

# Internationalization of R&D Modes and Implications for a Small Economy

KEI -- Third Workshop on Indicators in the Knowledge Economy.  
March 2, 2006

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# Structure of talk

- Modes of internationalization of R&D
- Recent trends in globalization of business
- Internationalization of business in Finland -  
overview
  - Production
  - R&D
  - Strategic alliances
- Implications & Policy Conclusions

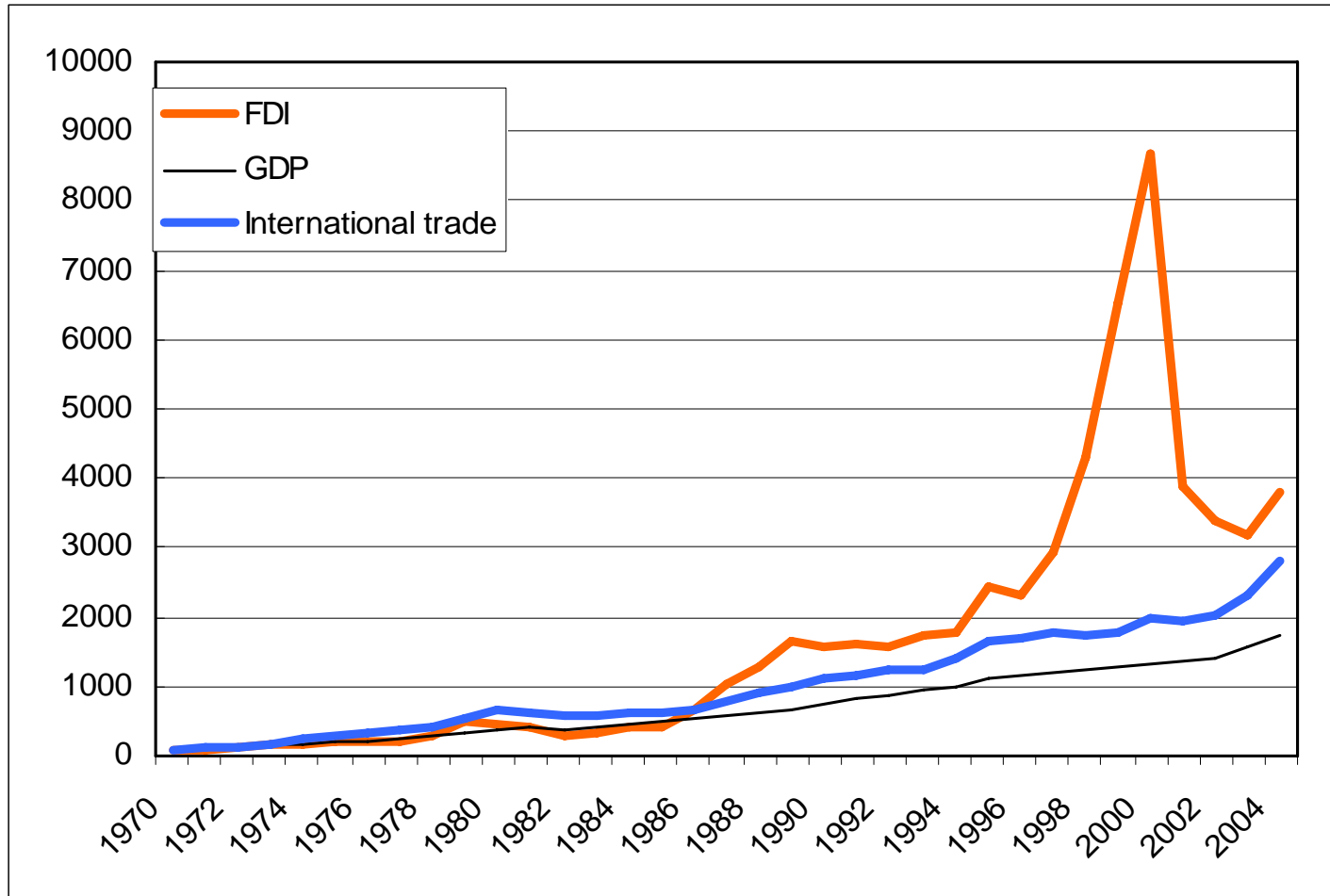
# Modes of R&D internationalization

- FDI/international M&As – R&D unit as part of corporate acquisition
- Acquisition of an R&D unit (only)
- Establishing a new R&D unit – greenfield
- Strategic cross-border alliances
  - Non-equity
  - equity

