deciding the method of oversight need to reflect this balance.

4.2 The PSA's review guidelines would benefit from a sequential structure

The PSA's (1994a) current guidelines for reviewing declarations are flexible and have several dimensions. While market structure and barriers to entry are stressed, the particular weight given to any one element is uncertain, so similar sets of facts could lead to a variety of conclusions. Moderately concentrated industries are not exempt from scrutiny by the PSA because there is no minimum concentration ratio that must be met before an industry attracts attention. Likewise, some industries have one major seller declared under the Act, while others have up to five. The rationale for such diversity is obscure.

Flexible criteria expand the information that must be organised, evaluated and communicated. This increases uncertainty and the frequency of disputes. The additional discretion inherent in flexible rules makes inconsistent and unpredictable decisions more likely (see Box 4.1).

The TPC's Draft Merger Guidelines (see Box 4.2) are more successful than the PSA's review guidelines in providing a clear indication of the agency's priorities. The Industry Commission recommends that the TPC's sequential approach to mergers be adapted to the analysis of prices oversight declarations.

The TPC's merger guidelines reveal what factors will be taken into account at which stage of the process, and how they will be weighed against each other. An important advantage of the guidelines is that their sequential nature allows mergers of no interest to the TPC to be identified at an early stage of analysis,

and thus the investigation may be discontinued before complex issues such as entry barriers need to be considered.

The step-like structure of the TPC's Draft Merger Guidelines were one of several major improvements made to the previous guidelines. *The Guidelines for the Merger Provisions of the Trade Practices Act 1974*, issued in October 1986, considered market definition, concentration measurement, competitive effects, and entry conditions as a single question (Round and Miller 1993, p. 212).

Box 4.1 Paint versus pre-mixed concrete

The PSA's decisions on pre-mixed concrete and paint illustrate the unpredictability of outcomes under the agency's current criteria.

The pre-mixed concrete industry was subject to prices surveillance from 1986 to 1992. The PSA (1991b) held a public inquiry into the industry in 1991 and found that the industry, in aggregate, had lost money for every year but one since it was declared. Moreover, although three companies accounted for 75 per cent of sales, there was significant price discounting; and the industry generally behaved in a competitive manner. Entry barriers were so low that the PSA (1991b, p. 29) was moved to observe that the industry was a reasonable approximation of a perfectly contestable market.

Nonetheless, the PSA (1991b, p. 79) went on to conclude that the peculiarities of the industry were such that it was not possible to make a categorical statement about the need or otherwise for prices surveillance. The PSA (1991b, pp. 87-88) recommended that prices surveillance be replaced with a system of formal prices monitoring and, pending appropriate amendments to the Act, that the current declarations be retained with significantly reduced supporting information requirements. (The Treasurer revoked the declarations applying to pre-mixed concrete from 5 March 1992.)

In the paint industry three manufacturers account for 75 per cent of domestic production. However, the PSA (1993a, p. 93) decided not to seek further involvement in the industry for reasons similar to those that justified an opposite conclusion for pre-mixed concrete. In particular, that there were a number of small regional producers; the threat of new entry was demonstrated by the expansion of smaller firms outside their traditional markets; and paint imports accounted for a small but growing share of sales.

The PSA's (1994a) current guidelines for reviewing declarations lack the step-like sequential structure of the merger guidelines. For example, there is no threshold inquiry regarding seller concentration that may exempt an industry from further attention. Once an industry is regarded as concentrated enough to attract more scrutiny by the PSA, the next focus of attention is not identified. Is it, for example, import competition, entry barriers, or the pre-disposition to collusion?

This lack of a sequential structure inhibits interested parties from focusing on the factors that are critical to the PSA's analysis of their industry. The PSA's guidelines should have sufficient structure, clarity and predicability to indicate whether a declaration should be changed when key circumstances change.

