

**GLOSSARY OF INDUSTRIAL
ORGANISATION ECONOMICS
AND COMPETITION LAW**

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ORGANISATION FOR ECONOMIC CO-OPERATION AND
DEVELOPMENT

FOREWORD

The Centre for Co-operation with European Economies in Transition, created in March 1990, is the focal point for co-operation between the OECD and central and eastern European countries and the former Soviet republics. Its major responsibility is to design and manage a programme of policy advice, technical assistance and training which puts the expertise of the Secretariat and Member countries at the disposal of countries engaged in economic reform.

In December 1990, the Council adopted a programme "Partners in Transition" for the purpose of providing more focused assistance to those countries that are more advanced in introducing market-oriented reforms and desire to become members of OECD. Additional activities which the Centre co-ordinates under this programme include reviews of the country's economic situation and prospects; reviews of specific policy areas and the participation of the Partner countries in a number of OECD committees.

In all these activities, the Centre maintains close relations with other multilateral bodies with the mutual objective of ensuring the complementarity of respective efforts to support economic reforms in Central and Eastern Europe and the former Soviet Union.

This Glossary of Industrial Organisation Economics and Competition Law has been commissioned by the Directorate for Financial, Fiscal and Enterprise Affairs in the framework of the Centre's work programme, to assist officials, academics and policy makers in the reforming central and eastern European economies in their understanding of the basic concepts of modern micro-economics.

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Director of the Centre for Co-operation
with the European Economies in Transition

Index of Terms

Terms in **bold** type are defined and discussed in this glossary. Those in *italics* are cross-referenced or incorporated in the discussion of other related terms and concepts. (The column of figures below right indicates the corresponding term in the French version of the Glossary).

1.	1. Abuse of Dominant Position	2
2.	2. Acquisition	7
3.	3. Administered Prices	152
4.	4. Advertising	168
5.	5. <i>Aggregate Concentration</i> (See Concentration).....	27
6.	6. Agreement	4
7.	7. <i>Allocative Efficiency</i> (See Pareto Efficiency).....	79
8.	8. <i>Alternative Costs</i> (See Opportunity Costs).....	48
9.	9. <i>Amalgamation</i> (See Merger)	1
10.	10. Anticompetitive Practices	147
11.	11. <i>Anti-Monopoly Policy</i> (See Antitrust)	143
12.	12. Antitrust	8
13.	13. <i>Average Costs</i> (See Costs)	54
14.	14. Barriers to Entry	11
15.	15. Basing Point Pricing	153
16.	16. Bertrand (Nash) Equilibrium	90
17.	17. Bid Rigging	194
18.	18. Bilateral Monopoly/Oligopoly	129
19.	19. Brand Competition (Inter- and Intra-).....	38
20.	20. Bundling	196
21.	21. <i>Buyer Concentration</i> (See Concentration)	30
22.	22. Buyout	173
23.	23. Cartel	15, 83
24.	24. <i>Cartelization</i> (See Cartel, Collusion, Monopolization)	19
25.	25. Collusion	23
26.	26. <i>Collusive bidding (tendering)</i> (See Bid Rigging).....	202
27.	27. Combination	20
28.	28. <i>Common Control</i> (See Control of Enterprises, Holding	

	Company)	44
29.	Competition	33
30.	<i>Compulsory Licensing</i> (See Licensing)	119
31.	Concentration	26
32.	Concentration Indexes	114
33.	<i>Concentration Measures</i> (See Concentration Indexes)	126
34.	<i>Concentration Ratio</i> (See Concentration Indexes).....	126
35.	<i>Concerted Action or Practice</i> (See Cartel, Collusion).....	148
36.	Conglomerate	42
37.	<i>Conglomerate Merger</i> (See Merger).....	102
38.	Conscious Parallelism	139
39.	Consolidation	104
40.	Conspiracy	9
41.	<i>Constant Returns to Scale</i> (See Economies of Scale).....	182
42.	Consumers' Surplus	198
43.	Consumer Welfare	13
44.	Contestability	43
45.	<i>Contestable Markets</i> (See Contestability)	121
46.	Control of Enterprises	45
47.	Costs	47
48.	<i>Countervailing Power</i> (See Bilateral Monopoly, Buyer Concentration, Monopsony)	145
49.	Cournot (Nash) Equilibrium	91
50.	<i>Crisis Cartel</i> (See Cartel)	16
51.	Cross Price Elasticity of Demand	81
52.	Cut-Throat Competition	34
53.	Deadweight Welfare Loss	142
54.	Deconcentration	58
55.	Deep Pockets	201
56.	<i>Delivered Pricing</i> (See Basing Point Pricing)	161
57.	<i>Demonopolization</i> (See Anti-Monopoly Policy, Antitrust, Deconcentration)	62
58.	<i>Depression Cartel</i> (See Cartel)	16
59.	<i>Deregulation</i> (See Regulation).....	63
60.	<i>Destructive Competition</i> (See Cut-Throat Competition).....	34
61.	<i>Differentiated Products</i> (See Product Differentiation).....	163
62.	<i>Discrimination</i> (See Price Discrimination).....	67
63.	<i>Diseconomies of Scale</i> (See Economies of Scale)	64
64.	<i>Distributor's Mark</i> (See Trade Mark)	124
65.	Diversification	70
66.	Divestiture	61
67.	Dominant Firm	89

68.	<i>Dominant Market Position</i> (See Dominant Firm)	144
69.	<i>Dominant Price Leadership</i> (See Dominant Firm, Price Leadership)	100
70.	Dumping	72
71.	Duopoly	73
72.	Economies of Scale	74
73.	Economies of Scope	75
74.	Efficiency	77
75.	Elasticity of Demand (Price)	81
76.	Enterprise	86
77.	<i>Entropy</i> (See Concentration Indexes).....	21
78.	Excess Capacity	197
79.	<i>Excessive Competition</i> (See Cut-Throat Competition)	35
80.	Excess Prices	151
81.	<i>Exclusive Dealing</i> (See Vertical Restraints).....	69
82.	Export Cartel	84
83.	<i>External Economies/Diseconomies</i> (See Externalities)	76
84.	Externalities	94
85.	Extraterritoriality	97
86.	Failing Firm	88
87.	Fighting Brand	195
88.	<i>Fixed Costs</i> (See Costs).....	51
89.	<i>Foreclosure of Competition</i> (See Anticompetitive Practices)	98
90.	Franchising	101
91.	Free Rider or Riding	140
92.	Full Cost Pricing	127
93.	<i>Full-Line Forcing</i> (See Tied Selling)	204
94.	<i>Gentlemen's Agreement</i> (See Collusion)	107
95.	<i>Gini Coefficient</i> (See Concentration Indexes).....	22
96.	<i>Herfindahl-Hirschman Index</i> (See Concentration Indexes)	111
97.	<i>Heterogenous Products</i> (See Homogenous Products, Product Differentiation)	164
98.	Holding Company	192
99.	Homogenous Products	165
100.	<i>Horizontal Integration</i> (See Merger)	117
101.	<i>Horizontal Mergers</i> (See Merger).....	105
102.	Income Elasticity of Demand	82
103.	<i>Increasing Returns to Scale</i> (See Economies of Scale)	183
104.	<i>Industry Concentration</i> (See Concentration).....	32
105.	<i>Integration</i> (See Vertical Integration)	116
106.	Intellectual Property Rights	71

107.	<i>Inter- and Intra-Brand Competition</i> (See Brand Competition)	36
108.	Interlocking Directorate	57
109.	<i>International Cartel</i> (See Cartel).....	17
110.	<i>Inverse Index</i> (See Concentration Indexes).....	113
111.	<i>Joint Monopoly Profits</i> (See Joint Profit Maximization)	167
112.	Joint Profit Maximization	125
113.	Joint Venture	87
114.	Lerner Index	112
115.	<i>Leveraged Buyout</i> (See Buyout)	172
116.	Licensing	136
117.	Limit Pricing	160
118.	<i>Lorenz Curve</i> (See Concentration Indexes).....	46
119.	Loss-Leader Selling	203
120.	<i>Management Buyout</i> (See Buyout)	173
121.	<i>Marginal Cost</i> (See Costs)	53
122.	<i>Marginal Revenue</i> (See Revenue)	175
123.	Market	120
124.	<i>Market Concentration</i> (See Concentration).....	29
125.	Market Definition	60
126.	Market Failure	59
127.	Market for Corporate Control	122
128.	Market Power	169
129.	Market Share	141
130.	Merger	102
131.	Mobility Barriers	12
132.	Monopolistic Competition	37
133.	Monopolization	133
134.	Monopoly	128
135.	<i>Monopoly Power</i> (See Market Power)	146
136.	<i>Monopoly Rents</i> (See Rent).....	186
137.	Monopsony	134
138.	Nash Equilibrium	92
139.	Natural Monopoly	130
140.	<i>Negative Externality</i> (See Externalities).....	95
141.	Non-Price Predation	93
142.	Oligopoly	137
143.	<i>Oligopsony</i> (See Monopsony)	138
144.	Opportunity Costs (or <i>Alternative Costs</i>)	49
145.	<i>Ownership Concentration</i> (See Concentration)	28
146.	<i>Package Tie-in</i> (See Bundling).....	205
147.	Parent	193
148.	Pareto Efficiency	78

149.	Patents	14
150.	Perfect Competition	39
151.	<i>Per Se Illegal</i> (See Rule of Reason)	110
152.	<i>Positive Externality</i> (See Externalities)	96
153.	Predatory Pricing	156
154.	<i>Preemption of Facilities</i> (See Barriers to Entry, Anticompetitive Practices)	3
155.	<i>Price Cartel</i> (See Cartel)	85
156.	Price Discrimination	68
157.	Price-Fixing Agreement	85
158.	Price Leadership	157
159.	Price Regulation	181
160.	<i>Producers' Surplus</i> (See Deadweight Welfare Loss).....	199
161.	Privatization	150
162.	Product Differentiation	65
163.	Profit	66
164.	Profitability	184
165.	<i>Quasi-rents</i> (See Rent)	170
166.	Rationalization Agreement	5
167.	Reciprocity	177
168.	Recommended or Suggested Price	154
169.	Refusal to Deal/Sell	178
170.	Regulation	180
171.	Rent	185
172.	Rent Seeking	176
173.	Resale Price Maintenance (RPM)	159
174.	<i>Restriction of Entry to the Market</i> (See Barriers to Entry, Limit Pricing)	187
175.	<i>Restriction of Technology</i> (See Licensing).....	190
176.	Restriction on Exportation	188
177.	Restriction on Importation	189
178.	Revenues	174
179.	<i>Ruinous Competition</i> (See Cut-Throat Competition)	35
180.	Rule of Reason	179
181.	Second Best, Theory of	200
182.	<i>Self-Regulation</i> (See Regulation)	10
183.	<i>Seller Concentration</i> (See Concentration)	31
184.	Selling Below Cost	203
185.	Shared or Joint Monopoly	131
186.	Shipping Conferences	41
187.	Specialization Agreements	6

188.	Standards	135
189.	Strategic Behaviour	25
190.	Subsidiary	99
191.	<i>Substantial Lessening of Competition</i> (See Market Power)	66
192.	Sunk Costs	52
193.	<i>Sustainable Monopoly</i> (See Contestability)	132
194.	<i>Tacit Collusion</i> (See Collusion, Conscious Parallelism)	24
195.	Takeover	149
196.	Tied Selling	205
197.	<i>Total costs</i> (See Costs)	55
198.	Trade Mark	123
199.	Transaction Costs	50
200.	<i>Uniform Delivered Pricing</i> (See Basing Point Pricing).....	162
201.	<i>Variable Costs</i> (See Costs).....	56
202.	Vertical Integration	118
203.	<i>Vertical Merger</i> (See Merger).....	106
204.	Vertical Restraints (or Restrictions)	191
205.	Workable Competition	40
206.	<i>X-Efficiency</i> (See Efficiency, X-Inefficiency)	206
207.	X-Inefficiency	207
1.	Abuse of Dominant Position	

Anticompetitive business practices in which a **dominant firm** may engage in order to maintain or increase its position in the market. These business practices by the firm, not without controversy, may be considered as "abusive or improper exploitation" of monopolistic control of a market aimed at restricting competition. The term abuse of dominant position has been explicitly incorporated in competition legislation of various countries such as Canada, EEC and Germany. In the United States, the counterpart provisions would be those dealing with monopoly and attempts to monopolize or monopolization of a market.

Which of the different types of business practices are considered as being abusive will vary on a case by case basis and across countries. Some business practices may be treated differently in different jurisdictions as well. However, the business practices which have been contested in actual cases in different countries, not always with legal success, have included the following: charging unreasonable or **excess prices, price discrimination, predatory pricing**, price squeezing by integrated firms, **refusal to deal/sell, tied selling** or product bundling and *pre-emption of facilities*. See **Anticompetitive practices**. See also I. Schmidt, "Different Approaches and Problems in Dealing With Control of Market Power: A Comparison of German, European and U.S. Policy Towards Market-Dominating Enterprises", *Antitrust Bulletin*, Vol. 28, 1983, pp. 417-460. And, F.M. Scherer

and D. Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin Co., Boston, 1990, Ch. 12, especially pp. 483-488.

2. Acquisition

Refers to obtaining ownership and control by one firm, in whole or in part, of another firm or business entity. As distinct from a **merger**, an acquisition does not necessarily entail *amalgamation* or **consolidation** of the firms. An acquisition, even when there is complete change in control, may lead the firms involved to continue to operate as separate entities. Nevertheless, joint control implies joint profit maximization and is a potential source of concern to antitrust authorities. See also **Takeover**.

3. Administered Prices

Administered prices are prices set by firms that do not vary in response to short-run fluctuations in demand and supply conditions. This price rigidity has been viewed by some economists as arising from the exercise of **market power**. Various research studies have been conducted attempting to link administered prices to **concentration** and inflation. What emerges from the findings is that there are differences across industries (and across countries) in the degree of price flexibility which simple models of market clearing cannot fully explain. However, researchers have been confronted with serious measurement difficulties, notably the fact that official price indices often do not reflect price discounts. For further details, see D.W. Carlton, "The Theory and the Facts of How Markets Clear", in R. Schmalensee and R. Willig (eds.), *The Handbook of Industrial Organization*, North Holland, Amsterdam, 1989.

4. Advertising

Advertising helps manufacturers differentiate their products and provides information about products to consumers. As information, advertising provides many benefits to consumers. Price advertising, for example, lowers market prices. Advertising that tells consumers about the existence of new products facilitates entry. On the other hand, by contributing to **product differentiation**, advertising may create **market power** by raising **barriers to entry**. Much empirical work has been carried out about the competitive effects of advertising, with no definitive results.

5. *Aggregate Concentration*

See **Concentration**.

6. **Agreement** (to lessen or restrict competition)

Agreement refers to an explicit or implicit arrangement between firms normally in competition with each other to their mutual benefit. Agreements to restrict competition may cover such matters as prices, production, markets and customers. These types of agreements are often equated with the formation of **cartels** or **collusion** and in most jurisdictions are treated as violations of competition legislation because of their effect of increasing prices, restricting output and other adverse economic consequences.

Agreements may be arrived at in an extensive formal manner, and their terms and conditions are explicitly written down by the parties involved; or they may be implicit, and their boundaries are nevertheless understood and observed by convention among the different members. An explicit agreement may not necessarily be an "overt" agreement, that is one which can be openly observed by those not party to the agreement. Indeed, most agreements which give rise to **anticompetitive practices** tend to be covert arrangements that are not easily detected by competition authorities.

Not all agreements between firms are necessarily harmful of competition or proscribed by competition laws. In several countries, competition legislation provides exemptions for certain cooperative arrangements between firms which may facilitate efficiency and dynamic change in the marketplace. For example, agreements between firms may be permitted to develop uniform product standards in order to promote **economies of scale**, increased use of the product and diffusion of technology. Similarly, firms may be allowed to engage in cooperative research and development (R&D), exchange statistics or form **joint ventures** to share risks and pool capital in large industrial projects. These exemptions, however, are generally granted with the proviso that the agreement or arrangement does not form the basis for **price fixing** or other practices restrictive of competition.