# Recent trends in globalization of business – a small country perspective

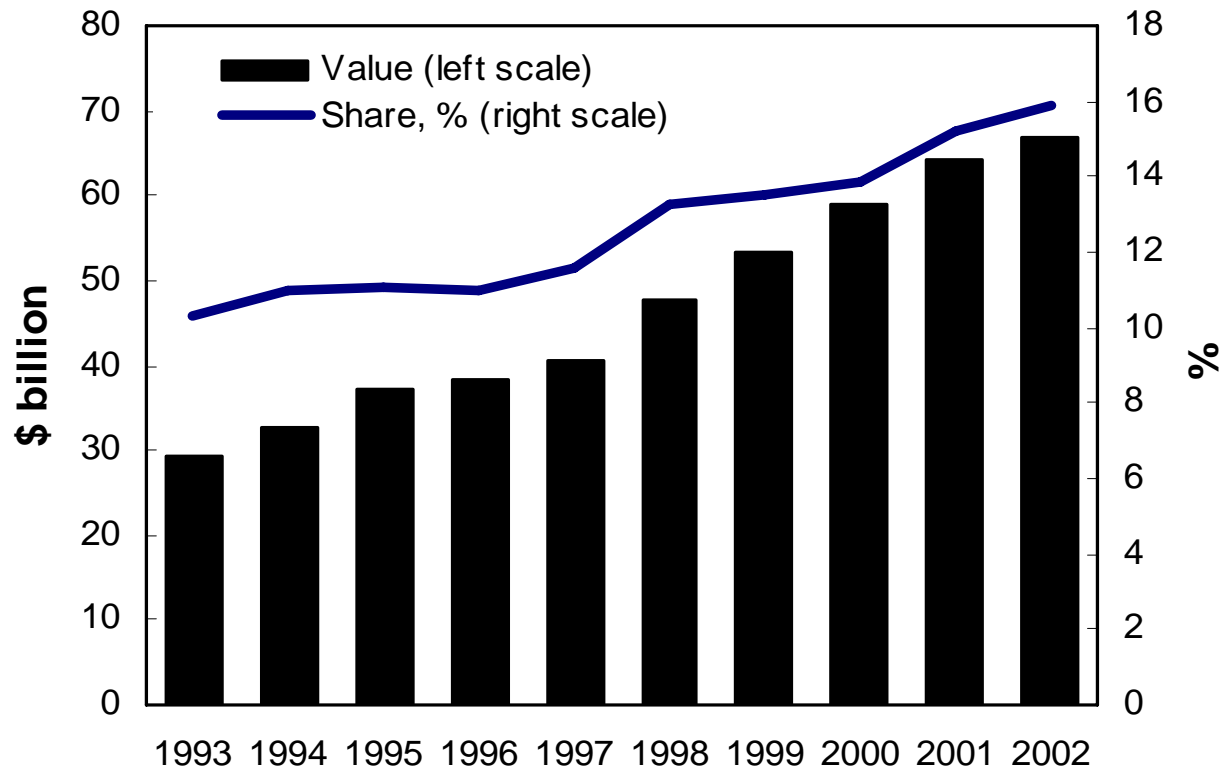
- R&D by foreign affiliates grows more than world trade or domestic R&D
- Cross-border M&A and global FDI main source of growth in foreign located R&D
- Emergence of "Alliance Capitalism"
  - Contract-based, cross-border strategic alliances
  - Most important mode of internationalization of R&D
  - Driven by ICT

