

Understanding when universities and firms form RJVs: the importance of intellectual property protection

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Abstract

During the past 20 years we have witnessed an increase in joint research between universities and firms. Nevertheless, this increase, which is largely attributed to the Bayh–Dole Act, has fallen short of expectations. This paper examines the conditions under which a firm will find it profitable to form a Research Joint Venture (RJV) with a university. My results indicate that firms which work on new-technologies, are more likely to form such partnerships. The reason is that these firms optimally choose minimal IP protection (lower profits), in effect sharing their innovation, so as to benefit from increased knowledge spillovers. Thereby, the opportunity cost of joining an RJV for firms (and universities) working on mature technologies is greater, making such partners unlikely candidates for RJVs.

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1. Introduction

In the early 1980s, the Bayh–Dole Act enabled universities to patent their innovations easier than before. The purpose of the Act was to foster US innovative activity, especially between firms and universities, at a time when fears were

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mounting that the US was a technological laggard compared with Japan. There is no doubt that universities and firms had been jointly doing research well before the Bayh–Dole Act (Rosenberg and Nelson, 1994). Nevertheless, the Act was successful in bridging many barriers between firms and universities, leading them to form Research Joint Ventures (RJVs). Indeed there seems to be an increase in RJVs, not only between US firms and US universities, (Baldwin and Link, 1998), but, as Fig. 1 displays, between EU firms and US universities as well (Link and Vonortas, 2002). However, as Hall et al. (2000) note, this increase is not as high as one would have anticipated. In explaining this shortfall in RJVs, Hall et al. (2000) stressed (among other reasons) the importance of intellectual property (IP) protection in setting obstacles to the formation of RJVs.

The aim of this paper is to try to understand under what conditions firms are likely to form an RJV with an university and when can IP issues raise barriers. The theoretical literature on this issue is rather slim. With the exception of Beath et al. (2001) and Poyago-Theotoky et al. (2002), I am not aware of any other work, which studies the potential barriers in the formation of RJVs.

The thesis advanced in this paper is that firms and universities, whose research is on new-technologies¹, will find it easier to form such RJVs. A finding as such seems to be in line with evidence offered by Hall et al. (2001) and Link and Vonortas (2002). In explaining the above proposition, the paper stresses the importance of the degree of IP protection. Specifically, the paper shows that the optimal policy for a firm (university) that conducts research on a fast evolving and not well-understood technology (i.e. a new-technology) is to share it, by choosing

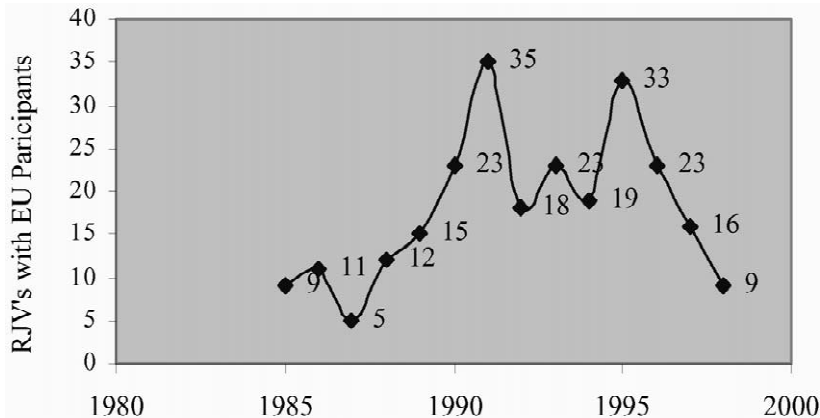


Fig. 1. RJVs between EU firms and US universities. Source, Link and Vonortas (2002).

¹Technologies that are closer to science and evolve faster than well-developed and well-understood technologies.

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