

RIETI BBL Seminar Handout

September 14, 2012

Speaker1: Andrew W. WYCKOFF (OECD)

Speaker2: Dominique GUELLEC (OECD)

<http://www.rieti.go.jp/jp/index.html>



INNOVATION IN THE ECONOMIC CRISIS AND BEYOND

Dominique Guellec
Caroline Paunov

Country Studies and Outlook Division
Directorate for Science, Technology and
Industry
OECD



Structure of the presentation

1. Innovation and the macro economy
2. Innovation in the current crisis
3. Policies
4. The Outlook for innovation?



3 key factors of the current business cycle for innovation

Downturn in Economic Activity



Weaknesses in Financial Systems



High Levels of Sovereign Debt



What to expect for innovation?

Two factors for aggregate innovation: *i)* innovation performance of the existing system and *ii)* firm dynamics/ entrepreneurship



Reduced demand for products

→ *competition (“creative destruction”)*

→ *resource reallocations*

Public budgetary situation

Reduced demand for products

→ *cash flows reduce innovation possibilities*

→ *demand for high-tech products*

→ *competition (“rents” for innovation)*



Reduced liquidities

Uncertainties

Public budgetary situation



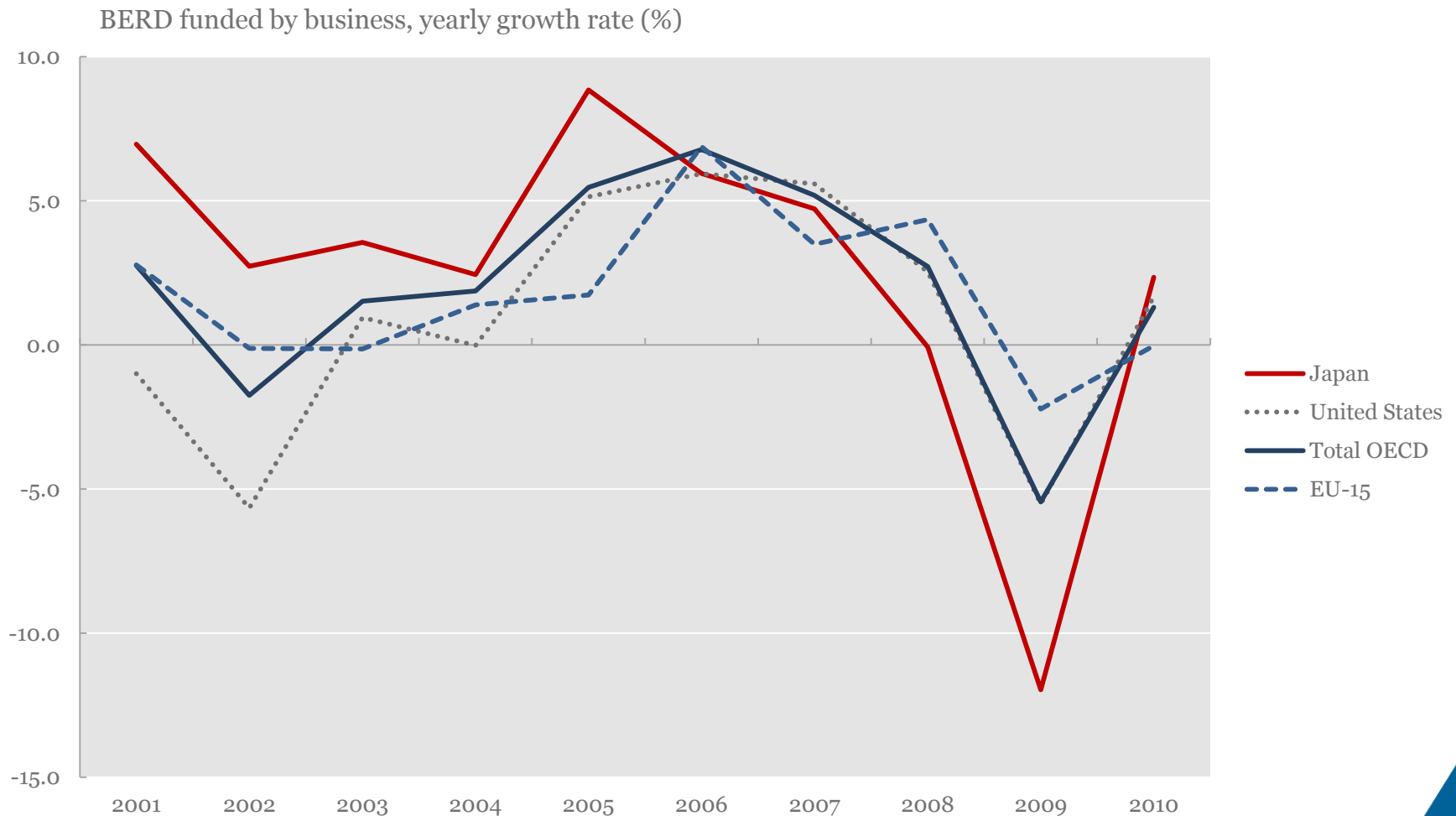
Innovation in the crisis and beyond

1. **The economic crisis that started in 2008 has negatively affected business innovation and R&D in all countries.**
2. **The crisis and the recovery have been uneven** across countries, industries and categories of firms.
3. **Some have featured better:** countries in Asia, including Korea and China; large multinational firms in high tech industries.
4. **VC, start ups and SMEs** have been hit the hardest, and have not recovered yet (entrepreneurship still low).
5. The crisis has **revealed and amplified** weaknesses (and strengths) which pre-existed, across countries, sectors and firms.





Business enterprise R&D has partially recovered after the 2008-9 shock



Source: OECD.