7. *Allocative Efficiency*

See **Pareto Efficiency**.

8. *Alternative Costs*

See **Opportunity Costs**.

9. *Amalgamation*

See **Merger**.

10. **Anticompetitive Practices**

Refers to a wide range of business practices in which a firm or group of firms may engage in order to restrict inter-firm **competition** to maintain or increase their relative market position and profits without necessarily providing goods and services at a lower cost or of higher quality.

The essence of competition entails attempts by firm(s) to gain advantage over rivals. However, the boundary of acceptable business practices may be crossed if firms contrive to artificially limit competition by not building so much on their advantages but on exploiting their market position to the disadvantage or detriment of competitors, customers and suppliers such that higher prices, reduced output, less consumer choice, loss of economic efficiency and misallocation of resources (or combinations thereof) are likely to result.

Which types of business practices are likely to be construed as being anticompetitive and, if that, as violating competition law, will vary by jurisdiction and on a case by case basis. Certain practices may be viewed as *per se illegal* while others may be subject to **rule of reason**. **Resale price maintenance**, for example, is viewed in most jurisdictions as being per se illegal whereas exclusive dealing may be subject to rule of reason. The standards for determining whether or not a business practice is illegal may also differ. In the United States, **price fixing agreements** are per se illegal whereas in Canada the agreement must cover a substantial part of the market. With these caveats in mind, competition laws in a large number of countries examine and generally seek to prevent a wide range of business practices which restrict competition. These practices are broadly classified into two groups: horizontal and vertical restraints on competition. The first group includes specific practices such as **cartels, collusion, conspiracy, mergers, predatory pricing, price discrimination and price fixing agreements**. The second group includes practices such as **exclusive dealing**, geographic market restrictions, **refusal to deal/sell, resale price maintenance** and **tied selling**. Generally speaking, horizontal restraints on competition primarily entail other competitors in the market whereas vertical restraints entail supplier-distributor relationships. However, it should be noted that the distinction between horizontal

and vertical restraints on competition is not always clear cut and practices of one type may impact on the other. For example, firms may adopt **strategic behaviour** to *foreclose competition*. They may attempt to do so by *pre-empting facilities* through acquisition of important sources of raw material supply or distribution channels, enter into long term contracts to purchase available inputs or capacity and engage in *exclusive dealing* and other practices. These practices may raise **barriers to entry** and entrench the market position of existing firms and/or facilitate anticompetitive arrangements.

11. *Anti-Monopoly Policy*

See **Antitrust**.

12. **Antitrust**

Antitrust refers to a field of economic policy and laws dealing with **monopoly** and monopolistic practices. Antitrust law or antitrust policy are terms primarily used in the United States, while in many other countries the terms competition law or policy are used. Some countries have utilized the phrases Fair Trading or Antimonopoly law. The intellectual basis for antitrust economics or policy is the sub-field of industrial organization economics which addresses issues arising from the behaviour of firms operating under different market structure conditions and the effect this has on economic performance. Most antitrust or competition laws have provisions dealing with structure such as **mergers**, **monopoly**, *dominant market position* and **concentration**, as well as behaviour, such as **collusion**, **price fixing**, and **predatory pricing**.

13. *Average Costs*

See **Costs**.

14. **Barriers to Entry**

Barriers to entry are factors which prevent or deter the entry of new firms into an industry even when incumbent firms are earning excess profits. There are two broad classes of barriers: structural (or innocent) and strategic. These two classes are also often referred to as economic and behavioural barriers to entry.

Structural barriers to entry arise from basic industry characteristics such as

technology, costs and demand. There is some debate over what factors constitute relevant structural barriers. The widest definition, that of Joe Bain, suggests that barriers to entry arise from **product differentiation**, absolute cost advantages of incumbents, and **economies of scale**. Product differentiation creates advantages for incumbents because entrants must overcome the accumulated brand loyalty of existing products. Absolute cost advantages imply that the entrant will enter with higher unit costs at every rate of output, perhaps because of inferior technology. Scale economies restrict the number of firms which can operate at minimum costs in a market of given size.

A narrower definition of structural barriers is given by George Stigler, who suggests that barriers to entry arise only when an entrant must incur costs which incumbents do not bear. This definition excludes scale economies as a barrier. There is some debate as to whether Stigler's definition includes costs not currently being incurred by incumbents or costs which have never been incurred by incumbents.

Other economists would emphasize the importance of **sunk costs** as a barrier to entry. Since such costs must be incurred by entrants, but have already been borne by incumbents, a barrier to entry is created. In addition, sunk costs reduce the ability to exit and thus impose extra risks on potential entrants.

Strategic barriers to entry arise from the behaviour of incumbents. In particular, incumbents may act so as to heighten structural barriers or threaten to retaliate against entrants if they do enter. Such threats must, however, be credible in the sense that incumbents must have an incentive to carry them out if entry does occur. See **Strategic Behaviour**.

Strategic entry deterrence often involves some kind of pre-emptive behaviour by incumbents. One example is the *pre-emption of facilities* by which an incumbent over-invests in capacity in order to threaten a price war if entry occurs. Another would be the artificial creation of new brands and products in order to limit the possibility of imitation. This possibility remains subject to considerable debate.

It should also be noted that governments can be a source of entry barriers through **licensing** and other regulations.

A concise discussion, with examples, is found in P. Geroski and A. Jacquemin, "Industrial Change, Barriers to Mobility and European Industrial Policy", *Economic Policy*, Nov. 1985, section 3. For more detail see R. Gilbert. "Mobility Barriers and the Value of Incumbency", in R. Schmalensee and R. Willig (eds), *The Handbook of Industrial Organization*, North Holland,

Amsterdam, 1989.

15. Basing Point Pricing

Basing point pricing (also known as *delivered pricing*) refers to a system in which a buyer must pay a price for a product inclusive of freight costs that does not depend on the location of the seller. The freight costs may be calculated from a specific location or "basing point" from standard published freight rate schedules. Under this system, customers located near or far from the basing point pay the same price. Thus nearby customers are discriminated against or are charged "phantom" freight that they would not incur if they had a choice of paying separately for the product and for the freight charges. Conversely, the freight costs of distant customers are absorbed by the sellers. This practice has been extensively used in industries such as steel and cement and has been viewed as a method to facilitate **collusion** among firms. In **competition** prices are expected to reflect costs. Economists therefore expect FOB (free on board) plus actual freight costs to emerge in competition. However, firms even in competition may adopt a system of delivered pricing because it is simple and saves administrative costs. This is particularly the case when firms establish price zones within which transportation distances and costs do not vary very much. Moreover FOB pricing plus actual freight costs may be a better means of collusion because it facilitates allocation of customers geographically. In addition the practice may be adopted in order to deter locational entry by otherwise competing firms.

16. Bertrand (Nash) Equilibrium

In a Bertrand model of oligopoly, firms independently choose prices (not quantities) in order to maximize profits. This is accomplished by assuming that rivals' prices are taken as given. The resulting equilibrium is a **Nash equilibrium** in prices, referred to as a Bertrand (Nash) equilibrium.

When the industry is symmetric, i.e., comprising firms of equal size and identical costs, and the costs are constant and the product homogenous, the Bertrand equilibrium is such that each firm sets price equal to marginal cost, and the outcome is **Pareto efficient**. This result holds regardless of the number of firms and stands in contrast to the **Cournot equilibrium** where the deviation from Pareto efficiency increases as the number of firms decreases.

However, when products are differentiated even the Bertrand model results in prices which exceed marginal cost, and the difference increases as products become more differentiated.

For details, and a comparison of Bertrand and Cournot models, see C. Shapiro, "Theories of Oligopoly Behavior", in R. Schmalensee and R. Willig (eds), *The Handbook of Industrial Organization*, North Holland, Amsterdam, 1989.

17. Bid Rigging

Bid rigging is a particular form of collusive **price-fixing** behaviour by which firms coordinate their bids on procurement or project contracts. There are two common forms of bid rigging. In the first, firms agree to submit common bids, thus eliminating price competition. In the second, firms agree on which firm will be the lowest bidder and rotate in such a way that each firm wins an agreed upon number or value of contracts.

Since most (but not all) contracts open to bidding involve governments, it is they who are most often the target of bid rigging. Bid rigging is one of the most widely prosecuted forms of **collusion**.

18. Bilateral Monopoly/Oligopoly

A situation where there is a single (or few) buyer(s) and seller(s) of a given product in a **market**. The level of **concentration** in the sale of purchase of the product results in a mutual inter-dependence between the seller(s) and buyer(s). Under certain circumstances the buyer(s) can exercise *countervailing power* to constrain the **market power** of a single or few large sellers in the **market** and result in greater output and lower prices than would prevail under **monopoly** or **oligopoly**. This would particularly be the case when: the "upstream" supply of the product is elastic, i.e. fairly responsive to price changes and not subject to production bottlenecks; the buyers can substantially influence downwards the prices of monopolistic sellers because of the size of their purchases; and the buyers themselves are faced with price competition in the "downstream" markets (see **vertical integration** for discussion of terms upstream-downstream). Such a situation is particularly likely in the case of purchase of an intermediate product. However, if the supply of the product upstream is restricted and there is no effective competition downstream, the bilateral monopoly/oligopoly may result in joint profit maximization between sellers-buyers to the detriment of consumers.

19. Brand Competition (Inter- and Intra-)

Firms marketing *differentiated products* frequently develop and compete on the basis of brands or labels. Coca Cola vs. Pepsi-Cola, Levi vs. GWG jeans, Kellogg's Corn Flakes vs. Nabisco's Bran Flakes are a few examples of *inter-brand* competition. Each of these brands may be preferred by different buyers willing to pay a higher price or make more frequent purchases of one branded product over another.

Intra-brand competition is competition among retailers or distributors of the same brand. Intra-brand competition may be on price or non-price terms. As an example, a pair of Levi jeans may be sold at a lower price in a discount or specialty store as compared to a department store but without the amenities in services that a department store provides. The amenities in services constitute intra-brand non-price competition. Some manufacturers seek to maintain uniform retail prices for their products and prevent intra-brand price competition through business practices such as **resale price maintenance (RPM)**, in order to stimulate intra-brand non-price competition if it will increase sales of their product.

20. Bundling

This term is also referred to as *package tie-in* and tends to occur when one product is sold in proportion to another as a requirement for the sale. It is related to the concept of **tied selling**. For example, a computer manufacturer may require customers to purchase along with the computer all or a specified amount of ancillary products such as floppy disks and printing paper. Alternatively, the sale may be made as a complete package such as an automobile equipped with all options including automatic transmission, cassette-radio and air conditioning. Bundling of products may be a source of economies or efficiencies for the manufacturer, part of which may be reflected in a lower composite price for the buyer than if all the different products were supplied or bought separately. However, bundling may also make it difficult for firms to enter different product segments of the market. The competition implications of bundling, including that of tied selling generally, are complex and need to be evaluated on a case by case basis adopting a **rule of reason** approach. See also **Tied Selling**.

21. Buyer Concentration

See **Concentration**.

22. Buyout

Refers to a situation where the existing owners of a firm are "bought out" by another group, usually management and/or workers of that firm. A buyout may be for the whole firm or a division or a plant as the case applies. The financing of the buyout can be structured in various ways such as bank loans or through the issuance of bonds. In a *leveraged buyout* for example, a fairly large proportion of debt in relation to the asset value of the firm is incurred. Because buyouts lead to replacing publicly traded equity with debt (in the form of bonds backed by assets and other guarantees) the firms are often viewed as "going private" since its shares may no longer be listed on the stock exchange. Buyouts are viewed as an integral part of the market for corporate control and the re-deployment of assets from lower to higher valued uses.

23. Cartel

A cartel is a formal agreement among firms in an oligopolistic industry. Cartel members may agree on such matters as prices, total industry output, **market shares**, allocation of customers, allocation of territories, **bid-rigging**,

establishment of common sales agencies, and the division of profits or combination of these. Cartel in this broad sense is synonymous with "explicit" forms of **collusion**. Cartels are formed for the mutual benefit of member firms. The theory of "cooperative" **oligopoly** provides the basis for analyzing the formation and the economic effects of cartels. Generally speaking, cartels or cartel behaviour attempts to emulate that of **monopoly** by restricting industry output, raising or fixing prices in order to earn higher profits.

A distinction needs to be drawn between public and private cartels. In the case of public cartels, the government may establish and enforce the rules relating to prices, output and other such matters. **Export cartels** and **shipping conferences** are examples of public cartels. In many countries *depression cartels* have been permitted in industries deemed to be requiring price and production stability and/or to permit **rationalization** of industry structure and **excess capacity**. In Japan for example, such arrangements have been permitted in the steel, aluminum smelting, ship building and various chemical industries. Public cartels were also permitted in the United States during the depression in the 1930s and continued to exist for some time after World War II in industries such as coal mining and oil production. Cartels have also played an extensive role in the German economy during the inter-war period. International commodity agreements covering products such as coffee, sugar, tin and more recently oil (OPEC: Organization of Petroleum Exporting Countries) are examples of *international cartels* which have publicly entailed agreements between different national governments. *Crisis cartels* have also been organized by governments for various industries or products in different countries in order to fix prices and ration production and distribution in periods of acute shortages.

In contrast, private cartels entail an **agreement** on terms and conditions from which the members derive mutual advantage but which are not known or likely to be detected by outside parties. Private cartels in most jurisdictions are viewed as being illegal and in violation of **antitrust** laws.

Successful cartels, be they public or private, require "concurrence", "coordination" and "compliance" among members. This means that cartel members need to be able to detect when violations of an agreement take place and be able to enforce the agreement with sanctions against the violators. These conditions are not easily met and this often explains why cartels tend to break down over time.

See **Agreement, Collusion**. Refer also to G.J. Stigler, "A Theory of Oligopoly," *Journal of Political Economy*, Vol. 72(1), February, 1964, pp. 44-61; D.K. Osborn, "Cartel Problems," *American Economic Review*, Vol. 66, September, 1976, pp. 835-844; and F.M. Scherer and D. Ross, *Industrial Market Structure and*

Economic Performance, Houghton Mifflin Co., Boston, 1990, Chs. 7 and 8.

24. *Cartelization*

See **Cartel, Collusion, Monopolization**.

25. **Collusion**

Adam Smith observed in his book *An Inquiry Into the Nature and Causes of the Wealth of Nations* published in 1776 that:

...people of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.

Collusion refers to **combinations, conspiracies** or **agreements** among sellers to raise or fix prices and to reduce output in order to increase profits. As distinct from the term **cartel**, collusion does not necessarily require a formal agreement, whether public or private, between members. However, it should be noted that the economic effects of collusion and a cartel are the same and often the terms are used somewhat interchangeably.

Collusion between firms to raise or fix prices and reduce output are viewed by most authorities as the single most serious violation of competition laws. Collusive arrangements are known to have been arrived at and enforced in ways which are as varied as the human imagination itself. Cases drawn from across different countries reveal that collusion may be reached through informal *gentlemen's agreements* where mutual regard, social convention and personal contacts and connections provide sufficient basis for ensuring adherence to agreed prices and related business practices by members. While collusion is generally easier when sellers are few and produce **homogenous products**, price fixing conspiracies have also arisen in the sale of complex products. An example is the electrical equipment industry in the United States which involved 29 different companies selling diverse technical products such as turbine generators, transformers, switch gears, insulators, controls and condensers. Similarly, through agreement on product specification details and **standards**, American steel producers were able to collude successfully for some time. In one **bid-rigging** conspiracy firms used the "phases of the moon" to take turns and determine which amongst them would submit the "low" bid to win the contracts. In yet other types of cases, collusion entailed market sharing agreements.

Collusion does not necessarily have to involve an explicit agreement or communication between firms. In oligopolistic industries, firms tend to be interdependent in their pricing and output decisions so that the actions of each firm impact on and result in a counter response by the other firm(s). In such circumstances, oligopolistic firms may take their rivals' actions into account and coordinate their actions as if they were a cartel without an explicit or overt agreement. Such coordinated behaviour is often referred to as *tacit collusion* or **conscious parallelism**.