Under more structured criteria, a declared company could seek a review because, for example, import competition, which was previously regarded as weak, is now much stronger. In that case import competition would be the focus of the PSA's review because, if it is strong enough, entry conditions and other factors that occur at a later stage in analysis are irrelevant. Likewise, if percentage thresholds are specified for seller concentration and import penetration, the outcome of some reviews would be highly predictable

Box 4.2 The TPC's November 1992 Draft Merger Guidelines

The TPC's Draft Merger Guidelines set out a five stage evaluation process.

The first stage is to define the market. The second stage is to calculate market shares and concentration ratios. If the proposed merger does not meet one of two concentration thresholds, the merger is of no further interest to the TPC.[28] The third stage in the TPC's decision process is a consideration of import competition. If import competition is judged to be an effective discipline on domestic firms, the merger is of no further interest. If import competition is considered not effective, the TPC evaluates entry conditions. The TPC looks for evidence that effective entry is likely to occur. The TPC defines this as entry within two years on a sufficient scale to restrain the exercise of market power. If the threat of new entry is insufficient to prevent a substantial lessening of competition following the merger, any other relevant factor is considered at the fifth stage.

4.3 Apply prices surveillance to dominant firms

Regardless of the way decision making is structured, the challenge is to formulate simple criteria for prices surveillance that reduce errors to a tolerable level (which benefit consumers) while making decisions more predictable — which benefits business planning and reduces administration and compliance costs. Rules that seek to embody every economic complexity and qualification may end up, through the vagaries of administration, proving counter-productive, under-cutting the policy objectives they seek to serve.

[28] If the merger results in the four largest firms supplying 75 per cent or more of the market (with the merged firm having at least 15 per cent) or if the merged firm would supply more than 40 per cent of the market, the TPC undertakes a more detailed evaluation of the market and may oppose the merger.

The administrative virtues of simplicity may out-weigh the economic losses from wrongly identifying market power or competition

Clearly, a natural or mandated monopoly has substantial market power. It is not necessary, however, for a firm to be a monopoly for it to have market power. But there is no consensus on what market share threshold should trigger further inquiries regarding the degree of market power.

In markets with two or three significant firms, the evidence is that it is uncommon for collective market power to be substantial or durable. Indeed, the Australian experience with the deregulation of duopolies has revealed strong competition in the very industries where the conditions for collusion are most favourable.

More importantly, the efficient regulation of the prices of duopolies and oligopolies is likely to require more information, and deftness in changing circumstances, than is available to any regulatory agency. Before prices oversight can be recommended, it is important to know whether it is a course of action that promotes its announced policy objectives.

The limitations of prices surveillance are so marked that it is doubtful whether it can make a constructive contribution to consumer welfare in duopolistic and oligopolistic markets. Moreover, not only do cartels already face substantial penalties under the Trade Practices Act, but the degree of excessive pricing in concentrated industries is modest and is confined only to a limited number of duopolies and oligopolies.

The remaining candidate for prices surveillance is the single firm that dominates a market. The key to market power for such a firm is the speed at which other firms, whether or not they are currently in the market, expand production in the face of higher prices. The larger is the market share of the leading seller, the longer it takes other firms to bring on new production.

Antitrust case law and recent econometric evidence suggest that to have market power, a single firm would need to occupy at least two-thirds of a market, and have no major rival (see Box 4.3). However, this threshold is not conclusive evidence of substantial market power:

> ... [it is important] to distinguish between short-run and long-run power. The former — mere market power — means that there are no good substitutes at present and that a firm can profitably raise prices above the competitive level. A firm with mere market power, however, will see its ability to maintain high prices eroded reasonably quickly by new entry or expansion of smaller rivals. A firm with long-run power (i.e. monopoly power) has a greater degree of insulation from the forces of entry (Hay 1992, p. 819).

Before a final decision is made as to whether substantial (single firm) market power is present or absent, it is necessary to assess factors such as the extent of entry barriers, the time lags on effective new entry and the possibilities for expansion by small firms and incursions by imports.

