

# Competition and Industry Policy

*No one can argue that a monopolist is impelled by an 'invisible hand' to serve the public interest.*

R.H.Tawney

Costs of Imperfect Competition ♦ Regulating Industry Structure ♦ Regulating Competitive Conduct ♦ Regulating Dominant Firms ♦ Competition Policy in Australia ♦ Benefits of Competition Policy ♦ Concluding Observations

Most real world markets depart from perfect competition. Some markets are naturally monopolistic because of technical innovation or economies of scale. Other markets contain only a few firms. Many others are monopolistically competitive—they contain several competing firms selling slightly differentiated products. In all such markets, firms have some market power. The firm can set the price at which it sells its' goods. It does not have to sell strictly at the price set by a competitive market. Thus, imperfect competition (market power) is a common feature of most economies.<sup>1</sup>

Market power can have significant efficiency and equity costs, including high prices, restrictions on output, inefficiency in production and weak innovation. Thus, the policy challenge is to create and sustain an efficient amount of competition in markets when this is often not the natural state of markets. Where competition is not feasible because of the natural monopoly features of the market, efficient regulation of the monopoly supplier is required.

In this chapter, we start by describing the costs of imperfect competition in product markets. Reducing these costs is the basic rationale for competition policy. The next three sections discuss the core competition policy strategies: regulating industry structure, industry conduct and performance. Industry structure regulation is designed to create a competitive industry, especially to deal with anti-competitive acquisitions and mergers. Conduct policies deal with the general competitive behaviour of firms, including prevention of anti-competitive agreements. Performance policies regulate dominant (private or public) firms to prevent abuse of market power. We then describe competition policy in Australia and the benefits of competition policy in Australia and elsewhere.

Finally, we briefly draw attention to two important, but unrelated, matters. One is the increasingly important role of digital companies. The other is the role of government in promoting productivity described by the Productivity Commission (2017).

<sup>1</sup> This chapter discusses market power in product markets. Chapter 27 discusses market power in labour markets.

## Costs of Imperfect Competition

The economic costs of imperfect competition may include a deadweight loss due to reduced output, inefficient production, a lack of innovation and rent-seeking costs. To simplify the exposition, we illustrate the costs associated with a monopoly. Similar costs arise in other forms of imperfect competition, though usually to a lesser degree.

**Deadweight losses from reduced output.** Figure 14.1a shows a monopoly market, with the marginal revenue (MR) curve below the demand curve. For ease of illustration, the marginal cost (MC) of supply is assumed constant. A monopolist maximises profit by selling  $Q_2$  output, where  $MR = MC$ , and setting price at  $P_2$ , rather than at  $MC = P_1$ . Consumption falls from the competitive level  $Q_1$  to  $Q_2$ . This causes a deadweight loss equal to area  $ABC$ .<sup>2</sup> If the demand curve is linear the deadweight loss (DWL) is:

$$DWL = 0.5 (Q_1 - Q_2) (P_2 - P_1) \tag{14.1}$$

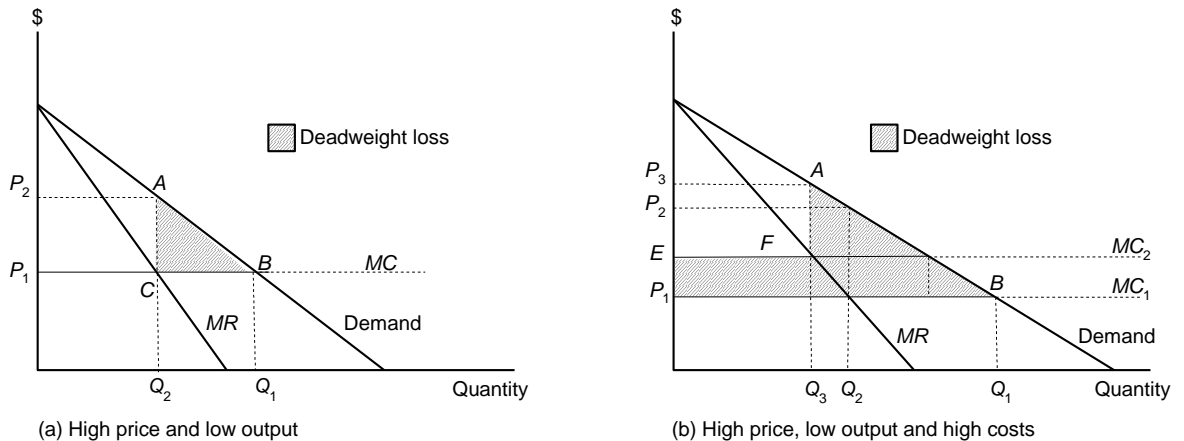
The DWL rises with the size of the price mark-up and the fall in consumption. In this analysis, area  $P_2ACP_1$  is treated as a transfer payment, with losses to consumers offset by gains to the producer.

Equation 14.1 can be rewritten as:

$$DWL = 0.5 \eta_d P_1 Q_1 m^2 \tag{14.2}$$

where  $\eta_d$  is the price elasticity of demand and  $m$  is the mark-up percentage  $(P_2 - P_1)/P_1$ .<sup>3</sup> Note the role of the price elasticity of demand. The higher the elasticity of demand the greater is the DWL. Equation 14.2 is important not only for estimating the costs of market power but also for developing efficient pricing and tax strategies (see Chapters 17 and 27).

**Excessive production costs.** In an oft-cited article, Leibenstein (1966) argued that monopolists exploit freedom from competition by being x-inefficient. X-inefficiency occurs when a firm fails to produce its output with the minimum use of inputs.<sup>4</sup>



**Figure 14.1** Costs of monopoly

<sup>2</sup> This triangle is often called a Harberger triangle. Harberger (1954) popularised the idea of estimating the costs or benefits associated with consumer and producer surplus triangles.  
<sup>3</sup> The derivation of Equation 14.2 from Equation 14.1 is explained in Chapter 27.  
<sup>4</sup> A firm is efficient if it produces output at least cost given the technology available. In perfect competition, all firms are efficient because x-inefficient firms are driven out of business.

In a study of 670 firms in the UK, Nickell (1996) found that growth in total factor productivity was positively related to the competitiveness of the industry. Figure 14.1b incorporates x-inefficiency costs, with marginal cost rising from  $MC_1$  to  $MC_2$ . The profit-maximising price would rise from  $P_1$  to  $P_3$  and output fall from  $Q_1$  to  $Q_3$ . The DWL is now the shaded area  $EFABP_1$ . A major part of this loss is the increase in operating costs.