## Global FDI flows, GDP, and foreign trade (1970=100)



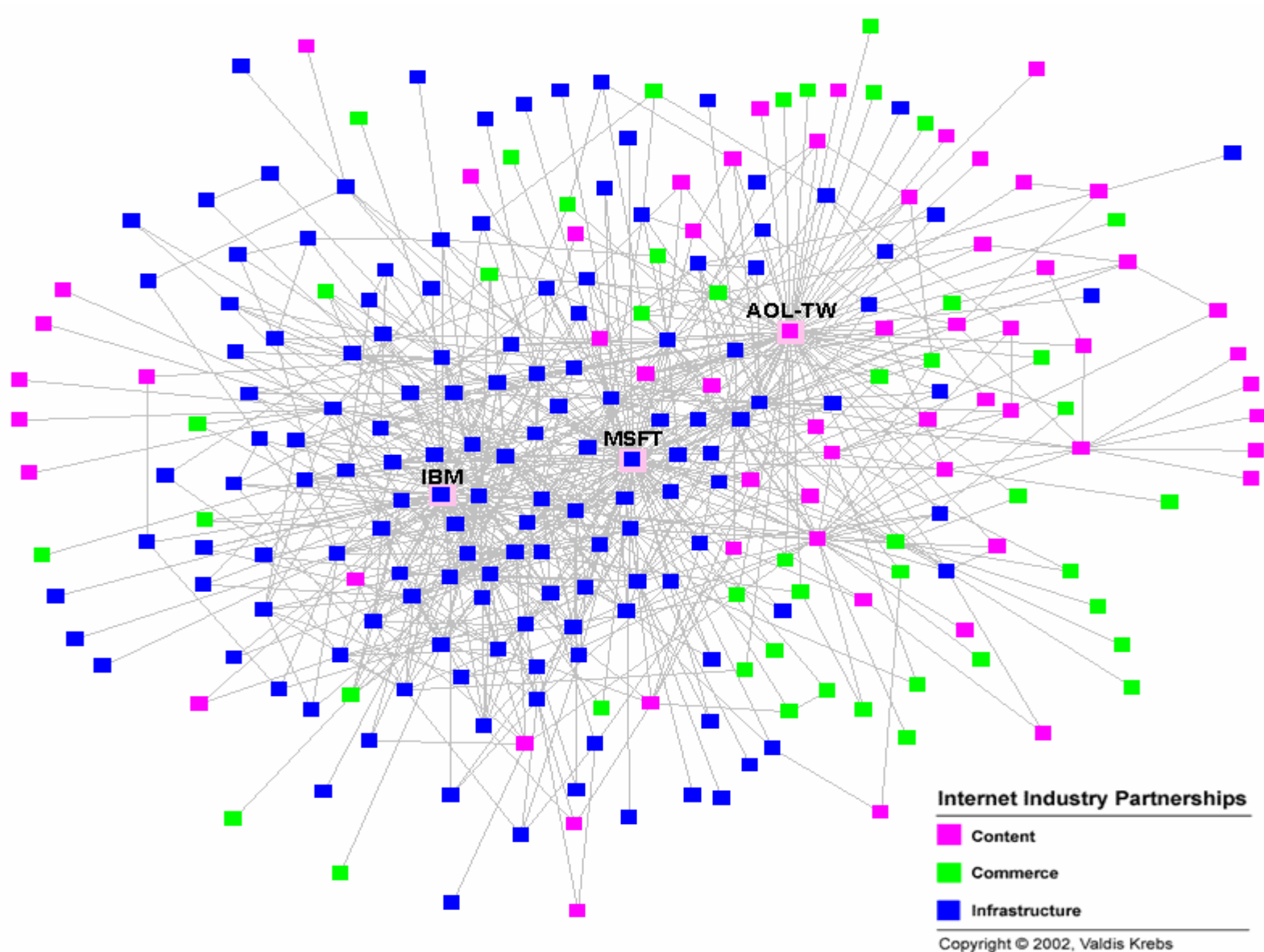
Data source: World Investment Report

## The value and share of R&D by foreign affiliates – a global view



Source: World Investment Report 2006 (Based on a sample of 30 economies)

