



Europäisches
Patentamt
European
Patent Office
Office européen
des brevets

Patents and the European economy



The economic role of patents

Benefit the owner

by preventing third parties from exploiting the invention for commercial purposes without authorisation

Patents



Benefit the public

by making the detailed description of the invention available to everyone

Protection

Cooperation

Licensing

Reputation

The European Patent System

38 European member states

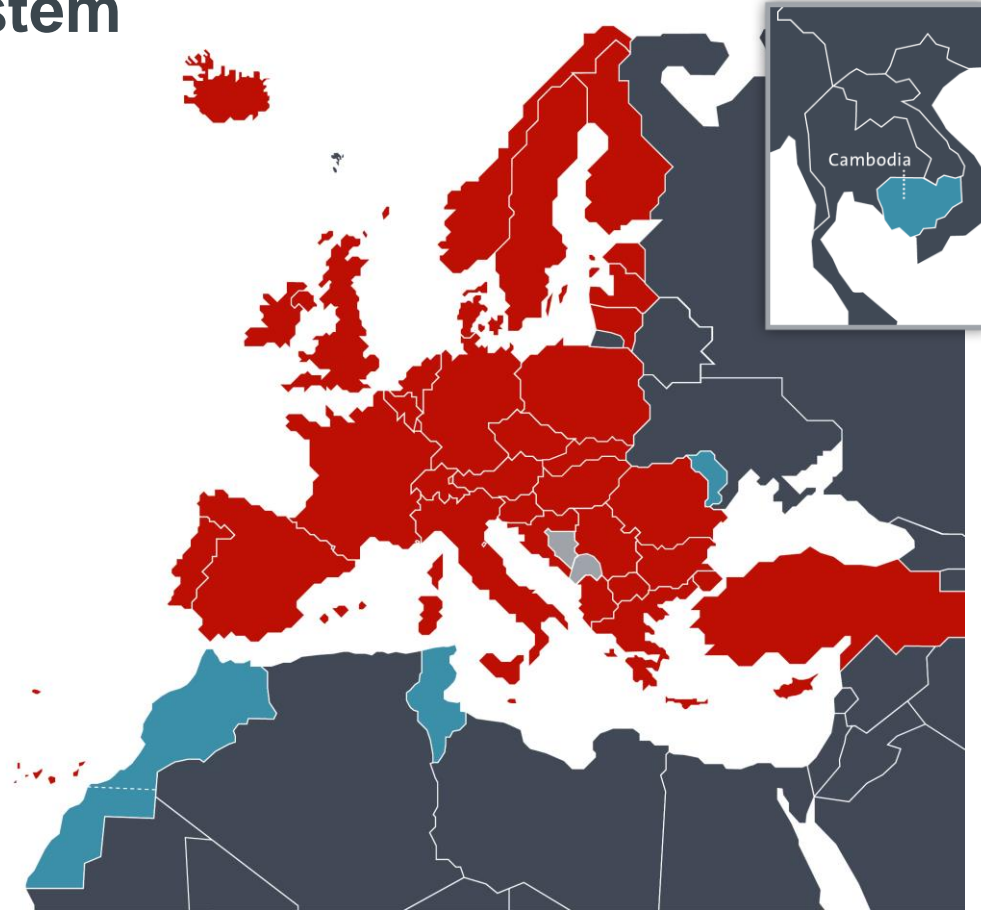
2 European extension states

4 Validation states

Including all EU member states

About **700 million inhabitants**

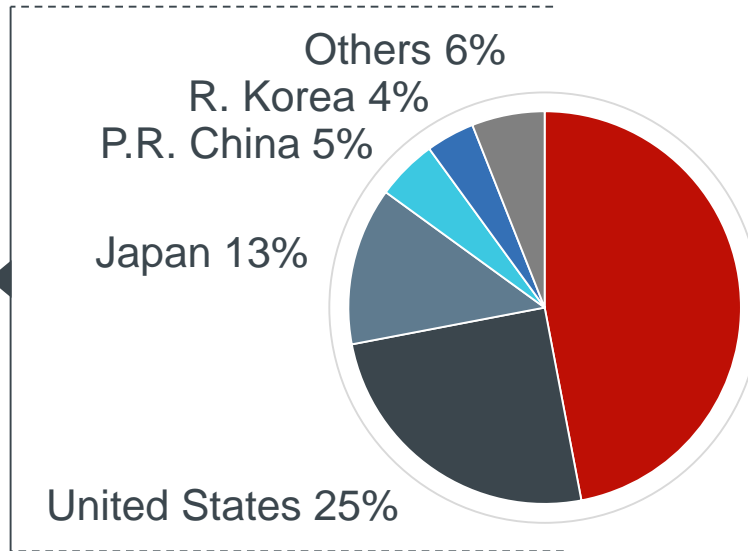
19% of the world's GDP



Geographic origin of European patent applications

Non-EPO
states **53%**

↗ Growth of applications
volume + 5.4%



EPO states 47%

↗ Growth of applications
volume + 3.8 %

Source: EPO. Status: 21.1.2019.

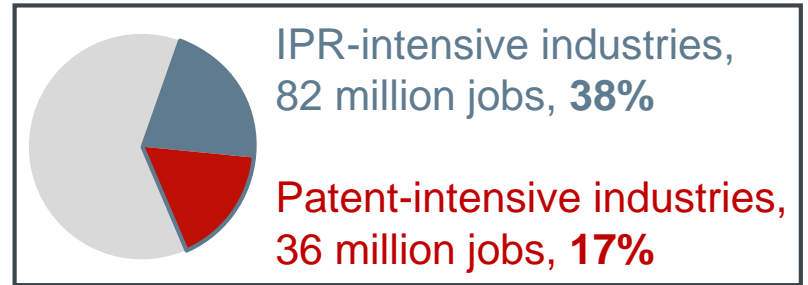
European patent applications include direct European applications and international (PCT) applications that entered the European phase during the reporting period. The geographic origin is based on the country of residence of the first applicant listed on the application form (first-named applicant principle).

