

PRELIMINARY FINDINGS

INNOVATION CHALLENGES IN THE  
FINNISH BUSINESS SECTOR AND THE NEED FOR  
INTERNATIONALISATION

Pluvia Zuniga (OECD)

Presentation at the Stakeholder Workshop, Helsinki  
8 February 2017



# The Business Sector – Main Features

---

- A polarised Business Sector : Few large companies and sectors dominating.
  - Large firms: 53% of industry value added and 43% of employment
- Export product basket traditionally dominated by raw materials, production supplies and investment goods
- Few sectors with Revealed Competitive Advantages
  - 9 sectors with  $RCA > 1$ ; Sweden: 15 sectors  $RCA > 1$ ; three sectors  $RCA > 2$  (paper, wood/w. products and computer and information)
- Business productivity growth uneven across sectors and deteriorated (only ICT services improving)
- Difficulties by SMEs to export and integrate GVC
- Weak business dynamics (difficulties for start-ups/SMES to grow and weak startup rates)

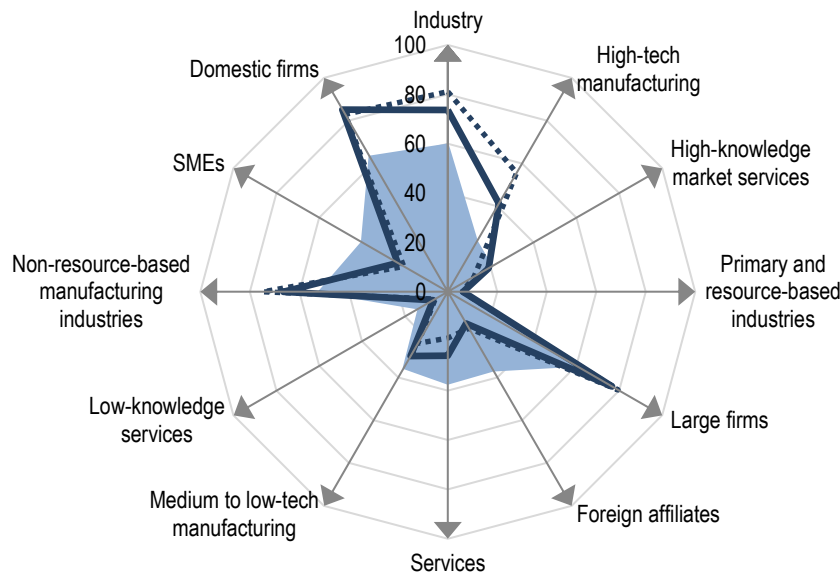


# Business Expenditure on R&D –Structural Features

■ OECD

■ Finland

■ Finland (2007)

