

PhD Thesis Abstract

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Thesis Title: THREE ESSAYS IN THE ECONOMICS OF INNOVATIONS

This thesis comprises three essays, each of which identifies and addresses a specific problem in the economics of innovations.

Essay 1: PATENTS, TRADE SECRETS AND THE CORRELATION AMONG R&D PROJECTS

Abstract: The choice of a research path in attacking scientific and technological problems is a significant component of firms' R&D strategy. One of the findings of the patent races literature is that, in a market setting, firms choose research projects that have an excessive degree of correlation, as compared to the socially optimal level. The paper revisits this question in a context where firms have access to trade secrets, in addition to patents, to assert intellectual property rights (IPRs) over their discoveries. We find that the availability of multiple IPR protection instruments can move the paths chosen by firms engaged in a winner-takes-all race towards the social optimum.

Essay 2: ON THE “CO-EXISTENCE” BETWEEN GENETICALLY MODIFIED, CONVENTIONAL, AND ORGANIC PRODUCTS IN EUROPEAN AGRICULTURE: A MULTI-MARKET EQUILIBRIUM ANALYSIS

Abstract: Although genetically modified (GM) crops have been quickly adopted in certain parts of the world, they have met with resistance from consumers in the European Union (EU) market. This has resulted in a complex (and ongoing) EU regulation, which envisions the co-existence of GM food with conventional and quality-enhanced products. As the regulation mandates the labeling and traceability of GM content in all stages of production and allows only a stringent adventitious presence of GM content in other products, it implies significant economic costs. Based on a partial equilibrium model of the EU agricultural food sector, we analyze the economic implications of introduction of GM food in the EU market. We develop, calibrate and simulate a model that captures the main features of the problem at hand. We find that the introduction of

GM food is reducing overall welfare but the producers of quality-enhanced products become better off, a result that is robust to variations in the values of critical parameters.

Essay 3: AN EMPIRICAL ANALYSIS OF LICENSE “PROFITS” OF U.S. UNIVERSITIES

Abstract: Since the Bayh-Dole Act of 1980 made it possible for universities and other non-profit organizations to retain title to patents derived from federally funded research, there has been a dramatic surge in patenting by U.S. universities. This time period was also characterized by fundamental legal and institutional changes favoring stronger intellectual property rights. This growth in university patenting and licensing activities has resulted a considerable discussion in the literature, which has revolved around how these activities have affected the traditional role of universities (advancement of science and dissemination of knowledge) whether the Bayh-Dole Act was in fact necessary to promote technology transfer. This paper aims to contribute to this discussion by empirically studying a basic yet somewhat unexplored question: “What can universities expect in terms of profits from patenting and licensing activities?”.