Various factors may facilitate the formation of price-fixing conspiracies. These include:

- a) Ability to raise and maintain industry price. If **barriers to entry** are low or there exist substitute products, collusion will not be successful and firms will not have an incentive to remain in or join the price conspiracy.
- b) Firms do not expect collusion to be easily detected or severely punished. If such is the case, the profits from collusion may be significantly higher than the costs of fines and of the firms' loss of reputation.
- c) Organizational costs are low. If the negotiations between firms are protracted and enforcement and monitoring costs of the conspiracy are high, it may be difficult to form a combination.
- d) Homogenous or very similar products are produced. Uniform price agreements are not easily reached if the products differ in attributes such as quality and durability. It becomes difficult for firms in such circumstances to detect whether variations in sales are due to changing buyer preferences or cheating by firms in the form of secret price cuts.
- e) Industry is highly concentrated or a few large firms provide the bulk of the product. When the number of firms is few, the costs of organizing collusion will tend to be low. Also, the probability of detecting firms which do not respect the fixed prices will be correspondingly higher.
- f) The existence of an industry or trade association. Associations tend to provide a basis for coordinating economic activities and exchange of information which may facilitate collusion. They may also reduce the organizational and monitoring costs of the combination.

Collusion does not necessarily arise in the presence of all or some of the above mentioned factors in a given market. In addition, there are a number of factors which may limit collusion. Such factors include product heterogeneity,

inter-firm cost differences, cyclical business conditions, existence of sophisticated customers, technological change, infrequent product purchases, differing expectations of firms, and incentives to secretly cut prices and increase market share. The last of these is a particularly important reason why collusion among firms tends to break down over time.

For further details see D.W. Carlton and J.M. Perloff, *Modern Industrial Organization*, Scott, Foresman/Little Brown. Glenview, Il., 1990, Ch. 9; F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin Co., Boston, 1990, Chs. 7 and 8; G.J. Stigler, "A Theory of Oligopoly," *Journal of Political Economy*, 1964, Vol. 72(1), pp. 44-61. See also **agreement, cartel**.

26. *Collusive bidding (tendering)*

See **Bid Rigging**.

27. Combination

In the parlance of competition law and policy, the term combination refers to firms organized together to form a **monopoly, cartel** or **agreement** to raise or fix prices and restrict output in order to earn higher profits. This term has been interchangeably used with **conspiracy** and **collusion** as well. For further details see discussion under these headings.

28. *Common Control*

See **Control of Enterprises, Holding Company**.

29. Competition

A situation in a market in which firms or sellers independently strive for the patronage of buyers in order to achieve a particular business objective, e.g., profits, sales and/or market share. Competition in this context is often equated with rivalry. Competitive rivalry between firms can occur when there are two firms or many firms. This rivalry may take place in terms of price, quality, service or combinations of these and other factors which customers may value.

Competition is viewed as an important process by which firms are forced to become efficient and offer greater choice of products and services at lower prices. It gives rise to increased **consumer welfare** and **allocative efficiency**. It includes the concept of "dynamic efficiency" by which firms engage in innovation and foster technological change and progress. See also **Cut-Throat Competition**, **Contestability**, **Perfect Competition**, **Efficiency**, **Pareto Efficiency**, **Workable Competition**.

30. *Compulsory Licensing*

See **Licensing**.

31. **Concentration**

Concentration refers to the extent to which a small number of firms or enterprises account for a large proportion of economic activity such as total sales, assets or employment. There are at least four distinct concepts embodied within the term concentration:

Aggregate Concentration which measures the relative position of large enterprises in the economy. This measure has interested economists, sociologists and political scientists mainly in the context of theories relating to actual (and potential) economic-political power which big business may be able to exercise because of their economic importance in a country/industrial sector/geographic region.

Industry or Market Concentration (also often referred to as *seller concentration*) which measures the relative position of large enterprises in the provision of specific goods or services such as automobiles or mortgage loans. The rationale underlying the measurement of industry or market concentration is the industrial organization economic theory which suggests that, other things being equal, high levels of market concentration are more conducive to firms engaging in monopolistic practices which leads to misallocation of resources and poor economic performance. Market concentration in this context is used as one possible indicator of **market power**.

Buyer Concentration which measures the extent to which a large percentage of a given product is purchased by relatively few buyers. At the extreme, a single purchaser of all the production of a good or service would give rise to a situation of **monopsony**. Buyer concentration may result in *countervailing power* that offsets the **market power** that may otherwise arise from high levels of *market* or *seller*

concentration. See also discussion under **bilateral monopoly/oligopoly.**

Ownership Concentration which measures the extent to which shares of stock exchange listed companies are widely or narrowly (closely) held. This last concept is often extended to describe the wealth or control of corporate assets among individual families or business entities. See **Concentration Indexes.**

32. Concentration Indexes

Various concentration indexes or measures have been suggested in the field of industrial organization economics. These measures are used to describe market structure and/or as a prima facie indicator of **market power** or **competition** among firms. Essentially, concentration indexes attempt to measure the number and relative size inequality of firms. The most frequently used measures are:

Concentration Ratio: The percentage of total industry output (or other such measure of economic activity, e.g., sales revenue, employment) which a given number of large firms account for. The *four-firm concentration ratio* (CR_4) measures the relative share of total industry output accounted for by the four largest firms. Similarly, CR_3 , CR_5 , CR_8 , etc. measures may be computed. The number of large firms are ranked and grouped in order to avoid disclosure of confidential economic information pertaining to individual firms. A disadvantage of the concentration ratio is that it does not indicate the total number of firms that may be operating and competing in an industry. For example, two industries with the same high CR_4 levels of 75 percent may differ nonetheless because one industry may have few firms while the other may have many firms.

Herfindahl-Hirschman Index (HHI): This measure is based on the total number and size distribution of firms in the industry. It is computed as the sum of the squares of the relative size of all firms in the industry. Algebraically it is:

$$HHI = \sum_{i=1}^n (s_i)^2 \text{ where } \sum_{i=1}^n s_i = 1$$

s_i is the relative output (or other measures of economic activity such as sales or capacity) of the i^{th} firm, and n is the total number of firms in the industry.

In an industry with one firm (monopoly), the HHI measure will be equal to 1. In a **duopoly** with two equal sized firms, the HHI measure will be:

$$(0.5)^2 + (0.5)^2 = 0.50$$

The HHI may be computed on a base of 1 (as in the above examples) or 1 000 or 10 000. The index is used, for example, in the United States Antitrust Division Merger Guidelines as an administrative criterion to screen **mergers** that may warrant further examination for their effects on **competition**. The HHI has several mathematical and economic theoretic properties which make it a desirable concentration measure.

There are other measures of concentration, e.g., the *Lorenz Curve*, *Gini Coefficient*, *Inverse Index* and *Entropy*. These measures, while of different theoretic significance, are not as frequently employed in industrial organization and competition policy analysis as the Concentration Ratio and the Herfindahl-Hirschman Index. For further information see, for example, G. Rosenbluth, "Measures of Concentration" in National Bureau of Economic Research, *Business Concentration and Price Policy*, Princeton University Press, Princeton, 1955; E.M. Singer, "The Structure of Industrial Concentration Indexes," *Antitrust Bulletin*, Vol. X, January-April, 1965, pp. 75-104; and D. Encaoua and A. Jacquemin, "Degree of Monopoly, Indices of Concentration and Threat of Entry," *International Economic Review*, Vol. 21, 1980, pp. 87-105.

33. *Concentration Measures*

See **Concentration Indexes**.

34. *Concentration Ratio*

See **Concentration Indexes**.

35. *Concerted Action or Practice*

See **Cartel, Collusion**.

36. **Conglomerate**

A firm or business enterprise having different economic activities in different unrelated industries. Conglomerate firms may emerge through **mergers** and **acquisitions** and/or investments across a diverse range of industries for a variety of reasons such as minimization of risk, increased access to financial and

management resources, and more efficient allocation of resources. Competition policy concerns have been raised, although without universal agreement among economists, that conglomerates facilitate anticompetitive practices through cross-subsidization of less profitable activities aimed at driving out competition and reciprocal arrangements with other conglomerates in the purchase and sale of inputs-outputs. There is increasing evidence that conglomerates are not necessarily more profitable and many conglomerate firms have in recent times been divesting different activities and focusing their operations on fewer lines of business. See also **Diversification, Mergers.**

37. *Conglomerate Merger*

See **Merger.**

38. **Conscious Parallelism**

Under conditions of **oligopoly**, the pricing and output actions of one firm have a significant impact upon that of its rivals. Firms may after some period of repeated actions become conscious or aware of this fact and without an explicit **agreement** coordinate their behaviour as if they were engaged in collusive behaviour or a **cartel** to fix prices and restrict output. The fear that departure from such behaviour may lead to costly price cutting, lower profits and market share instability may further create incentives for firms to maintain such an implicit arrangement amongst themselves. This form of *conscious parallel* behaviour or *tacit collusion* generally has the same economic effect as a **combination, conspiracy** or **price fixing** agreement. However, whether or not conscious parallel behaviour constitutes an illegal action which is restrictive of competition is a subject of controversy in both competition law and economics. Price uniformity may be a normal outcome of rational economic behaviour in markets with few sellers and homogenous products. Arguments have been advanced that the burden of proof must be higher than circumstantial evidence of concerted or parallel behaviour and uniform pricing and output policies. In other words, conscious parallelism in and of itself should not necessarily be construed as evidence of collusion. The problem arises more from the nature of the market or industry structure in which firms operate than from their respective behaviour. See also discussion under **agreements, cartel, collusion.**

39. Consolidation

Generally refers to combination or *amalgamation* of two or more firms into one new firm through the transfer of net assets. The new firm may be specially organized to distinguish it from a merger.

40. Conspiracy

Normally a covert or secret arrangement between competing firms in order to earn higher profits by entering into an **agreement** to fix prices and restrict output. The terms **combination**, **conspiracy**, **agreement** and **collusion** are often used interchangeably. For further details see discussion under these headings.

41. *Constant Returns to Scale*

See **Economies of Scale**.

42. Consumers' Surplus

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Consumers' surplus is a measure of consumer welfare and is defined as the excess of social valuation of product over the price actually paid. It is measured by the area of a triangle below a demand curve and above the observed price.

In the diagram below, the market demand curve for good X is drawn as AC. At price = P_0 , Q_0 units of X are purchased by all consumers. However, given the demand curve, there are some consumers who would be prepared to pay a higher price for X. These consumers receive a benefit from the fact that they actually pay only P_0 . The dollar value of the benefit to all such consumers is given by the area of the triangle P_0AB which is the dollar measure of consumers' surplus.

Consumers' surplus is a widely used measure of **consumer welfare** because it only requires information on the demand curve (prices and quantities). However, there is considerable debate over the degree to which it corresponds to more theoretically appealing measures of consumer welfare. In general, consumers' surplus is more useful the lower is the income elasticity of demand. (For a useful textbook discussion and references, see R. Just, D. Hueth and A.

Schmitz, *Applied Welfare Economics and Public Policy*, Prentice Hall, Englewood Cliffs, N.J., 1982, Chs. 5 and 6.)

43. Consumer Welfare

Consumer welfare refers to the individual benefits derived from the consumption of goods and services. In theory, individual welfare is defined by an individual's own assessment of his/her satisfaction, given prices and income. Exact measurement of consumer welfare therefore requires information about individual preferences.

In practice, applied welfare economics uses the notion of consumer surplus to measure consumer welfare. When measured over all consumers, **consumers' surplus** is a measure of aggregate consumer welfare. In anti-trust applications, some argue that the goal is to maximize consumers' surplus, while others argue that producer benefits should also be counted. See **Consumers' Surplus**, **Deadweight Welfare Loss**.

44. Contestability

A contestable market is one in which the following conditions are satisfied:

- a) there are no **barriers to entry** or exit;
- b) all firms, both incumbent and potential entrants, have access to the same production technology;
- c) there is perfect information on prices, available to all consumers and firms;
- d) entrants can enter and exit before incumbents can adjust prices.

In contrast to **perfect competition**, a contestable market may have any number of firms (including only one or a few) and these firms need not be price-takers. The analysis of contestable markets is designed for cases in which the existence of scale economies precludes a large number of competitors.

The theory of contestable markets suggests that an industry consisting of one or a few firms may be efficient. The basic idea is that incumbent firms will

maintain prices close to the competitive level because of the threat posed by potential entrants. If incumbents raise price, entry will occur (no **barriers to entry**), and the entrants will be able to produce as efficiently as incumbents (access to technology). Moreover, if price declines as a result of the entry, the entrant will be able to exit the industry quickly and costlessly (no barriers to exit). This is known as "hit and run" entry. It is the fear of "hit and run" entry which motivates even a monopolist to maintain prices close to average cost.

When incumbent firms set prices such that they make profits without providing an incentive for entry, prices are said to be sustainable. A *sustainable monopoly* price is one which clears the market, allows the monopolist to break even, and leaves no opportunity for profitable entry. Sustainability therefore defines the equilibrium in a contestable market.

A **natural monopoly** may be a contestable market if there are no significant **sunk costs**. This means that a natural monopoly which is contestable and sustainable need not be regulated or subject to competition policies because it is disciplined by the threat of entry. However, a natural monopoly market may be contestable, but not sustainable, in which case entry regulation may be required.

It is of considerable importance to establish whether a market is contestable. Deregulation in airlines and trucking has been predicated on the belief that these industries are contestable. This view arises from the position that entry and exit are relatively quick and easy. Easy exit is associated with the absence of sunk costs, which in the above industries is indicated by the existence of second-hand markets for trucks and airplanes.

The basic reference is W.J. Baumol, J.C. Panzar and R.D. Willig, *Contestable Markets and the Theory of Industry Structure*, Harcourt, Brace, Jovanovich, New York, 1982, revised 1988. See also D.F. Spulber, *Regulation and Markets*, MIT Press, Cambridge, 1989, Ch. 4 for discussion and references.

45. *Contestable Markets*

See **Contestability**.

46. Control of Enterprises

Control over enterprises is generally viewed to be exercised when an individual or group of investors hold more than 50 per cent of the common voting stock of the enterprise or firm. However, "effective control" may be exercised when the investor(s) holds a large block of voting stock even when it is less than 50 per cent but the remaining shares are widely held by many smaller investors. Control of enterprises may also be exercised through **interlocking directorates** and inter-corporate ownership links between firms as in the case of **conglomerates**.

47. Costs

Costs refer to the value in alternative uses of the factors of production used by a firm (labour costs, materials costs, capital costs. See also **Opportunity Costs**). Costs may be fixed or variable. *Fixed costs* are costs that do not vary with the amount produced. Examples are interest on debt, property taxes and rent. Economists also add to fixed cost an appropriate return on capital which is sufficient to maintain that capital in its present use. This reflects the idea that all economic costs are opportunity costs, the cost of foregone alternatives. Thus, the return to capital if employed elsewhere constitutes its opportunity cost. *Variable costs* are costs that vary with the amount produced. Examples are materials, fuel, production labour and maintenance. As the relevant time period is extended, more costs become variable.

Total costs refer to the sum of fixed and variable costs. *Average costs* refer to total costs divided by output. *Marginal cost* is the increment to total cost that results from producing an additional unit of output. Marginal cost is a function of variable costs alone, since fixed costs do not vary with increases in output.

Marginal cost has a particular importance in economic theory. The profit maximizing firms will always produce an output such that marginal cost equals marginal revenue. See **revenues**).

48. Countervailing Power

See **Bilateral Monopoly**, *Buyer Concentration*, **Monopsony**.

49. Cournot (Nash) Equilibrium

The Cournot model of **oligopoly** assumes that rival firms produce a homogenous product, and each attempts to maximize profits by choosing how much to produce. All firms choose output (quantity) simultaneously. The basic Cournot assumption is that each firm chooses its quantity, taking as given the quantity of its rivals. The resulting equilibrium is a **Nash equilibrium** in quantities, called a Cournot (Nash) equilibrium.