# Strategic alliances in Internet industry

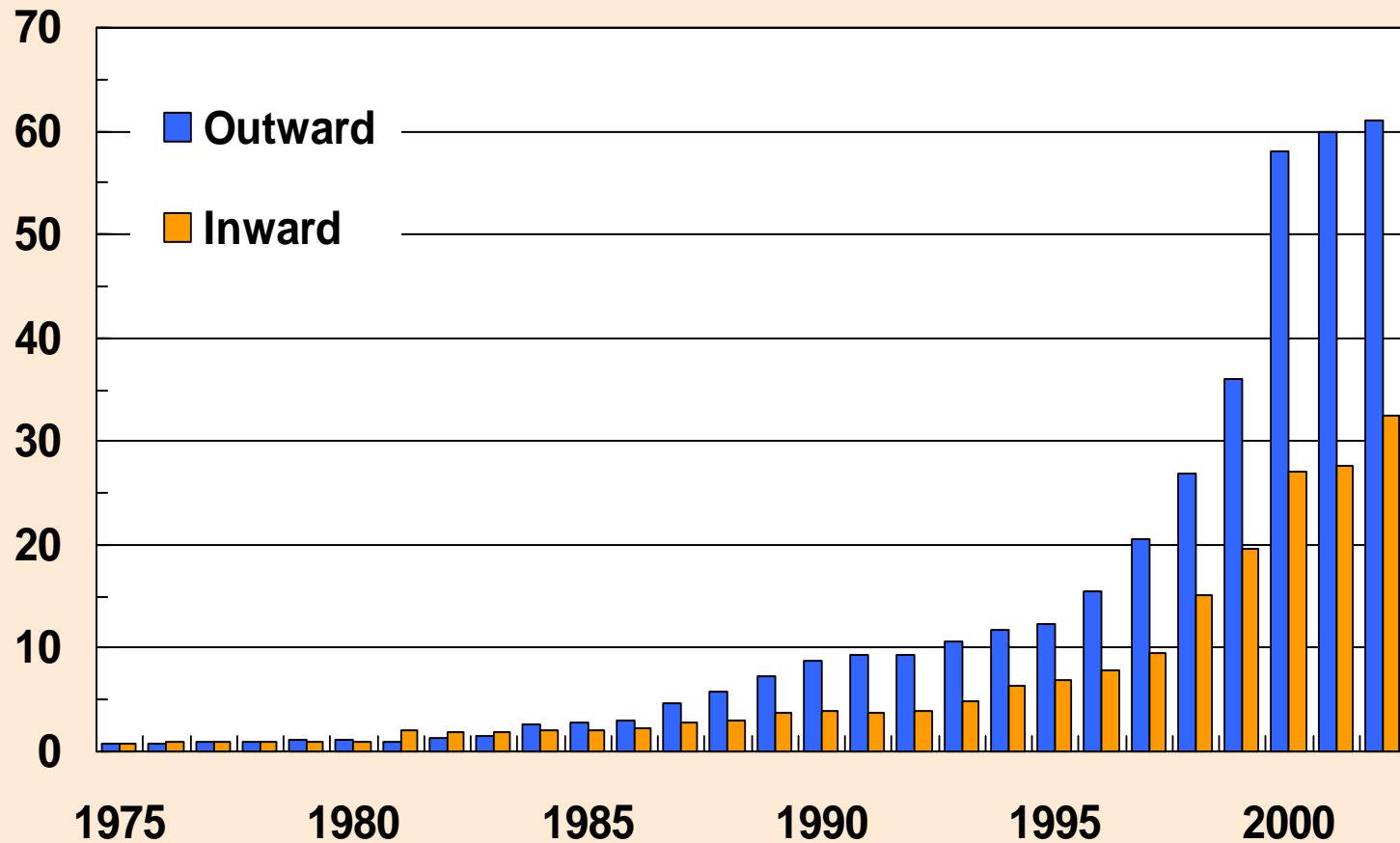


# Internationalization of business in Finland - overview

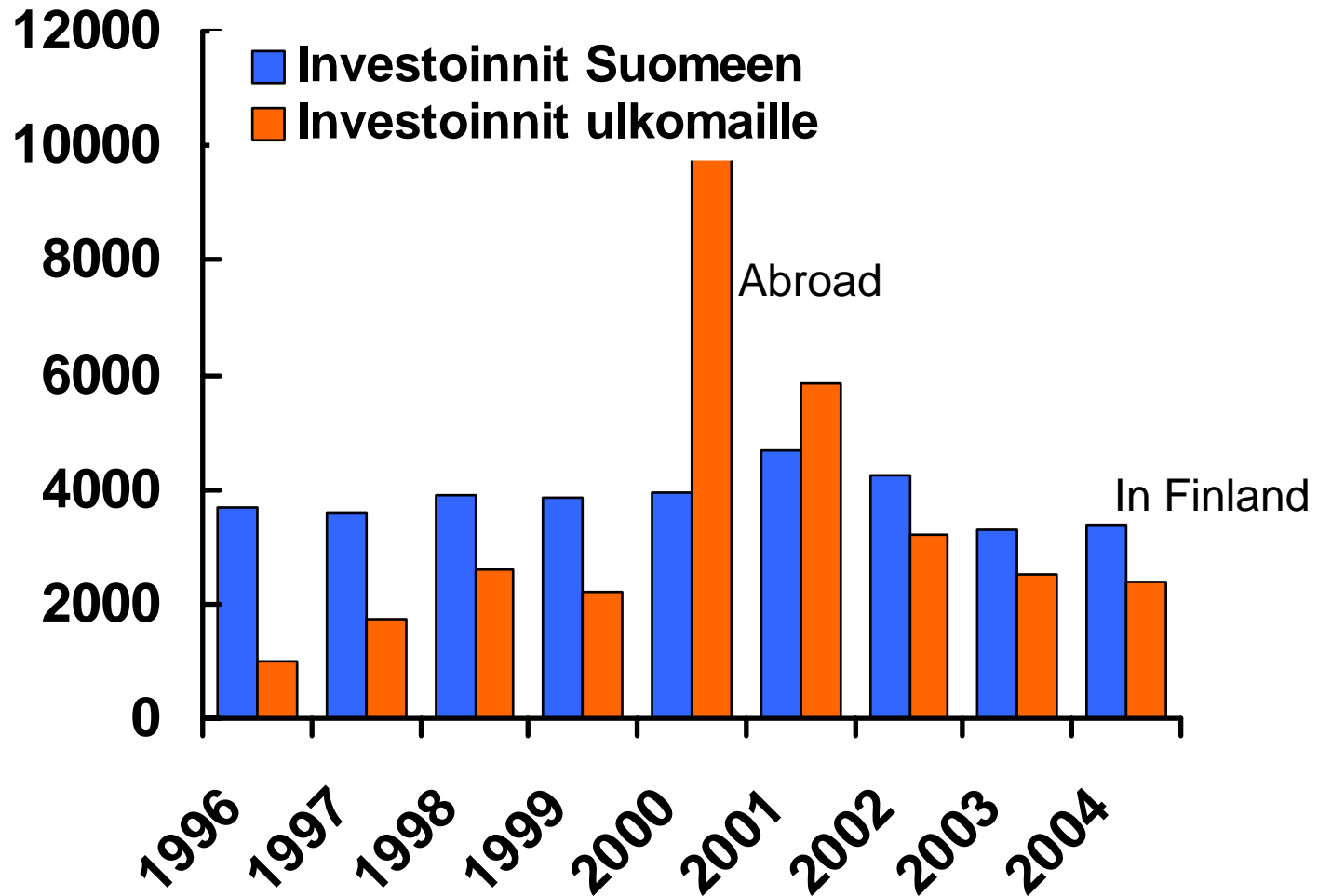