**Innovation costs.** As we saw in Chapter 5, economists differ on the impacts of industry concentration on the rate of innovation. Schumpeter argued that some monopoly is required to obtain innovation. Other economists contend that investment rises with certainty of profit, which increases in more concentrated industries. Scherer and Ross (1990) reviewed the evidence and found that, on balance, competition is more important for innovation. The recent history of the Australian telecommunications industry after deregulation supports this view. The welfare loss from a lack of innovation is the difference between what consumers would pay for a new good and the cost of producing it.

**Rent-seeking costs.** These are resources spent to gain economic rent. **Economic rent** is a payment to a factor of production over its opportunity cost (its value in alternative employment). In the discussion above, the price increases borne by consumers (from  $P_1$  to  $P_2$  in Figure 14.1a) were treated as a transfer payment because they were offset by the gain to the firm. However, the area  $P_2ACP_1$  in Figure 14.1a represents economic rent. Firms often spend resources to obtain such rents, especially when they can be gained by government regulation that reduces competition. Expenditure on gaining rents is a deadweight loss. Examples of rent-seeking firms in Australia include major mining companies, firms holding commercial TV licences, owners of taxi licences and pharmacies, just to name a few.

**Estimated costs of monopoly and rent seeking.** These estimates vary greatly. In a classic study drawing on Equation 14.2, Harberger (1954) estimated that the DWL from *output restrictions* in monopoly industries in the United States in the 1920s was equivalent to only 0.1 per cent of GDP. Cowling and Mueller (1978) recalculated the loss from output restrictions drawing on data for 734 US firms in the 1960s. Making different estimates on demand elasticities and price mark-ups, they calculated that the DWL was about 4 per cent of US GDP. Following a similar approach, Dixon *et al.* (2001) estimated that the welfare loss from monopoly in Australian manufacturing alone was equivalent to 1.4 per cent of GDP.

*Other costs* of monopoly may also be large. Kamerschen (1966) estimated that excess production costs were equivalent to 6 per cent of US GDP. Also, rent-seeking costs may be substantial. If the probability of achieving an economic rent is high, risk-neutral profit-maximising firms may spend a large amount of the potential rent to achieve or retain it. Drawing on relevant demand elasticities for regulated industries in the United States, Posner (1975) estimated that economic rent represented 10–30 per cent of the value of sales in some industries. This indicates the potentially high cost of rent-seeking expenditures.

**Equity.** We saw above that the area  $P_2ACP_1$  in Figure 14.1a is treated as a transfer payment, with losses to consumers offset by gains to the producer (usually shareholders). However, government may view transfers from consumers to shareholders as inequitable and undesirable and regard this also as a significant social cost.

**The role of potential competition.** Some economists (e.g. Baumol *et al.*, 1982) argue that, providing a market is contestable, potential competition constrains monopoly behaviour. A market is contestable if there is free entry and exit. In such a market, to deter entry the incumbent monopolist reduces the price of a good towards its long-run average cost. The critical requirement for free entry and exit is low sunk costs—firms can expect to recoup their

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#### Rent seeking

Trying to persuade government to change the rules in such a way as to create economic rent

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#### Economic rents

Payments to factors of production in excess of

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#### Rent-seeking costs

Resources used in rent seeking

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#### Potential competition

Competition from potential rivals not currently in the relevant market

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sunk costs or be able to liquidate assets or transfer them to another market without cost. In practice, there is often some unrecoverable sunk cost and completely free entry and exit is rare. A DWL remains when price exceeds marginal cost. But potential competition lowers the price mark-up and the associated loss. This implies that governments should encourage contestability and not place artificial restrictions on entry into a market.

### Possible efficiency arguments against competition

Despite the costs of imperfect competition, governments often protect industry from competition. This protection may take the form of import tariff or quota protection, restriction on entry to the industry, direct financial assistance or tax concessions. The Productivity Commission (2011a) estimated that measured gross assistance totalled \$17.2 billion in 2008–09, including \$9.5 billion in tariff assistance, \$3.7 billion in budgetary outlays and \$4.0 billion in tax concessions. This was equivalent to about 1.5 per cent of GDP. Industry support programs in Europe total about 2 per cent of GDP.

Clearly, government may assist industry for equity objectives. Can industry assistance also be justified on efficiency grounds? We discuss below four possible efficiency arguments for restricting competition or competitive behaviour.

First, competition in the short run may destroy competition in the long run. An example is **predatory pricing**. This occurs when a firm sells goods at low prices and sacrifices short-term profits with the aim of reducing the capacity of competitor firms and increasing own long-run market share and profits. Competition policy generally prohibits predatory pricing.

A second possible case for industry protection arises from the need to encourage innovation. Patents reward innovation by allowing a firm or individual control over new technology for a limited period. Without such protection entrepreneurs may be unable to recoup the costs of research and development (R&D), there would be under-investment in R&D and innovation would fall.

Thirdly, governments may limit entry into an industry, or assist industry self-regulation, to protect quality of service. This applies to providers of professional services, such as doctors, pharmacists, lawyers, accountants and surveyors, as well as to tradespersons like electrician and plumbers. The premise is that consumers cannot be trusted to make well-informed decisions, so there is information failure. We discuss these information issues in Chapter 15.

Fourthly, there has long been concern that start-up firms may not survive against competition and should be protected until they mature. The implicit market failure here is either that capital markets place too high a price on risk. Japan's protection of its steel, coal, machinery and shipbuilding industries is sometimes cited as an example of effective state-coordinated development that would not have occurred without official support. A current version of this view is that firms may need to combine in domestic markets to achieve the economies of scale that will enable them to compete in international markets.

However, it is not clear that there are such significant market failures. Selective assistance policies generally distort the allocation of resources and may reduce rather than increase the aggregate value of output. As Adam Smith observed:

Every system which endeavours ... to draw towards a particular species of industry a greater share of the capital of society than would naturally go to it ... diminishes, instead of increasing, the real value of the annual produce of its land and labour.<sup>5</sup>

If assistance is warranted, ideally government would identify the marginal subsidy required to provide the desired increase in output. But this is hard to identify. Often all output is subsidised, not just marginal output. Also, government has limited expertise at deciding when private capital markets are under-funding a private business. Public support for shipbuilding

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**Predatory pricing**  
Setting low prices and sacrificing short-term profits in order to reduce competition in the long run

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<sup>5</sup> Smith (1776), *The Wealth of Nations*, p. 651 in E. Cannan (ed.) (1937).

in Germany and Sweden and aerospace industries in Italy and the UK was unsuccessful. In recent years, East Asian experience (stagnation in Japan, the fall of the Korean chaebols and the failure of Indonesian crony capitalism) has also discredited industry assistance policies.

In summary, competition is generally desirable. An important exception occurs when there are natural economies of scale or scope, which reduce the average cost of production. There may also be situations when competitive behaviour aims to reduce competition, innovation requires protecting the gains for the innovator or consumers need to be protected from quack service providers. Other forms of industry protection or assistance may be warranted on distributional grounds, but rarely on efficiency grounds.