In the Commission's view, the PSA should follow the practice of merger law enforcement agencies in Australia and abroad and specify a minimum seller concentration ratio before an industry attracts further investigation.

The Commission judges that the balance between the costs and benefits of prices surveillance are such that it should be limited to settings where a single firm:

- has a greater than two-thirds market share; *and*
- has no major rival; *and*
- faces sporadic or trivial imports (import penetration persistently below 10 per cent of the market); *and*
- is sheltered by substantial barriers to entry (including the expansion of rivals).

The Commission acknowledges that, in some industries, the strict application of these tests may not allay public suspicion of the exercise of market power and the durability of competition (the petroleum products industry is a possible example). In such sensitive industries, there may be a role for the monitoring of market structure and competitive behaviour.

The Commission suggests that before such monitoring is contemplated, a body independent of the price regulator should undertake a public inquiry focusing on market structure and behaviour and the potential effectiveness of price monitoring. (As is the case now, such investigations could be at the discretion of the Minister). The criteria against which judgements are made should be announced in advance.[29]

4.4 Applying the market dominance test to current declarations

A very preliminary assessment of existing declarations, based on the above test for a dominant firm, suggests that, of the 19 declared goods and services,

[29] See IC (1992c, p. 35) for criteria to identify the pre-disposition of a market to collusion and the combination of evidence that signals effective price fixing.

only aviation services, harbour towage and postal services are likely to satisfy all the conditions for prices surveillance (see Table 4.1).

Box 4.3 Why a two-thirds market share threshold for market dominance?

There are a range of views on what market share threshold should trigger further inquiries regarding the degree of market power held by a single firm.

While the Australian courts have not expressed a particular view, foreign antitrust jurisdictions have been more specific:

- the US appeal courts focus on the interval of 50 to 70 per cent of the market — a market share below 50 per cent is rarely seen as evidence of market power, a share between 50 to 70 per cent can occasionally show market power, while a share above 70 per cent is usually taken to be strong evidence of market power (Hay 1992, p. 826);
- the European Court of Justice has held that a market share of between 63 and 100 per cent is presumptive of substantial market power (Vickers and Hay 1987, p. 48); and
- the European Commission regards market shares above 70 per cent are a strong indication that a single firm is dominant in a market, but other factors must be taken into account to see if this presumption can be rebutted (Jones and Gonzalez-Diaz 1992, pp. 133-34).[30]

The latest econometric evidence suggests that a single firm with a market share of 50 per cent may have very little market power if there is a competitive fringe (Carlton 1991). Other studies have found that if two or three large rivals are present in a market, profit levels are greatly reduced (Scherer and Ross 1990, p. 435; Carlton and Perloff 1994, p. 112).

The two-thirds market share threshold is one of a number of joint criteria proposed by the Industry Commission to ascertain if substantial market power is held by a single firm. As discussed in chapters 2 and 3, and in the main text of this chapter, prices oversight is not an effective response to market power that may result from co-ordinated action among several firms.

Many of the existing prices surveillance declarations appear to have been premised on a narrow definition of the market and a too lenient view of barriers to entry. While some firms may pass some of the conditions, they appear to fail others. By the same token, a number of organisations, not within the ambit of current declarations, would be likely to meet the necessary conditions for surveillance, including State and Territory water and

[30] For example, the European Commission has indicated that a market share as high as 90 per cent may not confer market power where the industry is new, technology is developing in different directions, and customer acceptance of the product is just beginning to crystallise (Portwood 1992, p. 78).

power utilities and, at the Commonwealth level, telecommunications carriers. However, as Hilmer has recommended, the need for any future surveillance should be undertaken only after consideration of structural reform.