Importance of IPR-intensive industries for EU economy

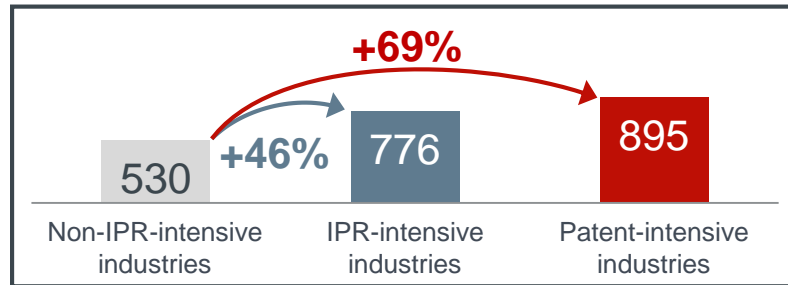
Contribution to EU GDP



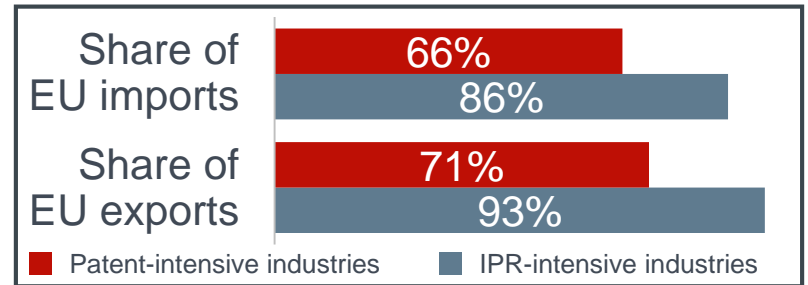
Share of EU employment



Wage premium



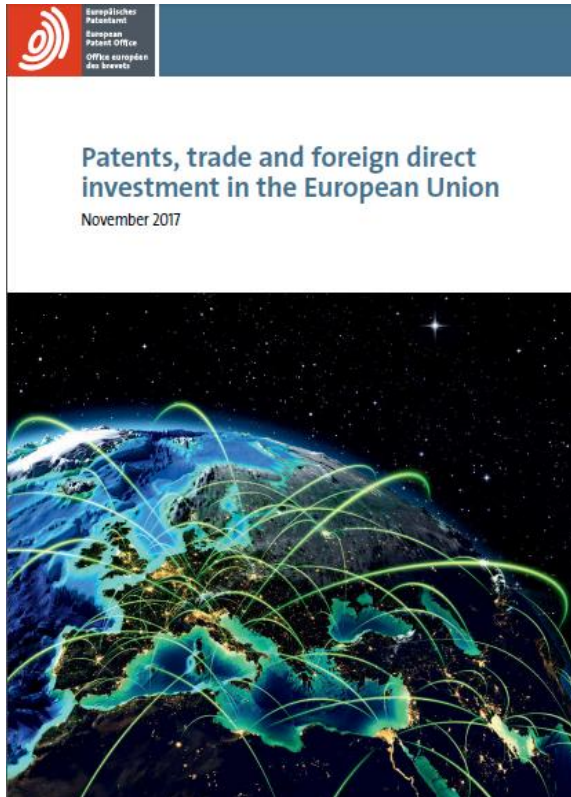
Contribution to EU trade



