

EMPIRICAL ANALYSIS OF PATENTING DECISIONS IN AGRICULTURAL BIOTECHNOLOGY

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I examine the importance of differences in patent laws, demand for the invention, and costs of patenting across countries on firms' propensity to pursue agricultural biotechnology patents in different countries. I isolate the propensity to patent, a potential negative side effect of instituting stronger patent policy, from the innovative effects of patent policy. First, I estimate a multivariate probit model of the effects of these factors on firms' propensity to apply for a patent in Australia, Brazil, Canada, China, Europe, Japan, or South Africa. I then use a version of the structural model to examine firms' propensity to both apply for patents and have them examined in Australia, Canada, and Europe. This allows me to refine the previous estimates that were based solely on firms' application decisions.

Many developing countries recently implemented increases in the strength of their patent laws in exchange for more generous international trading rights. I find that these recent increases in protection do not significantly increase the likelihood a firm patents abroad. Instead, I find that increased trade within a country significantly increases the likelihood a firm patents abroad and country effects rather than patent law effects significantly explain the variation in firms' decisions to patent abroad. In addition, I find that firms likely gather new information between the time of application and the time of examination.