The Commission points out that confining prices surveillance declarations to dominant firms would not, in itself, be a major policy shift. This is because, first, most current declarations apply to the leading seller in an industry – the major exceptions are beer, petroleum and cigarettes. Second, a comparable prices oversight policy already applies to Telstra; it is subject to price capping until it ceases to be the dominant carrier. Third, the TPC (1993, p. 60) has argued that price regulation should be mainly confined to natural and mandated monopolies. Finally, the Treasury (1993, p. 32) supports a more rigorous assessment of the areas where prices surveillance may apply, proposing that prices surveillance be restricted to areas of clear market power resulting from significant barriers to entry or natural monopoly.

4.5 Prices monitoring in border-line cases

Although the Hilmer Review supported prices surveillance when monitoring is thought to be insufficient, no criteria were set out to indicate how this judgement should be made.

Apart from the approach already suggested for sensitive industries, the Commission considers that prices monitoring is best suited to border-line cases. There will always be industries where there are doubts about the adequacy of competition. When close calls must be made in difficult areas, there is always scope for honest disagreement and unresolvable issues.

The Commission doubts the need for continued prices monitoring in several industries currently subject to the PSA's attention. For example, there appears to be effective competition in both the paint manufacturing and pre-mixed concrete industries, while the textile, clothing and footwear industries face strong import competition. Prices monitoring in competitive markets diverts the PSA's limited resources from more pressing matters.

Where there is less confidence about the extent of market power, the prices monitoring option should be less intrusive. For example, a firm may have more than two-thirds of sales, but the strength of import competition or the height of entry barriers may be unclear. In such cases, a compromise solution may be a two-year period of prices monitoring to see if surveillance is warranted.

The prices monitoring option has particular attraction if concerns about possible market power are limited to one state or to country areas. A

combination of prices monitoring and public inquiries should be able to address the relevant questions in a cost-effective manner. There is already a precedent for regional investigations with the PSA's inquiries into petrol pricing in Canberra and Tasmania.

In industries previously subject to prices surveillance, a transitional period of prices monitoring may be a useful device for assuring consumers that unforeseen difficulties will be quickly identified. In some industries, there will be rapid public acceptance that prices surveillance has seen its day. In others, particularly those with a high public profile, acceptance that there is no longer a role for the PSA may take longer. For example, in its recent inquiry into the petroleum products industry, the Commission found that there was a deep distrust of the industry in rural communities.

Transitional prices monitoring would allow governments to avoid stepping away from an industry so quickly that necessary public support for reform is undermined. (Similar motivations underpinned the introduction of CPI minus X price capping in the United Kingdom. The price cap assured consumers that the situation would not worsen after the implementation of proposed reforms).

The only sanction necessary for effective prices monitoring is the power of the Minister to order the PSA to undertake a public inquiry. For example, if firms did not co-operate in supplying price and cost data, a public inquiry by the PSA would give it the power to obtain necessary information and summon witnesses.

Table 4.1: **Preliminary assessment of existing declarations**

Good or service	*Seller with 2/3 market share?*[a]	*No major rival?*	*Significant entry barriers?*	*Import penetration persistently below 10 per cent?*	*Are all conditions for prices surveillance satisfied?*
Aviation services[b]	yes	yes	yes	yes	yes
Beer	no	no	no	yes	no
Biscuits	yes	no	no	yes	no
Ready-to-eat breakfast cereals	no	no	no	yes	no
Cement (Portland)	yes?	no?	no	yes[c]	no
Cigarettes	no	no	?	yes	no
Coffee (instant)	yes	yes	no	no	no
Concrete roofing tiles	no	no	no	?	no
Float glass	yes	yes	no	yes?[d]	no
Glass containers	yes	yes?	no	yes?	no
Harbour towage	yes	yes	yes	yes	yes
LPG	?	no	no	?	no
Petrol and automotive distillate	no	no	no	yes	no
Postal services[e]	yes	yes	yes	yes	yes

Table 4.1: **Continued**

Good or service	*Seller with 2/3 market share?*[a]	*No major rival?*	*Significant entry barriers?*	*Import penetration persistently below 10 per cent?*	*Are all conditions for prices surveillance justified?*
Steel (mill products)	yes	yes	no	yes	no
Steel (welded pipes)	yes	yes	no	yes	no
Tampons	no	no	no	?	no
Tea and tea bags	no	no	no	no	no
Toothpaste	no	?	no	?	no

