# Mergers and innovation

## Firm-level evidence

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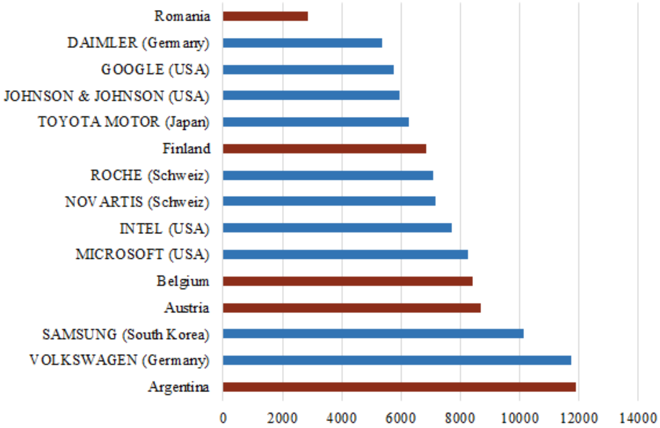
# Cross-border M&As and innovation

- Cross-border M&A constitute a large share of all mergers and global FDI flows, especially in R&D intensive industries
- Multinational firms are responsible for much of the world's R&D
- According to UNCTAD (2010), 70% of worldwide private R&D investment was undertaken by only 700 multinationals
- R&D budgets of some multinational firms exceed those of some countries

# Research budgets of multinational firms in Euro million




Source: R&D scoreboard and World Bank, 2013

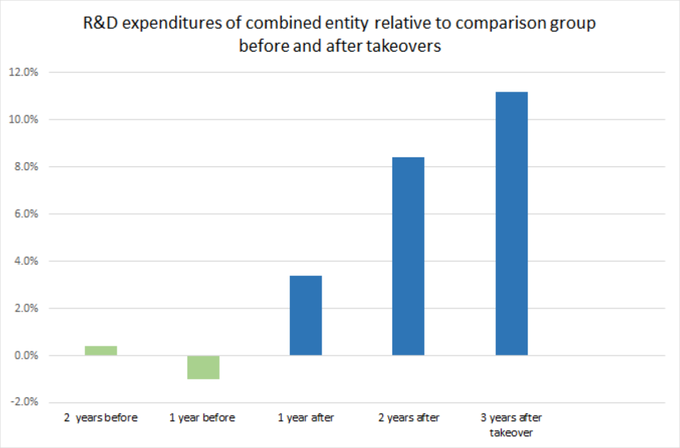
# Importance for economic policy

- Concerns about reduction or relocation of innovative activity
- "I think there's every reason to be worried. Very often the R&D goes abroad and the rest follows...It's a recipe for disaster and a slow hollowing out of our industrial base here."
  (Bob Bischof, vice-president of the German-British Chamber of Industry and Commerce)
- "National champions" policy and protection of "strategic industries"
- Examples of international M&As:
  - GE / Alstom vs. Siemens /Alstom
  - Pfizer / AstraZeneca
  - Sanofi / Aventis
  - Google / Where2

# Evidence from European M&As

- What is the effect of international M&As on
  - innovation in the merged entity?
  - (re-)location of innovative activity?
- Sample of 900 international M&As within Europe (1990-2008)
- Comparison group of firms with similar characteristics (industry, size, productivity, previous innovation etc.)
- How does innovation (measured as R&D expenditures and patents) change after M&As relative to "similar" firms that were not affected by a merger?

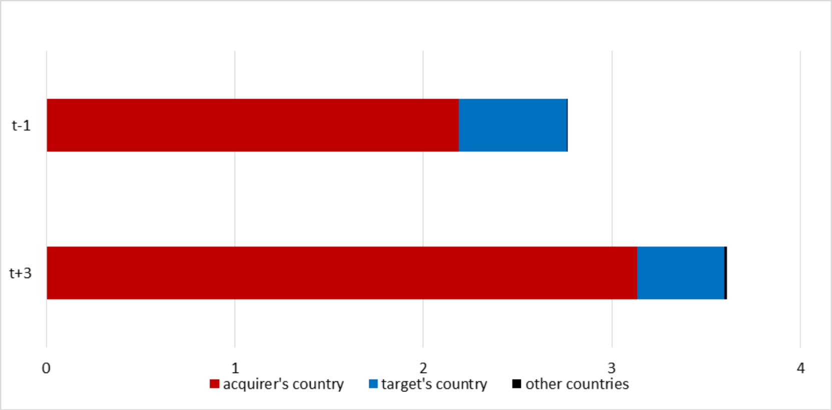
# R&D activities of the combined entity before and after international M&As within Europe




Source: Own calculations based on Bureau van Dijk's Orbis database and the R&D scoreboard.