# *Outward and Inward FDI stocks in Finland, 1975 – 2004, bill. EUR*

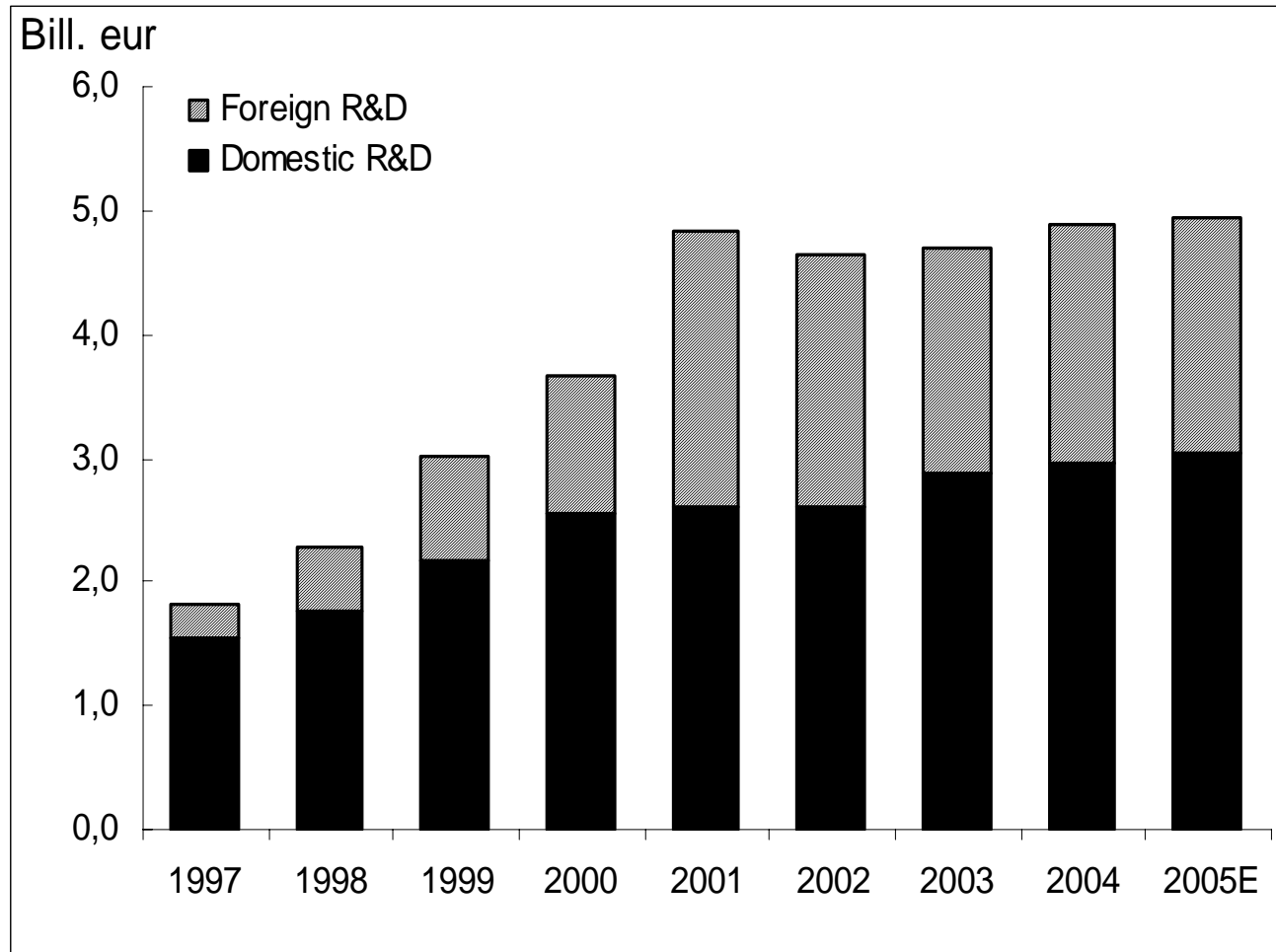
**Bill. EUR**



## Fixed investment (incl. M&A) of Finnish manufacturing firms Abroad vs. Finland, mill. Euro