The Cournot model provides results which are of some importance to industrial economics. First of all, it can be shown that price will not in most cases equal marginal costs (see **costs**) and **Pareto efficiency** is not achieved. Moreover, the degree to which each firm's price exceeds marginal cost is directly proportional to the firm's market share and inversely proportional to the market **elasticity of demand**.

If the oligopoly is symmetric, that is all firms have identical products and cost conditions, then the degree to which price exceeds marginal cost is inversely related to the number of firms. Thus, as the number of firms increases, the equilibrium approaches what it would be under **perfect competition**.

More generally, it can be shown that for the industry the degree to which price exceeds marginal cost is directly proportional to the *Herfindahl-Hirschman Index* of concentration. As concentration rises, industry performance deviates more from the norm of perfect competition. See **Bertrand (Nash) equilibrium**.

For more detail, see C. Shapiro, "Theories of Oligopoly Behavior", in R. Schmalensee and R. Willig (eds), *The Handbook of Industrial Organization*, North Holland, Amsterdam, 1989.

50. Crisis Cartel

See **Cartel**.

51. Cross Price Elasticity of Demand

Refers to the percentage change in the quantity demanded of a given product due to the percentage change in the price of another "related" product. If all prices are allowed to vary, the quantity demanded of product X is dependent not only on

its own price (see **elasticity of demand**) but upon the prices of other products as well. The concept of cross price elasticity of demand is used to classify whether or not products are "substitutes" or "complements". It is also used in **market definition** to group products that are likely to compete with one another.

If an increase in the price of product Y results in an increase in the quantity demanded of X (while the price of X is held constant), then products X and Y are viewed as being substitutes. For example, such may be the case of electricity vs. natural gas used in home heating or consumption of pork vs. beef. The cross price elasticity measure is a positive number varying from zero (no substitutes) to any positive number. Generally speaking, a number exceeding two would indicate the relevant products being "close" substitutes.

If the increase in price of Y results in a decrease in the quantity demanded of product X (while the price of X is held constant), then the products X and Y are considered complements. Such may be the case with shoes and shoe laces.

52. Cut-Throat Competition

Also known as *destructive or ruinous competition*; refers to situations when competition results in prices that do not chronically or for extended periods of time cover costs of production, particularly fixed costs. This may arise in secularly declining or "sick" industries with high levels of excess capacity or where frequent cyclical or random demand downturns are experienced. The destructive competition argument is often advanced to advocate government intervention in the form of price regulation or stabilization and structural rationalization.

53. Deadweight Welfare Loss

The deadweight welfare loss is a measure of the dollar value of consumers' surplus lost (but not transferred to producers) as a consequence of a price increase. Consider the following diagram:

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It is assumed that the industry is originally in a state of **perfect competition**, such that price equals *marginal cost* ($P_c = MC$), where the latter is assumed to be constant (constant returns to scale). Industry output is therefore Q_c and consumers' surplus is triangle P_cAC . Now compare this with the same industry which has some degree of monopoly power such that price (P_m) exceeds marginal costs. Industry output is now reduced to Q_m and **consumers' surplus** is P_mAB , a reduction of P_cP_mB . However, a portion of the lost consumer surplus, P_cP_mBD , is transferred to producers in the form of excess profits, referred to as *producers' surplus* (P_cP_mBE). The remainder, the triangle BCE , is referred to as a deadweight welfare loss and is a measure of lost **allocative efficiency**.

In anti-trust economics, there is some debate over the appropriate welfare measure to be applied. Some argue that lost consumer surplus (i.e. including both deadweight loss and producers' surplus) should be considered on the grounds that a transfer from consumers to firms does not improve social welfare. Others argue that this represents a value judgment and all decisions should be based only on the deadweight welfare loss (**allocative efficiency**), with judgments regarding transfers of income left to the political process. Still others argue that producers' surplus should be considered because much of it is dissipated in the quest for monopoly profits. See **Rent Seeking**.

Useful textbook discussions, with applications and reference are: S. Martin, *Industrial Economics*, Macmillan, New York, 1988, pp. 30-41; 274-276; F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin, Boston, 1990, Ch. 18.

54. Deconcentration

A policy of breaking up and divesting operations of large firms in order to reduce the degree of **concentration** in an industry. This policy has been advocated from time to time in different countries particularly in periods of high levels of merger activity. Lower industry concentration levels and increase in the number of firms are viewed as being conducive to stimulating competition. There are however inherent risks in adopting this policy as a general approach to resolving competition problems that may be associated with high industry concentration levels. A structural deconcentration policy may result in significant loss in economic efficiency. Large firms may be large because of economies of scale, superior technology and innovation which may not be divisible without high costs. This is more likely to be the case where firms have attained their respective size in response to market conditions and opportunities. However, in several countries, particularly in Eastern European economies, growth of industrial concentration and large firm size have been encouraged by deliberate government policy. Deconcentration policies in such an environment may be appropriate in order to promote market oriented firm behaviour and efficiency.

55. Deep Pockets

An expression used to describe the idea that extensive financial and other resources of large firms or conglomerates can be used to sell below cost for extended periods of time. In this view, deep pockets are thought to give such firms

an unfair advantage over competitors particularly if the practice of selling at prices below costs imposes losses and drives out competing firms. Others argue that firms using "deep pockets" to finance anticompetitive actions impose a cost on themselves because those funds could be more profitably employed elsewhere. Moreover, if capital markets work reasonably well, target firms should have no trouble obtaining financing to sustain themselves through the anticompetitive action. See **Predatory Pricing**.

56. *Delivered Pricing*

See **Basing Point Pricing**.

57. *Demonopolization*

See *Anti-Monopoly*, **Antitrust**, **Deconcentration**.

58. *Depression Cartel*

See **Cartel**.

59. *Deregulation*

See **Regulation**.

60. *Destructive Competition*

See **Cut-Throat Competition**.

61. *Differentiated Products*

See **Product Differentiation**.

62. *Discrimination*

See **Price Discrimination**.

63. *Diseconomies of Scale*

See **Economies of Scale**.

64. *Distributor's Mark*

See **Trade Mark**.

65. Diversification

The term refers to the expansion of an existing firm into another product line or market. Diversification may be related or unrelated. Related diversification occurs when the firm expands into similar product lines. For example, an automobile manufacturer may engage in production of passenger vehicles *and* light trucks. Unrelated diversification takes place when the products are very different from each other, for example a food processing firm manufacturing leather footwear as well. Diversification may arise for a variety of reasons: to take advantage of complementarities in production and existing technology; to exploit **economies of scope**; to reduce exposure to risk; to stabilize earnings and overcome cyclical business conditions; etc. There is mounting evidence that related diversification may be more profitable than unrelated diversification.

66. Divestiture

Refers to firms selling part of their current operations, divisions or subsidiaries. Divestiture may take place as a result of firms restructuring their business in order to concentrate on certain products or markets. It may also be imposed upon them by competition authorities as a result of a merger or acquisition which is likely to reduce competition substantially. Divestiture under these latter circumstances is aimed at maintaining existing competition in the market. Divestiture may also form a part of a policy to deconcentrate an industry.

67. Dominant Firm

A dominant firm is one which accounts for a significant share of a given market and has a significantly larger market share than its next largest rival. Dominant firms are typically considered to have **market shares** of 40 per cent or more. Dominant firms can raise competition concerns when they have the power to set prices independently.

An industry with a dominant firm is therefore often an **oligopoly** in that there are a small number of firms. However, it is an asymmetric oligopoly because the firms are not of equal size. Normally, the dominant firm faces a number of small competitors, referred to as a competitive fringe. The competitive fringe sometimes includes potential entrants. Thus the dominant firm may be a monopolist facing potential entrants.

Like a monopolist, the dominant firm faces a downward sloping demand curve. However, unlike the monopolist, the dominant firm must take into account the competitive fringe firms in making its price/output decisions. It is normally assumed that the dominant firm has some competitive advantage (such as lower costs) as compared to the fringe.

The term competitive fringe arises from the basic theory of dominant firm pricing. It is generally assumed that the dominant firm sets its price after ascribing a part of the market to the competitive fringe which then accepts this price as given.

Dominant firms may be the target of competition policy when they achieve or maintain their dominant position as a result of anti-competitive practices. See **Abuse of Dominant Position**.

For further discussion and references, see S. Martin, *Industrial Economics*, Macmillan, New York, 1988, Ch. 4.

68. Dominant Market Position

See **Dominant Firm**.

69. *Dominant Price Leadership*

See **Dominant Firm. Price Leadership.**

70. **Dumping**

The practice by firms of selling products abroad at below costs or significantly below prices in the home market. The former implies **predatory pricing**; the latter, price discrimination. Dumping of both types is viewed by many governments as a form of international predation, the effect of which may be to disrupt the domestic market of foreign competitors. Economists argue, however, that price discriminatory dumping, where goods are not sold below their incremental costs of production, benefits consumers of the importing countries and harms only less efficient producers.

Under the General Agreement on Tariffs and Trade (GATT) rules, dumping is discouraged and firms may apply to their respective government to impose tariffs and other measures to obtain competitive relief. As in the case of **predatory pricing** or **selling below costs** (see discussion under these headings), arguments have been advanced questioning the economic feasibility of dumping at prices below costs over extended periods of time.

71. **Duopoly**

A duopoly is an industry consisting of two sellers. It is therefore a special case of **oligopoly**. In industrial organization economic theory, duopoly is often analysed as a simplified example of oligopoly behaviour. See **oligopoly**.

72. **Economies of Scale**

Refers to the phenomenon where the average costs per unit of output decrease with the increase in the scale or magnitude of the output being produced by a firm. Similarly, the opposite phenomenon, *diseconomies of scale*, occurs when the average unit costs of production increase beyond a certain level of output. At the point where the average costs are at a minimum, the minimum efficient scale (MES) of output of a firm or plant is reached. The maximum efficient scale of output is reached at the point just before diseconomies set in, that is unit costs of production start to increase. Between the range of minimum and maximum efficient scale of output, there may also exist *constant returns to scale*

where the average unit costs of production remain unchanged as output increases. The minimum and maximum scales of output, in relation to the total demand or market size have an important bearing on the number and size distribution of firms in an industry and on **concentration**.

A distinction is often made between different types of economies of scale:

Product Specific Economies are associated with the volume of output of any single product made and sold. In a multi-product firm or plant, product specific economies are often realized by specializing in the manufacture of one or a few products over a larger scale of output. Such economies generally arise by avoiding the costs of interrupting production and re-tooling that is required in order to produce different products with the same machinery and equipment. Product specific economies are often the basis for **specialization agreements**.

Plant Specific Economies are associated with the total output (frequently encompassing many products) of an entire plant or plant complex. **Economies of scope** may be embodied as part of plant economies as the costs of common overheads, e.g., head office administration and accounting costs, are spread across multiple products.

Economies of Multi-plant Operations are associated with operating more than one plant and may arise for such reasons as minimizing transportation costs of raw materials and/or finished products, to better serve different geographic markets, **economies of scope**, specialization, etc.

For more details, see F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin Co., Boston, 1990, Ch. 4.

73. Economies of Scope

Economies of scope exist when it is cheaper to produce two products together (joint production) than to produce them separately. For example, it may be less costly to provide air service from point A to points B *and* C with one aircraft than have two separate air flights, one to point B and another to point C. Similarly, a steer produces beef and hide and it may be inefficient to breed steers separately for beef and for hide. While many factors such as technology may explain economies of scope, of particular importance is the presence of common

input(s) and/or complementarities in production. Firms may often endeavor to exploit economies of scope in order to produce and offer multiple products at lower costs.

74. Efficiency

The term has a wide number of usages. In the context of industrial organization economics and competition law and policy, it relates to the most effective manner of utilizing scarce resources. Two types of efficiency are generally distinguished: technological (or technical) and economic (or allocative). A firm may be more technologically efficient than another if it produces the same level of output with one or fewer physical number of inputs. Because of different production processes, not all firms may be technologically efficient or comparable. Economic efficiency arises when inputs are utilized in a manner such that a given scale of output is produced at the lowest possible cost. An increase in efficiency occurs when an existing or higher scale of output is produced at lower cost. Unlike technological efficiency, economic efficiency enables diverse production processes to be compared. **Competition** is generally viewed by economists to stimulate individual firm(s) or economic agents in the pursuit of efficiency. Efficiency increases the probability of business survival and success and the probability that scarce economic resources are being put to their highest possible uses. At the firm level, efficiency arises primarily through **economies of scale and scope** and, over a longer period, through technological change and innovation.

The term "efficiency" in distribution or consumption is used to describe the situation when a particular set of goods and services are divided amongst the consumers in such a way that no one individual can be made better off without making another worse off. See also **Pareto Efficiency**.

75. Elasticity of Demand (Price)

The price elasticity of demand measures the responsiveness of demand to variations in price. It is defined as the percentage change in quantity demanded divided by the percentage change in price. Since the demand curve is normally downward sloping, the price elasticity of demand is usually a negative number. However, the negative sign is often omitted.

In principle, the price elasticity may vary from (minus) infinity to zero. The closer to infinity, the more elastic is demand; and the closer to zero, the more

inelastic is demand. In practice, elasticities tend to cluster in the range of minus 10 to zero. Minus one is usually taken as a critical cut-off point with lower values (that is less than one) being inelastic and higher values (that is greater than one) being elastic. If demand is inelastic a price increase will increase total revenues while if demand is elastic, a price increase will decrease revenues.

Demand curves are defined for both the industry and the firm. At the industry level, the demand curve is almost always downward sloping. However, at the firm level the demand curve may be downward sloping or horizontal. The latter is the case of the firm in a perfectly competitive industry whose demand is infinitely elastic. When the firm's demand curve is downward sloping, the firm has some control over its price.

The price elasticity of demand is determined by a number of factors, including the degree to which substitute products exist see **cross price elasticity of demand**). When there are few substitutes, demand tends to be inelastic. Thus firms have some power over price. When there are many substitutes, demand tends to be elastic and firms have limited control over price.

76. Enterprise

A term in the commercial world used to describe a project or venture undertaken for gain. It is often used with the word "business" as in "business enterprise". Usually, by extension, it refers to the business entity carrying out the enterprise and is thus synonymous with "undertaking", "company" or "firm". See also **holding company**.

77. Entropy

See **Concentration Indexes**.

78. Excess Capacity

A situation where a firm is producing at a lower scale of output than it has been designed for. It exists when *marginal cost* is less than *average cost* and it is still possible to decrease average (unit) cost by producing more goods and services. Excess capacity may be measured as the increase in the current level of output that is required to reduce unit costs of production to a minimum. Excess capacity is a

characteristic of **natural monopoly** or **monopolistic competition**. It may arise because as demand increases, firms have to invest and expand capacity in lumpy or indivisible portions. Firms may also choose to maintain excess capacity as a part of a deliberate strategy to deter or prevent entry of new firms.

79. *Excessive Competition*

See **Cut-Throat Competition**.

80. **Excess Prices**

Refers to prices set significantly above competitive levels as a result of **monopoly** or **market power**. However, in practice, in absence of a **conspiracy** or **price fixing agreement** or evidence of market power stemming from high concentration, it is very difficult to establish a threshold beyond which a price may be considered excessive or unreasonable. Because the basic method of organizing production in a market economy is through the price system, price flexibility is critical. Prices fluctuate in order to bring supply and demand into equilibrium. Temporary shortages in supply or increases in demand will cause prices to rise and provide incentives for increased production and entry of new suppliers. Moreover, it should be noted that price and/or profit comparisons between different firms, markets, or countries are fraught with legal and economic problems. Attempts by government to control or force a roll back of prices that are not a result of restrictions on competition are inconsistent with the philosophy underlying competition policy.

81. *Exclusive Dealing*

See **Vertical Restraints**.

82. **Export Cartel**

An **agreement** or arrangement between firms to charge a specified export price and/or to divide export markets. Many competition law statutes exempt such agreements from the **conspiracy** provisions provided that the cartel does not lead to injurious effects on competition in the domestic market, e.g., give rise to price fixing agreements or result in reduction in exports. The rationale for permitting

export cartels is that it may facilitate cooperative penetration of foreign markets, transfer income from foreign consumers to domestic producers and result in a favourable balance of trade. See also **cartel**.

