Trademarks and the patent premium value: Evidence from medical and cosmetic products

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ABSTRACT

The determinants of the premium value of patents for medical and cosmetic products are analyzed with respect to a complementary IP strategy such as trademarks. I discuss a novel method and database to gauge combinations of patent and trademark pairs regarding the same innovative project. The premium value is computed through a model of renewal decisions for the patent cohorts 1985–1990 that have been designated in the U.K. and Germany. After taking into the account several firm characteristics and patent indicators typically used in the literature, I find ample evidences that patent and trademark pairs are featured by higher valuations.

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1. Introduction

Much of literature on patent valuation has attempted to devise indicators that can proxy the intrinsic value of an underlying technological invention [1]. However, as Teece [2] argued the value the innovator can extract from a patent depends in significant extent also on the appropriability conditions and complementary assets which are required for the commercial translation of that invention. More in general, the innovator can put in place strategies in order to ameliorate the conditions that directly affect the value of an invention [3]. With the exception of few works the role that the innovator’s strategic behavior plays in determining the value of patents has been overlooked by previous literature [4]. This paper aims to build on this gap and analyzes how trademark strategies affect patent valuation.

The proposed analytical framework carries over research on entrepreneurial finance that has stressed the role of intellectual property as a quality signal [5,6]. Similarly to Block et al. [7] I argue that trademarks by enhancing the signaling function of patents and expanding their breadth of protection increase the value of the patented R&D. In this context I introduce a novel concept namely patent and trademark pair, when the output of the invention process is protected by a combined IP strategy represented by patenting and also filing a trademark. I argue that patent and trademark pairs have a significant signaling value and hence they are featured by higher valuations. I corroborate this view by assessing the premium value of patents for medical and cosmetic products using an ad-hoc dataset on renewal decisions. I opted to limit the analysis solely to medical and cosmetic products because of the importance hold by formal IP strategies in the pharmaceutical industry.

In advancing this task I develop a new method and database integrating several sources: bibliographic information from patent and trademark records, patent renewal and opposition decisions, demographic information on the patenting firms, and others. The context is constituted by the universe of the European firms who have filed at least one European Patent Convention (EPC) application for medical and cosmetic products from 1985 to 1990. The new method for defining patent and trademark pairs is given by a string matching algorithm which integrates bibliographic information on two levels. First, it considers the patenting firm when I have drawn from a database previously developed by Thoma et al. [8], that provides a direct link of the business companies with their patent and trademark portfolios. A subsequent layer of integration of the pairs is based on the analysis of the textual description of the legal documents. Because patents and trademarks are very rich information sources regarding the technological and commercial activities of a firm, their combination allows to uniquely assess to what extent the patent portfolio of a company has been actively translated in commercial activities and to measure its economic potential.

The ad-hoc dataset on patent valuation is made up of annual renewal decisions and archival information on historical fee costs.
for patent designations in the U.K. and Germany, whose renewal decisions have been observed from 1985 to 2010. By adopting the approach of Schankerman [9] and Grönlund [10], I compute dollar estimates on the premium value of patent protection in terms of the purchasing power parity (PPP). This dataset allows to assess the valuation of patent and trademark strategies and to analyze the determinants of patent value when multiple IP strategies are jointly combined. In the regression analysis, I take into the account several firm demographic characteristics which correlate with the value of patents such as firm’s size and experience, country of origin, growth of R&D investment, primary business activity, listing in financial markets, and others.

I find that the patent and trademark pair strategy affect the premium value of patents even after having controlled for opposition decisions and other patent value indicators typically used in the literature. One patent and trademark pair for medical and cosmetic products is worth on average about US PPP $536 thousand and $124 thousand for patents designating Germany and the U.K. respectively. The most conservative estimate of the value impact of the pairing strategy is about PPP $11 thousand regardless of the designation decision.

2. Theoretical framework

Recent literature has analyzed firm performance with respect to the combination of IP strategies of patents and trademarks, positing the hypothesis that trademarks are a proxy of the marketing and commercialization ability of a firm. Helmers and Rogers [11] show that the trademark stock yields two percentage point higher impact than the patent stock. Trademark strategies anticipate the commercial translation of a technology when it is patented, and they help mitigate the risk of opportunistic behavior. Furthermore, activities related to the trademark portfolio are valuable signals that the unit of analysis is the firm and that the commercial potential of a patented invention is enhanced in several ways when it is paired with a trademark.

There is scarce evidence on the determinants of patent value when trademark strategies are combined with respect to the same innovative project although complementary investments in marketing and commercialization are essential in order to yield economic success and value to an invention [24,25].

Because trademark strategies have the typical goal to build brand awareness and publicity among consumers [26], the commercial potential of a patented invention is enhanced in several ways when it is paired with a trademark filing. Trademark strategies anticipate the commercial translation of a technology when it requires novel complementary assets with respect to the incumbent’s business model [3]. More in general, an IP strategy which is articulated as a patent and trademark pair (hereafter PTP) signals to customers, competitors and investors in an industry about the market success of an invention project, and therefore it is...
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