(a) This market share is, in most cases, based on the PSA's initial definition of the relevant market in the issues paper for the relevant inquiry. (b) Airport and air safety services provided by the Federal Airports Corporation and the Civil Aviation Authority. (c) Portland cement has been subject to anti-dumping action. (d) Clear float glass has been subject to anti-dumping action. (e) Reserved domestic services of Australia Post

APPENDIX A: CROSS-ELASTICITIES OF DEMAND, MARKET POWER AND THE CELLOPHANE FALLACY.

Many consider that firms which sell in markets with high demand elasticities are subject to effective competition. Similarly, firms that face low demand elasticities are suspected of having significant market power because most consumers will not switch away from their products in response to a price rise (PSA 1994a, p. 8). This approach should be viewed with caution.

High elasticities

A high *measured* cross-price-elasticity of demand may reflect the fact that the firm is already exercising market power.

As a firm with market power increases its prices, products that are considered poor alternatives at the competitive level become desirable alternatives for consumers. Products that may be considered to be good substitutes at the monopoly price may be regarded as grossly inferior at the lower competitive price. Therefore, the cross-price elasticity, which we measure in practice, will be significantly higher than that at the competitive level.

The PSA is dealing with firms that are thought to have substantial market power. If this is true they should already be charging a higher than competitive price. They will therefore have higher measured elasticities.

To illustrate further by analogy with the determination of market boundaries in merger analysis, in a typical merger case the issue is not whether the firms in question are exercising market power, but whether the merger would lead to an increase in market power. Therefore, what may be of great concern is the cross-price-elasticities between merging firms. If these cross-elasticities are high, compared to the cross-elasticities with other firms, it indicates that the products of the merging firms are good substitutes for each other. In other words, the principal competitive constraints on the behaviour of each of the firms prior to the merger were the products of the other firm. After the merger

this competition will not be present, and the merged firm will have substantial market power. However, post-merger the new firm will quickly move to exploit its market power, and therefore the measured elasticities of the merged firm will remain high. The merger would be a concern for the TPC because there is considerable *unused* potential to profitably raise prices, but in practice the TPC may have measured high elasticities before *and after* the merger.

In summary, high elasticities should not be taken as *prima facie* evidence of substantial competition as they may be the result of market power having already been exercised.[31]

Low elasticities

It can also be argued that low elasticities may be poor evidence for concluding that a firm has substantial market power. For example, the PSA (1992b, p. 105) relied on extremely low own and cross price elasticities of demand to support a conclusion that Nestlé has market power in the market for instant coffee. In stressing low elasticities as evidence of the exercise of market power, the PSA (1994a, p. 8) appears to have not taken account of the Cellophane fallacy:

> In the landmark Cellophane case, the Supreme Court held that du Pont did not have significant market power ... because it had many reasonably good substitutes for its product, Cellophane. This holding has been criticised in the economic and legal literature on the grounds that du Pont had, in fact, exercised market power by raising price substantially and that it was the substantial elevation of Cellophane's price above the competitive level that brought it into competition with other products ... in this case and most others, the elasticity of demand was significantly greater at the monopoly equilibrium than at the competitive equilibrium, so evaluating it at the monopoly equilibrium led to a significant underestimate of market power. The Court's error is well known to students of antitrust, and is commonly referred to as the *Cellophane* fallacy (Froeb and Werden, 1992, p. 241).

[31] Two uncontroversial results in microeconomic theory are that the elasticity of demand is significantly greater at the monopoly price than at the competitive price; and that a monopolist sells in the elastic portion of the demand curve because this is the only part where marginal revenue is positive.