83. *External Economies/Diseconomies*

See **Externalities**.

84. **Externalities**

Externalities refers to situations when the effect of production or consumption of goods and services imposes costs or benefits on others which are not reflected in the prices charged for the goods and services being provided. Pollution is an obvious example of a *negative externality*, also termed an *external diseconomy*. Chemicals dumped by an industrial plant into a lake may kill fish and plant life and affect the livelihood of fishermen and farmers nearby. In contrast, a *positive externality* or *external economy* may arise from the construction of a road which opens a new area for housing, commercial development, tourism, etc. The invention of the transistor generated numerous positive externalities in the manufacture of modern telecommunication, stereo and computer equipment. Externalities arise when property rights cannot be clearly assigned. See also **Market Failure**.

85. **Extraterritoriality**

Refers to the application of one country's laws within the jurisdiction of another country. In the context of competition policy, the issue of extraterritoriality would arise if the business practices of firm(s) in one country had an anticompetitive effect in another country which the latter considered to be in violation of its laws. For example, an **export cartel** formed by companies which may be exempt from competition laws of country A may nevertheless be viewed as a **price-fixing agreement** to limit competition in markets of country B and in violation of the latter country's **antitrust** laws. Another situation that could arise is a merger between two competing firms in one country resulting in substantial lessening of competition in the markets of another country. (This can arise if the merging companies are primarily export-oriented and account for the bulk of the market in the importing country.)

Whether or not companies can be successfully prosecuted for violations of competition laws of another country is importantly dependent, among other factors, on the nature of the sovereign relationship between the countries involved, where the alleged violation has taken place, the legal status of the business practice or action in the originating country and the existence of subsidiary operations and significant assets in the affected country against which legal actions can be brought forward.

86. Failing Firm

A firm that has been consistently earning negative profits and losing **market share** to such an extent that it is likely to go out of business. The concept becomes an issue in merger analysis when the acquiring firm argues that the acquisition of such a firm does not result in substantial lessening of competition since it is likely to exit the market anyway. If this is true, the "current" market share of the failing firm may have no "future" competitive significance and should be weighted accordingly.

87. Fighting Brand

Refers to a new brand of an existing or similar product which is priced very low or below costs and is made available for a limited time period in specific market areas in order to combat competition from other (usually smaller) firms. Firms introduce "fighting brands" to avoid lowering the prices charged for their established brands as this may prove to be costly for reasons such as these established brands being priced uniformly across a wide number of markets. Fighting brands' are often viewed as a form of predation or anticompetitive practice intended to drive out competitors from a given market. As with other forms of predation, however, their chances of success are limited. See **Predatory Pricing**.

88. Fixed Costs

See **Costs**.

89. *Foreclosure of Competition*

See **Anticompetitive Practices**.

90. **Franchising**

A special type of vertical relationship between two firms usually referred to as the "franchisor" and "franchisee". The two firms generally establish a contractual relationship where the franchisor sells a proven product, trademark or business method and ancillary services to the individual franchisee in return for a stream of royalties and other payments. The contractual relationship may cover such matters as product prices, advertising, location, type of distribution outlets, geographic area, etc. Franchise agreements generally fall under the purview of competition laws, particularly those provisions dealing with **vertical restraints**. Franchise agreements may facilitate entry of new firms and/or products and have efficiency enhancing benefits. However, franchising agreements in certain situations can restrict competition as well. See *Competition Policy and Vertical Restraints: Franchising*, OECD, Paris, forthcoming in 1993.

91. **Free Rider or Riding**

Free riding occurs when one firm (or individual) benefits from the actions and efforts of another without paying or sharing the costs. For example, a retail store may initially choose to incur costs of training its staff to demonstrate to potential customers how a particular kitchen appliance works. It may do so in order to expand its sales. However, the customers may later choose to buy the product from another retailer selling at a lower price because its business strategy is not to incur these training and demonstration costs. This second retailer is viewed as "free riding" on the efforts and the costs incurred by the first retailer. If such a situation persists, the first retailer will not have the incentive to continue demonstrating the product.

92. **Full Cost Pricing**

This is a practice where the price of a product is calculated by a firm on the basis of its direct costs per unit of output plus a markup to cover overhead costs and profits. The overhead costs are generally calculated assuming less than full capacity operation of a plant in order to allow for fluctuating levels of production

and costs. Full cost pricing is often used by firms as it is very difficult to calculate the precise demand for a product and establish a market price. Empirical studies indicate that full cost pricing methods are widely employed by business firms. See, for example, R.B. Heflebower, "Full Costs, Cost Changes and Prices" in the National Bureau of Economic Research, *Business Concentration and Pricing Policy*, Princeton University Press, Princeton, 1955 pp. 361-396; and A. Silberston, "Surveys of Applied Economics: Price Behaviour of Firms," *Economic Journal*, Vol. 80, September, 1970, pp. 511-582.

93. *Full Line Forcing*

See **Tied Selling**.

94. *Gentlemen's Agreement*

See **Collusion**.

95. *Gini Coefficient*

See **Concentration Indexes**.

96. *Herfindahl-Hirschman Index*

See **Concentration Indexes**.

97. *Heterogenous Products*

See **Homogenous Products, Product Differentiation**.

98. Holding Company

A holding company is a purely financial concern which uses its capital solely to acquire interests (normally controlling interests) in a number of operating companies. Although the purpose of a holding company is mainly to gain control and not to operate, it will typically have representation on the boards of directors of

the operating firms. Holding companies provide a means by which corporate control can become highly concentrated through pyramiding. A holding company may gain control over an operating company which itself has several **subsidiaries**.

99. Homogenous Products

Products are considered to be homogenous when they are perfect substitutes and buyers perceive no actual or real differences between the products offered by different firms. Price is the single most important dimension along which firms producing homogenous products compete. However, empirical experience demonstrates that when the number of such firms is few, the existence of homogenous products may facilitate **collusion**. In various jurisdictions, collusive arrangements have been found to exist in homogenous products such as cement, flour, steel and sugar. In contrast, *heterogenous products* differ significantly from each other and are not easily substitutable. See also **product differentiation**.

100. Horizontal Integration

See **Merger**.

101. Horizontal Merger

See **Merger**.

102. Income Elasticity of Demand

The quantity demanded of a particular product depends not only on its own price (see **elasticity of demand**) and on the price of other related products (see **cross price elasticity of demand**), but also on other factors such as income. The purchases of certain commodities may be particularly sensitive to changes in nominal and real income. The concept of income elasticity of demand therefore measures the percentage change in quantity demanded of a given product due to a percentage change in income. The measures of income elasticity of demand may be either positive or negative numbers and these have been used to classify products into "normal" or "inferior goods" or into "necessities" or "luxuries". If as a result of an increase in income the quantity demanded of a particular product decreases, it would be classified as an "inferior" good. The opposite would be the

case of a "normal" good. Margarine has in past studies been found to have a negative income elasticity of demand indicating that as family income increases, its consumption decreases possibly due to substitution of butter. This finding may, however, be less applicable today given health concerns regarding heart disease and cholesterol levels and new information on beneficial attributes of margarine. This illustrates the inherent risks likely to be associated with generalizations or classification of products based on income elasticity measures.

103. *Increasing Returns to Scale*

See **Economies of Scale.**

104. *Industry Concentration*

See **Concentration.**

105. *Integration*

See **Vertical Integration.**

106. Intellectual Property Rights

The general term for the assignment of property rights through patents, copyrights and trademarks. These property rights allow the holder to exercise a monopoly on the use of the item for a specified period. By restricting imitation and duplication, monopoly power is conferred, but the social costs of monopoly power may be offset by the social benefits of higher levels of creative activity encouraged by the monopoly earnings.

107. *Inter- and Intra-Brand Competition*

See **Brand Competition.**

108. Interlocking Directorate

An interlocking directorate occurs when the same person sits on the board of directors of two or more companies. There is a danger that an interlock between competing firms (direct interlocks) may be used to co-ordinate behaviour and reduce inter-firm rivalry. Direct interlocks are illegal in the U.S. under the Clayton Act, but other countries are more lenient.

Empirical evidence suggests, however, that the majority of interlocking directorates are between financial and non-financial companies. Thus, representatives of banks commonly sit on the boards of competing firms. These indirect interlocks are typically not a factor in competition policy.

109. *International Cartel*

See **Cartel**.

110. *Inverse Index*

See **Concentration Indexes**.

111. *Joint Monopoly Profits*

See **Joint Profit Maximization**.

112. Joint Profit Maximization

A situation where members of a **cartel**, **duopoly**, **oligopoly** or similar market condition engage in pricing-output decisions designed to maximize the groups' profits as a whole. In essence, the member firms seek to act as a **monopoly**. Note should be made that joint profit maximization does not necessarily entail **collusion** or an **agreement** among firms. The firms may independently adopt price-output strategies which take into account rival firms' reactions and thereby produce joint profit maximization.

113. Joint Venture

A joint venture is an association of firms or individuals formed to undertake a specific business project. It is similar to a partnership, but limited to a specific project (such as producing a specific product or doing research in a specific area). Joint ventures can become an issue for competition policy when they are established by competing firms. Joint ventures are usually justified on the grounds that the specific project is risky and requires large amounts of capital. Thus, joint ventures are common in resource extraction industries where capital costs are high and where the possibility of failure is also high. Joint ventures are now becoming more prevalent in the development of new technologies.

In terms of competition policy, the problem is to weigh the potential reduction in competition against the potential benefits of pooling risks, sharing capital costs and diffusing knowledge. At present there is considerable debate in many countries over the degree to which research joint ventures should be subject to competition law. See *Competition Policy and Joint Ventures*, OECD, Paris, 1990.

114. Lerner Index

A measure proposed by economist A.P. Lerner to measure **monopoly** or **market power**. The Lerner Index (LI) is:

$$LI = \frac{\text{Price} - \text{Marginal Cost}}{\text{Price}} = \frac{-1}{E}$$

where E is the price elasticity of demand

In perfect competition, LI is equal to zero. The index defines monopoly power in terms of the slope of the demand curve. In the case of a profit maximizing firm in equilibrium, *marginal revenue* equals *marginal cost* and the LI is equal to the inverse of the **elasticity of demand**.

The LI is a static measure and does not indicate whether the deviation between price and marginal cost is a worthwhile cost to pay for possible

innovation or new plant construction, or whether the disparity between marginal cost and price may reflect superior efficiency rather than the ability of a firm to charge high prices.

115. *Leveraged Buyout*

See **Buyout**.

116. **Licensing**

Refers to granting legal permission to do something, such as produce a product. The license confers a right which the person or firm did not previously possess. Some licenses are granted free of charge, but most require payment. Licenses are legal agreements which may contain restrictions as to how the license is employed.

There are two broad cases of licensing which are relevant to competition policy. The first is licenses granted by governments to entrants in specific industries. Licensing systems exist in many communication industries (radio and T.V. broadcasting), professions (doctors) and services (banking, liquor outlets). The terms of licenses vary, but they are often accompanied by various restrictions on the firm. Those restrictions (or regulations) may apply to price, quality or amount of service. Government licensing represents an important **barrier to entry** in these industries.

The second use of licensing is in patent, copyright and trademark cases whereby authority (in the form of a license) is granted by the owner to another party to make, reproduce, buy or sell the item. Copyright, trademark and patent holders may license others to use or produce the good, usually in return for a fixed payment and a royalty rate. In most cases, a patent holder has no preference between licensing and producing his invention himself because he can maximize his return through payment of the licensing fees.

However, patent holders are not required to either use or license their technology. Thus, there may be a *restriction of technology* diffusion which also acts as a **barrier to entry**. In many countries there is a provision for revoking patents or imposing *compulsory licensing* when it can be proved that the patent has been abused through non-use or anticompetitive restrictions on licensing. In practice, compulsory licensing is seldom used.

117. Limit Pricing

Limit pricing refers to the pricing by incumbent firm(s) to deter or inhibit entry or the expansion of fringe firms. The limit price is below the short-run profit-maximizing price but above the competitive level.

There are a number of models of limit pricing and a considerable debate over the issue of whether it is in fact profitable for firms to engage in such behaviour. Limit pricing implies that firms sacrifice current profits in order to deter entry and earn future profits. It is not clear whether this strategy is always superior to one where current prices (and profits) are higher, but decline over time as entry occurs.

In the early literature on limit pricing, the ability of incumbents to establish such prices was linked to the existence of structural **barriers to entry**. However, this required rather stringent assumptions about the behaviour of incumbents, notably that incumbents would maintain output in the face of entry, and that this threat was believed by potential entrants. The more recent literature has focused on *strategic barriers to entry*, notably the actions which incumbents can take to persuade entrants that they will not accommodate entry.

See R. Gilbert, "Mobility Barriers and the Value of Incumbency", in R. Schmalensee and R. Willig (eds), *The Handbook of Industrial Organization*, North Holland, Amsterdam, 1989.

118. Lorenz Curve

See **Concentration Indexes**.

119. Loss-Leader Selling

A marketing practice of selling a product or service at a loss in order to attract customers to buy other products at regular prices. Although this practice is illegal in some jurisdictions, in others it is viewed benevolently as a promotional device that has the procompetitive effect of increasing total sales.

120. *Management Buyout*

See **Buyout**.

121. *Marginal Cost*

See **Costs**.

122. *Marginal Revenue*

See **Revenue**.

123. Market

A market is where buyers and sellers transact business for the exchange of particular goods and services and where the prices for these goods and services tend towards equality. In order for a market to "clear" or function properly, the quantity of goods and services demanded and supplied must be equal at some given price. At any particular point in time, markets can be in "equilibrium" or "disequilibrium" depending on whether or not aggregate supply equals aggregate demand at the prevailing price. Markets may be local, regional, national or international in scope and do not necessarily require buyers and sellers to meet or communicate directly with each other. Business may be transacted through the use of intermediaries as well. See also **market definition**.

124. *Market Concentration*

See **Concentration**.

125. Market Definition

The starting point in any type of competition analysis is the definition of the "relevant" market. There are two fundamental dimensions of market definition: (i) the product market, that is, which products to group together and (ii) the geographic market, that is, which geographic areas to group together. Market definition takes into account both the demand and supply considerations. On the

demand side, products must be substitutable from the buyer's point of view. On the supply side, sellers must be included who produce or could easily switch production to the relevant product or close substitutes. Market definition generally includes actual and potential sellers, that is, firms that can rapidly alter their production processes to supply substitute products if the price so warrants. The rationale for this is that these firms will tend to dampen or curb the ability of existing firms in the market to raise price above the competitive level. The location of buyers and sellers will determine whether the geographic market is local, regional, national or international. If markets are defined too narrowly in either product or geographic terms, meaningful competition may be excluded from the analysis. On the other hand, if the product and geographic markets are too broadly defined, the degree of competition may be overstated. Too broad or too narrow market definitions lead to understating or overstating **market share** and concentration measures.

The U.S. Department of Justice and the Canadian Bureau of Competition Policy Merger Guidelines, for example, provide a paradigm for defining the relevant product and geographic markets that is based on the likely demand response of consumers to an anticompetitive price increase. A market is defined as a product or group of products and a geographic area in which it is sold such that a hypothetical, profit-maximizing firm that was the only seller of those products in that area could raise prices by a small but significant and non-transitory amount above prevailing levels. The result of applying this paradigm is to identify a group of products and a geographic area with respect to which sellers could exercise market power if they were able to coordinate their actions perfectly so as to act like a monopolist. See G. Werden, "Market Delineation and the Justice Department's Merger Guidelines," *Duke Law Review*, June, 1983, pp. 514-579.

126. Market Failure

A general term describing situations in which market outcomes are not **Pareto efficient**. Market failures provide a rationale for government intervention. There are a number of sources of market failure. For the purposes of competition policy, the most relevant of these is the existence of **market power**, or the absence of **perfect competition**. However, there are other types of market failure which may justify regulation or public ownership.

