State of competition

It is widely recognized that the state of competition can significantly affect the number and the success of innovative firms. Both theory and evidence show that, on the one hand, competition gives firms an incentive to develop innovations in order to be more effective and to survive. On the other hand, competition may also negatively affect innovation by reducing the monopoly rents that induce a firm to invest in innovation. Overall, impediments to competition have been declining in all OECD countries in recent years, and competition policies have become more homogeneous across OECD countries. The state of competition critically depends on the regulatory framework, access to foreign and domestic markets and, more generally, on the trajectories of innovative new ventures. Public policy can improve the competition policy framework through antitrust and network policies, by assessing the impacts of rules and regulations on competition, by avoiding policies that have the potential to unnecessarily restrain competition and by considering the effects on innovation when designing and applying competition policies.

What is the state of competition?

Competition describes how firms independently strive in order to achieve profits, increase sales and keep market share. Competitive rivalry between firms may take place in terms of price, quality, service or combinations of these and other factors that customers may value (OECD, 2008).

Competition can be estimated by measures of industry concentration, such as the total market share of leading firms in the industry and the Herfindahl Index, which is the sum of the squares of the market shares of all firms in an industry. Higher values indicate greater concentration and lower competitive intensity.

The state of competition may be affected by the structure of the market, regulations, ownership, the nature of products, and the behaviours of certain economic agents.

Central concepts to describe the state of competition include:

- **Market power,** or the ability of firms to charge prices above competitive levels. Market power results from the structure of the market.
- **Barriers-to-entry** effectively shape the degree of competition, as high barriers-to-entry allow incumbents to engage in anti-competitive behaviour and raise prices to earn greater profits, while low barriers constrain both behaviours. The barriers-to-entry can result from natural factors (e.g. economies of scale arising from high fixed costs), sunk costs (i.e. the costs that a firm is unable to recover if it chooses to exit from a particular industry, such as research and development expenditures), practices of incumbent firms (e.g. locking in customers by long-term contracts) and regulation (e.g. restrictions on new entry into markets, lengthy and costly procedures to start new businesses).
- **Competitive neutrality** is defined as the state of competition in which no entity operating in an economic market is subject to undue competitive advantages or disadvantages.

How does the state of competition affect innovative businesses?

Theoretical models offer conflicting conclusions on the impact of competition on innovation.

- **On the one hand, competition may foster innovation by giving firms incentives to develop innovations in order to be more effective and to survive.** Strong competition drives the most inefficient firms out of the market and enables only the most efficient firms to survive. As a result, competitive pressures stimulate organizational innovation when successful innovation allows incumbents to subsist. Firms may have an incentive to develop new innovative products in order to differentiate their products and to thereby escape competition from rivals. Thus, strengthening competitive pressure by increasing exposure to imports can spur innovation by domestic firms. However, such benefits only arise if the framework conditions are favourable (e.g. available skilled personnel, access to finance).

- **On the other hand, competition may also negatively affect innovation by reducing the monopoly rents that induce a firm to invest in innovation** (Schumpeter, 1942). In this view, firms facing less competition have a greater incentive to innovate since they can expect adequate returns from their innovation due to the temporary monopoly power that would arise.

- W**hile the impact of competition on innovation is not clear-cut across theoretical models, it is generally recognized that this relationship depends on specific factors** and a wide range of assumptions regarding appropriability conditions, the type of innovation (e.g. product vs. process), the importance of the innovations in question (e.g. radical vs. incremental) and the change in the intensity of rivalry associated with innovation. For instance, Aghion et al. (2009) show that competitive pressures tend to stimulate innovation in technologically advanced sectors close to the technology frontier, while discouraging innovation in lagging sectors.

What is the evidence on the state of competition and innovative businesses?