## Regulating Industry Structure

The aim of industry structure policies (also described as anti-trust policies) is to create and maintain competitive industry structures. This is a structure in which no single firm or small group of firms has a dominant market share that allows it to exercise market power, mark up prices significantly above long-run average costs or be x-inefficient. Dominant market share may arise via organic growth or by acquisitions or mergers. Anti-trust policies generally aim to prevent acquisitions and mergers that could result in excessive concentration in a market (or in Australia to lessen competition in a defined market). It is harder to break up an existing dominant company. The US government succeeded in breaking up the dominant AT&T (telephone) company into smaller companies in 1984. However, the Clinton Administration failed to break up the Microsoft Corporation in the 1990s.

The general approach to dealing with mergers and acquisitions is to determine what constitutes a market and the existing level of competition in it (using a concentration metric) and to estimate the effects of the proposed merger or acquisition on market concentration or competition and hence output and prices.

**Defining a market.** Estimates of market shares require a definition of a market and estimates of total market sales. However, there is no definitive measure of a market. A market consists of similar products that can be readily substituted one for another. Where buyers or sellers can readily shift between products or areas, these products and areas are part of one market. Formally, substitution is measured by cross-price elasticities. As Stigler (1955, p. 4) wrote: ‘all products or enterprises with large long-run cross-elasticities of either supply or demand should be combined into a single industry’. However, deciding whether any cross-elasticity magnitude is large or small is a matter for judgement.

The determination of the market is crucial because the larger the market the less will be the market dominance by one or a few firms. If a market is narrowly defined, it is more likely to be dominated by one or a few firms. On the other hand, the demand for the industry’s products may be elastic and the products may be subject to competition from other markets. An important related issue is the appropriate territory. Increasingly, regulators must decide whether markets are defined by a single country, a group of countries or even the world.

As an example of the product dimension problem, in determining whether United Bananas was a dominant company the European court had to decide whether bananas were distinguishable from other fruits and therefore a separate market or part of the overall fruit market in Europe. The Court ruled that this depended on the extent to which bananas were ‘interchangeable’ with other fruit. However, this is not a precise concept. The concept of interchangeability is operational only if the cross-price elasticity of demand can be estimated. If the demand for bananas falls significantly when the price of apples falls, the two goods are substitutable and hence part of one market.

An Australian illustration of the difficulty of defining markets was the decision of the Federal Court to allow the wholesaler Metcash to take over the loss-making Franklins’

supermarkets. The ACCC opposed this takeover because it would reduce competition in the wholesale/distribution market. But the Federal Court found that the major constraints on grocery competition were the large market shares of Woolworths and Coles in the retail market and that the takeover could increase competition in this market rather than decrease it.

**Determining market dominance with concentration ratios.** Economists typically measure market power by the excess of price over marginal cost. However, marginal cost is hard to measure. Therefore, other measures of market power are required. Market shares are a simple indicator of the market power of single firms.

**Concentration ratios** measure the proportion of industry sales accounted for by a small number of large firms (typically three to five firms). However, a simple concentration ratio gives no special weight to the largest firm. Suppose that in two industries, *A* and *B*, four firms share 80 per cent of an industry's sales. However, in *A* the largest firm has 60 per cent of the sales and the other three firms share 20 per cent, whereas in *B* the four largest firms each have 20 per cent of sales. Most people would consider that the concentration was greater higher and potentially more damaging in *A* than in *B*.

The Herfindahl–Hirschmann Index (HHI) gives greater weight to firms with large shares. The HHI is defined as:

$$HHI = (100s_1)^2 + (100s_2)^2 + \dots + (100s_n)^2 \quad (14.3)$$

where *s* denotes a firm's share of industry sales and there are 1...*n* firms. Regulators in Australia, the European Union and the United States use the HHI as an indicator of whether a merger or acquisition may be allowed or should be examined. Drawing on Yang and Pickford (2011), the following post-merger shares are generally regarded as acceptable:

- Australia: HHI < 2000, or HHI > 2000 and ΔHHI < 50.
- European Union: HHI < 1000, or HHI 1000–2000 and ΔHHI < 250, or HHI > 2000 and ΔHHI < 150, or *M* < 10 per cent (where *M* is market share of the merged entity).
- United States: HHI < 1000, or HHI 1000–1800 and ΔHHI < 100, or HHI > 1800 and ΔHHI < 50 and *M* < 35 per cent.

Conversely, mergers that lead to higher HHI scores would be examined. However, the Australian Competition and Consumer Commission (ACCC, 2011) indicates that these scores are only guides. Clearly, rulings based only on measures of market share would be arbitrary. High market share may not indicate inelastic demand for a firm's product (which is the basis of its power to mark up prices). Concentration measures indicate possible costs but ideally the costs and benefits of concentration should be estimated on their merits in each case.

**Estimating the effects of increased concentration.** Ideally the regulator would assess the effect of increased concentration on output, prices, x-inefficiency costs and innovation as appropriate. This implies assessing economic performance with and without the acquisition or merger. This is not easy. In the Metcash takeover of Franklins, the ACCC argued that if the takeover were disallowed, another company would take over the loss-making Franklin stores. The Federal Court did not agree that this could be assumed to be likely to occur. Firms involved in mergers and acquisitions invariably argue that there will be significant cost savings from synergies and economies of scale. However, it is important to identify merger-specific efficiencies. Firms may achieve cost savings by contracting out low-volume in-house work or by economies of scale that could be achieved by internal growth. Nevertheless, regulations based on estimates of the costs and benefits of acquisitions and mergers can be expected to produce a more efficient outcome than determinations based on arbitrary concentration ratios.

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**Concentration ratio**

The proportion of a market shared by a small number of large firms

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**In practice, applications of competition policy vary.** In the United States any lessening of competition is generally viewed as undesirable regardless of possible counter-arguments. In Europe, the main merger test is whether a merger would significantly impede effective competition. However, Vickers (2005) notes that the European Community Courts in Luxembourg are now requiring more economic rigour in merger analysis.

In Australia, the *Competition and Consumer Act 2010* provides the legal basis for determining acquisitions and mergers. Critically, Section 50 prohibits acquisitions and mergers, not on the grounds of concentration ratios, but rather when they would be likely to substantially lessen competition in the market. However, as shown in Box 14.1, the ACCC is required to consider many facets of competition and, in effect, to make a determination on the perceived economic costs and benefits of the proposed acquisition or merger.

## Regulating Competitive Conduct

Despite anti-trust policies, concentrated industries occur in most countries. Collusion is an ever-present danger. Even without high concentration, some firms may have significant market power and use this power to restrict competition. Such restrictions include collusion over prices or market shares, price discrimination of various kinds, commodity bundling and vertical restraints on buyers or sellers.