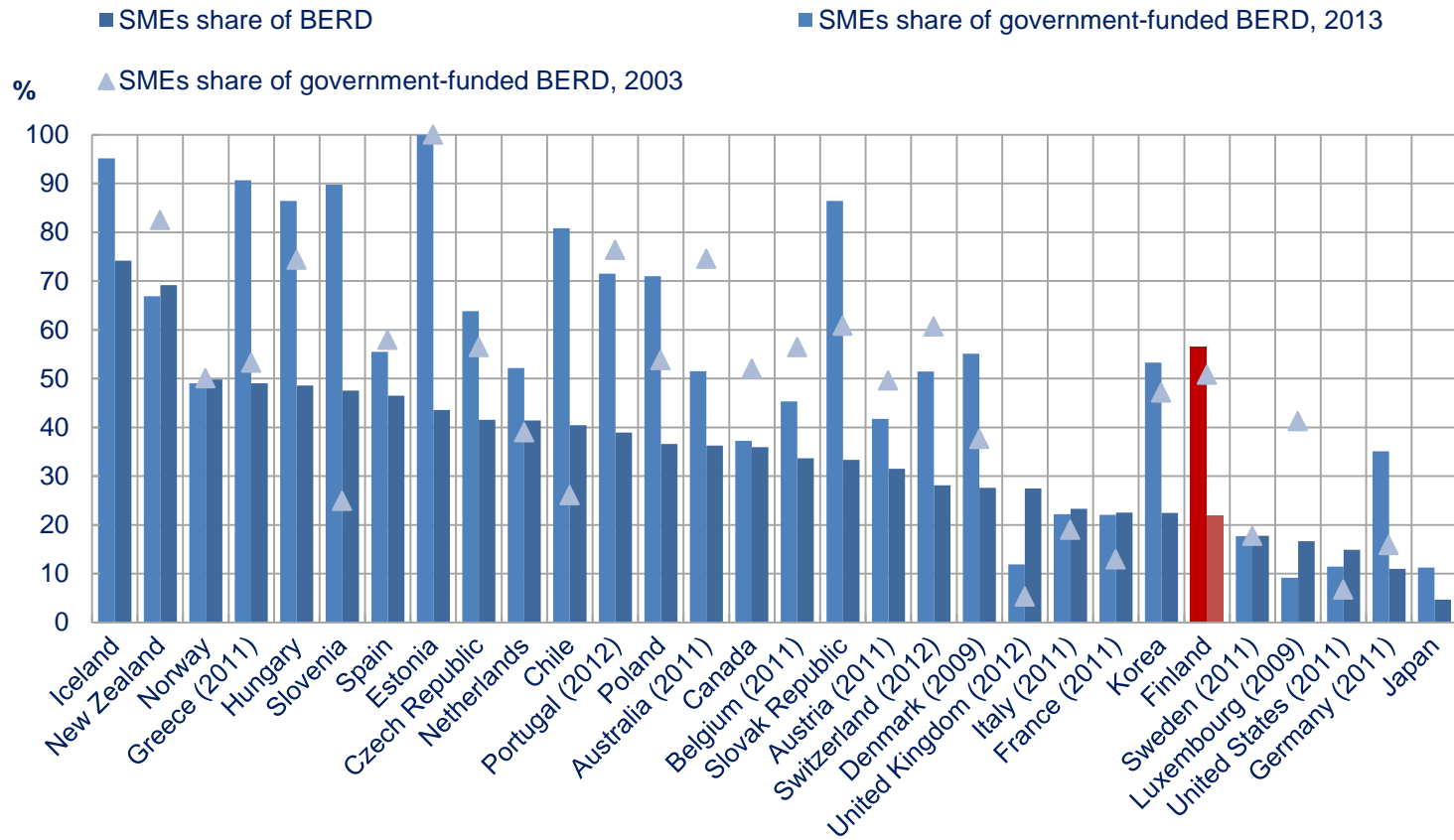


- Services represent a lower share in BERD than OECD average

- Business R&D intensity (BERD relative to GDP) is still high and well above the OECD median, despite contractions and ongoing industrial re-structuring
  - 2.12% in 2015 (2.3% in 2013), similar to Sweden
- Finland's BERD is primarily performed by the high-technology manufacturing sector and strongly concentrated in large firms.
- The share of SMEs in BERD lower than many OECD countries: 21.8% of BERD lower than OECD average (35%).

