

Title: Who Gets a Patent? The Role of Examiners and Applicants

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Abstract:

Small firms obtain patents at significantly lower rates than large firms. To investigate the mechanisms behind this patent-grant gap and their implications for patent policy, we develop and estimate a dynamic structural model of patent examination. We measure claim novelty using PatentBERT embeddings—computing the minimum textual distance to a corpus of 23.5 million prior art documents, including both granted patents and pre-grant publications—and identify examiner behavior by observing the specific prior art cited in rejections. We find that the patent-grant gap is driven primarily by examiners applying stricter novelty standards to small-firm applications and by small firms' lower potential for improvement upon amendment, rather than by differences in underlying novelty, revision costs, or search intensity. Counterfactual simulations show that equalizing either novelty standards or improvement potential closes roughly half the abandonment gap, whereas reducing prosecution costs has a modest impact. Notably, AI-assisted prior art search—a recent de facto policy shift at the USPTO—raises rejection rates for both firm types and further widens the gap.