Accordingly, most OECD countries regulate the conduct of firms by prohibiting collusive behaviour and actions that restrict competition. The following are some of the major conduct issues and some policy responses.

### Box 14.1 Regulation of acquisitions and mergers in Australia

In Australia, the *Competition and Consumer Act 2010* (the Act) governs acquisitions and mergers. The ACCC is responsible for implementing the Act and determines the outcomes, subject to appeals to the Trade Practices Tribunal. As in other countries, definitions of a market and market dominance are key issues.

Section 4E of the Act defines a market as ‘a market in Australia and, when used in relation to any goods and services, includes a market for those goods or services and other goods or services that are substitutable for, or otherwise competitive with, the first mentioned goods or services’. This is a broad definition of a market rather than a precise one as the degree of product substitutability or competitiveness is not defined.

Section 50, which governs acquisitions and mergers, prohibits acquisitions and mergers that would result in ‘a substantial lessening of competition’ in a ‘substantial market’. The ACCC (2011) acknowledges that interpreting ‘substantial lessening’ requires judgements. A substantial market is interpreted to be at least a state-wide market rather than a regional market.

Section 50 also describes the factors that the ACCC must consider in making its determinations. These include actual or potential import competition, barriers to market entry, the level of concentration in the market, the likelihood that acquisition will remove an effective competitor and the

likelihood that acquisition will significantly increase prices or profit margins.

In recent years the ACCC has opposed outright some major acquisitions and mergers. It opposed the Australian Stock Exchange takeover of the Sydney Futures’ Exchange, the Caltex proposal to take over the retail assets of Mobil Oil and the National Australia Bank’s bid to take over AXA Asia Pacific Holdings. However, it allowed Westpac Bank to take over St George Bank, Mayne Nickless to take over Australian Hospital Care, Fosters to acquire Southcorp and AMP to acquire AXA Asia Pacific Holdings’ Australian and New Zealand businesses.

In practice, the ACCC opposes only a few acquisitions and mergers outright. In 2010-11 the ACCC considered 377 cases for compliance with section 50 of the Act and decided that 141 required review. Of these, the Commission cleared 110 unconditionally. Of the remaining 31 cases, the Commission publicly opposed three, expressed private concerns about 4, and agreed that 10 could proceed with variations. Fourteen matters were withdrawn.

This does not mean that the ACCC has little influence over acquisitions and mergers. The nature of the proposals that firms put forward are influenced by both the Act and the power of the ACCC under it.

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**Price fixing**  
An agreement between  
firms to set certain  
prices

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**Price fixing** agreements by firms generally raise prices and restrain competition. Most countries prohibit price fixing by cartels. In 2007, Australia's largest packaging company (the private Visy corporation) was fined \$36 million for fixing prices with its major duopoly competitor, Amcor, which confessed to the scheme. However, it can be difficult to prove price fixing. Firms may adopt similar prices and price changes due to collusion or because they face similar market forces and similar price changes make economic sense. In 2007, the ACCC failed to prove that owners of major chains of petrol stations were colluding on petrol prices although the stations regularly changed their petrol prices by similar amounts and at similar times over the week. Another grey area is fee recommendations by professional organisations to their members. Regulators usually focus on cases of overt, explicit, price fixing because these cases are easier to prove and punish.

**Predatory pricing** is the practice of setting low prices that sacrifice short-term profits with the aim of driving existing competitors out of a market and deterring new firms from entering it. In Australia, low prices are defined simply as 'below the relevant cost'. In 2010, Cabcharge was fined \$3 million for supplying 6178 meters to taxis either free or for \$100 (to maintain its monopoly on the taxi EFTPOS system) when the direct costs of acquisition were \$250 per unit. Putting excess supply on a market has a similar effect. Qantas was alleged to have done this on some inter-city Australian routes to lock out competition from Virgin Airlines. Predatory pricing is prohibited in most OECD countries. On the other hand, pricing below long-run average cost but above average variable cost is generally not regarded as predatory.

Again, the regulator faces various problems. First, the regulator must define a 'relevant cost'. This could be defined as average variable cost. But there are still awkward questions. Are overheads associated with labour employment variable costs? How should joint costs be allocated? Second, the regulator rarely has independent cost data and must rely on data provided by the regulated firm. Third, the regulator requires estimates of marginal revenue. The ACCC could not show that the building products company, Boral, exercised predatory pricing in that industry. Under Australian law, the regulator must show not only that a firm is underpricing, but also that it is aiming to harm a competitor. Intention is hard to prove.

**The principle of unrestricted dealing** is critical to a competitive market. This has several implications. One is the need for **third-party access to essential facilities**, such as telecommunication, energy or transport networks. An essential facility has two main characteristics: it is a natural monopoly and it produces a good that is an essential input to the production of another good or service. Vertically integrated firms often have a monopoly on some aspect of transmission and can exclude other firms by setting excessive prices for access. This makes access unprofitable and maintains the down-market share of the vertically integrated firm. In Australia, the (then) major telco (Telstra) was charged frequently with setting excessive prices for access to its copper lines. Again, there is a major question as to what would represent a fair price. Economic efficiency requires that competitors should pay no more for a service than do in-house businesses. However, a vertically integrated firm may argue that it is entitled to recoup research and development and capital expenses and to a return on risk capital. Although the obligation to deal on fair terms applies principally to vertically integrated firms with monopoly control of infrastructure networks, the principle of unrestricted dealing has general application. For example, the European Union fined British Sugar three million euros for charging excessively high prices for bulk sugar to wholesalers to protect its own retail operations.

The principle of unrestricted dealing also implies **avoidance of exclusive dealing with external parties**. Exclusive dealing occurs when one party imposes restrictions on another party's freedom to choose with whom it deals. For example, exclusive purchasing or distribution arrangements between breweries and hotels would be prohibited. In 2010,



Cabcharge was fined \$11 million for refusing to deal with a competing supplier (Travel Tab) to allow Cabcharge payments to be processed through a rival EFTPOS terminal. The European Commission has gone further than this and argued successfully in the courts that discounts and rebates designed to tie in dealers or agents to a particular supplier are unlawful. For example, by giving loyalty-inducing quantity rebates, Michelin was found to prevent dealers from being able to select their suppliers freely.

**Resale price maintenance** is another major restrictive practice. This occurs when firms fix the minimum prices at which their product can be sold by distributors. This restricts competition in both wholesale and retail markets. Most developed countries prohibit resale price maintenance. This regulation usually applies to all firms, not just dominant ones.