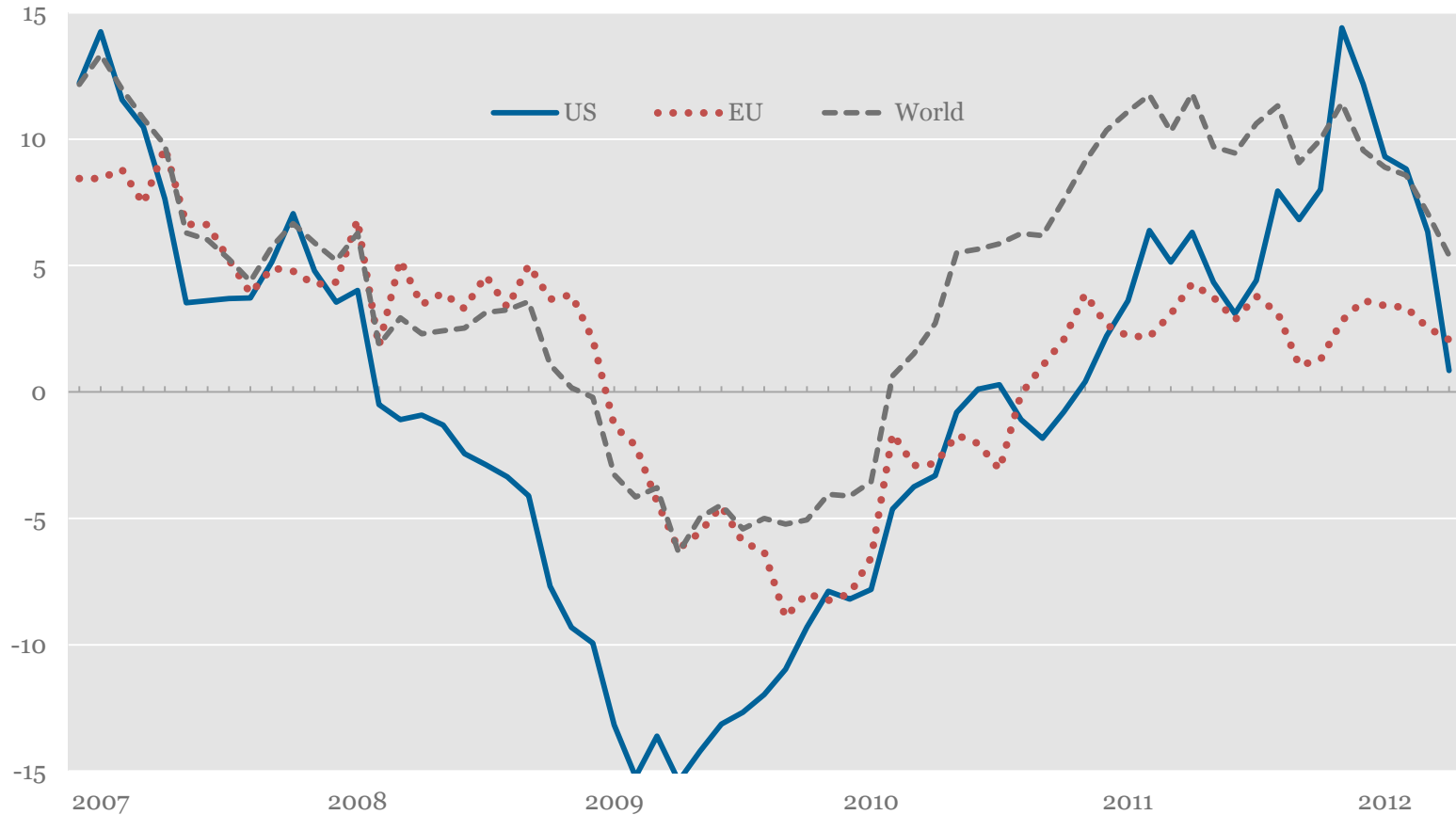


A deep through followed by a fragile recovery



Patent Filings are hit by the crisis

PCT Filings; 5 months moving average; yearly growth rates (%)

