4.1. International co-operation in research

International co-operation in research allows firms to stay abreast of developments and tap into a large base of ideas and technology. The innovation capability of a country depends to a significant extent on the degree of co-operation between its firms and their foreign partners.

International co-operation has increased in recent times. The average share of patent applications filed under the Patent Co-operation Treaty (PCT) that involved international co-invention increased from 6.6% in 1996-98 to 7.3% in 2004-06.

The degree of international co-operation differs significantly between small and large countries. On average, small and less developed economies engage more actively in international collaboration. This reflects their need to go beyond their small internal markets and/or have access to better research infrastructure. Co-invention is particularly strong in Chinese Taipei, Belgium and Switzerland, where over 40% of the patents filed in the mid-2000s resulted from collaboration with at least one inventor from abroad.

Among large countries, the degree of co-operation varies more. France, Germany, the United Kingdom and the United States report international co-operation of between 11% and 24% in 2004-06. European countries report a significant increase in international collaboration: in Sweden (18.6%) and the United Kingdom (24.4%), for instance, the share of co-invented patents increased by more than 5 percentage points from 1996-98. Japan and Korea have the smallest shares of international co-invention, and less than in the mid-1990s. Brazil, China, Japan and Korea report a contraction of more than 30% in international co-invention.

European countries mainly collaborate with other EU countries, except Ireland and the United Kingdom which co-operate most with the United States. In Canada, China, India, Israel, Korea, Mexico and Chinese Taipei the share of patents co-invented with the United States is at least twice as high as the share co-invented with European Union countries.

Patents measuring co-inventions

Co-invention of patents is a measure of the internationalisation of research. It provides an indicator of formal R&D co-operation and knowledge exchange among inventors in different countries. International co-invention is measured as the number of patents invented by a country with at least one inventor located abroad as a share of total patents invented domestically.

As inventors in different countries differ in their specialisation and knowledge assets, they often need to seek competences or resources beyond their national borders. International collaboration by researchers can take place either within a multinational corporation (providing research facilities in several countries) or through a research joint venture among several firms or institutions (*e.g.* universities or public research organisations). For multinational corporations, international collaboration frequently reflects companies' strategies to integrate geographically dispersed knowledge (*e.g.* within the multinational network) and/or to develop complementarities with foreign inventors (firms or institutions) in the production of technology.

Source

OECD, Patent Database, June 2009, *www.oecd.org/sti/ipr-statistics*.

Going further

OECD (2009), *OECD Patent Statistics Manual*, OECD, Paris.

Figure notes

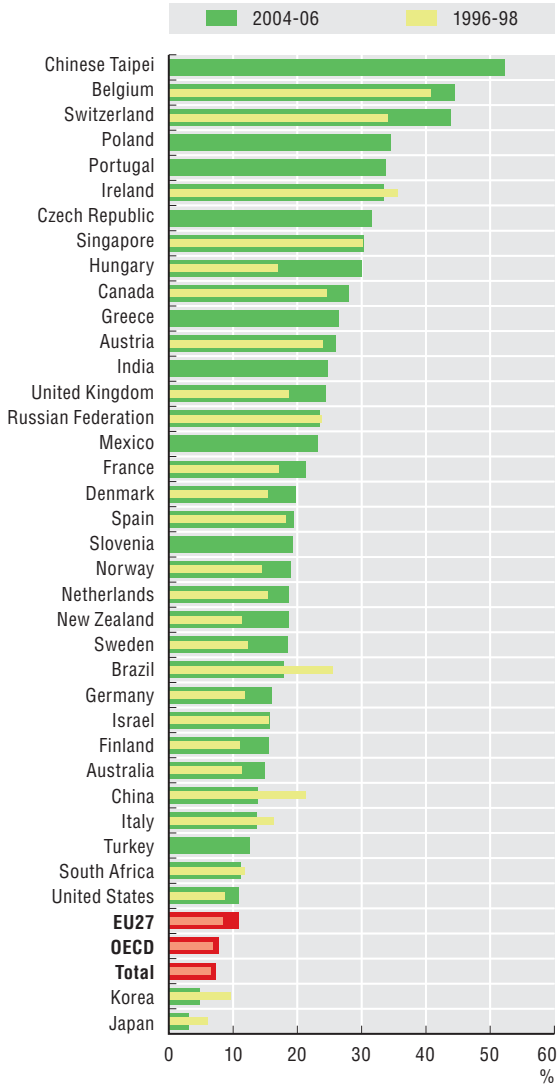
Co-inventions are measured as the share of patent applications filed under the PCT with at least one co-inventor located abroad in total patents invented domestically.

Patent counts are based on the priority date and the inventor's country of residence. The EU is treated as one country; intra-EU co-operation is excluded. Average co-operation is provided for OECD total and total patents.

Figures only cover countries with more than 250 PCT filings over the periods.

PCT patent applications with co-inventors located abroad, 2004-06

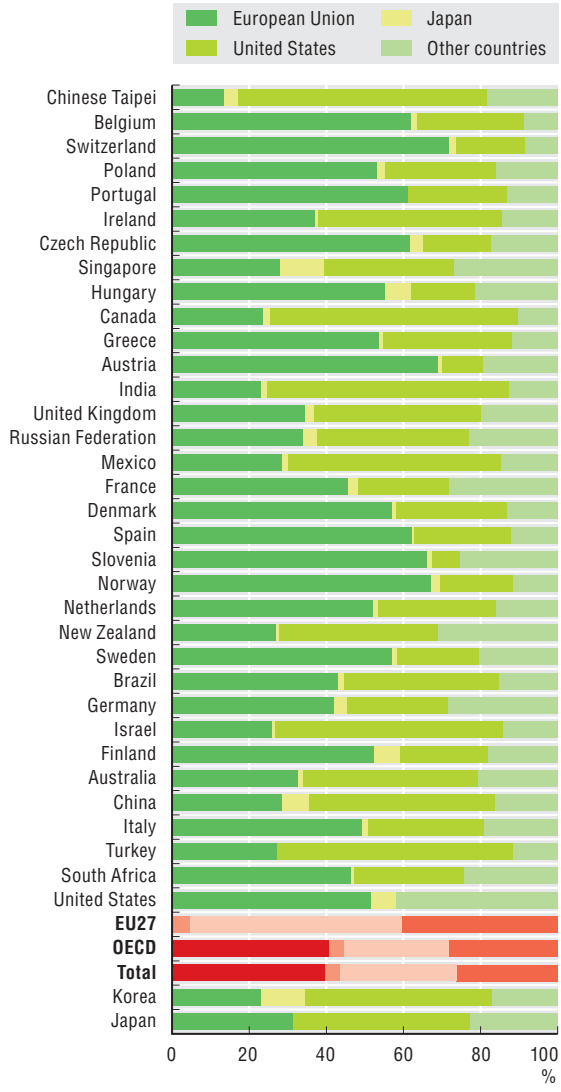
Percentage



StatLink http://dx.doi.org/10.1787/745612746632

PCT patent applications with co-inventors located abroad, by partner, 2004-06

Partner in the three major regions



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