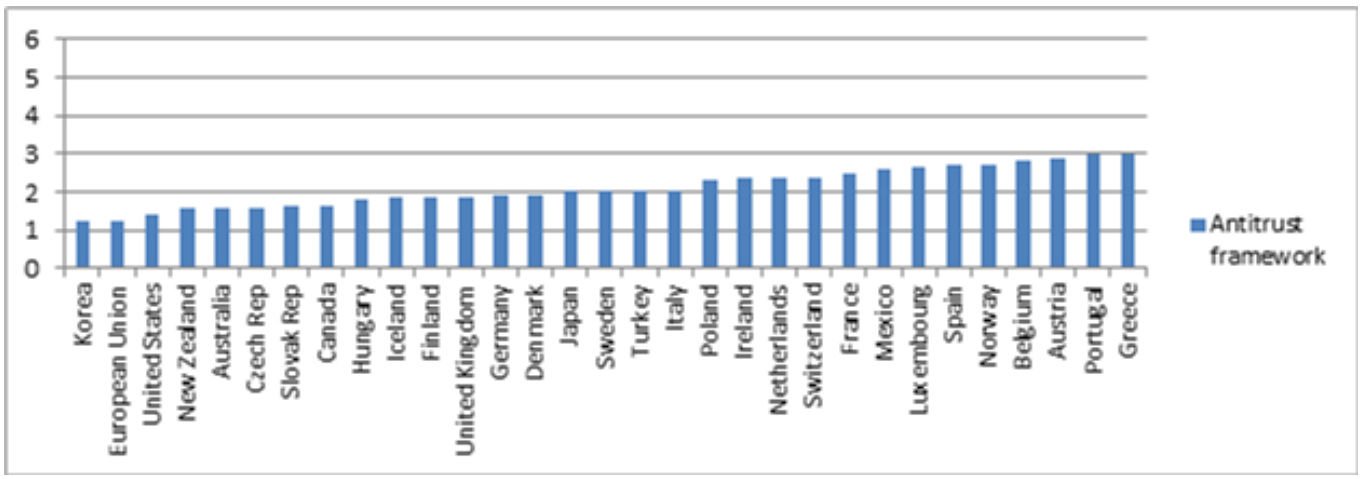
The mostly used measures of competition are the concentration ratio and the Herfindahl index. Both measures are traditional structural measures of market concentration based on market share. The concentration ratio is the percentage of market share of a given number of firms in an industry. For instance, the four-firm concentration ratio measures the total market share of the four largest firms in an industry. The concentration ratios illustrate the extent to which the largest firms control the industry. The Herfindahl index provides a more complete picture of industry competition than does the concentration ratio, since it takes into account the market shares of all firms in the industry. Indeed, it is calculated as the sum of the squares of the market shares of all firms in an industry. Higher values of these measures indicate greater concentration and lower competitive intensity.

The extent to which national policies promote competition is measured by the OECD competition law and policy indicator (CLP). The indicator is composed of: i.) the antitrust framework, i.e. policies enhancing competition in general, typically enforced by the competition authorities and ii.) network policies, i.e. policies encouraging competition in deregulated network industries, typically implemented by more or less independent sector regulators. The indicator of the antitrust framework measures the scope and enforcement of antitrust law, and the degree of independence of the competition authorities. The indicator of network policies covers the independence of sector regulators and access issues (for further details on the construction of the CLP indicator, please refer to Jens Høj, 2007). The data used in the indicators come from databases collected in collaboration with the governments of OECD member countries. The overall CLP indicator is calculated using about 100 data points for each country, with each data point measured on a scale from 0 (the best score) to 6 (the worst score).

In analysing the CLP indicators, three groups of OECD countries can be distinguished: countries with relatively strong CLP (Australia, Canada, the Czech Republic, Denmark, Italy, Korea, the United Kingdom and the United States), countries with relatively weak CLP (Austria, Greece, Japan, Mexico, Norway, Portugal and Switzerland), and the remaining countries that are not statistically distinguishable from the first two groups. Generally speaking, countries with a strong antitrust

framework have relatively weak network policies, and vice-versa, with the two effects tending to offset each other in the summary indicator. This may suggest that countries counter-balance relatively weak antitrust policies by implementing strong network policies to promote competition. Conversely, countries with a tradition of strict enforcement of competition laws tend to rely on this for ensuring competition in network industries (OECD, 2009).

Figure 1. Antitrust framework indicator, score for OECD countries (2007)
Scale 0 to 6 (from best to worst performance)



Source: Hoj (2007), « Competition Law and Policy Indicators for the OECD Countries », OECD Economics Department Working Papers, 568, OECD Publishing.