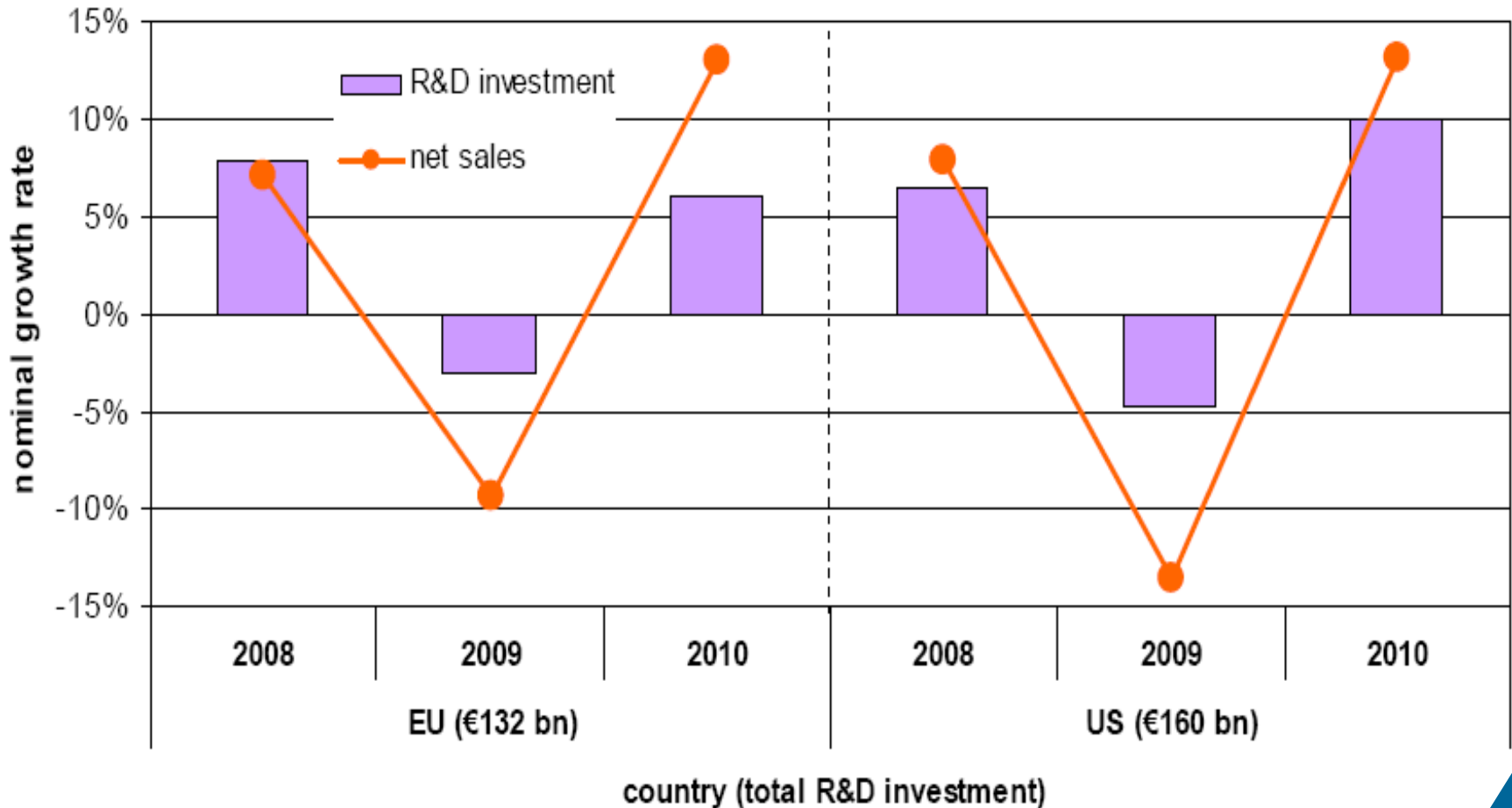


Source: WIPO.



Large firms have recovered quickly

Growth rates in R&D investments and sales of top EU and US corporate R&D investors, 2008-10 (%)