**Australian practice.** As shown in Box 14.2, under the *Competition and Consumer Act 2010* Australia has a comprehensive set of regulations designed to prevent anti-competitive behaviour including by government. Section 2 binds all Commonwealth and state businesses to the conditions of Part IV, which contains the key prohibitions on anti-competitive behaviour.

#### Box 14.2 Australian regulations prohibiting anti-competitive behaviour

The *Competition and Consumer Act 2010* (the Act) contains many regulations that promote competition and prohibit anti-competitive behaviour.

Part III of the Act deals with provision of third-party access to essential facilities such as electricity grids or natural gas pipelines. The aim is to ensure that third parties can compete in upstream or downstream markets. Under Section 44, the ACCC has the power to require vertically integrated monopolies to provide competitors with access to their facilities at competitive rates. For example, Telstra must provide competitors with access to its local telephone network at rates that allow other firms to compete in the local telephone market. In 2005, following ACCC action, Telstra was forced to lower its wholesale prices for broadband customers.

Part IV deals with anti-competitive practices. The following are some of the most important regulations.

Section 45 prohibits anti-competitive agreements, including agreements that involve market sharing, restrictions on the supply of goods and price fixing. Under this section the ACCC has imposed fines of several million dollars on major transport companies for colluding on freight contracts, on suppliers of concrete for colluding on concrete prices in Queensland, and on large civil engineering companies for colluding on tenders for major public projects in New South Wales.

Section 46 deals with misuse of market power. It prohibits a business with a substantial degree of market power from using its market power to eliminate or substantially damage a competitor or to prevent a firm entering the market or engaging in

competitive conduct in a relevant market. This outlaws predatory pricing, which is described as supplying goods for a sustained period at a price that is less than the relevant cost to the corporation of supplying the good. Under this section the ACCC found that BHP breached the Act when it refused to sell important products to a competitor, Queensland Wire Industries. However, the section does not prevent what small businesses often view as oppressive behaviour by a dominant firm, for example the owner of a large shopping mall may set local monopoly rents and oppressive leasing conditions.

Section 47 prohibits anti-competitive exclusive dealing, which has the aim of substantially lessening competition in a relevant market. Thus, it is prohibited to supply goods on the condition that the purchaser will not acquire goods from a competitor of the supplier or that the purchaser will not resupply the goods in a specified place or classes of place.

Section 48 deals with resale price maintenance. Suppliers may recommend a resale price for goods providing that is only a recommendation and the supplier takes no action to influence the reseller not to sell or resupply below that price. However, the Act prohibits suppliers from specifying a minimum price below which goods or services may not be resold or advertised for sale. It also prohibits inducements to resellers not to discount, for example by giving special deals to resellers who agree not to discount. Following action by the ACCC, the skin-care company, Dermatologica, was fined \$0.25 million for attempting to force two retailers to stop discounting.

## Regulating Dominant Firms

When a firm dominates a market, especially an important one such as telecommunications, energy or transport, general rules of conduct may not be sufficient to protect the public from excessive prices and x-inefficiency. The public interest may require direct regulation of the dominant firm and of the prices it sets. Public ownership is another option. Public ownership enables government to control directly the key output, investment and pricing decisions and provides the government with more information. Here we discuss methods to regulate dominant private firms. But, as discussed in Chapters 16 and 17, similar efficiency and pricing principles apply to a publicly owned firm.

Given that the capacity to charge excessive prices is the main cause of economic inefficiency, price regulation is the logical policy response. However, price regulation is a complex task. The regulator needs to determine the firm's costs, a fair rate of return on capital and the allocation of costs over multiple services. Even an apparently homogeneous product like electricity is characterised by the time of the day or week when it is supplied.

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**Rate-of-return price regulation**  
Setting regulated prices to achieve an expected rate of return

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**Rate-of-return price regulation** is the basis of price regulation. Typically, the regulator reviews the total operating and capital costs of the regulated enterprise to establish a revenue requirement. Sometimes the regulator conducts a supplementary exercise to determine whether the expenses are efficient. The aim is to ensure that regulated revenue is not inflated by inefficient expenditures. In some cases, the regulator estimates the costs of separate services by a cost allocation method (see Chapter 16). The regulator then sets the prices for each service. As we will see in Chapter 17, in the short run efficient prices should reflect short-run marginal costs (SRMC). However, SRMC pricing may not produce enough revenue to provide a reasonable return on capital employed. If this occurs, the regulated firm will not be able to attract capital and there will be under-investment in key services. Therefore, most regulators aim to set prices based on long-run marginal cost inclusive of capital costs.

The process can be represented by the following accounting equation:<sup>6</sup>

$$\sum_{i=1}^n P_i Q_i = \Sigma E + rK \quad (14.4)$$

where  $P$  and  $Q$  are the price and quantity of the  $i$ th service respectively, the firm supplies  $i = 1 \dots n$  services,  $E$  is the firm's operating expenses,  $K$  is the value of capital employed and  $r$  is the rate of return allowed on capital. To determine the appropriate price for each service, the regulator must forecast  $Q$  and  $E$  and determine appropriate values for  $K$  and  $r$ .

To forecast operating expenses, the regulator can draw on recent audited expenses. However, the regulator must allow for normal cost inflation. Also, expenses depend on the quantity of services provided. If the quantity of output is considered either too limited or excessive, the regulator will need a cost function that relates costs to quantity supplied. Also, the regulator may consider that expenses include some x-inefficiency costs which should be discounted going forward.

The main methods for determining the capital value employed are: historic cost after depreciation, reproduction cost, replacement cost or market value. Each of these concepts requires some judgement. The first method requires estimates of depreciation. A further major drawback of this method is that, with inflation, the depreciated historic cost may be far below replacement cost or market value. Therefore, revenues based on this measure may be too low to warrant future investment. Reproduction cost is the cost of reproducing the existing plant at current prices. Again, this may understate the needs of the business as it assumes old technology. Replacement cost is the cost of replacing the capacity with plants embodying

<sup>6</sup> The discussion in this section draws on Viscusi *et al.* (2005, Chapter 12).

current technology. This ensures that the revenues will allow the firm to fund new investment. However, like the previous two methods, it assumes that all past investment in capacity was justified. This problem does not arise with the market value of the productive assets, which is a forward-looking valuation method. But there is a circularity problem with market valuations of capital stock: the market value depends on the prices that the regulator sets.