Overall, competition policies have become more homogeneous across OECD countries (Hoj, 2007). Competition laws have become quite similar, although the enforcement of these laws and the liberalisation of the network industries still significantly differ within the OECD area. Overall, impediments to competition have been declining in all OECD countries in recent years. OECD countries have been improving the general competition policy framework, but there still remains considerable room for further progress in promoting competition in network industries.

What other topics relate to the state of competition and innovative businesses?

The regulatory framework shapes competition in several ways (see Regulatory framework for innovation in firms [1]) and (see Regulatory framework for innovative entrepreneurship [2]):

- **Administrative framework for entry and growth** (see Administrative framework for entry and growth [3]). Administrative burdens can deter the entry of new firms into a market, reducing, thereby the competitive pressures on established firms.
- **Bankruptcy regulation** (see Bankruptcy regulation [4]). Bankruptcy regulation influences the state of competition by shaping the process leading to non-profitable business exits and by affecting entry rate through the perceived risk of being an entrepreneur.
- **Product market regulation** (see Product market regulation [5]). The state of competition closely relates to product market regulations.
- **Access to foreign and domestic markets** (see Access to foreign and domestic market [6]). Access to the domestic market affects the state of competition, since opening national markets to foreign companies and foreign products increases the number of competitors within domestic markets.

- **Costs of hiring and firing** (see Costs of hiring and firing [7]). High costs of hiring and firing can constitute a barrier to entry and expansion, as they can discourage firms from hiring new employees. More generally, they can constitute barriers to an efficient reallocation of human resources.

What other topics relate to the state of competition in the context of innovative entrepreneurship?

Trajectories of new innovative ventures (see Trajectories of new innovative new ventures [8]). The entry, growth and exit of innovative new ventures determine the state of competition and contribute to the process of creative destruction. An efficient process of firm entry and exit allows the death of less productive firms, and the success of more productive ones through the shift of resources to more valuable uses.

What policies relate to the state of competition and innovative businesses?

Public policy can influence the state of competition by:

- **Assessing the impacts of rules and regulations on competition and avoiding policies that have the potential to unnecessarily restrain competition.**

The OECD Competition Assessment Toolkit (OECD, 2011) provides a general methodology for identifying unnecessary restraints and developing alternative, less restrictive policies that still achieve government objectives. Four categories of rules and regulations are examined: i) those limiting the number or range of suppliers (regulations on entry, exclusive rights, rules and regulations on the inter-state or intra-national flow of goods, services and capital), ii) those limiting the ability of suppliers to compete (regulations on advertising and marketing, rules on content and setting standards, grandfather clauses), iii) those reducing the incentives of suppliers to compete (self-regulation, cooperation and information exchange between competitors, regulations that partially or completely exempt activities from national competition laws), and iv) those limiting the choices and information available to consumers.

- **Enabling companies to benefit from their innovation through an appropriate intellectual property rights system that allows temporary monopoly powers and creates incentives to innovate.**

Innovative companies face external obstacles to the use of intellectual property rights, such as the cost and time for application and for enforcement. Policies should address the financial constraints that limit firms' use of intellectual property rights, reduce application time, and improve litigation and enforcement mechanisms by reducing the time and cost of enforcement procedures.

- **Further improving the competition policy framework through antitrust and network policies.**

OECD countries have been improving the general competition policy framework, but there still remains considerable room for further progress in promoting competition in both antitrust and network policies. First, weaknesses persist in competition policy enforcement despite the widespread implementation of appropriate legal frameworks. Second, progress can be achieved by strengthening competition in network industries, particularly in terms of establishing independent sector regulators.

- **Considering the effects on innovation when designing and applying competition**

policies.

Competition policies should take into account the role played by innovation in preserving the dynamism of markets and should strive not to hinder firms' innovative activities. Regulations should instruct firms about the results they must achieve, rather than instruct them about what they must do. Otherwise, there is a high probability that regulations will have a negative impact on innovation. Generally speaking, if a particular business behavior enhances the likelihood of innovation and provides gains in efficiency, these benefits should be traded-off against any potential increase in market power. If the former outweigh the latter, the business behavior may be viewed favourably. For instance, the expected increase in innovation resulting from a joint research venture between competitors can more than counterbalance any potential negative effects due to the reduction of competition and coordination of prices and production.

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