Source: IPR-intensive industries and economic performance in the European Union – Joint Report 2016 from the EPO and EUPIO – Data 2011-2013.

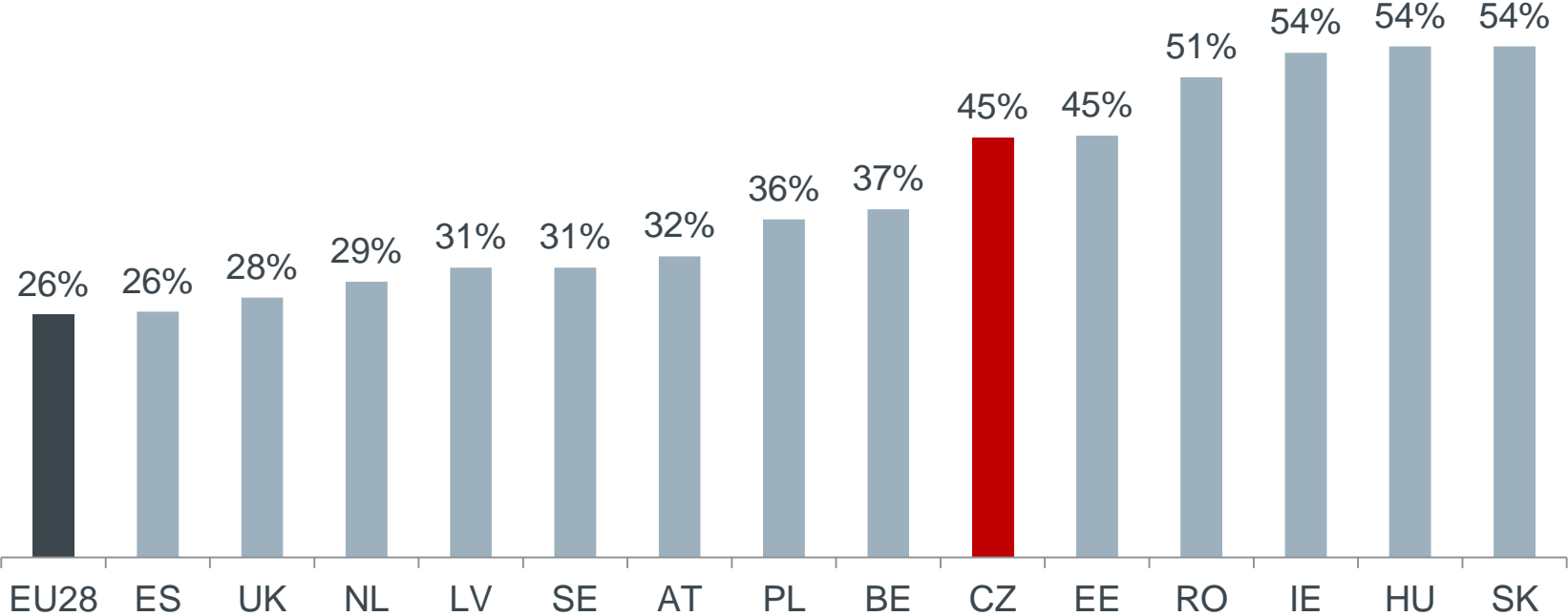
Note: IPR: IP rights: trade marks, patents, designs, copyrights, geographical indications and plant variety rights.