Having established capital value, a regulator attempts to determine a rate of return that the market would require for a business with its risk characteristics. Essentially, the rate of return must reflect the competitive cost of capital. The pre-tax weighted average cost of capital (WACC) is given simply by Equation 14.5, where  $D$  is the pre-tax cost of debt,  $E$  is the cost of pre-tax equity and  $w$  is the proportion of debt finance.

$$WACC = wD + (1-w)E \quad (14.5)$$

However, the literature on how to estimate this seemingly simple equation is vast.<sup>7</sup> At a simple level, following the Modigliani-Miller theorem on capital structure, in a world without taxes, the WACC is not affected by the proportion of debt finance (the value of  $w$ ). Although debt is lower cost than equity which bears more risk, taking on more debt increases the risk and cost of equity.<sup>8</sup> While an appropriate cost of debt can be inferred from the market, there is debate about whether to use historic or projected debt rates. The cost of equity is typically based on the capital asset pricing model (known as CAPM, see Equation 14.6). This shows the expected return on equity ( $E$ ) as equal to the risk-free return ( $R_f$ ) plus a risk premium which allows for undiversifiable market risk. The risk premium is expressed in terms of the expected return on a diversified market portfolio ( $R_m$ ) and a factor  $\beta$  which is the covariance of the asset returns with the market return. The average value of  $\beta$  across all risk assets is 1.0 but a given asset may have a lower  $\beta$  where returns are less volatile than average and/or returns are regarded as only partly correlated with general market conditions.

$$E = R_f + \beta(R_m - R_f) \quad (14.6)$$

Finally, the regulator sets prices. The regulator set prices for each major service or set a price cap for a group of services (the basket control method). Individual price caps provide greater controls and may be feasible where there are only a few products. However, they are complex to develop and administer. The regulator must determine a fair price for each service that will cover average cost, not just marginal cost, given the required risk-adjusted rate of return. To avoid cross subsidies, information on the allocation of fixed costs and variable overhead costs is required. Alternatively, the regulator may design a two-part tariff system to minimise deadweight losses (see Chapter 17). But this is not practical for a multi-product firm.

Given these complications, regulators often adopt a basket approach. In this case, the regulator specifies the maximum rate at which a weighted price index for a group of products may change. The weights in the index are based on the revenue shares of each product. Thus, a regulator may determine that a firm's weighted price index cannot increase faster than the consumer price index (CPI) or the CPI –  $X$  where  $X$  is a percentage figure such as 1 or 2 per cent which typically reflects potential productivity gains relative to the rest of the economy. It may also reflect a judgement that a firm's current prices are too high. Basket price caps are simpler to administer than a set of individual prices. They also allow a regulated company to determine its relative prices and to alter prices more flexibly when circumstances change.

<sup>7</sup> Useful discussions can be found in reports by the Commonwealth Competitive Neutrality Complaints Office (1998), Australian Energy Regulator (2013) and NSW IPART (2018).

<sup>8</sup> If the interest paid on debt is tax deductible, and the dividends paid to equity are not tax deductible, the pre-tax WACC may fall with the amount of debt used. Dividend imputation partly offsets this effect.

However, the regulator must still judge whether a firm's initial basket of prices is reasonable and whether the basket of prices should decline in real terms at some specified rate because current prices are too high or because of expected productivity gains.

Evidently, rate-of-return price regulation (RoRR) requires a lot of data. Most of this is supplied by the regulated enterprise and the regulator often has incomplete information. RoRR may also weaken incentives to control costs and improve productivity. Under cost-based prices, firms may pass on cost increases in higher prices without breaching the regulated rate of return. Alternatively, RoRR may encourage excess services. Before airlines were deregulated in the United States, they competed with excess services. With the cost increases, the high prices did not breach the regulated rates of return. Firms may also substitute capital for labour when this is efficient and increase their accounting profits (while reducing the rate of return). Generally, firms under RoRR have less incentive to improve productivity if these improvements lead to lower prices rather than increased profits.

Given these problems, there has been much discussion of methods of regulation that would incentivise the regulated firm to be efficient (Weare and Friedmann, 1998). One incentive strategy, sometime called the price cap approach, simply sets maximum prices and allows the regulated firm to retain any profits from productivity gains. However, the effectiveness of the strategy depends on how it is managed. Productivity incentives exist if the regulator holds prices constant in response to the firm's performance but allows prices to change with changes in external factors.

**In conclusion.** Regulating private firms is complex. The regulator has limited information and must forecast market environment and firm performance. Future events may vary from those forecast, so flexibility is needed. Also, price regulation may simply validate the cost structure of the regulated firm. In a review of Australian regulation, the Productivity Commission (2001a) argued that, due to the complexity of price regulation and the poor information on which it is often based, regulated prices are often more inefficient than those that would occur in an unregulated market. High prices penalise consumers. Low prices discourage investment. Given these challenges, price regulation should focus on major monopolistic markets, especially access to essential infrastructure services, where regulation is most beneficial. And the regulator needs to show that regulation improves outcomes compared with market outcomes. Box 14.3 outlines how firms are regulated in Australia.

### Box 14.3 Regulation of dominant firms in Australia

In Australia, Commonwealth and state agencies regulate dominant firms, mainly by price regulation. The regulatory agency is usually an independent agency established by Australian or state legislation.

The ACCC is the most important regulator. The ACCC administers the price regulations clauses in Part III of the *Competition and Consumer Act 2010*, governing essential access to major infrastructure businesses, and the *Prices Surveillance Act 1983*. The ACCC sets price caps for access to telecommunication networks, rail freight and postal services. Other regulatory responsibilities include maintaining competitive safeguards in telecommunications and monitoring major airport, stevedoring and petrol prices.

The Australian Energy Regulator (AER) regulates the wholesale electricity market and is responsible for the economic

regulation of the electricity transmission and distribution networks in the national electricity market. The AER is also responsible for regulation of gas transmission and distribution networks and for enforcing the national gas law and national gas rules in all jurisdictions except Western Australia.

Turning to the states and territories, most have regulatory agencies. For example, in NSW the Independent Pricing and Regulatory Tribunal (IPART) regulates the water, gas, electricity and public transport industries. IPART advises the NSW government on maximum prices for monopoly services provided by government agencies. This includes revenues and/or prices of electricity networks and natural gas pricing and third-party access to gas networks. In Victoria, the Essential Services Commission plays a similar role.

## Competition Policy in Australia

As we saw in Chapter 2, the Australian economy was traditionally protected and not very competitive. However, since the early 1980s governments from both sides of politics have introduced substantial competition reforms. In 1983–84, the Australian government abolished most controls on currency exchanges, floated the Australian dollar and deregulated domestic interest rates. In the late-1980s the government cut tariffs substantially and introduced competition into the airline and telecommunication markets.