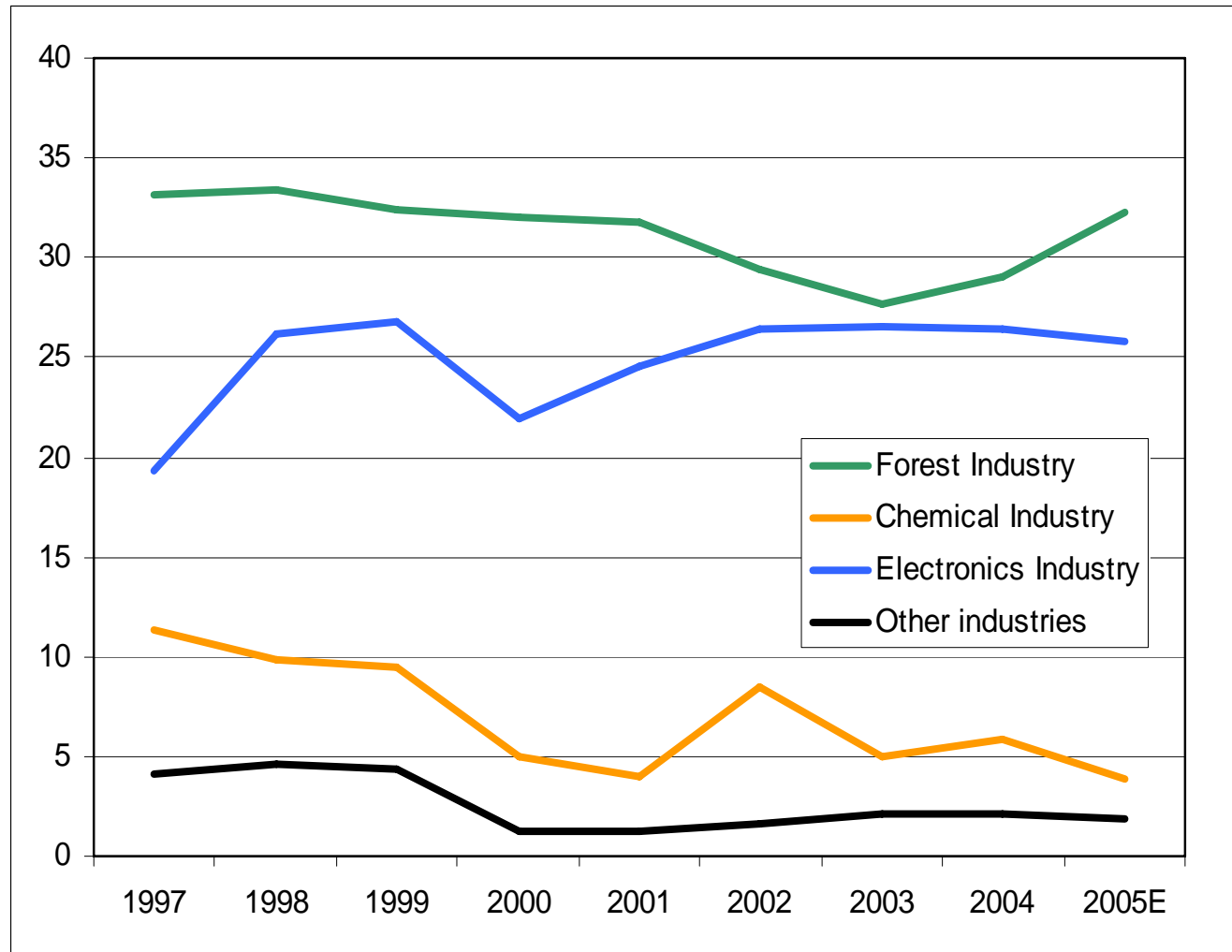


## Domestic and foreign R&D of Finnish manufacturing industry



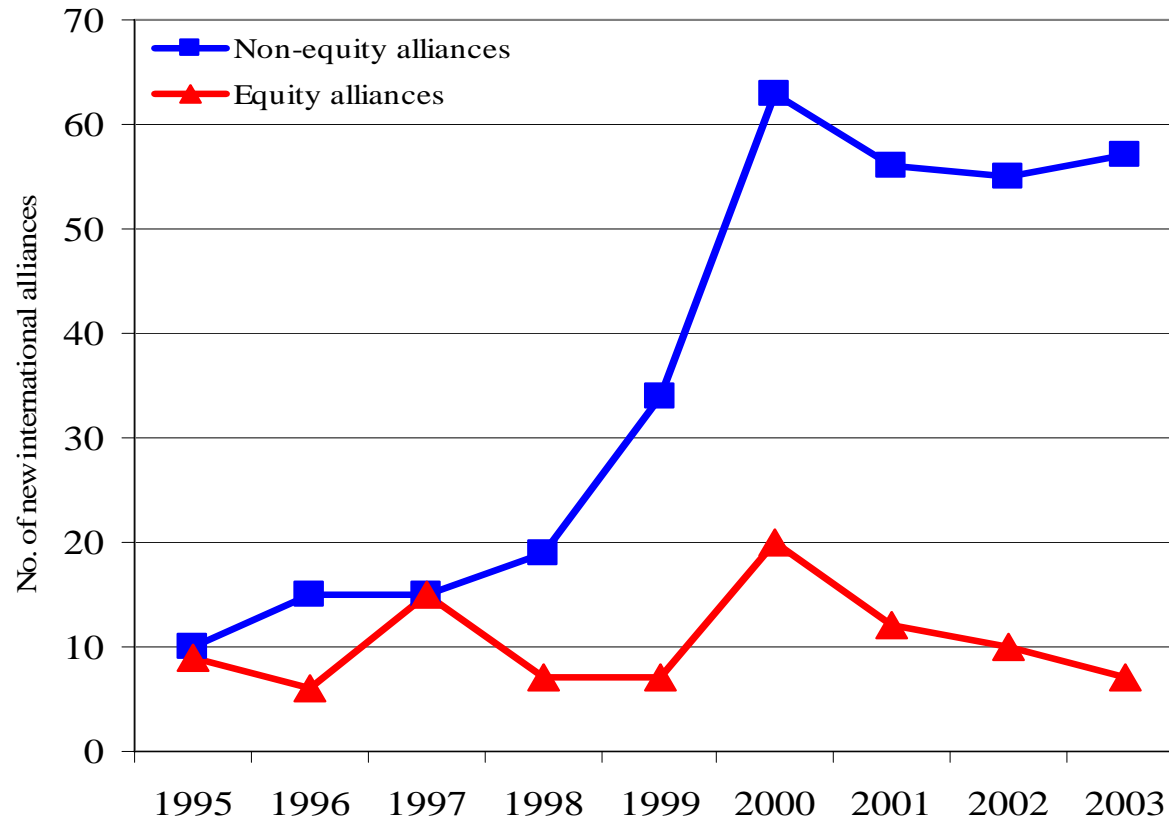
Source: Confederation of Finnish Industries

