Thesis abstract “Essays on Innovation and Investment Decisions under Imperfect Competition”

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Innovation incentives are imperfectly provided in market settings: When deciding on their innovation activity, firms tend to focus on the maximization of their private benefits, poorly internalizing social benefits. This thesis analyzes how policy intervention could be designed in order to align private and social incentives. In the three papers of this thesis, I consider three environments where firms' choices in a laissez-faire situation may be socially inefficient. The inefficiencies arise because of learning externalities, free riding when the innovation decision is made by a group of participants, or because firms are not willing to invest in a new activity that has a higher social than private value.

In the first thesis paper, I deal with the strategies of firms in innovative consumer product markets characterized by demand uncertainty. I analyze the timing and location decision of firms in that context using a Hotelling mode of horizontal product differentiation. I characterize a war of attrition where firms may delay entry. Delayed entry implies that collusive location strategies characterized by a high degree of differentiation do not materialize. The welfare implications are thus mixed. I also assess location strategies and entry equilibria if firms have only a limited window of opportunity to enter. In this case, the possible patterns of entry are simultaneous and sequential entry, whereas in the former case uncertainty indeed allows the firms to differentiate themselves and to reap large profits. I suggest then that firms may collude by tacitly coordinating on simultaneous entry and thereby engaging in high-differentiation location strategies.

In the second thesis paper (joint work with Paolo Casini, LICOS, University of Leuven), we consider the investment incentives in the case of financial market infrastructures (FMIs). We focus on two salient features of FMIs that have an important impact on their robustness by influencing the incentives to invest, namely their natural monopolies character (economies of scale) and their governance structure. We focus on a scenario in which both a user-owned Cooperative and a third-party-owned infrastructure (Third Party Provider) can provide an infrastructure service to users. We identify the set of service provision configurations and show that both monopoly Cooperative and TPP service provision as well as coexistence of the two FMIs can be equilibria. We then assume that the service provision has a history, that is either a monopoly Cooperative or TPP is at first in place. We identify provision equilibria that depend on the market history. The results show that overseers need take into account the dynamic interaction in financial infrastructure markets and that it is not sufficient if they restrict their attention only to a given infrastructure provider.

In the third thesis paper, I address the question of how a government should allocate a subsidy budget over time in order to maximize the innovation activity in an industry. In a setting where firms do not enter a market without subsidies, I compare different subsidy schemes of a government. In terms of pure innovation outcomes, the inter-temporal distribution of subsidies (implying sequential entry) may be preferred to a scheme of sponsoring early entry of firms, provided that the subsidies at a later stage are only paid if the early entrant has not been successful. If a government seeks to maximize the innovation-efficiency of a given budget, the range where an inter-temporal distribution of subsidies is preferred to the large scale provision early on is even larger. I also show that heterogeneity of firms may make sequential entry more favourable from a total welfare perspective. A lack of commitment of the government may imply that simultaneous early entry avoids some inefficient sequential subsidy schemes.