

Do Patents Really Work?

The stated purpose of granting patents is to provide an incentive for inventors to innovate and to share their innovations with the public. And as with all public policy, it is fair to ask the question: Does patent policy actually influence the behavior of inventors? It turns out this is a tough question to answer. While the anecdotal evidence suggests that patents are doing their job, a truly rigorous study of the question is hindered by two problems.

The first problem is that you really can't measure behavior statistically. You can only measure changes in behavior and changes in behavior have to be driven by changes in policy. And since US patent law and policy has been pretty stable since the 1950's there are only a limited number of changes available for study.

The second problem is that once you have a policy change one still has to be able to separate the behavior change caused by the policy from other societal factors that may drive changes in behavior. Patent policy isn't the only factor that drives inventive activity. The number of patents granted will be influenced by economic activity, education and income levels as well as host of other potential factors.

In 2010, David Abrams attempted to measure if patent policy can impact innovator behavior. And in [Did TRIPS Spur Innovation? An Empirical Analysis of Patent Duration and Incentives to Innovate](#) he appears to have found an answer (yes).

For the change to the system, Abrams chose the 1995 implementation of the TRIPS agreement which was part of the GATT approval. Specifically, in the TRIPS agreement the US agreed to change the patent term from 17 years after the patent issue date to 20 years after the patent application date.

Once Abrams chose the change, his next problem was to isolate the change from other societal factors. What Abrams did was to use a "difference in differences" methodology. Abrams described this methodology using an example. Assume that bankruptcy laws were relaxed significantly for people who earn less than \$150,000 per year but not for people who earn over that amount. Then if, after passage, there is a 10% increase in the rates of bankruptcy the initial conclusion might be that the law increased bankruptcies. What Abrams points out is that there is a way to test this conclusion: compare bankruptcy rates for people who earn less than \$150,000 with those who earn more than \$150,000. His argument is that if the bankruptcy rates between the two groups both increased by 10%, then the law probably had no impact. Conversely, if there is a significant difference in the increases between the two groups, then the law probably had a significant impact.

Abrams took advantage of the fact that the TRIPS increase in the patent term would be offset by the processing time the USPTO took to approve the patent. Because these processing times vary by patent classification code, Abrams reasoned that if inventors were rationally influenced by the change in term, he would see more applications in patent classes that had shorter application processing times compared to those with longer processing times. And, after analyzing over 800,000 patents, this is exactly what he found.

It doesn't look like this increase in patent quantity came from a reduction in quality. Abrams compared forward citations, (a typical quality measure for patents) for patent applications made before and after the term change and found no significant difference. Unfortunately, since Abrams was measuring differences instead of absolutes there is no way to quantify an absolute increase in applications from this study.

To be fair, the value of an empirical study with this result is limited. What makes this study worth noting is that by demonstrating that inventors and innovation can be influenced by patent policy, Abrams created a methodology that allows future researchers to separate the impact of patent policy from other societal factors. What they will discover only time can tell.

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