# The Impact of Tax Differences on Intrafirm Patent Transactions

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Tax differences between countries can have a big impact on intellectual property (IP) transactions that occur within a multinational company. For many multinationals, the most important IP transactions involve patents, which are valuable exclusive rights that allow inventors to control their inventions for a certain period of time.

In a globalized world, companies can take advantage of differing foreign tax rates by moving their patents to affiliates in countries with lower taxes in order to reduce their overall tax payments. This means that the country of the original inventors, usually the country where the parent company is based, may lose out on tax revenues. In this blog post, we explore the relationship between tax differences and patent transactions using a new data set of global IP transactions organized by ktMINE.[1]

## What Does It Mean to Move IP?

Patent transactions involve the transfer of patent rights from one entity to another, enabling the effective utilization and protection of intellectual property across borders. This can be done for legitimate reasons, like selling a patent to another company for a profit. But transfers can also occur within the same company, and these are often driven by strategic reasons, such as lowering its tax burden.

## The Influence of Tax Differences

The tax differences between the parent company and its affiliates in different countries can affect how and where these patent transactions happen. Multinational corporations often structure their operations to minimize their taxes. By transferring patents to affiliates in countries with lower tax rates, the parent company can reduce the overall amount of taxes it has to pay.

This is often done through a practice called “transfer pricing,” which involves pricing transactions between different affiliates of the same parent company. Taxing authorities try to ensure these transactions are done at a fair market value, but it can be difficult to determine the true value of intangible assets like patents.

The figure below plots the relationship between patent transactions and tax differences between countries. We analyzed data on patent transfers within multinational corporations during the period 2000-15, focusing on intrafirm transactions (that is, those taking place within the same corporate group). Further, we concentrated on transfers from non-tax haven countries to various destinations.

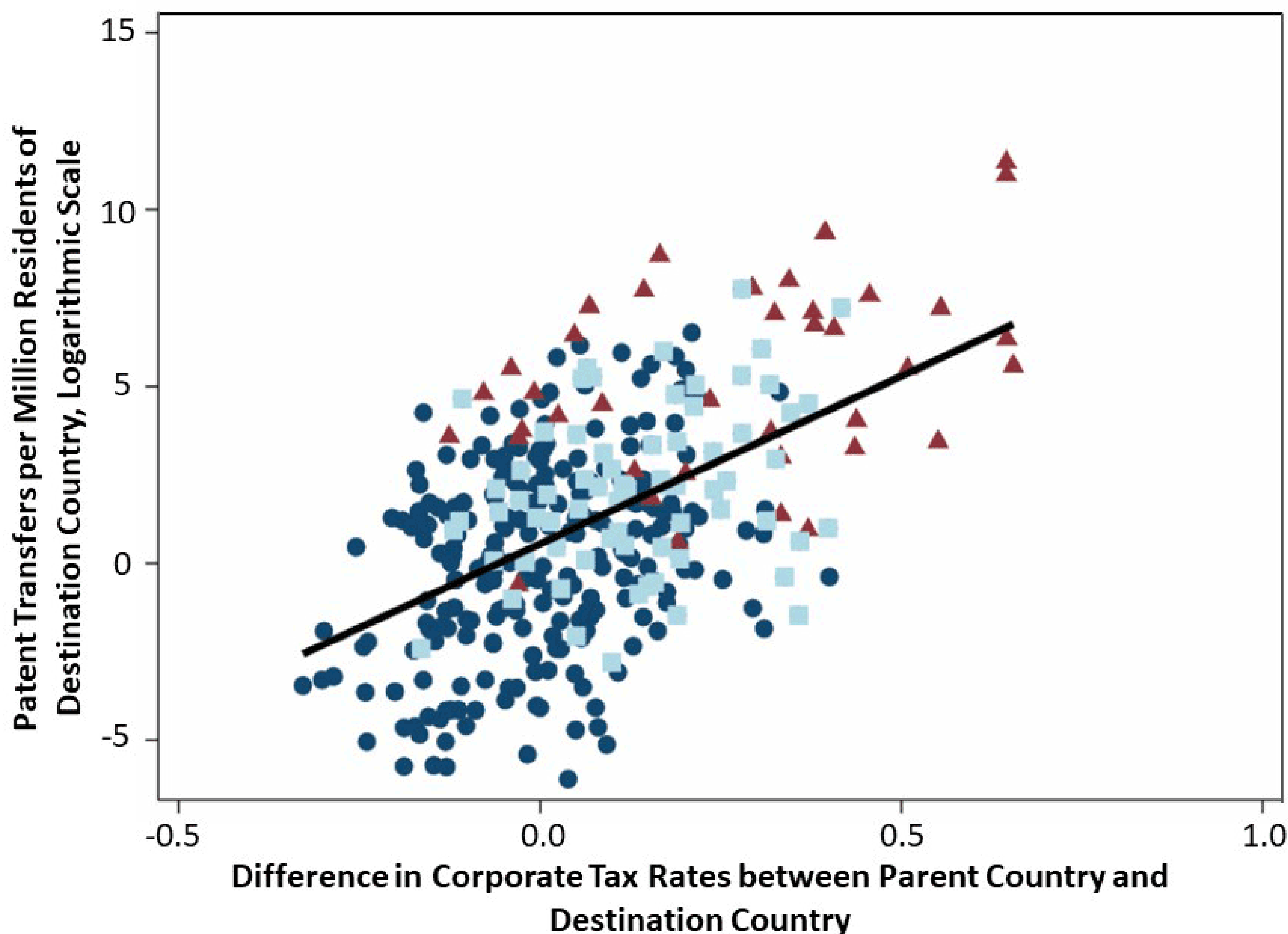
We plotted the number of intrafirm patent transfers per million residents in the destination country on the vertical axis, represented in a logarithmic scale.[2] On the horizontal axis, we measure the difference in corporate tax rates