When individuals or firms impose costs or benefits on others for which the market assigns no price, then an **externality** exists. Negative externalities arise when an individual or firm does not bear the costs of the harm it imposes

(pollution, for example). Positive externalities arise when an individual or firm provides benefits for which it is not compensated.

Finally, there are cases in which goods or services are not supplied by markets (or are supplied in insufficient quantities). This may arise because of the nature of the product, such as goods which have zero or low *marginal costs* and which it is difficult to exclude people from using (called public goods; for example, a lighthouse or national defense). It may also arise because of the nature of some markets, where risk is present (called incomplete markets; for example, certain types of medical insurance).

127. Market for Corporate Control

In an economic system where the voting stock (shares) of companies are publicly bought and sold through the mechanism of a stock exchange, the term "market for corporate control" refers to the process by which ownership and control of companies is transferred from one group of investors and managers to another. The share prices of companies publicly listed on the stock exchange are often viewed as a "barometer" indicating the extent to which management is efficiently operating the corporation and maximizing shareholder wealth. Generally speaking, investors or shareholders delegate substantial authority to professional managers who are hired to make the company's day-to-day pricing, production, investment, marketing and other business decisions. However, shareholders may not always be in a position to monitor or oversee these decisions, particularly if there are a large number of such shareholders. Under these circumstances, the company managers may not necessarily take decisions that maximize shareholder wealth. They may choose to shirk their duties by pursuing their own personal goals such as avoiding risk, maximizing their pay and fringe benefits, and spending money on prestige projects. Depending on the available information, the share prices of the company will be valued low and this would create incentives for takeover by a more efficient group of managers and shareholders. By taking control and subsequently changing management or management practices and reallocating resources, the assets of the acquired company may be put to more highly valued uses.

The "market for corporate control" along with competition in the markets for products and services play an important role in reinforcing each other in promoting **efficiency**. See M.C. Jensen and R.S. Ruback, "The Market for Corporate Control: The Scientific Evidence," *Journal of Financial Economics*, Vol. 11, 1983, pp. 5-50.

128. Market Power

The ability of a firm (or group of firms) to raise and maintain price above the level that would prevail under competition is referred to as market or *monopoly power*. The exercise of market power leads to reduced output and loss of economic welfare.

Although a precise economic definition of market power can be put forward, the actual measurement of market power is not straightforward. One approach that has been suggested is the **Lerner Index**, i.e., the extent to which price exceeds *marginal cost*. However, since marginal cost is not easy to measure empirically, an alternative is to substitute *average variable cost*. Another approach is to measure the price **elasticity of demand** facing an individual firm since it is related to the firm's price-cost (profit) margin and its ability to increase price. However, this measure is also difficult to compute.

The actual or potential exercise of market power is used to determine whether or not *substantial lessening of competition* exists or is likely to occur. An approach adopted in the administration of merger policy in the United States and Canada seeks to predict whether, post-merger, the parties can institute a non-transitory price increase above a certain threshold level (say 5 or 10 per cent) which will vary depending on the case without attracting entry of new firms or production of substitute products. Their ability to maintain or exceed this price threshold is assessed by detailed examination of quantitative and qualitative market structure and firm behaviour factors.

129. Market Share

Measure of the relative size of a firm in an industry or market in terms of the proportion of total output or sales or capacity it accounts for. In addition to profits, one of the frequently cited business objectives of firms is to increase market share. Market share, profits and economies of scale are often positively correlated in market economies. High levels of market share may bestow **market power** on firms. See also **Concentration, Concentration Indexes**.

130. Merger

An *amalgamation* or joining of two or more firms into an existing firm or to form a new firm. A merger is a method by which firms can increase their size and expand into existing or new economic activities and markets. A variety of motives may exist for mergers: to increase **economic efficiency**, to acquire **market power**, to **diversify**, to expand into different geographic markets, to pursue financial and R&D synergies, etc. Mergers are classified into three types:

Horizontal Merger: Merger between firms that produce and sell the same products, i.e., between competing firms. Horizontal mergers, if significant in size, can reduce competition in a market and are often reviewed by competition authorities. Horizontal mergers can be viewed as *horizontal integration* of firms in a market or across markets.

Vertical Merger: Merger between firms operating at different stages of production, e.g., from raw materials to finished products to distribution. An example would be a steel manufacturer merging with an iron ore producer. Vertical mergers usually increase economic efficiency, although they may sometimes have an anticompetitive effect. See also **Vertical Integration**.

Conglomerate Merger: Merger between firms in unrelated business, e.g., between an automobile manufacturer and a food processing firm.

131. Mobility Barriers

Mobility barriers are factors which impede the ability of firms to enter or exit an industry, or to move from one segment of an industry to another. "Mobility barriers" is therefore a general term which includes **barriers to entry**, barriers to exit, and barriers to intra-industry changes in market position. More specifically, mobility barriers may refer to barriers to movement from one strategic group of firms within an industry to another group. See R. Gilbert, "Mobility Barriers and the Value of Incumbency," in R. Schmalensee and R. Willig, (eds), *The Handbook of Industrial Organization*, North Holland, Amsterdam, 1989.

132. Monopolistic Competition

Monopolistic competition describes an industry structure combining elements of both **monopoly** and **perfect competition**. As in perfect competition,

there are many sellers and entry and exit is relatively easy. However, unlike the situation in perfect competition, products are somewhat differentiated. As a consequence, each firm faces a downward sloping demand curve which gives it some power over price. In this sense the firm is like a monopolist, although the demand curve is more elastic than that of the monopolist (see **elasticity of demand**). In essence, although the product is differentiated, it does have substitutes so that the demand curve facing the firm will depend on the prices charged by rivals producing similar products.

Monopolistic competition is probably the most prevalent market structure, particularly in service industries. Although it can be shown that monopolistic competition is **Pareto inefficient** because equilibrium price exceeds marginal cost, this inefficiency is the result of producing a variety of products. Because there are many firms and free entry/exit, monopolistic competition is not usually considered a problem for competition policy. In equilibrium, monopolistic competitors earn zero or low economic profits.

133. Monopolization

Attempts by a **dominant firm** or group of relatively large firms to maintain or increase market control through various **anticompetitive practices** such as **predatory pricing**, *pre-emption of facilities*, and *foreclosure of competition*. See also discussion under **abuse of dominant position**.

134. Monopoly

Monopoly is a situation where there is a single seller in the market. In conventional economic analysis, the monopoly case is taken as the polar opposite of **perfect competition**. By definition, the demand curve facing the monopolist is the industry demand curve which is downward sloping. Thus, the monopolist has significant power over the price it charges, i.e. is a price setter rather than a price taker.

Comparison of monopoly and perfectly competitive outcomes reveals that the monopolist will set a higher price, produce a lower output and earn above normal profits (sometimes referred to as monopoly rents). This suggests that consumers will face a higher price, leading to a **deadweight welfare loss**. In addition, income will be transferred from consumers to the monopoly firm.

The preceding arguments are purely static in nature and constitute only part of the possible harm resulting from monopoly. It is sometimes argued that monopolists, being largely immune from competitive pressures, will not have the appropriate incentives to minimize costs or undertake technological change. Moreover, resources may be wasted in attempts to achieve a monopoly position. However, a counter argument advanced is that a degree of monopoly power is necessary to earn higher profits in order to create incentives for innovation.

Monopoly should be distinguished from **market power**. The latter is a term which refers to all situations in which firms face downward sloping demand curves and can profitably raise price above the competitive level. Market power may arise not only when there is a monopoly, but also when there is **oligopoly**, **monopolistic competition**, or a **dominant firm**.

Monopolies can only continue to exist if there are **barriers to entry**. Barriers which sustain monopolies are often associated with legal protection created through patents and monopoly franchises. However, some monopolies are created and sustained through strategic behaviour or economies of scale. The latter are **natural monopolies** which are often characterized by steeply declining long-run average and marginal costs and the size of the market is such that there is room for only one firm to exploit available economies of scale.

For purposes of competition law and policy, monopoly may sometimes be defined as a firm with less than 100 per cent market share. Different jurisdictions approach "monopoly" in different ways depending upon **market share** criteria. See also **Dominant Firm**.

135. *Monopoly Power*

See **Market Power**.

136. Monopoly Rents

See **Rent**.

137. Monopsony

A monopsony consists of a market with a single buyer. When there are only a few buyers, the market is defined as an *oligopsony*. In general, when buyers have some influence over the price of their inputs they are said to have monopsony power.

Monopsony (or oligopsony) in and of itself is not often of concern in competition policy, although it does imply a lack of competition. It becomes more relevant when combined with monopoly or oligopoly, that is with monopoly power.

One common use of the notion of monopsony power arises in the context of defining market structure. For example, in cases where monopoly power is the issue, it may be useful to examine the extent to which such power is offset by powerful buyers. This is sometimes referred to as *countervailing power*. The ability of a firm to raise prices, even when it is a monopolist, can be reduced or eliminated by monopsony or oligopsony buyers. To the extent that input prices can be controlled in this way, consumers may be better off.

A second important use of the concept of monopsony power arises in cases of vertical integration and merger. It is generally agreed that where monopsony power exists, there will be an incentive for vertical integration. Moreover, under some circumstances it can be shown that vertical integration, even when it occurs between a monopolist and a monopsonist (bilateral monopoly), can increase economic efficiency. For further discussion and references, see F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin, Boston, 1990, Ch. 14.

138. Nash Equilibrium

In non-cooperative **oligopoly** theory it is necessary to model the manner in which firms choose strategies, given the fact that their decisions will affect their rivals. The most common assumption is that each firm chooses its strategy so as to maximize profits, given the profit-maximizing decisions of other firms. The result is a Nash Equilibrium, developed by the game theorist John Nash.

A Nash equilibrium is a strategy selection such that no firm can gain by altering its strategy, given the existing strategies of its rivals. Thus, a Nash

equilibrium represents a best response by any firm to the given strategies of the others.

Consider a **duopoly**, with each of two firms choosing a strategy. The strategy pair chosen is a Nash equilibrium if firm A's choice maximizes its profits, given firm B's choice and firm 2 maximizes its profits given firm 1's choice.

Strategies refer to the decisions firms make. Strategies may involve quantities, prices, or any other relevant decisions (such as R&D, investment, or location). The choice will depend on the nature of the problem. When the strategy analysed involves quantities, the resulting equilibrium is termed a **Cournot (Nash) equilibrium**. When the strategy involves prices, it is called a **Bertrand (Nash) equilibrium**.

See D. Fudenberg and J. Tirole, "Noncooperative Game Theory for Industrial Organization", and C. Shapiro, "Theories of Oligopoly", both in R. Schmalensee and R. Willig (eds), *The Handbook of Industrial Organization*, North Holland, Amsterdam, 1989.

139. Natural Monopoly

A natural monopoly exists in a particular market if a single firm can serve that market at lower cost than any combination of two or more firms. Natural monopoly arises out of the properties of productive technology, often in association with market demand, and not from the activities of governments or rivals (see **monopoly**). Generally speaking, natural monopolies are characterized by steeply declining long-run average and marginal-cost curves such that there is room for only one firm to fully exploit available economies of scale and supply the market.

In essence natural monopolies exist because of **economies of scale** and **economies of scope** which are significant relative to market demand. Natural monopolies are thought to exist in some portions of industries such as electricity, railroads, natural gas, and telecommunications. Because productive efficiency requires that only one firm exist, natural monopolies are typically subject to government regulation. Regulations may include price, quality, and/or entry conditions. For more detail, with references, see W.W. Sharkey, *The Theory of Natural Monopoly*, Cambridge University Press, Cambridge, UK, 1982 and M. Waterson, "Recent Developments in the Theory of Natural Monopoly," *Journal of Economic Surveys*, Vol. 1, No. 1, 1987.

140. *Negative Externality*

See **Externalities**.

141. **Non-Price Predation**

Non-price predation is a form of **strategic behaviour** that involves raising rivals' costs. It is potentially less costly and hence more profitable than **predatory pricing**. Typical methods include using government or legal processes to disadvantage a competitor. A firm may be able to force competitors to incur significant litigation or administrative costs, at little cost to itself. See D W. Carlton and J. M. Perloff, *Modern Industrial Organization*, Scott, Foresman Little Brown, Glenview, Il., 1990, Ch. 13.

142. **Oligopoly**

An oligopoly is a market characterized by a small number of firms who realize they are interdependent in their pricing and output policies. The number of firms is small enough to give each firm some **market power**.

Oligopoly is distinguished from **perfect competition** because each firm in an oligopoly has to take into account their interdependence; from **monopolistic competition** because firms have some control over price; and from **monopoly** because a monopolist has no rivals. In general, the analysis of oligopoly is concerned with the effects of mutual interdependence among firms in pricing and output decisions.

There are several types of oligopoly. When all firms are of (roughly) equal size, the oligopoly is said to be symmetric. When this is not the case, the oligopoly is asymmetric. One typical asymmetric oligopoly is the **dominant firm**. An oligopoly industry may produce goods which are homogeneous/ undifferentiated or it may produce goods which are heterogeneous/ differentiated.

The analysis of oligopoly behaviour normally assumes a symmetric oligopoly, often a **duopoly**. Whether the oligopoly is differentiated or undifferentiated, the critical problem is to determine the way in which the firms act in the face of their realized interdependence.

In general, there are two broad approaches to this problem. The first is to assume that firms behave cooperatively. That is, they collude in order to maximize **joint monopoly profits**. The second is to assume that firms behave independently or non-cooperatively. The analysis of oligopoly behaviour under the non-cooperative assumption forms the basis of oligopoly theory.

Within non-cooperative oligopoly theory a distinction is made between models in which firms choose quantities and those in which they choose prices. Quantity-setting models are often referred to as Cournot models and price-setting models as Bertrand models.

For a useful survey of non-cooperative oligopoly models, see C. Shapiro, "Theories of Oligopoly Behavior" in R. Schmalensee and R. Willig (eds.), *The Handbook of Industrial Organization*, North Holland, Amsterdam, 1989.

143. *Oligopsony*

See **Monopsony**.

144. **Opportunity Costs** (or *Alternative Costs*)

An essential concept in economics whereby the cost of using a resource in one activity is measured in terms of its best alternative use. The opportunity or alternative cost of producing one unit of commodity Y is what must be sacrificed by employing resources to produce it rather than something else. If several opportunities are given up in this manner, the relevant cost is the value assigned to the best (or highest) alternative. Opportunity costs are often referred to as "implicit costs" and while the concept is central to economics, they are not easy to measure. Cash outlays are "explicit costs" and are measured in terms of conventional accounting principles. See also **Costs**.

145. *Ownership Concentration*

See **Concentration**.

146. Package Tie-in

See **Bundling**.

147. Parent

A company which owns or operates a number of other companies, known as **subsidiaries**. A parent firm can be a **holding company** but it loses that status if it actively operates its **subsidiaries**.

148. Pareto Efficiency

Pareto efficiency, also referred to as *allocative efficiency*, occurs when resources are so allocated that it is not possible to make anyone better off without making someone else worse off. When referring to a situation as Pareto efficient, it is usually assumed that products are being produced in the most efficient (least-cost) way. Pareto optimality is sometimes used interchangeably with Pareto efficiency. Sometimes Pareto optimality is reserved for cases when both production and allocative efficiency are obtained.

Deadweight welfare loss is a measure of allocative inefficiency. In the case considered above under that heading, the total loss of consumer surplus involved in moving from competition to monopoly was $P_c P_m BC$ of which BCE was deadweight loss and $P_c P_m BE$ was producers' profit. Now consider the movement from monopoly to competition. The **gain** in consumers' surplus is $P_c P_m BC$, while producers lose $P_c P_m BE$. However, it is potentially possible for consumers to compensate producers by this amount and still retain BCE . Thus consumers are potentially better off, producers are no worse off and so the movement to competition represents a Pareto improvement and competition is said to be Pareto efficient.

This result has been termed "the first theorem of welfare economics" and it states that an economy characterized by **perfect competition** in all markets will always be Pareto efficient, if there are no **market failures**.