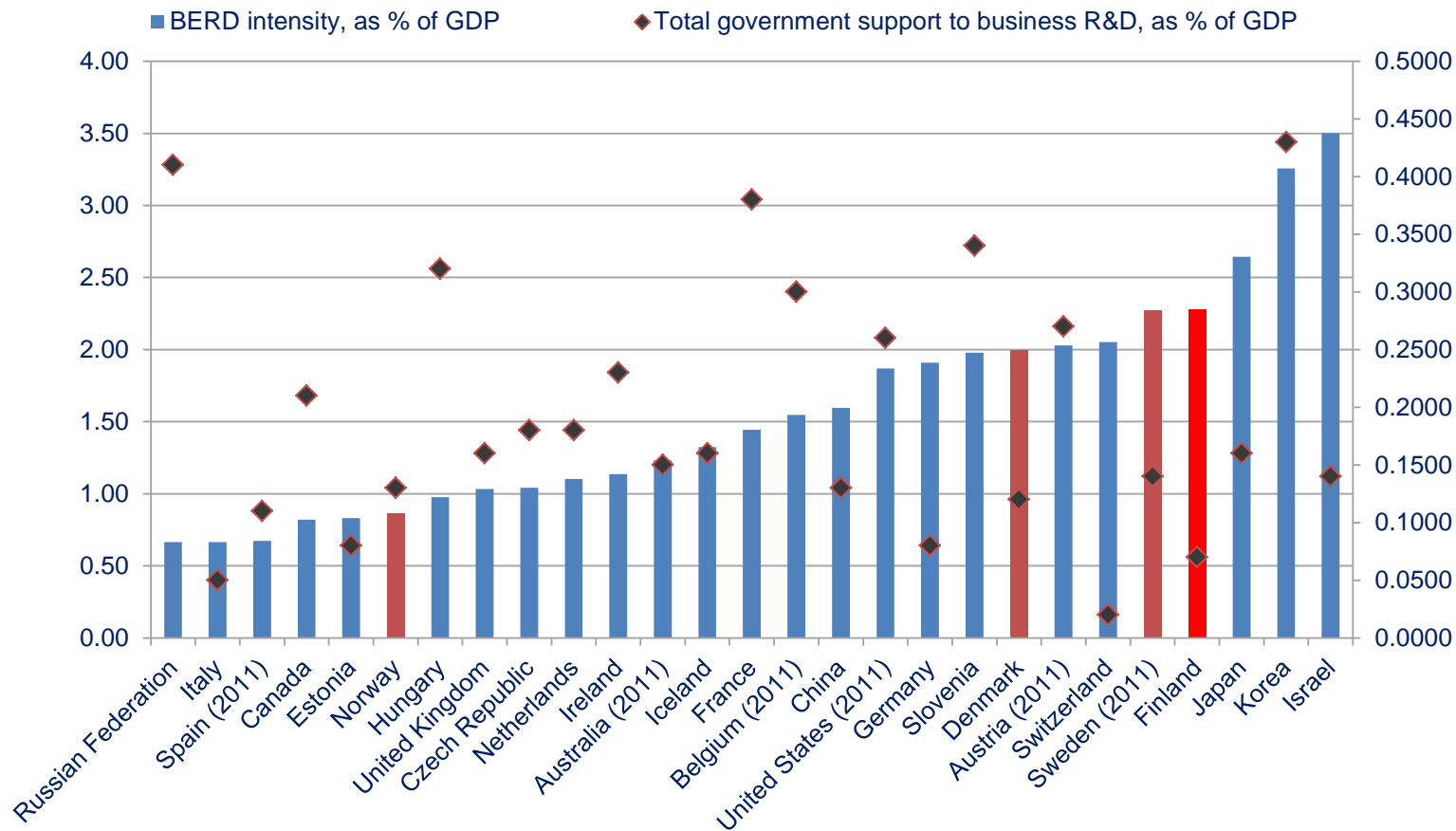


# Weak participation of SMEs in BERD





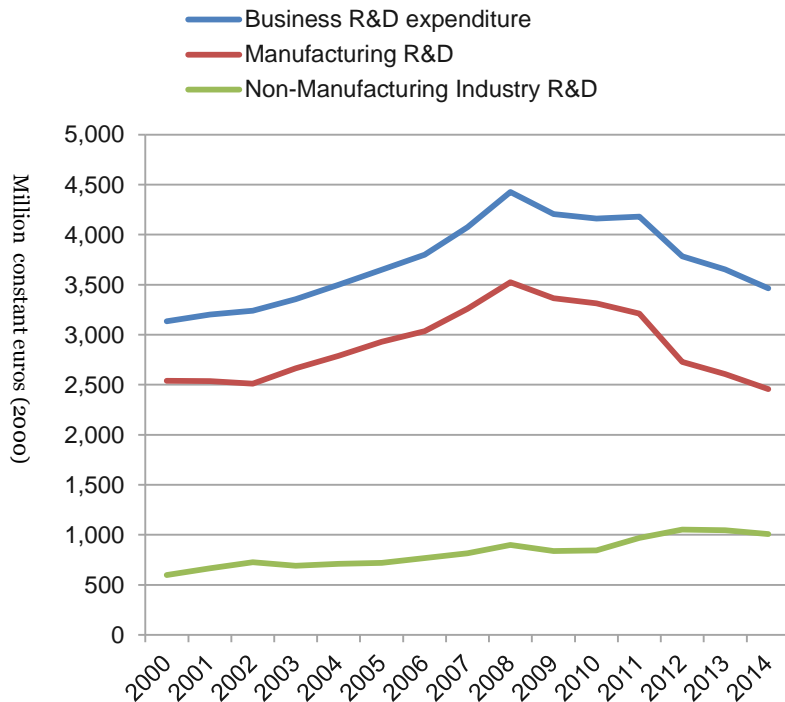
# BERD still high with low levels of government funding - in OECD comparison



