

Small firms and patenting revisited

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Small firms are less likely to patent innovations than larger firms. This reflects both the propensity to patent and the size of firms' portfolio of potentially patentable innovations. Here, using data from a unique dataset of UK innovation project linked to the UK Innovation Survey we demonstrate that the portfolio effect dominates. Differences in the probability that smaller and larger firms will patent relate not to a 'propensity to patent' effect but primarily to the 'portfolio effect', i.e. larger firms create a greater number of innovations than smaller firms and therefore are simply more likely to create one or more which are patentable.

Key findings

Our analysis draws on data from the UK Innovation Survey 2015 combined with additional data on a sub-set of firms' most valuable innovation. Our empirical analysis suggests three key findings:

- First, confirming evidence from other studies, we too find that smaller firms in the UK are less likely to be patenting than larger firms.
- Second, using data on individual innovations, our analysis suggests that smaller firms are no less likely than large firms to patent any specific innovation or proportion of their innovations. In other words, the propensity to patent any specific innovation is broadly similar in firms of all sizes.
- Third, where firms do not patent specific innovations it is cost barriers rather than issues related to the awareness of patenting or innovation quality which are driving any firm size differences.

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Patenting in small and larger firms

An enduring debate in discussions of intellectual property (IP) policy has been the value of patenting for small firms with studies suggesting that small firms prefer to protect their intellectual property using non-patent methods. Why should this be the case? Two explanations dominate. The first argues that small firms may simply be less familiar with formal IP mechanisms leading to a lower propensity to patent. The second explanation is that resource constraints and/or registration and defence costs mean patenting is of little value for small firms.

Ensuring that IP policy 'works' for both larger and smaller firms is important to maximise the social value of innovation. However, there are no theoretical arguments which unequivocally suggest that small firms should have a lower propensity to patent any specific innovation. However, resource constraints do suggest that smaller firms are likely to have a smaller portfolio of patentable innovations. Having a portfolio which includes patentable innovations is only a necessary condition for whether or not a firm will actually make a patent application. This decision also depends on the perceived benefit-cost ratio of patenting being positive – the sufficient condition for patenting by small firms.

Policy implications

Data recently published by the Intellectual Property Office suggests that between 0.6 - 1.5% of SMEs and less than 1% of micro enterprises had patents in 2014. This compared to about 4% of large firms. As patenting has been shown to have large follow-on effects for innovation in small firms, finding ways to reduce the barriers for small firms may have a large impact on the growth of innovative small firms. IP offices have hitherto operated outreach programs to raise awareness of IP instruments among smaller firms based on the implicit belief that small firms have a lower propensity to patent their innovations. Our evidence suggests that such programs may have limited effects. Instead, our evidence suggests that measures to reduce patenting costs for small firms may be more effective. These could take several forms but the most important is likely to be help with the legal costs of patent enforcement.

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