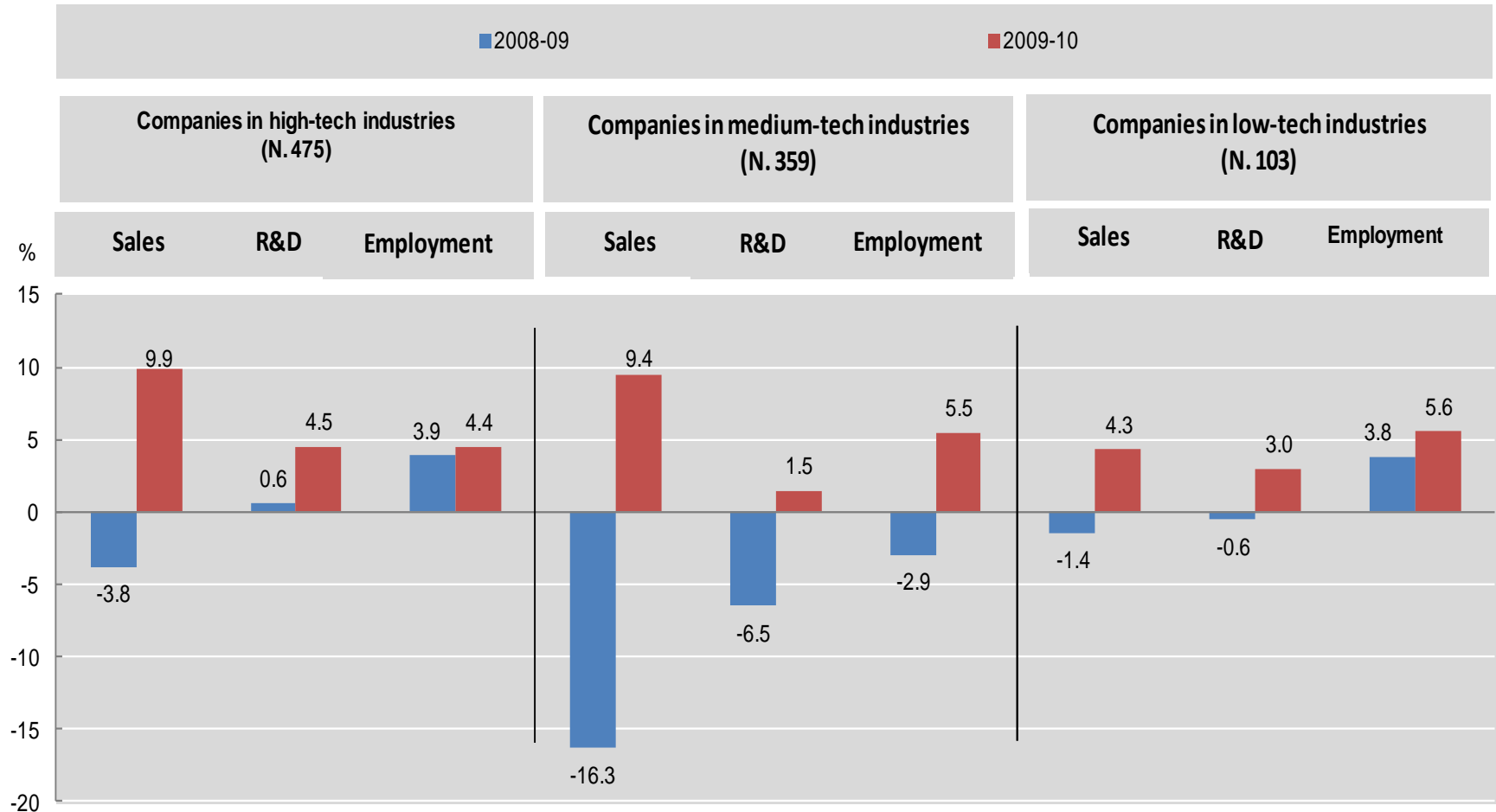


Source: EU (2011), R&D Scoreboard.



Large medium-tech manufacturers (e.g. automobile) have been hit strongly

Sales, R&D and employment growth for