In 1995 the states and territories agreed to participate in the competition reform process by signing with the Australian Government the National Competition Policy (NCP) package of agreements.<sup>9</sup> Under the NCP all governments agreed that there should be no restrictions on competition unless these restrictions could be shown to be in the public interest. The public benefit test requires that non-competitive agreements or behaviour be assessed by benefit–cost analysis. In principle, the reforms would include:

- Structural reforms separating regulatory from commercial functions and natural monopoly elements from contestable elements.
- Competitive neutrality with public agencies competing on the same terms as private firms.
- Independent authorities to set and administer prices for monopoly service providers.
- Introduction of a national regime ensuring that monopoly suppliers of essential infrastructure services provide access to third parties on reasonable terms and conditions.
- A legislative review program to assess whether regulatory restrictions on competition are in the public interest and, if not, the changes required.

To implement the agreements, the *Trade Practices Act* was extended to include government businesses. The ACCC was established to implement the Act, taking over from the Trade Practices Commission and the Prices Surveillance Authority. The National Competition Council (NCC) would monitor the progress of reforms, especially by state governments.

The Commonwealth, states and territories signed the agreement only after protracted arguments over the distribution of benefits and costs. The Industry Commission (1995) estimated that the reforms would increase GDP by 5.5 per cent per annum with four-fifths of these benefits due to reforms by state and local government and only one-fifth to reforms by the Commonwealth. However, whereas the Commonwealth would gain significant tax revenue from the reforms, especially from sales of power, gas and water businesses, the states would lose previously untaxed surpluses from these industries. To obtain agreement to the reforms, the Commonwealth agreed to increase general revenue grants to the states and territories by up to \$600 million per annum in 1994–95 dollars, subject to satisfactory implementation of the NCP as assessed by the NCC.

These reforms affected all major sectors of the economy, including agriculture, mining, manufacturing, banking, the professions and public services. In 1998, the OECD (1998, p. 40) declared that ‘the regulatory review in Australia is unprecedented in its scope and ambition in OECD countries’. The ACCC (run by economists) enforced the *Trade Practices Act* much more aggressively than did its predecessor, the Trade Practices Commission (run by lawyers). The average effective rate of assistance for manufacturing industry fell from 22 per cent in 1984–85 to 6 per cent in 1996–97 (Productivity Commission, 1991a). Over the same period,

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<sup>9</sup> The National Competition Package included the Competition Principles Agreement (CPA), the Conduct Code Agreement and the Agreement to Implement Competition Policy. Clause 5(1) of the CPA provided that ‘The Guiding Principle is that legislation (including Acts, enactments, Ordinances or regulations) should not restrict competition unless it can be demonstrated that: (a) the benefits of the restriction to the community as a whole outweigh the costs; or (b) the objectives of the legislation can only be achieved by restricting competition.’

trade intensity (the ratio of imports plus exports to GDP) increased from 30 per cent to 47 per cent. Liberalisation of foreign investment increased competition in local markets. Inward direct foreign investment increased from 1 per cent of GDP to 2 per cent of GDP. The Commonwealth introduced a requirement that a Regulatory Impact Statement, including a cost–benefit analysis, be undertaken for all existing and proposed regulations that may affect business. The state governments reviewed many restrictive laws and regulations.

The Productivity Commission (2005a) argued that these reforms produced important benefits (see below). However, the Commission also noted that reform was incomplete in many areas. Integrated national markets still did not exist in the energy, water and freight transport sectors. There were competitive restrictions in broadcasting, pharmacy and insurance services. State governments had not completed their reviews of restrictive legislation. The Commission also argued that there would be substantial gains from more competition in delivery of human services (community services, health and vocational education and training). Other challenges include the billion dollar assistance for domestic procurement for the defence industry, restricted competition in the provision of public transport, and the structure of industrial relations.

## Benefits of Competition Policy

The benefits of competition policies are the reduction in the costs of imperfect competition described previously. They include increased supplies of goods due to more competitive pricing, reductions in x-inefficiency in production and increased innovation. Also, there may be reductions in the rent-seeking expenses associated with protection and industry assistance.

Most estimates of the benefits of competition policy focus on reductions in prices in the industries that are directly affected by competition policies because these are the most readily observable outcome. Lower prices are generally assumed to reflect productivity gains. Improvements in productivity allow resources to be released into other sectors.

However, there are important caveats. First, to estimate the effect of competition policies, the counterfactual (outcomes without the competition policies) must be estimated. Changes due to technical progress should not be counted as a benefit of deregulation. Second, lower costs may reflect lower wages as workers in the now unprotected industries no longer extract part of the economic rent in the industry. If labour is initially paid a wage above its opportunity cost, some savings in costs are transfers from workers to shareholders or consumers and are not real productivity benefits. On the other hand, lower prices may underestimate the benefits if they do not allow for any dynamic effects of competition policy flowing on to other sectors, for example through increased exports.

Ideally, gains from competition policies would be estimated using a computable general equilibrium (CGE) model of the economy. This allows for changes in output and prices in all sectors of the economy and for the release of factors of production into and out of the newly competitive sectors. However, a CGE model has many in-built and not always transparent assumptions. In any case, to estimate the benefits of competition policy it is necessary to estimate the counterfactuals.

**Reviews of the effects of competition policies.** In an early study Winston (1993) reviewed the effects of deregulation programs in the United States between the late 1970s and early 1990s. In this period, the proportion of GDP produced by fully regulated industries fell from 17 per cent to 7 per cent. Market conditions changed greatly in the transportation, energy, telecommunications and financial industries, which accounted for \$600 billion of output. The total estimated benefit of about \$40 billion per annum (Table 14.1) is conservative because it excludes benefits for the energy sector (not then analysed) and savings in rent-seeking costs. Ninety per cent of the estimated benefits accrued to consumers via lower prices or improved

services, for example in improved service frequency and reliability and faster travel times. Firms increased profits due to cost savings in the airlines and railroads, but lost profits with lower revenues in the trucking industry. Employment increased in cable television and banking but declined in trucking. In other industries, the employment effect was unclear.

The OECD (1998) reviewed productivity gains in OECD countries, including the United States, due to regulatory reform. Table 14.2 shows the estimated reductions in real prices that followed elimination of economic regulations. The report claims that these price reductions reflect large gains in labour and capital productivity, although it acknowledges that part of the reductions may be attributable to factors other than regulatory reform.

The OECD reports that labour productivity growth rates in the manufacturing sectors most affected by competition-enhancing reforms were double those in other sectors from 1986 to 1991. Capital productivity increased greatly in the road haulage industries. In addition, market liberalisation in telecommunications facilitated a rapid take-up of new services. The effect on employment depends on the output effects of the reforms and the flexibility of the labour market. In many industries, in telecommunications in Japan and Finland, in retailing in Sweden and the Netherlands, and in airlines in the United States, the increase in output more than offset the labour productivity gains, resulting in net job increases.

For Australia, the Productivity Commission (2005a) noted that the rate of increase in real per capita incomes in the second half of the 1990s was as high as at any time in the 20th century. Also, labour force participation was as high and unemployment as low as at any time over the past three decades. It attributed much of this growth to the competition reforms. It also noted that the only CGE modelling of the reforms was the prospective work cited above by the Industry Commission (1995).

