

## Research Productivity vs. Patent Practices: A New Insight into the R&D - Patent Relationship

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**Note importante : le papier est en cours de relecture finale**

Nowadays, patent statistics are widely used by public institutions and academics. One of the most popular indicators is the number of patents per unit of research input. Whereas public institutions rather use this ratio to gauge countries' innovative efforts or performances - according few attention to differences in patenting practices -, economists underline that patents per researchers are not perfect indicators of productivity and should be taken at most as indicators of apparent productivity. They argue that patent systems substantially differ in terms of implementation and subject matter and rather use the index to investigate determinants of the patenting practices (sometimes referred to as the propensity to patent). Indeed, variation in this ratio comes either from different productivity of research or different patenting practices, or both.

The objective of this paper is to provide a better understanding of the complex relationship between R&D and patents. The contribution to the literature is twofold. First, this paper puts forward a model that explicitly distinguishes the productivity of researchers and the patenting practices. Second, it validates the model at the macroeconomic level. The empirical analysis relies on data on national priority filings directly collected from national patent offices (NPO) from OECD and non-OECD countries. In that respect, it is one of the first papers to investigate the various drivers of *national* innovative performances.

The empirical evidence confirms that the apparent patent productivity of research depends on both the productivity of research and national patenting practices. Among them, administrative fees are an important institutional setting, with a negative and significant impact on a country's number of first filings. Characteristics of R&D and technological specialization are two other main dimensions explaining patenting performances of countries.