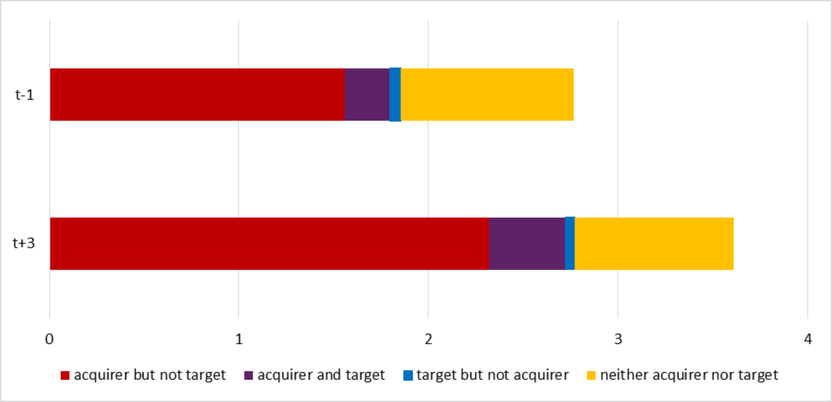
- The global effects of international M&As on R&D and innovation seem to be positive in many cases
- A possible explanation is improved market access upon acquisition
- Another possible explanation are efficiency gains
- There is some evidence of decreased innovation activity after M&As in specific R&D-intensive industries (e.g. pharmaceuticals), but this is true for both domestic and international transactions
- The overall positive effects are often accompanied by restructuring and relocation of R&D
- Mainly if acquirers invest in small and relatively less R&D intensive firms

# New patents filed before and after international M&A by inventors' country in the consolidated company



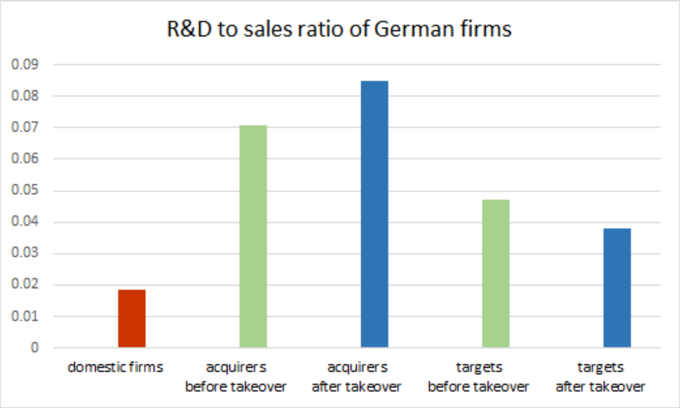

Note: The bars show the number of patents in the consolidated entity 1 year before and 3 years after an international M&A which takes place at year t and the distribution of patents by country of inventor.

# New patents filed before and after international M&A by technology classes in which firms have experience




Note: The bars show the number of patents in the consolidated entity 1 year before and 3 years after an international M&A which takes place at year t. The bars also show the distribution of patents by 3-digit IPC technology classes which have been part of the patent portfolio of acquirer but not target, both, target but not acquirer or none of both 4 years earlier.

# Evidence on R&D from German firms

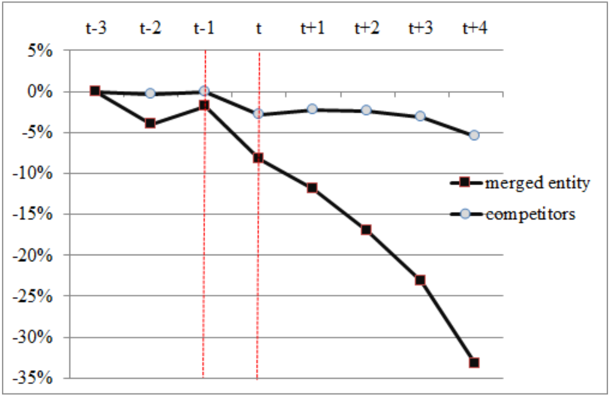



Source: Own calculations based on Bureau van Dijk's Amadeus database and survey data among German SMEs.

# Evidence from the pharmaceutical industry

- European merger cases in the pharmaceutical industry 1991-2007
- Investigated by the European Commission for antitrust implications
- 65 merger cases, which affected 381 firms
- 52 firms acquired at least one of 67 target firms
- Data on sales, profits, R&D and patents from various other sources
- After M&As, we observe a decline in R&D and patenting among firms affected by a merger

# Evidence from the pharmaceutical industry: Patent activity relative to a comparison group




Notes: Graph shows relative deviation of average observed values of patents from patents predicted by lagged values and current growth rates of non-merging firms in the same region. $t$ denotes the time period in which the merger takes place.

# Conclusion

- Cross-border M&As may sometimes lead to a reduction of R&D activities in target firms but often have positive effects on global innovation
- From a global perspective, not many reasons to favor domestic over international M&As
- However, some types of (domestic and international) M&As can negatively affect innovation within the merged entity and among non-merging competitors

Thank you very much for your attention

# Presentation is related to the following research papers


- Haucap, J. & Stiebale, J. (2016). How mergers affect innovation: theory and evidence from the pharmaceutical industry. DICE Discussion Paper No 218.
- Stiebale, J. & Reize, F. (2011). The impact of FDI through mergers and acquisitions on innovation in target firms. International Journal of Industrial Organization, 29(2), 155-167.
- Stiebale, J. (2013). The impact of cross-border mergers and acquisitions on the acquirers' R&D – Firm-level evidence. International Journal of Industrial Organization, 31(4), 307-321.
- Stiebale, J. (2016). Cross-border M&As and innovative activity of acquiring and target firms. Journal of International Economics, 99, 1-15.