149. Patents

Patents give inventors property rights to the exclusive use of their invention for a specified period of time. The profits stemming from a patent are socially useful because they encourage inventive activity. In the absence of patents, competitive industries may produce too few inventions. Investments in inventive activity are **sunk costs**, and without the protection of patents to allow inventors to recoup those investments, inventive activity would probably decline. See discussion under **Intellectual Property Rights** and **Licensing**. See also F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, 3rd edition, Houghton Mifflin, Boston, 1990, Ch. 17.

150. Perfect Competition

Perfect competition is defined by four conditions (in a well-defined market):

- a) There is such a large number of buyers and sellers that none can individually affect the market price. This means that the demand curve facing an individual firm is perfectly elastic. See **Elasticity of Demand**.
- b) In the long run, resources must be freely mobile, meaning that there are no **barriers to entry** and exit.
- c) All market participants (buyers and sellers) must have full access to the knowledge relevant to their production and consumption decisions.
- d) The product should be homogenous.

When these conditions are fulfilled in any well-defined market, the market is perfectly competitive; when they are fulfilled in all markets, the economy is perfectly competitive.

It is this definition of perfect competition which underlies the conclusion that a perfectly competitive economy is **Pareto efficient**. Under these conditions, the price of the goods produced = *marginal cost* and all goods will be produced in the least costly way.

It is evident that this notion of competition can be highly restrictive in terms of policy-making. Some economists have therefore argued that the goal of

competition policy should not be perfect competition, but a more realistic target such as **workable competition**.

Another drawback to the use of perfect competition as a policy goal is that it is not clear that perfect competition is desirable unless it can be achieved in all markets. See **Second Best, Theory of**.

151. *Per Se Illegal*

See **Rule of Reason**.

152. Positive Externality

See **Externalities**.

153. Predatory Pricing

A deliberate strategy, usually by a dominant firm, of driving competitors out of the market by setting very low prices or selling below the firm's incremental costs of producing the output (often equated for practical purposes with average variable costs). Once the predator has successfully driven out existing competitors and deterred entry of new firms, it can raise prices and earn higher profits.

The economic literature on the rationality and effectiveness of predatory pricing is in a state of flux. Many economists have questioned the rationality of predatory pricing on grounds that: it can be at least as costly to the predator as to the victim; targets of predation are not easily driven out, assuming relatively efficient capital markets; and entry or re-entry of firms in the absence of barriers reduces the predator's chances of recouping losses incurred during the period of predation.

However, other economists have suggested that price predation might be feasible if it is undertaken to "soften" up rivals for future acquisition, or if potential targets of predation or their sources of capital have less information about costs and market demand than the predator. See *Predatory Pricing*, OECD, Paris, 1989, for a summary of issues, concepts, and operational approaches toward this practice.

154. *Preemption of Facilities*

See **Barriers to Entry, Anticompetitive Practices.**

155. *Price Cartel*

See **Cartel.**

156. Price Discrimination

Price discrimination occurs when customers in different market segments are charged different prices for the same good or service, for reasons unrelated to costs. Price discrimination is effective only if customers cannot profitably re-sell the goods or services to other customers. Price discrimination can take many forms, including setting different prices for different age groups, different geographical locations, and different types of users (such as residential vs. commercial users of electricity).

Where sub-markets can be identified and segmented then it can be shown that firms will find it profitable to set higher prices in markets where demand is less elastic (see **Elasticity of Demand**). This can result in higher total output, a pro-competitive effect.

Price discrimination can also have anti-competitive consequences. For example, **dominant firms** may lower prices in particular markets in order to eliminate vigorous local competitors. However, there is considerable debate as to whether price discrimination is really a means of restricting competition.

Price discrimination is also relevant in regulated industries where it is common to charge different prices at different time periods (peak load pricing) or to charge lower prices for high volume users (block pricing).

For more details, see L. Philips, *The Economics of Price Discrimination*, Cambridge University Press, Cambridge, UK, 1983; and F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin, Boston, 1990, Ch. 13.

157. Price Fixing Agreement

An agreement between sellers to raise or fix prices in order to restrict inter-firm competition and earn higher profits. Price fixing agreements are formed by firms in an attempt to collectively behave as a **monopoly**. For further details see discussion under **agreement, cartel, collusion** and other headings indicated therein.

158. Price Leadership

Prices and price changes established by a **dominant firm**, or a firm accepted by others as the leader, and which other firms in the industry adopt and follow. When price leadership is adopted to facilitate collusion, the price leader will generally tend to set a price high enough that the least efficient firm in the market may earn some return above the competitive level.

159. Price Regulation

The policy of setting prices by a government agency, legal statute or regulatory authority. Under this policy, minimum and/or maximum prices may be set. Price regulation also encompasses "guidelines" which specify the magnitude by which prices can increase as in the case of rent controls. The bases on which regulated prices are set vary. These may be on costs, return on investment, markups, etc.

160. *Producers' Surplus*

See **Deadweight Welfare Loss**.

161. Privatization

Refers to transfer of ownership and control of government or state assets, firms and operations to private investors. This transfer takes the form of issue and sale or outright distribution of shares to the general public. Broadly used, the term privatization includes other policies such as "contracting out" that is, the process by which activities, while publicly organized and financed, are carried out by private sector companies, e.g., street cleaning, garbage collection, housing,

education. The policy of privatization has been extensively implemented in the United Kingdom and since adopted in several countries around the world. See collection of papers in J.A. Kay, C.P. Mayer and D.J. Thompson, *Privatization and Regulation - the U.K. Experience*, Oxford University Press, Oxford, 1986; and J. Vickers and G. Yarrow, *Privatization - an Economic Analysis*, MIT Press, Cambridge, 1988. See also *Regulatory Reform, Privatisation and Competition Policy*, OECD, Paris, 1992.

162. Product Differentiation

Products are considered to be differentiated when there are physical differences or attributes which may be real or perceived by buyers so that the product is preferred over that of a rival firm. Products are differentiated by firms in order to obtain higher prices and/or increased sales. Differentiation may occur in terms of physical appearance, quality, durability, ancillary services (e.g., warranties, post-sales services and information), image and geographic location. Firms will frequently engage in advertising and sales promotion activities to differentiate their products. Product differentiation can give rise to **barriers to entry** but then it may also facilitate entry into and penetration of markets by firms with products which buyers may prefer over existing ones. It should be noted that differentiated products are not to be confused with heterogenous products. The latter generally refers to products which are different and not easily substitutable whereas among differentiated products there is some degree of substitutability. See also **Homogenous Products**.

163. Profit

In economic theory, profit is the surplus earned above the normal return on capital. Profits emerge as the excess of total revenue over the **opportunity cost** of producing the good. Thus, a firm earning zero economic profits is still earning a normal or competitive return. Positive economic profits therefore indicate that a firm is earning more than the competitive norm.

Economic profits are not the same as accounting profits. In accounting, profits are simply the excess of revenues over the explicit costs of obtaining the revenues. Costs are not calculated as opportunity costs and do not include a normal return on capital. Moreover, accountants calculate different categories of profits which may differ from country to country.

For purposes of competition policy, the problem is that positive economic profits may (but not necessarily) indicate the existence of **monopoly power**. However, economic profits are not observable and use must be made of accounting profits. Positive accounting profits may reflect nothing other than a normal or competitive return. See **Profitability**.

164. Profitability

Measures of profitability figure prominently in both the empirical literature in industrial organization and in the resolution of anti-trust cases. At issue is the extent to which observed (accounting) measures of profitability can indicate the presence of monopoly power.

A variety of measures of profitability have been employed. Rates of return on equity or assets are defined as accounting **profits** divided by either equity or assets. Profits may be calculated before- or after-tax and may or may not include interest payments. Normally, interest payments are excluded when calculating the rate of return on equity, but are included when calculating the rate of return on assets. The rate of return on assets reflects operating results and, if interest rates are included, should not reflect financing decisions.

Many empirical studies have employed the price-cost margin, defined as revenues less variable costs divided by revenues. This measure typically excludes various capital costs, but is defended on the grounds that it is related to the **Lerner Index**.

Finally, some use has been made of Tobin's "q", defined as the market value of a firm divided by the replacement costs of its tangible assets. The market value of a firm is determined in stock markets. To the extent that stock markets capture the long-run profitability of a firm, then higher "q" values reflect greater profitability.

The question of whether any of these measures can be employed to measure economic profits (see **profit**) has been widely debated. Moreover, even if it can be determined that they do, there is considerable controversy as to whether higher levels of profitability reflect the exercise of market power or the returns to superior efficiency and skills. See R. Schmalensee, "Inter-Industry Studies of Structure and Performance," in R. Schmalensee and R. Willig (eds), *The Handbook of Industrial Organization*, North Holland, Amsterdam, 1989.

165. *Quasi-rents*

See **Rent**.

166. Rationalization Agreement

An agreement (generally approved or authorized by government) between firms in an industry to close down inefficient plants, reduce excess capacity and realign production in order to increase overall industry efficiency and performance.

167. Reciprocity

A form of bilateral (or multilateral) arrangement between firms to bestow favourable terms on, or buy and sell from, each other to the exclusion of others. This may have the effect of limiting competition and/or preventing the entry of firms into certain markets. Concern about reciprocal arrangements has been particularly raised in the context of conglomerates. It is argued that subsidiary firms are likely to encounter each other frequently as buyers or sellers in different markets. Reciprocity may benefit firms by ensuring contract fulfillment or by facilitating secret price-cutting.

168. Recommended or Suggested Price

In several industries, suppliers may recommend or suggest the price at which a product may be resold. In certain cases the supplier may indicate the "maximum" price for the product in order to discourage retailers from raising prices to increase their own margins and thus reduce total sales. Such practices may be adopted in order to avoid violating laws against **resale price maintenance**. The specification and attempted enforcement of "minimum" prices for products is illegal in many countries.

169. Refusal to Deal/Sell

The practice of refusing or denying supply of a product to a purchaser, usually a retailer or wholesaler. The practice may be adopted in order to force a retailer to engage in **resale price maintenance (RPM)**, i.e., not to discount the

product in question, or to support an *exclusive dealing* arrangement with other purchasers or to sell the product only to a specific class of customers or geographic region. Refusal to deal/sell may also arise if the purchaser is a bad credit risk, does not carry sufficient inventory or provide adequate sales service, product advertising and display, etc. The competitive effects of refusal to deal/sell generally have to be weighed on a case-by-case basis.

170. Regulation

Broadly defined as imposition of rules by government, backed by the use of penalties that are intended specifically to modify the economic behaviour of individuals and firms in the private sector. Various regulatory instruments or targets exist. Prices, output, rate of return (in the form of profits, margins or commissions), disclosure of information, **standards** and ownership ceilings are among those frequently used. Different rationales for economic regulation have been put forward. One is to curb potential market power and increase efficiency or avoid duplication of facilities in cases of **natural monopoly**. Another is to protect consumers and maintain quality and other standards including ethical standards in the case of professional services provided by doctors, lawyers, etc. Regulations may also be enacted to prevent *excessive* competition and protect suppliers from unstable output and low price conditions, to promote employment and more equitable distribution of income. *Excessive competition*, sometimes also called *ruinous competition*, is a controversial term without precise meaning in economics. It usually refers to a condition of excess capacity and/or declining demand in an industry, which causes prices to fall to the level of average variable costs, discouraging new investment and causing some incumbents to leave the industry until capacity is reduced to the point where supply once again intersects with demand at a price sufficient to cover all costs. When regulatory authorities interfere with this process by setting minimum price levels, excess capacity and its attendant resource misallocation will tend to persist in the industry. Many economists use this as an example of the use of regulation to promote the private interests of producers at the expense of the public interest.

Not all forms of regulation have to be mandated or imposed by government. Many professions adopt *self-regulation*, i.e., develop and self-enforce rules commonly arrived at for the mutual benefit of members. Self-regulation may be adopted in order to maintain professional reputation, education and ethical standards. They may also act as a vehicle to set prices, restrict entry and ban certain practices (e.g., advertising in order to restrict competition).

Deregulation refers to the relaxation or removal of regulatory constraints on firms or individuals. Deregulation has become increasingly equated with promoting competition and market-oriented approaches toward pricing, output, entry and other related economic decisions.

See P.L. Joskow and N. Rose, "The Effects of Economic Regulation," in R. Schmalensee and R. Willig (eds), *Handbook of Industrial Organization*, North Holland, Amsterdam, 1989. *Competition Policy and the Professions* OECD, Paris, 1985; *Regulatory Reform, Privatisation and Competition Policy*, OECD, Paris, 1992.

171. Rent

In modern economics, rent refers to the earnings of factors of production (land, labour, capital) which are fixed in supply. Thus, raising the price of such factors will not cause an increase in availability but will increase the return to the factor. This differs from the more common usage of the term, whereby rent refers to payments for the use of a resource.

Economists use the term economic rent to denote the payment to factors which are permanently in fixed supply and *quasi-rent* to denote payments for factors which are temporarily in fixed supply. The presence of economic rents implies that the factor can neither be destroyed nor augmented. Quasi-rents exist when factors can be augmented over time, or when their supply can be reduced over time through depreciation. Factors which earn economic or quasi-rents typically are paid an amount in excess of their **opportunity costs**.

In the case of economic rents the supplier receives a payment in excess of the amount required to induce the supplier to supply the factor. Quasi-rents, on the other hand, are returns in excess of that required to keep the factor active, but may not be sufficient to have induced the supplier to enter in the first place.

When the availability of a good is artificially restricted (for example by laws limiting entry), then the increased earnings of the remaining suppliers are termed monopoly rents. The potential existence of *monopoly rents* provides an incentive for firms to pay for the right to earn these rents. See **Rent-Seeking**.

For further details, see A.A. Alchian, "Rent," in J. Eatwell, M. Milgate and P. Newman, *The New Palgrave: A Dictionary of Economics*, Macmillan, London, 1987.

172. Rent Seeking

The opportunity to capture monopoly rents (see **Rents**) provides firms with an incentive to use scarce resources to secure the right to become a monopolist. Such activity is referred to as rent-seeking. Rent-seeking is normally associated with expenditures designed to persuade governments to impose regulations which create monopolies. Examples are entry restrictions and import controls. However, rent-seeking may also refer to expenditures to create private monopolies.

The notion of rent-seeking may be traced to economists Tullock and Krueger, who both assumed that the potential for monopoly rents would induce firms to compete for the right to earn such rents. The outcome would then be that resources equal to the monopoly rents would be expended on securing the monopoly. This, they suggested, was a social loss equivalent to the amount of monopoly rents (or profits), since the resources could have been better employed in other activities. Hence it is argued that the social costs of monopoly power should include at least some portion of monopoly profits. See **Deadweight Loss**.

See D.W. Carlton and J.M. Perloff, *Modern Industrial Organization*, Scott, Foresman/Little Brown, Glenview, Il., 1990, Ch. 13.

173. Resale Price Maintenance (RPM)

A supplier specifying the minimum (or maximum) price at which the product must be re-sold to customers. From a competition policy viewpoint, specifying the minimum price is of concern. It has been argued that through price maintenance, a supplier can exercise some control over the product market. This form of vertical price fixing may prevent the margin from retail and wholesale prices from being reduced by competition. However, an alternative argument is that the supplier may wish to protect the reputation or image of the product and prevent it from being used by retailers as a **loss leader** to attract customers. Also, by maintaining profit margins through RPM, the retailer may be provided with incentives to spend greater outlays on service, invest in inventories, advertise and engage in other efforts to expand product demand to the mutual benefit of both the supplier and the retailer. RPM may also be used to prevent **free riding** by retailers on the efforts of other competing retailers who instead of offering lower prices expend time, money and effort promoting and explaining the technical complexities or attributes of the product. For example, one retailer may not reduce

price but explain and demonstrate to customers the use of a complex product such as a computer. The customer may after acquiring this information choose to buy the computer from a retailer that sells it at a lower price and does not explain or demonstrate its uses. In many countries, RPM is *per se illegal* with few exceptions or exempt products. Many economists now advocate adopting a less stringent approach in competition law towards RPM and other **vertical restraints**. See *Competition Policy and Vertical Restraints: Franchising*, OECD, Paris, forthcoming in 1993, for a brief synthesis of some of the economic debates in this area.

