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#### Industry and Innovation >

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# The valuation of patent-trademark pairing as IP strategy: evidence from the USPTO

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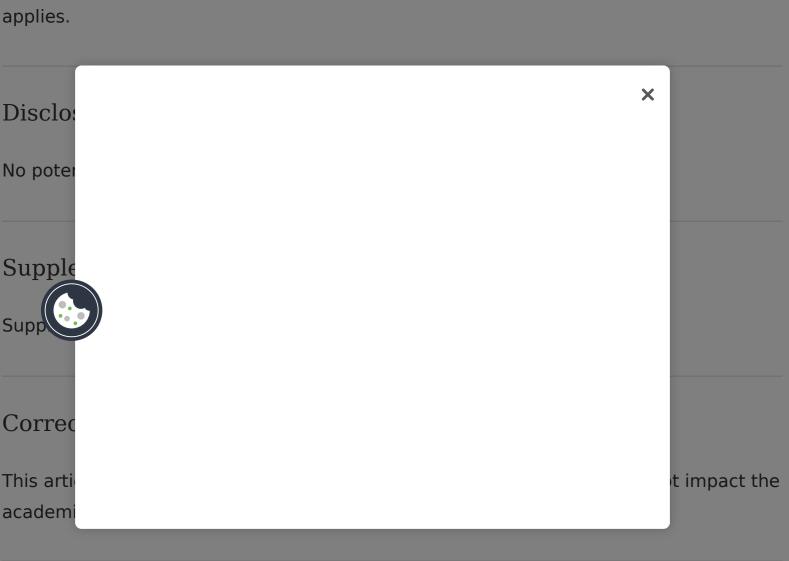
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## Notes

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<sup>8</sup> The Al

- <sup>1</sup> Moore (2005) documents that at the USPTO about 16 percent of utility patents are never renewed after they have been granted, and only 46 percent of them provide full-term statutory protection.
- <sup>2</sup> With respect to the prosecution costs at the USPTO from start until patent issue, in 2000 Lemley (2001) estimated a lower bound of \$ 10 thousand and upper bound \$ 30 thousand in current values, which in terms of 2015 prices amount to \$ 13 thousand and \$ 40 thousand respectively. In 2015, the USPTO issued about 300 thousand utility patents, which means an overall range in prosecution costs of between \$ 4 and 12 billion.
- <sup>3</sup> In the marketing literature, brand equity encompasses not only its value but also the brand meaning and strength (For a fuller discussion on the concept of brand equity see the survey by Srinivasan, Hsu, and Fournier <u>2012</u>).
- <sup>4</sup> For recent surveys of the IP signaling theory in the context of entrepreneurial financing see Gambardella (2013), Hall (2019) and Hall and Harhoff (2012).

<sup>5</sup> Furthermore, it has been found that patenting attracts financing from prominent VCs who con s <u>2013</u>). Although onti, Thursby first round of financin ensity of the sign <sup>6</sup> An ana known and uality, most y er interest. inno but also IP Close UP, 15 N <sup>7</sup> See La ion on

application in 2010 amounted to \$ 3,050. Other costs involved in design search could

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increase this expenditure. In terms of office fees, the 2010 USPTO schedule included trademark application and statement of use fees of about \$ 475 per international class, which means \$ 665 for a typical trademark with 1.4 international classes. However, these are lower bound procedural fees at the PTO, and other costs would be incurred for 'intent-to-use in commerce' applications or more complex trademark filings. Hence, on average, trademark attorney and office fees could amount to \$ 4,000–5,000.

<sup>9</sup> Another criterion for approval of the registration of a mark is that the application should not be deceptive and contrary to law or morality.

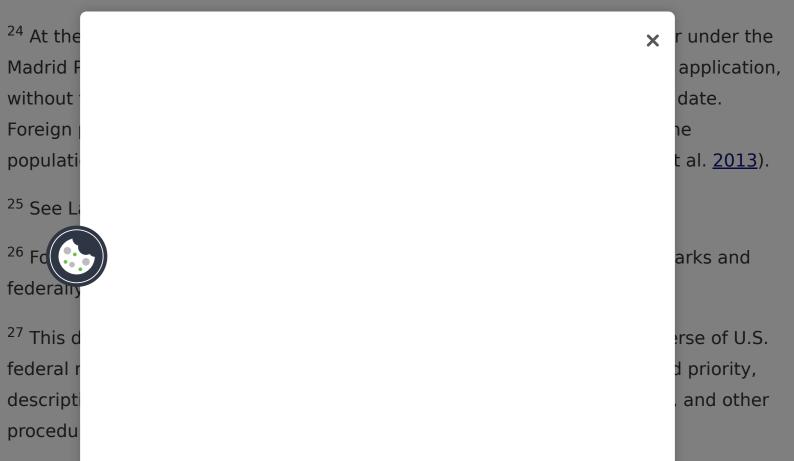
<sup>10</sup> It is noteworthy that the assumption of monotonicity of non-increasing benefits R – given the non-decreasing fee costs C – is sufficient but not necessary for the validity of Equation (2), which is required to hold solely in the neighbourhood of the optimal renewal age. In particular, there is a time  $\dot{T}$  for which  $R_{tj}$  –  $C_{tj}$  > 0 for t <  $\dot{T}$  and  $R_{tj}$  –  $C_{tj}$  < 0 for t >  $\dot{T}$ , where  $\dot{T}$  is the last age which the patentee pays the renewal fees. Hence, the net revenues may be increasing in some periods before  $\dot{T}$ .