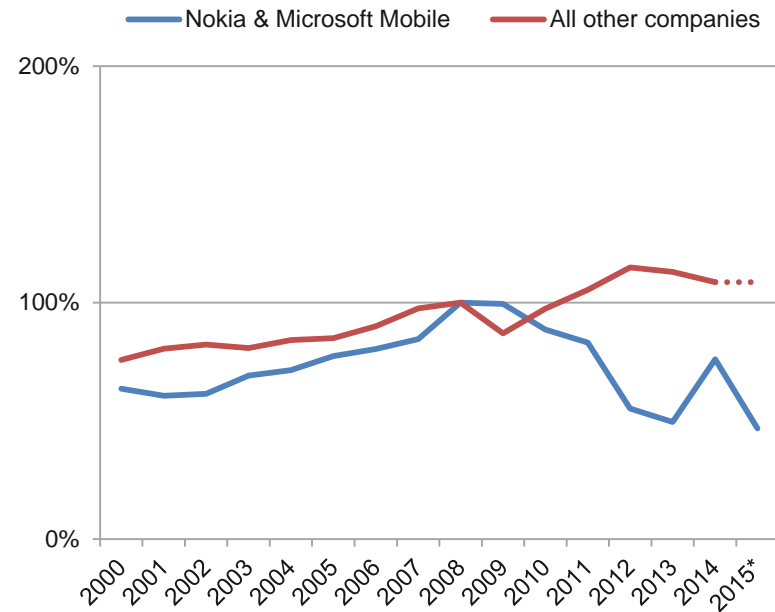


# BERD evolution and Nokia

Business R&D (BERD), 2000-14  
Million constant euros (2000)



BERD (real), Indexed (2008=100)



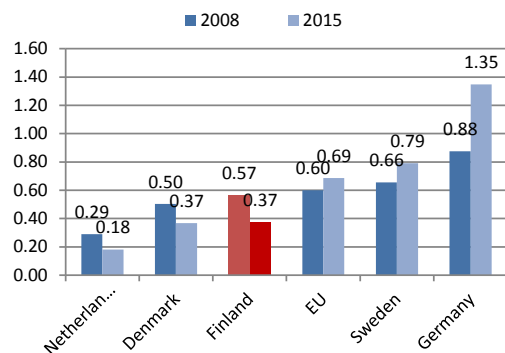
Source: Statistics Finland, with the support of ETLA.

- BERD contraction mainly due to industrial re-structuring: Nokia
- In the aggregate, the rest of firms – including in the services sector – showed a more stable pattern and their BERD (in real terms) has increased since 2010.
- Nokia still performs a high share of BERD (50% in 2009, 20% in 2015)



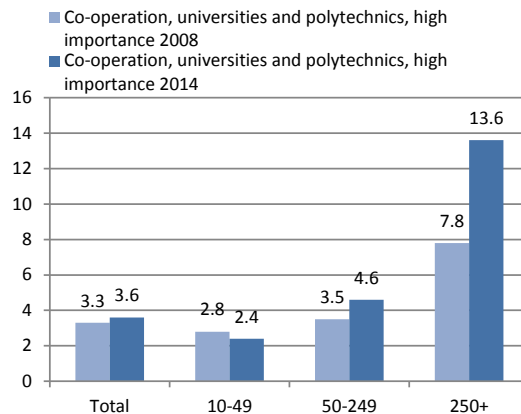
# Non-R&D investments, cooperation and global spillovers

Figure 1: Non-R&D as percentage of turnover



Source: Eurostat

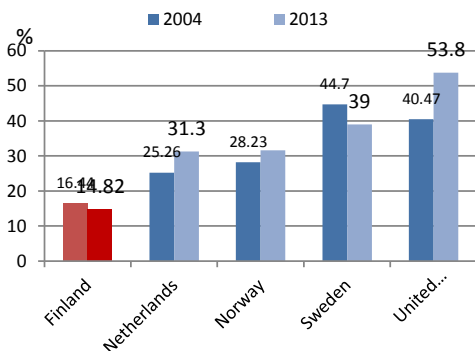
Figure 38: Collaboration with Academia by firm size, 2008 and 2104



Source: Statistics Finland.

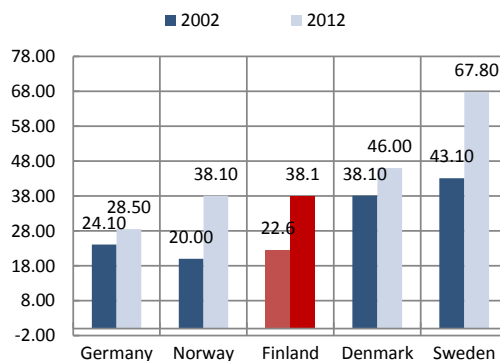
- Lower investments in Non-R&D compared to Sweden and Germany
- ICT investment (relative to GDP or value added) lower than comparator countries. e.g. computer software investment: 1.1% of GDP, about half Sweden and Denmark.
- Cooperation only valuable for Large Firms
- Weak FDI role in the economy and innovation

