

The Countries and the Cities With the Highest Number of Patent Applications

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A new database allows for the geolocation of global patent applications. Thanks to this database, technology clusters can be analysed and patent activities can be compared in different countries and cities. The data are also relevant to policymakers.

So where are new inventions made? To answer this question, KOF researchers joined forces with the “Chair of Innovation and IP Policy” at EPF Lausanne and produced a dataset of worldwide patent applications ¹. As a next step, geographic coordinates were assigned to the addresses of the inventors and the registered companies and universities (“geocoding”). The dataset contains both the geographic coordinates and the associated cities and regions in which the addresses are located.

For instance, the database allows for the identification of all patented inventions by inventors based in Zurich or the Canton of Schwyz. A total of 7 million addresses of inventors and applicants were collated from 19 million patent documents, geocoded and assigned to 46 countries and approximately 50,000 cities. Graph 1 maps the inventor coordinates for patent applications in Central European countries.

Original data from the world's main patent offices

Up until now, a comprehensive database containing exact location information for worldwide patent data did not exist. For this project, original data were collected from the five biggest patent offices (US, European, Japanese, Chinese and South Korean patent offices). In addition, the data were supplemented with addresses provided by three national European patent offices (German, UK and French patent offices). Although no further data from patent offices in smaller countries were included, the smaller European countries were also comprehensively covered.

This is mostly due to the fact that small but economically successful countries are highly internationalised, a fact that is also reflected in their patent applications. Many patent applications are filed simultaneously at the national patent office and at patent offices in bigger countries (e.g. Germany or the US) or at the European Patent Office, which standardises the application process within Europe. Address data for smaller countries were taken from the applications filed at other patent offices.

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to compare Asian and European countries since patent applications are government-subsidised in China and the patent systems are not directly compatible. Nevertheless, looking at Asia's development over time, it becomes clear that gigantic technological progress has taken place in China: While no more than 5,200 new patent applications were filed in the People's Republic in 1990, the number had risen to 250,000 in the year 2010.

T 1: Cities with the Highest Number of Patent Applications Worldwide, 2010 – 2014

South Korea	Seoul	269,353
Japan	Tokyo	262,497
China	Beijing	131,336
United States	Santa Clara County	89,480
China	Shenzhen	89,253
China	Shanghai	87,358
South Korea	Daejeon	86,761
South Korea	Suwon	73,407
South Korea	Seongnam	69,525
China	Suzhou	64,080

In Europe, the cities with the highest number of patent applications are Munich and – depending on the time frame in question – either Paris or Stuttgart. The European patent statistics are largely dominated by German cities (see Table 2). Helsinki ranks 11th on the list of European cities with the highest numbers of patent applications, while Zurich ranks 12th.

T 2: Cities with the Highest Number of Patent Applications in Europe, 2010 to 2014

Germany	Munich	17,497
Germany	Stuttgart	15,034
France	Paris	11,051
Germany	Berlin	8,552
UK	London	7,125
Germany	Hamburg	5,037
Germany	Nuremberg	4,313
Germany	Erlangen	3,753
UK	South Cambridgeshire District Council	3,699
Sweden	Stockholm	3,327

¹ The project was funded by the Swiss National Science Foundation (SNF).

A detailed description of the data is available here:

[de Rassenfosse, Gaétan; Jan Kozak, and Florian Seliger \(2019\): Geocoding of worldwide patent data, Scientific Data 6\(260\), https://doi.org/10.1038/s41597-019-0264-6.](#)

The dataset can be accessed on the [KOF website](#).

Various visualisations for different countries and continents are available on the [project homepage](#).

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