Importance of international technology transfers



- Up to **90% of a country'** productivity gains come from the diffusion of technology developed in **the rest of world**
- Technology flows through **trade** and **foreign direct investment** (FDI) are responsive to **patent protection**.

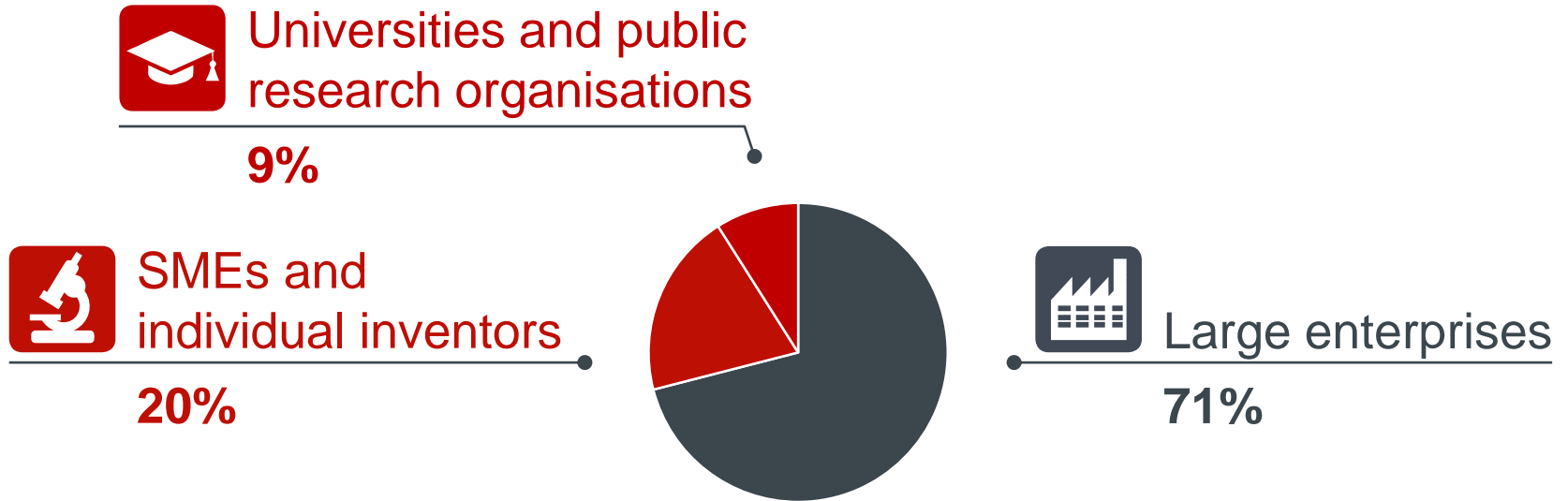
Share of employment by foreign companies in patent-intensive industries 2011-2013



Source: IPR-intensive industries and economic performance in the European Union – Joint Report 2016 from the EPO and EUIPO – Data 2011-2013.

Note: IPR: IP rights: trade marks, patents, designs, copyrights, geographical indications and plant variety rights.

SMEs and universities are key actors of innovation



Source: EPO.

This breakdown is based on a large representative sample of patent applications filed with the EPO in 2018 by applicants located in member states of the European Patent Organisation. SMEs have been identified based on the European Commission definition of SMEs (2003/361/EC). According to this definition, an SME is i) an independent company with ii) less than 250 staff and iii) a turnover below €50 million and/or a balance sheet below €50 million. Detailed financial data and company ownership data from the BvD Orbis database have been used to enable a strict application of this definition. The category "public research organisations" includes technology transfer offices that while registered as corporate entities are clearly affiliated to a university or public research organisation.