Figure 2: MNCs' participation BERD, 2013



Source: OECD Foreign Affiliates Database, OECD.Stat

Figure 3: FDI stocks as percentage of GDP



Source: OECD Foreign Affiliates Database, OECD.Stat



## Revitalise business innovation - Policy actions to consider (1)

---

- (1) Increase public support towards business R&D and innovation to address the current needs for economic renewal and strengthening productivity growth.
  - ❑ In doing so emphasise radical innovation projects which can lead to new high value-added products and services.
  - ❑ This entails addressing gaps in the innovation cycle, including knowledge-transfer, technology testing and commercialisation.
- (2) Strengthen the participation of SMEs in R&D and innovation activities through enhanced funding and improved allocation mechanisms. This suggests several lines of action:
  - ❑ Entry of new SMEs: e.g. Engage Grants programme, Canada; KMU-innovativ, Germany; InnovationAgent, Denmark).
  - ❑ Promote R&D and innovation linkages between SMEs and large firms through projects that build capacity and encourage joint research and co-development, e.g. common spaces that give SMEs access to large firms' research infrastructure and expertise (an example is Synerleap in Västerås Sweden).
  - ❑ Enable SME innovation by supporting test sites and demonstration facilities (in areas of new technologies and applications)





## Revitalise business innovation - Policy actions to consider (2)

---

### (3) Address industry challenges through stakeholder coordination and strategic innovation agendas (and their implementation):

- ❑ Currently no sector or strategic innovation strategies, no road-mapping; some networks or clusters (SHOKs).
- ❑ Examples of practice: Strategic Innovation Programmes (Sweden); Strategic Platforms for Innovation and Research (DNK) ; Leading Edge Cluster (Germany)
- ❑ Innovation roadmapping – identification of both technology and non-technology bottlenecks (e.g. regulation; skills) and innovation priorities.
- ❑ Mobilising existing programs plus new ones: New PPP model for research and innovation. Need for a new, more open model, with reinforced governance, etc.

### (4) Increase growth opportunities through networks and demand-side programs.

- ❑ Develop innovation networks around public markets (needs); scale up procurement programs across the government agencies and regions.



## Framework conditions – Areas for Improvement (1)

---

- Framework conditions fairly favorable for innovation (access to finance, entrepreneurship, skills...)..
  - ❑ Finland's general business framework ranks high in several dimensions. In terms of the Ease of Doing Business, Finland's score is among the highest (according to the World Bank Doing Business 2017). E.g. Barriers to entrepreneurship and bankruptcy legislation are in line with best practice.
  - ❑ In terms of trade and FDI regulations, Finland scores relative well and above OECD average. Finland's Service Trade Restrictiveness Index (STRI) scores are above the OECD average and scores of other Nordic countries in several sectors.
  - ❑ Structural reforms and government measures aim at reducing regulation and red tape to improve operating conditions for businesses
  - ❑ Credit remains accessible, although it has become more difficult for small firms in the very recent past.



## Framework conditions – Areas for Improvement (2)

---

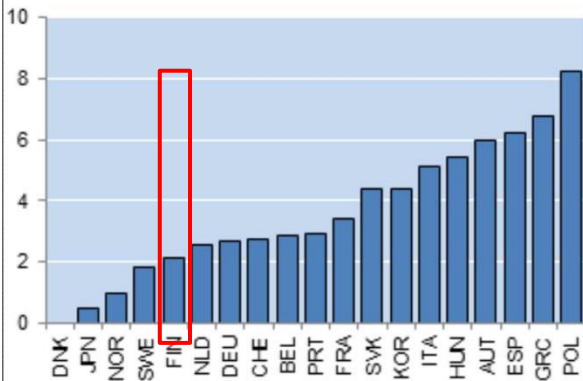
- Yet Finland could do better in:
  - ❑ Incentivizing market competition through Product Market regulation in certain sectors and markets. Regulations remain cumbersome in some areas, notably in retail trade, network industries, construction and land-use planning. Streamlining regulations is a key objective of the new government.
  - ❑ Enhancing flexibility in labor markets and resource allocation through employment protection legislation (or just labor costs in general?) and labor market regulations
  - ❑ According to a recent study ((Andrews et al. (2015):huge (Andrews et al. (2015) gains in reforming employment protection legislation, and improving access to early stage venture capital
  - ❑ Easing doing business: Room to improve regulations regarding the protection of minority investors, contract enforcement and getting credit (doing business 2017).