Another basic result is that the elasticity of demand is equal to the sum of the cross-elasticities of demand. All else the same, the larger the cross-elasticity of demand, the larger is the price elasticity of demand. At the monopoly price, both price elasticities and (the sum of) the cross-elasticities of demand must be high. If the contrary were the case, the monopolist could continue to raise price without loss of sales.

The Cellophane fallacy involves failing to account for the changes to measured elasticities that occur as a result of the business decisions of a firm with market power.

The PSA (1992b, p. 11) reported price and cross-elasticity estimates that are so low that Nestlé appears to not be taking even partial advantage of the insensitivity of coffee drinkers to price increases. A firm exercising monopolistic power will not price at a level where demand is relatively inelastic because marginal revenue is negative. The estimated inelastic demand for instant coffee is a good sign that Nestlé is not currently exercising market power.[32]

If Nestlé has market power, we would expect that it will already be charging the highest price it can profitably charge. Although many managers and investors are modest about their private needs, if asked, higher profits, and charging as much as the market can bear, are forefront in most commercial strategies:

> George Stigler conducted a survey that wonderfully illuminates both the limits of surveys and the limits of self-knowledge. He asked a selection of managers whether they set prices so as to maximise the firms' profits. They replied that they do not. Then Stigler asked whether they would make more money if they reduced prices. They said no. Next he asked whether they would make more money if they increased their prices. Once again they said no. Well, there you have it. A scholar might infer that the managers were maximising profits, although they would not accept the conclusion (Easterbrook 1990, p. 775).

[32] Cross-elasticities of demand are also of little practical use in the PSA's review. For example, if there is enough data to estimate cross-elasticities, it should be possible to directly estimate the elasticity of demand for the product in question. This was done for the PSA's public inquiry into instant coffee where demand was found to be highly inelastic because price elasticities of -0.11 and -0.375 were estimated.

Cross-elasticities of demand are also sensitive to the relative size of the product markets being compared so that substitution relationships may be obscured. For example, the soft drink market is many times the size of the tea market. The cross-elasticity of demand for tea will be low because even a dramatic diversion of consumers from tea will lead only to a small change in demand for soft drinks.

It is difficult in practice to obtain accurate or meaningful estimates of cross-elasticities due to limitations regarding data and econometric techniques. For example, CUB (1994, p. 16) reports a 1989 estimate of the price elasticity of demand for beer of -0.15. On the other hand, the Business Regulation Review Unit (1989, p. 159) reported that the Treasury's revenue estimates implied that the price elasticity of demand for light and full strength beers were -1.2 and -1.6 respectively in 1987. US studies of the elasticity of demand for various *brands* of coffee and beer have found ranges of -1 to -15 with the majority falling between -2.5 and -5 (Landes and Posner 1981, pp. 956-57).

If a market is highly concentrated, but demand elasticities are low, other factors must be restraining instant coffee sellers from substantially increasing prices and profits. Low measured elasticities of demand appear inconsistent with a firm exercising market power. Therefore, evidence of low elasticities should not be taken as *prima face* evidence of market power without further investigation.[33]

Summary

Both high and low elasticities are inconclusive evidence for determining whether firms have significant market power. Recorded elasticities will obscure the fact that if firms do have market power, their behaviour will alter the measured elasticities from the levels that would prevail in a competitive market.

High elasticities of demand show either that market power is being exercised in full, or that substitutes are so plentiful that pricing above cost will lose most, or all, of the current sales of the firm concerned. That is, a high elasticity of demand may point to a situation of vigorous competition, or fully exploited market power. Low elasticises may be evidence of market power, but beg the question — if such power exists, why isn't it being exercised?

[33] A possible explanation is that elasticities that are being measured are not the appropriate elasticities. In particular, short-run elasticities, as opposed to long-run elasticities, may have been calculated. Long-run elasticities are always higher than short-run elasticities as people have greater ability to adjust their behaviour. If firms are profit maximising over a long term horizon then the long-run elasticity is the appropriate guide to behaviour. Nestlé may have some market power, but it will be vastly overstated by the short-run elasticity of demand.

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