

# Anti-competitive conduct, in-house R&D, and growth

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## Abstract

Incumbent firms have two basic possibilities to improve their competitive position in the product market: Investment in R&D and the creation of entry barriers to the disadvantage of potential rivals, e.g. through lobbying activities, campaign contributions, bribes or the adoption of incompatible technologies. This paper proposes a simple oligopoly model which raises the possibility that such anti-competitive conduct and R&D investment are complementary activities for incumbents. Consequently, an institutional framework or technological possibilities which encourage anti-competitive conduct, although impeding entry of potential rivals and accentuating standard oligopoly distortions, may foster R&D-based growth and welfare. However, this outcome is less likely if entrants exert technological spillover effects, e.g. through foreign direct investment. Stronger protection of intellectual property rights, although triggering anti-competitive conduct and thereby impeding market entry as well, is more likely to foster economic growth.

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“[R]egulation is acquired by the industry and is designed and operated primarily for its benefit.” (Stigler, 1971)

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## 1. Introduction

In a world of imperfect product market competition, incumbent firms have two basic possibilities to improve their competitive position in the product market: Investment in R&D and the creation of entry barriers to the disadvantage of potential rivals (anti-competitive conduct).<sup>1</sup> Evidence provided by Djankov et al. (2002) suggests that entry barriers can be understood by public choice theory of entry regulations (e.g. Stigler, 1971), stressing (i) lobbying activities of industry incumbents aiming at regulations which enhance their profits and (ii) politicians and bureaucrats who use regulations both to create rents for incumbents and to extract them through campaign contributions, votes and bribes. Resulting entry barriers may come, for instance, in the form of administrative burdens associated with registration of a business, legal barriers to entry which regulate the number of competitors allowed in a market through national, state or provincial laws, poorly communicated and non-transparent rules and procedural requirements for penetrating a market, and discrimination against foreign firms with respect to accessibility of information and appeal procedures.<sup>2</sup> Besides affecting legislative entry regulations, incumbent firms may also contribute to technological barriers to entry. For instance, particularly in innovative and technologically advanced industries, incumbents often seek to adopt incompatible technologies (e.g. Salop and Scheffman, 1983; Krattenmaker and Salop, 1986).

This paper provides a first attempt to jointly analyze the decisions of incumbents to invest in R&D and to impede competition by raising rivals' entry costs. In a first step we analyze a simple static oligopoly model which suggests that investing in entry barriers and in R&D are complementary activities for incumbents. For instance, higher incentives of firms to raise rival's entry costs, possibly induced by the legal treatment of anti-competitive conduct in an economy or technological possibilities, may be conducive to R&D effort of incumbents.

To examine the implications of this finding for economic growth and welfare, we extend the basic model to an endogenous growth framework with multiple industries and oligopolistic competition within an industry. Each industry consists of one incumbent and many potential entrants. We argue that whether the increased R&D expenditure of incumbents, when fostered by a higher incentive for incumbents to impede entry, also implies faster growth or even higher welfare is dependent on the contribution of entrants to the economy's knowledge stock which can be accessed by innovating firms in the future. For instance, the literature on the impact of foreign direct investment sometimes suggests that foreign multinationals exert significant positive knowledge spillovers on the domestic economy.<sup>3</sup> In this case, an environment which encourages anti-competitive conduct of incumbents may, by retarding entry, reduce both the economy's growth rate and welfare, though fostering R&D investments of incumbents. However, if spillover effects are negligible, growth and welfare may increase, despite the fact that impeded entry triggered

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<sup>1</sup>A further possibility is advertising, which we do not consider in this paper. See Grossmann (2008) for a first attempt to analyze the interaction between R&D investments and advertising outlays of firms under free entry in monopolistically competitive markets, and its implications for economic growth and welfare.

<sup>2</sup>A rich set of measures of entry regulations in OECD countries is provided by Conway et al. (2005).

<sup>3</sup>Generally, however, the evidence is mixed. Positive FDI spillover effects seem to be confined to developed countries like the U.S. and to R&D-intensive industries. The size of the effects varies considerably between studies. For discussions of the available evidence, see e.g. Keller (2004; section 6.2) and Egger et al. (2006).

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