

The (Un)intended Consequences of Preferential Trade Agreements

Evidence from Patent Grant Rates at the USPTO

Contrary to expectations, I find evidence of reduced patenting coming from countries with which the United States has entered into Preferential Trade Agreements that include comprehensive intellectual property provisions (“IPAs”). The quality of the marginal patent application therefore increases, leading to *higher grant rates*. At the same time, patent examination involves more transactions.

This suggests the more important impact of IPAs with the US is found in the partner country.

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1 Introduction

Bilateral preferential trade agreements often include comprehensive intellectual property rights protections beyond the minimum standards required by WTO membership (Maskus & Ridley, 2021). By improving patent enforcement, lowering costs, and lowering import barriers, such “IPA” agreements increase foreigners’ incentive to patent in the partner country. However, they may also violate the

“most-favored nation” principle of WTO norms if their IP provisions do not apply equally to patent application origins outside the IPAs. Howard et al. (2023) report increased bilateral patenting between IPA parties. Relating this finding with the recent literature on patent office discrimination against foreigners, we examine the US Patent Office’s grant rates for non-US patent applications.

2 Objective

Does entering a “preferential trade agreement” with IP provisions come with preferential treatment at the domestic patent office?

3 Methodology

Our identification strategy relies on time variation in the nature of trade relations with the US and therefore allows assessing heterogeneity beyond the simple “foreigner” dummy common in the literature on “discrimination” at the patent office (Petit et al., 2022). The list of PTAs was compiled by Maskus & Ridley (2021).

4 Results

We find that foreign applications have a grant rate only marginally lower than that of domestic applications (~1.5 pp). However, when the country of origin signs an IPA with the US, the grant rate rises by 1.5-4 pp. At the same time, citations to these patent applications increase by 8-18%, including those by examiners, while the examination process involves slightly more transactions.

The main econometric specification is a panel difference-in-differences OLS specification with time, origin-country, and technology fixed effects and a dummy variable indicating if the origin country has entered an “IPA” with the United States.

The patent data is obtained from USPTO’s PatentsView. The sample is restricted to 2001-2017. The main specification compares foreign applications from IPA countries to those from non-IPA countries, but results are similar when using domestic applications as the control group.

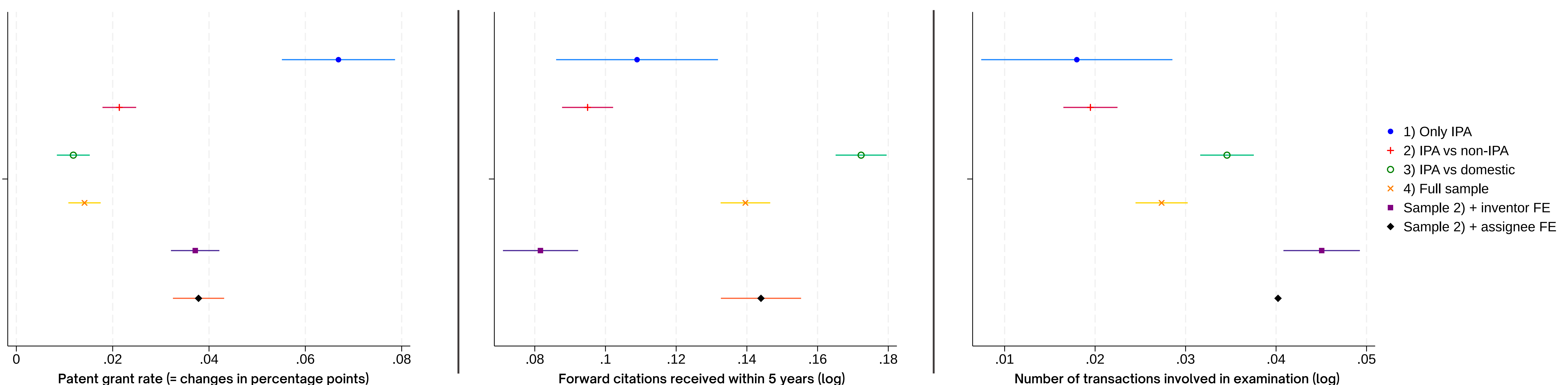
Unreported analyses include:

1. Examination duration decreases compared to non-IPA foreign applications, but not compared to domestic applications.
2. The inventor country matters only for direct applications to the USPTO, i.e., those without foreign priorities.
3. The reduction in patenting and increase in grant rate is concentrated in the three “high-income” partner countries that enter an IPA in the sample period: Australia, South Korea, and Singapore.
4. The grant rate increases twice as much for patents involving female inventors, even conditional on technology dummies.

I compare three ways of assigning patent applications to countries:

1. via the patent office of first filing;
2. via the address of the (main) applicant (if known); and
3. via the address of the (first) inventor.

The results of 1. and 2. are very similar; those of 3 qualitatively similar but smaller in magnitude. I only report results of 1. below.



5 Conclusion

Further study is warranted, including:

1. using a more sophisticated identification approach;
2. comparing the change in the grant rate at the USPTO to that of other major PTOs;
3. looking at the development of domestic and US patenting in the origin countries.

Caveats:

1. Values at the country level fluctuate a lot over time, especially the grant rate.
2. Even if the identification was perfect, IPAs will clearly not be exogenous to the US.
3. Most estimated coefficients are larger without inclusion of technology dummies, indicating a possible change in the composition of foreign patenting.

Key references
Howard, J., Maskus, K. E., & Ridley, W. C. (2023). The Impacts of Intellectual Property-Related Preferential Trade Agreements on Bilateral Patent Applications. *World Bank Policy Research Working Paper No. 10320*.
Maskus, K., & Ridley, W. (2021). Trade Impacts of Intellectual-Property-Related PTAs: Evidence from Using the World Bank Deep Trade Agreements Database. *World Bank Policy Research Working Paper No. 9659*.
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