## Rate of internationalization of R&D by industry (foreign units' R&D personnel as a per cent of total)



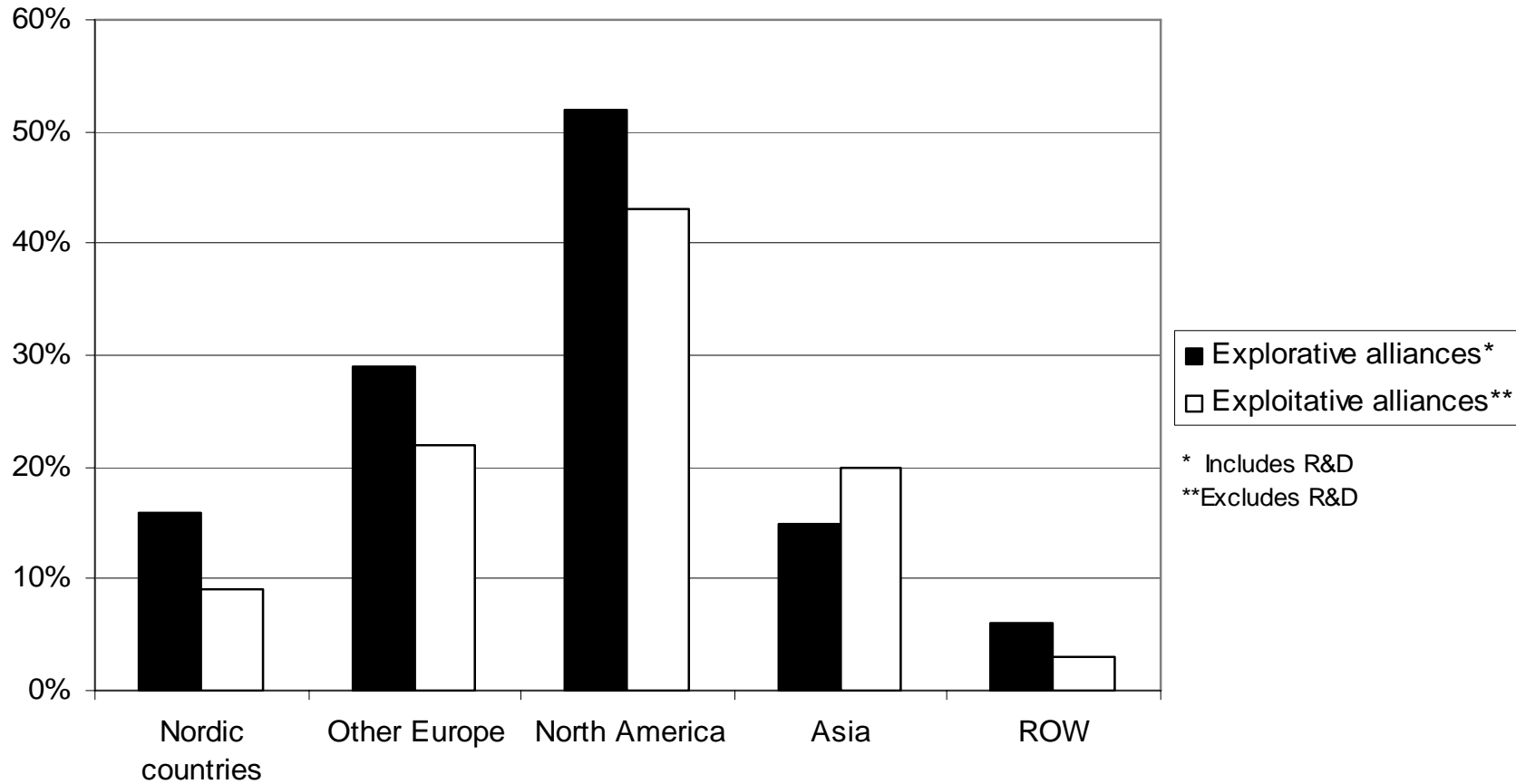
Data source: Confederation of Finnish industries and employers

