Evidence on U.S. Patent Quality and Reforms to Reduce Patent Application Backlogs

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The following note is based on Harutyunyan et al (2024), "Patent Quality in the United States: Findings and Suggestions for Policymakers," which synthesizes the evidence on patent quality and invalidation rates, thereby providing an evidence base for policy debate on U.S. patent quality.

Question: What do we know about U.S. patent quality?

Answer:

- According to the USPTO definition of patent quality, a high-quality patent meets four key criteria: (i) eligible as patent subject matter, (ii) novel, (iii) non-obvious, and (iv) clearly and sufficiently claimed and described.
- There are two primary kinds of patent examination errors, both of which reduce patent quality. Examiners may **Incorrectly Grant** an application that does not meet the criteria mentioned above, and examiners may **Incorrectly Reject** an application that does meet the four criteria.
- Three independent studies—each using different methods and datasets—all show that:
    1. The PTO's Incorrect Grant rate is in the single digits and low relative to other global patent offices.
    2. The PTO's Incorrect Rejection rate is significantly higher than its Incorrect Grant rate counterpart.
- The policy discourse in the United States should resultantly rebalance attention toward Incorrect Rejections.

Question: What can we infer from PTAB and Court invalidation rates?

Answer:

- Patent invalidation rates at the Patent Trial and Appeal Board (PTAB) and in the district courts do not accurately reflect the quality of patents in the United States, as the patents involved in legal disputes are not representative of the broader population of U.S. patents. There are at least three reasons why this is the case:
    1. Patents challenged in PTAB concentrate in specific areas of technology, are more likely to be owned by smaller firms, and are commercially more valuable.
    2. PTAB cases only reach a final trial if they pass an initial institution stage, which is designed to screen out any challenges that do not have a high likelihood of invalidating the patent. This step removes patents considered valid from the set involved in final PTAB trials.
    3. After the institution decision and before the final trial, several cases are settled. Empirically verified theories of litigation predict that only close cases will not settle, further implying that the patents used to calculate the popularly quoted invalidation rates are not representative of the overall patent pool.[1]
- Hence, invalidation rates should not be used to draw inferences on the underlying quality of the U.S. patent population.

Question 3: How can we address the patent backlog?

Answer:

- Over 800,000 applications await examination, considered "unacceptable" by Secretary of Commerce Howard Lutnick.
- Though reducing the backlog is a key aim of the Office, the PTO is aware that efforts to reduce the inventory could undermine patent quality.
- We now have a working model of the U.S. patent examination process that can be used to analyze the effect of reforms on examination speed, patent quality, and the number of patent applications (Matcham and Schankerman, 2025).
- The model indicates that politically feasible increases to applicant fees and adjustments to examiner rewards that incentivize timely grants will not significantly improve examination speed or quality.
- Instead, one way to retain patent quality, improve speed, and reduce spurious applications would be to reduce the number of allowable negotiation rounds (i.e., reduce Requests for Continued Examination).
- Finally, decreased examiner motivation would increase the backlog and reduce quality. Reduced examiner motivation encourages invalid applications and incentivizes applicants to broaden their requests for property rights. As such, cost-cutting reforms that decrease examiner motivation, such as asking examiners to work extra hours or increasing their production targets, may have the unintended consequence of both *increasing* the backlog and reducing patent quality.

1 This point was summarized by former Chief Judge at the Federal Circuit, Hon Paul Michel, "The cases that go to final adjudication in the courts are only the close cases—the cases that are not close end up in settlements that you never read about… It's not a representative subset of all the examination results out there."