IPR ownership and revenue per employee by firm size

Difference in revenue per employee
of IPR owners
compared with non-owners of IPR

Large companies

+ 4.0%

SMEs

+ 31.7%

Total

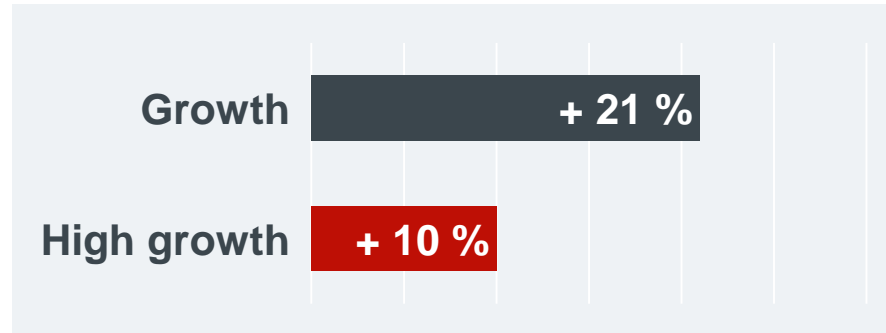
+ 28.0%

Source: EUIPO (2015) Intellectual property rights and firm performance in Europe: an economic analysis

SMEs with prior IPR activities are more likely to grow than other SMEs

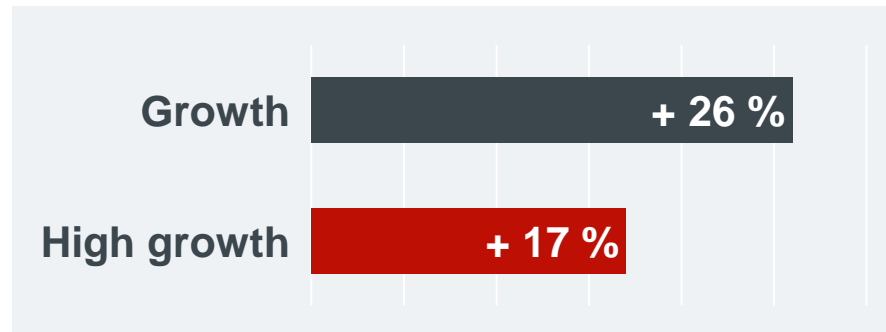
Increase in odds of growth with
prior IPR use

= Innovation



Increase in odds of growth with
prior use of a European IPR

= Innovation + international



Source: EPO-EUIPO (2019) Intellectual property rights and firm performance in Europe: an economic analysis, June 2019

The example of Aerogen

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Office européen des brevets

EPO SME CASE STUDIES | AERGEN

Breathing new life into aerosol drug delivery

Aerogen began as a small start-up in Ireland based on an aerosol technology and has established itself as a global leader in the hospital sector for high-performance aerosol drug delivery for ventilated patients. At the heart of the aerosol technology is a nebuliser that differentiates Aerogen's products from competitors and is central to an extensive patent portfolio, which has proved to be a valuable asset in creating strategic partnerships with global leaders in the critical care respiratory sector and accelerating the acceptance of Aerogen's technology in the market. The company has found it beneficial to conduct an annual meeting with its IP management team to review and refine its IP strategy. Collaborations with outside research groups also support Aerogen's R&D and IP activities.



Perforated palladium-nickel plate with porous ceramic tubes creating fine aerosol particles

- A start-up turned into a **global market leader**
- **Strong patent portfolio** proved critical for:
 - gaining recognition
 - attracting capital
 - establishing strategic partnerships
 - securing high margins
- Access to **international patent protection** is needed for strategic partnerships

Best patent practices : the EPO SME case studies



SKLETON
TECHNOLOGIES



Aerogen



LITHOZ
Manufacture the future.



■ 38 European member states ■ Two European extension states ■ Three validation states



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Thank you for your attention!

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