<sup>11</sup> See Lanjouw (<u>1998</u>) for Germany, Schankerman (<u>1998</u>) for France, Deng (<u>2007</u>) for Belgium and Austria, and Grönqvist (<u>2009</u>) for Finland.

<sup>12</sup> At the USPTO, the renewal fees for small patenting entities are halved, and under strict conditions patent expiration due to unpaid fees could be invalidated. For fuller

details s X <sup>13</sup> Limiti sample coverag market to attract t respect to the abov ave Stat 2016). designat riod in the Furth? large at <u>2016</u>). 14 This y tent legislation <sup>15</sup> The e isidering a GDP def

- <sup>16</sup> As a robustness check, I relaxed this depreciation assumption and used higher levels of the depreciation rate.
- <sup>17</sup> Given the importance of the United States as a locus of R&D activities, I do not think that limiting the analysis to the patented inventions owned by U.S. patentees is a serious drawback.
- $^{18}$  The direct priority links were garnered from the PatStat (2016).
- <sup>19</sup> The Maintenance Fee Events File is accessible at <u>www.google.com/googlebooks/uspto-patents-maintenance-fees.html</u>.
- <sup>20</sup> A complete list of sources for the historical fee cost schedules is available upon request to the author.
- While strict equivalents are patent filings including exactly the same priorities or combination of priorities, an INPADOC patent family constitutes a self-contained and consolidated group of priority links including any direct or indirect priority link. For more information on the patent family definition see Martinez (2011).
- <sup>22</sup> See Lanham Act § 2.
- <sup>23</sup> See Lanham Act § 1(a).



- <sup>28</sup> During the time period covered by the analysed dataset (1982–1998) 95.7% of the registrations include textual information and 68.3 relied only on text.
- <sup>29</sup> An extensive discussion of the string similarity J<sup>w</sup> index, matching methodology and related implementation in the case of patent and trademark documents is presented in Appendix A of the Supplementary Material.
- <sup>30</sup> For a battery of examples see Appendix Table 3.
- <sup>31</sup> Several visual inspections revealed that the textual similarity across the portfolio of patents and trademarks originated from: a) discriminating token(s) in the patent title and wordmark; b) combination of non-discriminating tokens from a patent title, that could appear in one single wordmark or in combination of wordmarks in distinct trademarks (within the same portfolio); c) one single and non-discriminating token from a patent title repeated in many trademarks from the same portfolio, which can be assimilated to umbrella branding.
- <sup>32</sup> This assumption is broadly consistent with the time lag between a firm's first patent and its trademark, as shown in Appendix A of the Supplementary Material: seven out of ten of the firms that obtain patents and trademarks start both IP strategies within three years of each other, while half of them are contemporaneous first-time filers (within a year) of a patent or trademark.



<sup>37</sup> In terms of the renewal fee payment, I computed the present value rule starting with the application year both for the U.S. and EPC patents and did not consider the application and grant fees in the value computations. See section 3 for a fuller presentation.

<sup>38</sup> The continuous indicators were detrended for time and technology effects, using the geometric mean method.

<sup>39</sup> Twelve dummies of the year-technology interaction effects computed at the two digit classification could not be identified, and hence they were aggregated to the left-out category in the regression analysis.

<sup>40</sup> Although according to the Trademark Manual of Examining Procedure (TMEP § 1202.01, available at tmep.uspto.gov) trade naming does not constitute a demonstration of the use requirement of the Lanham Act, it is suitable for trademark protection through the common law system, when it is also employed as a product or service name in the marketplace. Thus, a patent titled with the trade name could be indicative of a common law trademark owned by the patentee. In fact, this protection strategy could be sought by younger firms and those with a limited number of product lines (See discussion in Appendix A of the Supplementary Material).

The finding that a trade name shown in the patent title does not enhance patent

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computed as binary variables at different thresholds of the similarity distribution of the

lemark pairs

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J<sup>w</sup> index with the log number of forward citations, and I confirm a positive Pearson's coefficient even at a one percent level of significance.

#### Related Research Data

Patents, Thickets, and the Financing of Early-Stage Firms: Evidence from the Software **Industry** 

Source: National Bureau of Economic Research

Trademark Law: An Economic Perspective

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How Valuable is Patent Protection? Estimates by Technology Field

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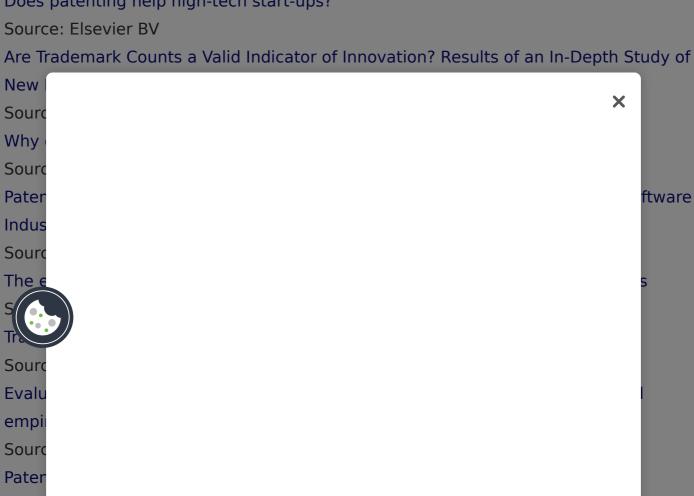
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