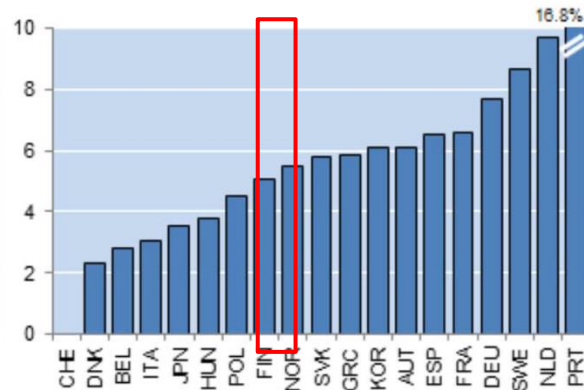
# Framework conditions – Areas for Improvement

## (3)

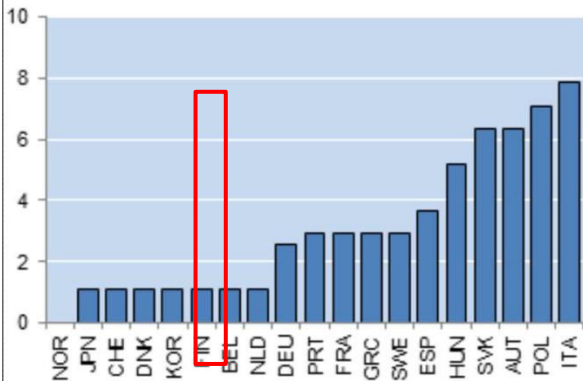
A. Stringency of Barriers to Entrepreneurship



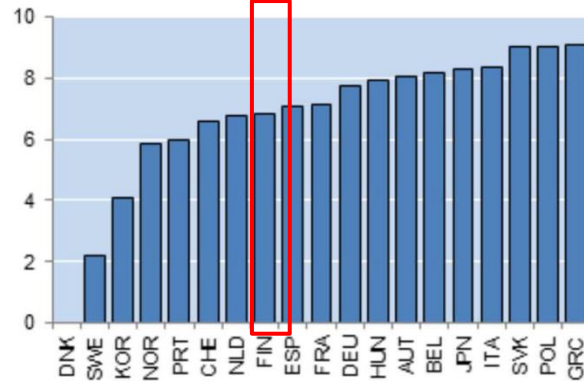
B. Stringency of Employment Protection Legislation



C. Cost of Bankruptcy Legislation for Entrepreneurs



D. Access to Early Stage Venture Capital



- Cross-country gains to aggregate labour productivity from reforms to best practice level of four policy variables that partly explain cross-country industry differences in the size of national frontier (NF) firms, relative to global frontier (GF) benchmark (Andrews *et al.* (2015))
- Huge gains in reforming **employment protection legislation**, and improving **access to early stage venture capital**



# The need for internationalisation (1)

---

## **Business Sector:**

- Finland has not been very successful in attracting FDI – compared to neighbours, especially Sweden and Denmark and MNE's participation in BERD is more than half the share reported in Sweden –according to 2013 data. The ratio of FDI to GDP in Finland is lower than Denmark and Sweden
- FDI can provide a link between Finland-based technological capabilities and the R&D performed by Finland-based MNEs outside the country.

## **Higher Education and Academic Research:**

- Finland has a relatively small share of international students: In 2014 only 19% of all doctoral students were international students, which is lower than in all the other Nordic countries and 8 percentage points lower than the OECD average.
- Finnish researchers co-publish with international co-authors only a little less than their counterparts in the other Nordic countries.



## The need for internationalisation (2)

---

(1) Integrate the Finnish innovation system (both business and public research) with global knowledge networks:

- Reinforce efforts to attract foreign R&D (foreign firms and institutions) through initiatives such as the creation of global Centres of Excellence in key areas (e.g. digitalisation; clean-tech and health-tech, etc.).

(2) Foster inward and outward mobility. Strengthen incentives for talent attraction:

- Establish a fund to head-hunt leading international researchers. This will involve competitive conditions to attract talents from abroad (both Finnish and foreign) and could be an integral feature of cooperative arrangements
- Ensure that immigration laws are conducive to attract talents, including timely and reasonable working permit conditions for foreign researchers and their spouses.
- Increase the proportion of higher education conducted in English.
- Open faculty recruitment to global competition, based on scientific excellence.