In its 2005 review the Productivity Commission estimated the economy-wide gains due to productivity improvements and price changes over the 1990s in the electricity, gas, urban water, telecommunications, urban transport, ports and rail freight sectors, in all of which there

**Table 14.1 Welfare effects of deregulation in the United States in the 1980s (\$bn per annum at 1990 prices)**

<i>Industry</i>	<i>Consumers</i>	<i>Producers</i>	<i>Total</i>
Airlines	8.8-14.8	4.9	13.7-9.7
Railroads	7.2-9.7	3.2	12.4-12.9
Trucking	15.4	-4.8	12.6
Telecommunications	0.73-1.6	-	0.73-1.6
Cable television	0.37-1.3	-	0.37-1.3
Brokerage	0.14	-0.14	0.0
Naturalgas	Na	Na	na
Total	32.6-43.0	3.2	35.8-46.2

Source: Winston (1993).

**Table 14.2 Real price reductions after elimination of regulations**

<i>Sector</i>	<i>Countries</i>	<i>Price reductions (%)</i>
Road transport	France, Germany, Mexico, USA	19-30
Airlines	Australia, Spain, UK, USA	20-33
Electricity	Japan, Norway, UK	5-26
Financialservices	UK, USA	30-70
Professionalservices	UK (conveyancing)	33
Telecommunications	Finland, Japan, Korea, Mexico, UK	10-66

Source: OECD (1998), *The OECD Report on Regulatory Reform, Synthesis*.

were significant reforms. In the 1990s, real prices fell Australia-wide by 19 per cent in the electricity sector, by over 20 per cent in telecommunications, by between 8 and 42 per cent for rail freight and by up to 50 per cent for port charges. The Commission concluded that reforms in infrastructure services boosted GDP by 2.5 per cent but this was a partial estimate because it does not include all effects of the policy changes since 2000.

### Concluding Observations

In concluding, we note two very different issues. First, we must note that we have not addressed in this chapter possibly the most important industry issue of our time — namely the control of the internet which is dominated by a few extraordinarily large US companies, including Google, Facebook, Amazon, as well as by Chinese giants, Alibaba and Tencent. The issues here are both highly complex and politically important with allegations of international sabotage, fake news, abuse of private information and manipulations of democratic processes in both the United States and the United Kingdom. We will discuss these issues as we review and progress this in-line edition.

Second, and quite differently, in its most recent 5-year review of productivity in Australia, the Productivity Commission (2017) devoted only one of the five main chapters to the role of markets. Here the two main recommendations were reform of the energy markets (a mess largely caused by inconsistent government policies) and creating an effective environment for market innovation. In the other four chapters, the Commission focussed on improving the health of Australians, investing in future skills, more efficient towns and cities and more effective governments. This perspective emphasises the important and integral role of government in increasing productivity. Competitive markets are important, but not the whole productivity story.

### Summary

<ul style="list-style-type: none"> <li>• Competition policy is mainly about creating and maintaining competitive industry structures and behaviour. The aims are to improve the allocative, productive and dynamic efficiency of the economy.</li> <li>• The relationship between competition policy and regulation is complex. Government often must regulate the conduct of firms to ensure that they act competitively. Also, when there are dominant firms, government may regulate their behaviour to ensure that they act in the public interest. On the other hand, improving competitiveness may require doing away with some regulations.</li> <li>• The costs of monopolies include high prices due to restrictions on output, excessive production costs and a lack of innovation. Also, firms may incur unproductive rent-seeking costs. Collectively, these costs may total several percentage points of GDP.</li> <li>• Competition strategies include structure, conduct and performance policies.</li> </ul>	<ul style="list-style-type: none"> <li>• Structural policies aim to create a competitive industry structure, for example by prohibiting acquisitions and mergers that would create a dominant business.</li> <li>• Competitive policies deal with the general competitive behaviour of firms, for example outlawing collusive and other anti-competitive behaviour.</li> <li>• Performance policies regulate dominant firms in key sectors, usually by rate-of-return price regulation. However, this may not provide an incentive to reduce costs. Also, there is a risk that such price regulation will reduce investment.</li> <li>• Over the last 15-20 years, many OECD countries, including Australia, have introduced policies designed to increase competition. These have included opening the public sector to competition.</li> <li>• These competition policies appear to have significantly reduced the prices of basic services and to have increased productivity and gross domestic product.</li> </ul>
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## Questions

- Should mergers and acquisitions that substantially reduce competition always be opposed?
- What are the various ways to measure market power and industry concentration?
- Why might rate-of-return price regulation of a dominant firm give rise to inefficiencies?
- Assume that a monopolist produces at constant marginal cost such that  $MC = 40$ . The monopolist faces a demand curve given by  $Q^d = 110 - 2P$ . Determine the following:
  - The marginal revenue function.
  - The profit maximising price and quantity combination of the monopolist.
  - The output level that would have been produced if the industry had been perfectly competitive.
  - The deadweight loss as a result of monopoly production.
- Suppose that a firm operating in a perfectly competitive industry can produce at a constant marginal cost of \$15 per unit. Suppose also that if the same firm operated as a monopoly it would produce at a constant marginal cost of \$20 per unit. If the market demand the firm faces is given by  $Q^d = 1260 - 4P$  and the marginal revenue is given by  $MR = 315 - 0.5Q$ , determine the following:
  - The perfectly competitive and monopoly outputs and prices.
  - The loss of consumer surplus under monopoly production.
- Suppose that a firm can produce at constant marginal costs of \$5 per unit. It has a market demand of  $Q^d = 60 - 3P$ . Determine the following:
  - The marginal revenue function.
  - The rent-seeking costs that the firm might incur to ensure its market was regulated to enable it to charge monopoly prices.
  - The deadweight loss that would arise as a result of the monopoly position.
  - The overall loss arising from the regulation.
- If workers in developing countries work in inferior conditions, is this unfair competition?
- Virgin Airlines has accused Qantas of engaging in predatory behaviour by increasing flights and reducing prices on inter-city flights. What criteria would you use, and what data would you require, to determine whether a firm is engaging in predatory pricing?
- Australian competition policy requires that mergers and acquisitions be not allowed when they would result in a 'substantial lessening of competition'. What issues arise in interpreting this principle?
- Can vertically integrated firms have internally exclusive dealings and thus avoid competitive restrictions on exclusive dealings?
- What economic factors should a regulator consider in dealing with proposed mergers and acquisitions?
- In the UK football (soccer) league there are no restrictions on payments to players. In Australia the football leagues impose salary caps on payments. What are the competitive implications?

## Further Reading

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