## Growth of international strategic alliances of Finnish firms



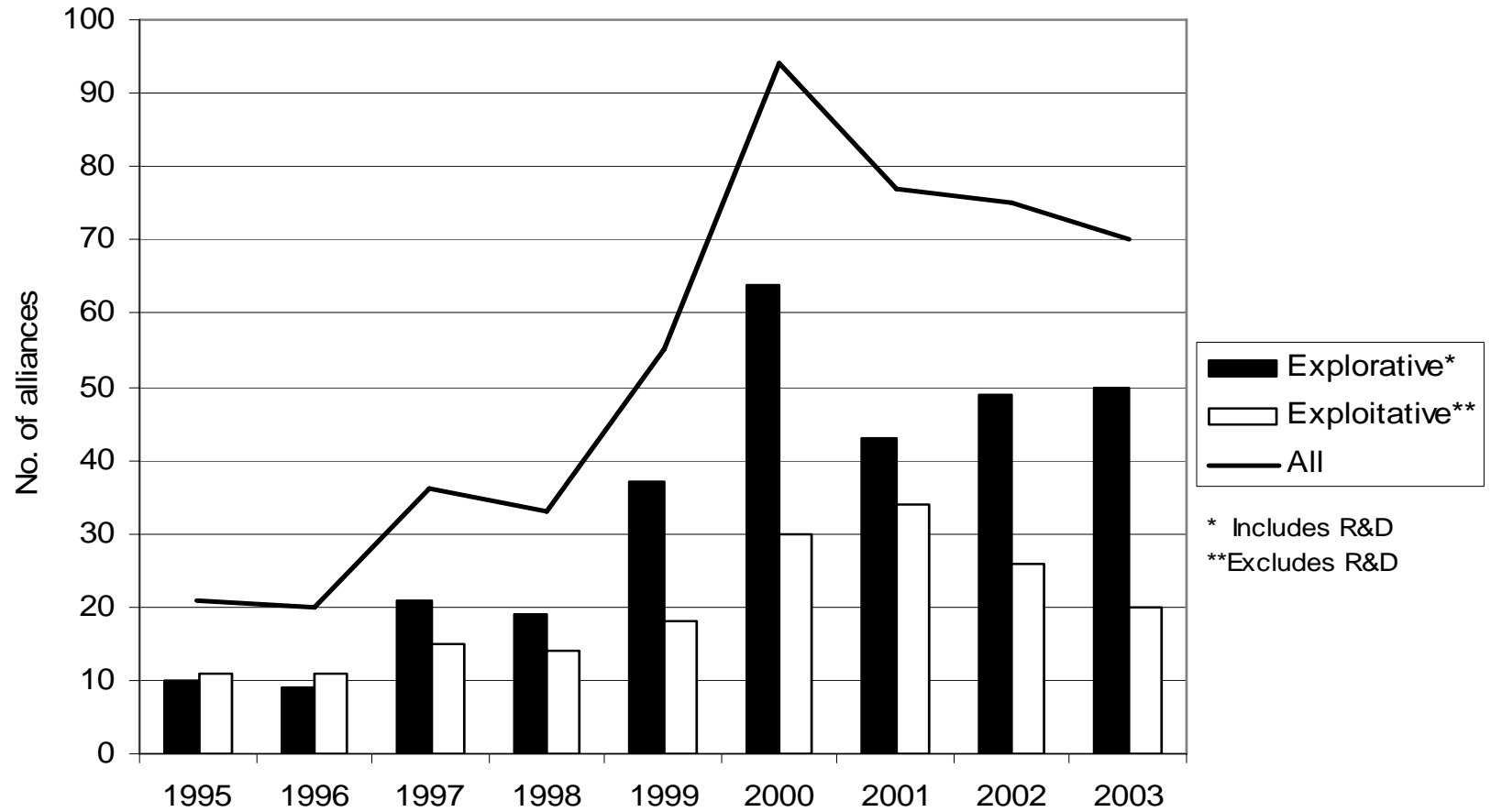
Source: SAFIF (Strategic alliances of Finnish firms) data base

## Strategic alliances of large Finnish firms by region, %



Source: SAFIF (Strategic alliances of Finnish firms) data base

## Strategic alliances of Finnish firms (No of alliances)



Source: SAFIF (Strategic alliances of Finnish firms) data base

## Conclusions and policy implications



# Conclusions & Policy Implications

- Strategic alliances is the most rapidly growing mode of internationalization
  - Non-equity (contract based) alliances grow fastest
  - Explorative alliances (incl. R&D) more important for small knowledge-intensive economies
  - Geography matters – alliances are different across different regions (Asia vs. Europe/US)
  - Main motives
    - Sharing risks and costs
    - Acquiring complementary assets
    - Standard setting
  - ICT (or GPT) driven

# Conclusions & Policy Implications

- From policy point of view:
  - Growing amount of information on internationalization based on FDI, high-tech exports, international patenting etc
  - Little is known
    - about the extent and nature and determinants of alliances, and other collaborative arrangements
    - Determinants of foreign located R&D vs. domestic R&D
    - Co-location of production and R&D
  - IPR issues are gaining in importance – more emphasis in public policies:
  - How to strengthen IPR position of SMEs?

# References

- Christopher Palmberg & Mika Pajarinen (2005), Internationalisation through Strategic Alliances - Determinants of Non-equity Alliances of Finnish Firms (The Finnish Journal of Business Economics, 4/05)
- Ali-Yrkkö & Lovio & Ylä-Anttila (eds) (2004), Multinational Enterprises in the Finnish Innovation System. Taloustieto, Helsinki.
- Dahlman & Routti & Ylä-Anttila (2006), Finland as a knowledge economy – Elements of success and lessons learned. World Bank Institute. Washington DC.