174. Restriction of Entry to the Market

See **Barriers to Entry, Limit Pricing**.

175. Restriction of Technology

See **Licensing**.

176. Restriction on Exportation

Restrictions placed on the ability of firms to export. Such restrictions may come from governments, normally to protect or conserve non-renewable resources or cultural treasures. They may also come from agreements among firms to limit exports as part of a cartel arrangement. These restrictions may also arise from agreements negotiated by the importing country such as the case of "voluntary" export restrictions (VER's) of Japanese automobiles to the United States. Finally export restrictions may be part of **licensing** arrangements whereby the firm granted the license is not allowed to export the good in competition with other licensees, or the firm selling the license. See also **Export Cartel**.

177. Restriction on Importation

Measures, normally adopted by governments, which restrict the ability of firms to enter foreign markets via imports. The most common restrictions are tariffs, quotas and voluntary export restraints. Tariffs serve to tax imports, thus making them expensive relative to domestic goods. Quotas affect imports directly by restricting the number of units which can come from abroad. Voluntary export

restraints, largely confined to the U.S., are similar to quotas in that they restrict quantities. They differ from quotas in that they are not imposed unilaterally by the importing country. Rather, they are agreed to by the exporting country or countries, usually to forestall the imposition of tariffs and/or quotas.

178. Revenues

Revenues (or total revenue) refer to the value of output sold, that is the number of units times the price per unit. Average revenue is revenue per unit, that is total revenue divided by the amount of output sold. Average revenue is therefore equal to price per unit. *Marginal revenue* is the increment in total revenue resulting from the sale of an additional unit.

Marginal revenue may or may not equal average revenue. A firm operating under **perfect competition** has no control over price. It must sell all units at the same price. Hence *marginal revenue* equals price (which is average revenue) and these are constant.

A firm with **market power**, on the other hand, faces a downward sloping demand curve. In order to sell more, it must reduce price. Thus average revenue (price) is declining. Moreover, it can be shown that marginal revenue is not only declining, but is less than average revenue.

The profit maximizing firm sets marginal cost (see **costs**) equal to marginal revenue. For the perfectly competitive firm, the result is that price equals marginal cost, the condition for **Pareto efficiency**. For a monopolist, price exceeds marginal cost and is therefore higher than that of the perfectly competitive firm. See **monopoly, perfect competition**.

179. Ruinous Competition

See **Cut-Throat Competition**.

180. Rule of Reason

A legal approach by competition authorities or the courts where an attempt is made to evaluate the pro-competitive features of a restrictive business practice against its anticompetitive effects in order to decide whether or not the practice

should be prohibited. Some market restrictions which *prima facie* give rise to competition issues may on further examination be found to have valid efficiency-enhancing benefits. For example, a manufacturer may restrict supply of a product in different geographic markets only to existing retailers so that they earn higher profits and have an incentive to advertise the product and provide better service to customers. This may have the effect of expanding the demand for the manufacturer's product more than the increase in quantity demanded at a lower price.

The opposite of the rule of reason approach is to declare certain business practices *per se illegal*, that is, always illegal. **Price fixing agreements** and **resale price maintenance** in many jurisdictions are *per se illegal*.

181. Second Best, Theory of

The theory of the second best suggests that when two or more markets are not perfectly competitive, then efforts to correct only one of the distortions may in fact drive the economy further away from **Pareto efficiency**. Thus, for example, if there is one industry which can never satisfy all the conditions for **perfect competition**, it is no longer clear that the optimal policy is to move the remaining industries towards perfect competition. Moreover, the conditions under which **Pareto efficiency** can be achieved under these circumstances are complex and not likely to be implementable.

Thus, the defense of competition policy often requires giving weight to more than **Pareto efficiency**. For example, competition policy may be defended on the grounds of equity, democracy and incentives. However, achievement towards Pareto efficiency is generally given more weight in the application of competition policy.

A useful discussion, with references, is found in F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin, Boston, 1990, pp. 33-38.

182. Self-Regulation

See **Regulation**.

183. *Seller Concentration*

See **Concentration**.

184. **Selling Below Cost**

A practice whereby a firm sells products at less than costs of manufacture or purchase in order to drive out competitors and/or to increase market share. This practice may arise partly because of **deep pockets** or cross-subsidization using profits derived from sale of other products. A number of measurement issues arise as to what constitutes costs but generally the practice would arise if price is below **marginal cost** or **average variable cost**. A question also arises as to whether selling a product below costs is economically feasible over a long period of time since the firm may incur high costs in the form of loss of potential profits. See also **loss leadering, predatory pricing**.

185. **Shared or Joint Monopoly**

Anticompetitive behaviour by firms, normally an **oligopoly**, in order to secure monopoly profits for the firms as a group. Essentially, shared monopoly requires some form of **collusion** but stops short of being a formal **cartel**. It is therefore similar to *tacit collusion*. In a shared monopoly firms may not compete for the same customers and have instead local monopolies.

Since in theory industry profits under a non-coordinated **oligopoly** will be less than those under **monopoly**, there is some incentive for firms in an oligopoly to attempt to coordinate their actions so as to achieve profits nearer the monopoly solution.

186. **Shipping Conferences**

Refers to shipping companies that have formed an association to agree on and set freight rates and passenger fares over different shipping routes. There are different shipping conferences for different regions of the world. Shipping conferences, aside from setting rates, adopt a wide number of policies such as allocation of customers, loyalty contracts, open pricing contracts, etc. Historically, eastern bloc country shipping lines have not joined these conferences. In many

jurisdictions, shipping conferences are exempt from the application of competition laws but this position is being increasingly changed in order to promote greater competition and choice for shippers (exporters).

187. Specialization Agreements

A provision permitting firms to form an agreement to specialize in the production of a narrow or specific range of product lines in order to realize "product specific economies" (see **Economies of Scale**). In several industries, firms may be manufacturing at sub-optimal scales, multiple and duplicate products. Specialization agreements are aimed towards facilitating re-alignment of production in order to achieve longer production runs of specific products and realize efficiencies. A formal provision for these agreements and exemption from the application of competition laws may be necessary in order to assure firms they will not be viewed as forming an illegal **combination**. Specialization agreements are particularly relevant in the context of small economies where the market may not be large enough for firms to exploit potential product specific economies of scale.

188. Standards

Refers to defining and establishing uniform specifications and characteristics for products and/or services. In the case of manufactured products, the standard may relate to physical measurements and dimensions, materials and performance attributes. For example, a standard bath tub may be established as measuring 162 cm by 74 cm, being made of either enamelled metal or fiberglass and having performance capability of carrying human body and water weight of minimum 180 kg. A distinction is usually made between technical and performance standards. The specifications that the bath tub should be of certain dimensions and made of enamelled metal or fiberglass are considered as technical standards. The weight and capacity capabilities are the performance standards. A distinction is also made between "voluntary" and "mandatory" standards; the former are generally developed by industry associations and member firms may voluntarily adopt them. Mandatory standards are usually those developed by government agencies or **regulation** and are compulsory.

Standardization of products often promotes economies of scale in production, interchangeability between products of different manufacture, higher quality, complementarity between different products, and diffusion of technology.

Standards may also reduce product heterogeneity and facilitate **collusion** and/or act as a non-tariff barrier to trade. Standards may also be used by incumbent firms in favour of their own products and processes and raise **barriers to entry**.

In the case of services, many professions and trades ranging from medical doctors to carpenters set minimum standards for granting licenses to practice. While these licenses are likely to raise the average quality of the service, they also have the effect of restricting supply and increasing prices. If standards are to enhance economic welfare, the standard setting and certification procedures must be transparent and subject to checks and balances such that the influence of any one particular interest group does not dominate. Also, standards should be reviewed periodically and updated.

189. Strategic Behaviour

Strategic behaviour is the general term for actions taken by firms which are intended to influence the market environment in which they compete. Strategic behaviour includes actions to influence rivals to act cooperatively so as to raise joint profits, as well as noncooperative actions to raise the firm's profits at the expense of rivals. Various types of **collusion** are examples of cooperative strategic behaviour. Examples of noncooperative strategic behaviour include *pre-emption of facilities*, price and **non-price predation** and creation of artificial **barriers to entry**. Strategic behaviour is more likely to occur in industries with small numbers of buyers and sellers. See D.W. Carlton and J.M. Perloff, *Modern Industrial Organization*, Scott, Foresman/Little Brown, Glenview, IL, 1990, Ch. 13.

190. Subsidiary

A company controlled by another company. Control occurs when the controlling company owns more than 50 per cent of the common shares. When the parent owns 100 per cent of the common shares, the subsidiary is said to be wholly-owned. When the subsidiary operates in a different country, it is called a foreign subsidiary. The controlling company is called a **holding company** or **parent**. A subsidiary is a corporation with its own charter and is not a division of the controlling company.

191. *Substantial Lessening of Competition*

See **Market Power**.

192. Sunk Costs

Sunk costs are costs which, once committed, cannot be recovered. Sunk costs arise because some activities require specialized assets that cannot readily be diverted to other uses. Second-hand markets for such assets are therefore limited. Sunk costs are always fixed costs (see **costs**), but not all fixed costs are sunk.

Examples of sunk costs are investments in equipment which can only produce a specific product, the development of products for specific customers, advertising expenditures and R&D expenditures. In general, these are firm-specific assets.

The absence of sunk costs is critical for the existence of *contestable markets*. When sunk costs are present, firms face a barrier to exit. Free and costless exit is necessary for **contestability**. Sunk costs also lead to **barriers to entry**. Their existence increases an incumbents' commitment to the market and may signal a willingness to respond aggressively to entry.

193. *Sustainable Monopoly*

See **Contestability**.

194. *Tacit Collusion*

See **Collusion, Conscious Parallelism**.

195. Takeover

The acquisition of control of one company by another or occasionally by an individual or group of investors. Takeovers are usually instituted by purchasing shares at a "premium" over existing prices and may be financed in a variety of ways including cash payment and/or with shares of the acquiring company. While the terms **mergers, acquisitions** and takeover are often used interchangeably,

there are subtle differences between them. A takeover may be complete or partial and may not necessarily involve merging the operations of the acquired and acquiring firms. The fact that joint ownership and control may arise from a takeover implies that the companies could maximize joint profits, which can be a source of concern to competition authorities. See also **Market for Corporate Control**.

196. Tied Selling

Refers to situations where the sale of one good is conditioned on the purchase of another good. One variant is *full-line forcing* in which a seller presses (or forces) a complete line of products on a buyer who is predominantly interested in only a specific product. Tied selling is sometimes a means of price discrimination. Competition concerns have been expressed that tying may foreclose opportunities for other firms to sell related products or may increase **barriers to entry** for those that do not offer a full line of products. An opposite view is that these practices are efficiency driven i.e., used to reduce costs of producing and distributing the line of products and ensuring that like quality products are used to complement the product being sold. For example, a computer manufacturer may require purchase of disks in order to prevent damage to or poor performance of his equipment by the use of substitute lower quality disks. There is increasing recognition that depending on different market situations, tied selling arrangements may have a valid business rationale. In the administration of competition policy, an increasing number of economists suggest adopting a **rule of reason** approach to tied selling.

197. Total Costs

See **Costs**.

198. Trade Mark

Trade mark refers to words, symbols or other marks which are used by firms to distinguish their products or services from those offered by others. A trade mark may be registered under the *Patent Act* or the *Trademark Act* or other such intellectual property legislation as may be applicable. A trade mark may often become equated with the product itself and may be a source of competitive advantage. For example, "kleenex" as a trade mark name is used to refer to "tissue

"handkerchiefs"; "Xerox" in place of "photocopying"; "Coke" instead of a "cola drink". Trade marks may communicate information about the quality of a good or service to consumers. Firms which license their trade marks to retailers may thus require conditions in the licensing contract assuring uniform quality. See **Intellectual Property Rights, Licensing**.

199. Transaction Costs

Transaction costs refer to the costs involved in market exchange. These include the costs of discovering market prices and the costs of writing and enforcing contracts.

Transaction cost economics, as developed primarily by economists Coase and Williamson, suggests that economic organizations emerge from cost-minimizing behaviour (including transaction costs) in a world of limited information and opportunism.

Transaction-cost analysis has been used to explain vertical integration, multinational enterprises, and franchising. See O. Williamson, "Transaction Cost Economics" in R. Schmalensee and R. Willig (eds), *The Handbook of Industrial Organization*, North Holland, Amsterdam, 1989.

200. Uniform Delivered Pricing

See **Basing Point**.

201. Variable Costs

See **Costs**.

202. Vertical Integration

Describes the ownership or control by a firm of different stages of the production process, e.g., petroleum refining firms owning "downstream" the terminal storage and retail gasoline distribution facilities and "upstream" the crude oil field wells and transportation pipelines. "Forward" integration refers to the production to distribution stages whereas "backward" integration refers to the

production to raw material stages of the operations of a firm. Vertical integration may be achieved through new investment and/or *vertical mergers* and **acquisition** of existing firms at different stages of production. An important motive for vertical integration is efficiencies and minimization of **transaction costs**.

203. *Vertical Merger*

See **Merger**.

204. **Vertical Restraints (or Restrictions)**

Refers to certain types of practices by manufacturers or suppliers relating to the resale of their products. The usual practices adopted in this regard are **resale price maintenance (RPM)**, *exclusive dealing* and exclusive territory or geographic market restrictions. Under exclusive dealing and/or exclusive territory, a single distributor is the only one who obtains the rights from a manufacturer to market the product. A significant debate exists in the economic literature as to whether this confers **monopoly power** on the distributor. Usually, the distributor's market power is limited by inter-brand competition. The manufacturer's purpose is normally to provide incentives to the distributor to promote the product and provide better service to customers. See also discussion under **Free Riding, RPM** and *Competition Policy and Vertical Restraints: Franchising*, OECD, Paris, forthcoming in 1993.

205. **Workable Competition**

Workable competition is a notion which arises from the observation that since **perfect competition** does not exist, theories based on it do not provide reliable guides for competition policy. The idea was first enunciated by economist J.M. Clark in 1940. He argued that the goal of policy should be to make competition "workable," not necessarily perfect. He proposed criteria for judging whether competition was workable, and this provoked a series of revisions and counter-proposals. The criteria put forward are wide ranging e.g. the number of firms should be at least large as **economies of scale** permit, promotional expenses should not be excessive and **advertising** should be informative.

No consensus has arisen over what might constitute workable competition but all bodies which administer competition policy in effect employ some version of it.

An interesting discussion is found in G. Reid, *Theories of Industrial Organization*, Blackwell, Oxford, 1987, Ch. 7. See also F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin, Boston, 1990, pp. 53-54.

206. *X-Efficiency*

See **Efficiency, X-Inefficiency**.

207. **X-Inefficiency**

In *The Wealth of Nations* published in 1776, Adam Smith observed that "Monopoly... is a great enemy to good management." This insight explicitly recognized that the problem of **monopoly** is not only one of price but also one of costs. While monopoly may provide the basis for extracting higher prices from customers, the lack of competitive stimulus may raise the costs of producing the goods and services it sells. The lack of incentives or competitive pressures may lead monopolistic firms to neglect minimizing unit costs of production, i.e., to tolerate "X-inefficiency" (phrase coined by H. Leibenstein). Included in X-inefficiency are wasteful expenditures such as maintenance of excess capacity, luxurious executive benefits, political lobbying seeking protection and favourable regulations, and litigation. See H. Leibenstein, "Allocative Efficiency vs. X-Efficiency," *American Economic Review*, Vol. 56, June, 1966, pp. 392-415. For a contrary viewpoint see G.J. Stigler, "The Existence of X-Efficiency," *American Economic Review*, Vol. 66, March 1976, pp. 213-216. Stigler's objection is based on his observation that there is no economic theory which predicts that monopolists will not maximize profits by producing efficiently. See also H. Leibenstein's reply, "X-Inefficiency Xists - Reply to an Xorcist," *American Economic Review*, Vol. 68, March 1978, pp. 203-211.

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