between the parent country and the destination country.[3]

In the figure, the light blue squares represent low-tax countries, which are tax havens that still maintain high levels of productivity; these countries include Belgium, Ireland, Hong Kong, the Netherlands, Singapore and Switzerland. We separated these countries because we anticipated observing innovation occurring in these regions that is not solely driven by their low-tax status.

The red triangles represent tax havens, which are countries known for their extremely low tax rates. These tax havens are distinct from the low-tax countries mentioned earlier and are identified based on research by Thomas Tørsløv, Ludvig Wier and Gabriel Zucman. Lastly, the dark blue circles represent all other countries not categorized as low-tax countries or tax havens.

**Intrafirm Patent Transactions from Non-Tax-Haven Countries**




SOURCES: ktMINE and authors' calculations.

NOTES: This figure represents intrafirm patent transactions originating in non-tax haven countries from 2000 to 2015. Light blue squares represent low-tax countries, red triangles represent tax havens, and dark blue circles represent all other countries. See Endnote 3 for information on the calculated x-axis values.

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As shown in the figure, the cluster of tax haven countries shifts upward and to the right, away from the low tax countries and other countries. We also found a positive correlation, 52%, between the number of patent transfers and the difference in corporate tax rates. In other words, the higher the difference in tax rates between the origin country and the destination country, the greater the number of patent transactions within the same corporate group. This suggests that tax differences play a significant role in influencing these intrafirm transfers.

Additionally, we noted that tax havens, represented by the red triangles, tended to receive more intrafirm patents from companies located in high-tax countries. This aligns with the common understanding that tax havens attract companies seeking to minimize their tax burdens.

# Tax Differences Have Substantial Impact on Intrafirm Patent Transactions

In summary, our analysis reveals that tax differences between countries have a substantial impact on patent transactions within multinational corporations. Companies have a strong incentive to transfer their patents to affiliates located in countries with lower tax rates.

These findings emphasize the importance of understanding the tax implications of such transactions for both companies and governments. This understanding allows for effective management of intellectual property portfolios while considering tax efficiency within the global business landscape. However, it also raises concerns about potential tax revenue losses in the parent countries and the need for governments to ensure that profits are not shifted to different regions to evade taxes.

### Notes

1. Chicago-based ktMINE sources IP data from patent offices, financial regulatory authorities and other places around the world, and aggregates them into the largest repository of IP data available.
2. We focus on transfers per million to make an equitable base for comparison across destinations. Larger countries tend to have larger business sectors that are involved in more patent transfers. For that reason, looking at raw totals would be a skewed metric. It is more informative to see if countries are receiving transfers far beyond what we would expect for their size.
3. The formula is the difference between origin and destination rates as a share of after-tax income; that is, (tax of the origin − tax of the destination) ÷ (1 − tax of the origin). For example, if the origin tax is 33% and the destination tax is 0%, then the difference is (0.33 − 0) ÷ (1 − 0.33) = 0.5 or 50%. For more information, see Ana Maria Santacreu's 2019 working paper, "International Technology Licensing, Intellectual Property Rights and Tax Havens."

## About the Authors

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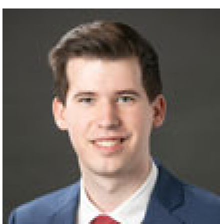

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