firms in high-, medium-high and low-technology industries, 2008-09 and 2009-10 (%)

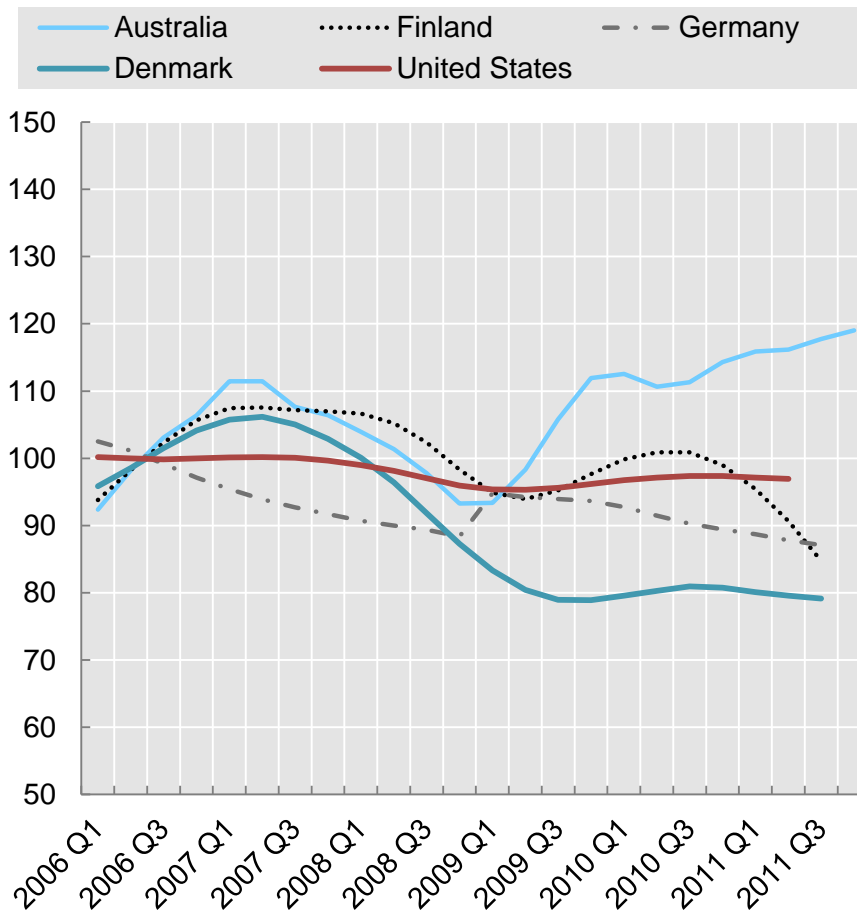


Source: *OECD STI Outlook 2012* based on EU (2011), R&D Scoreboard.

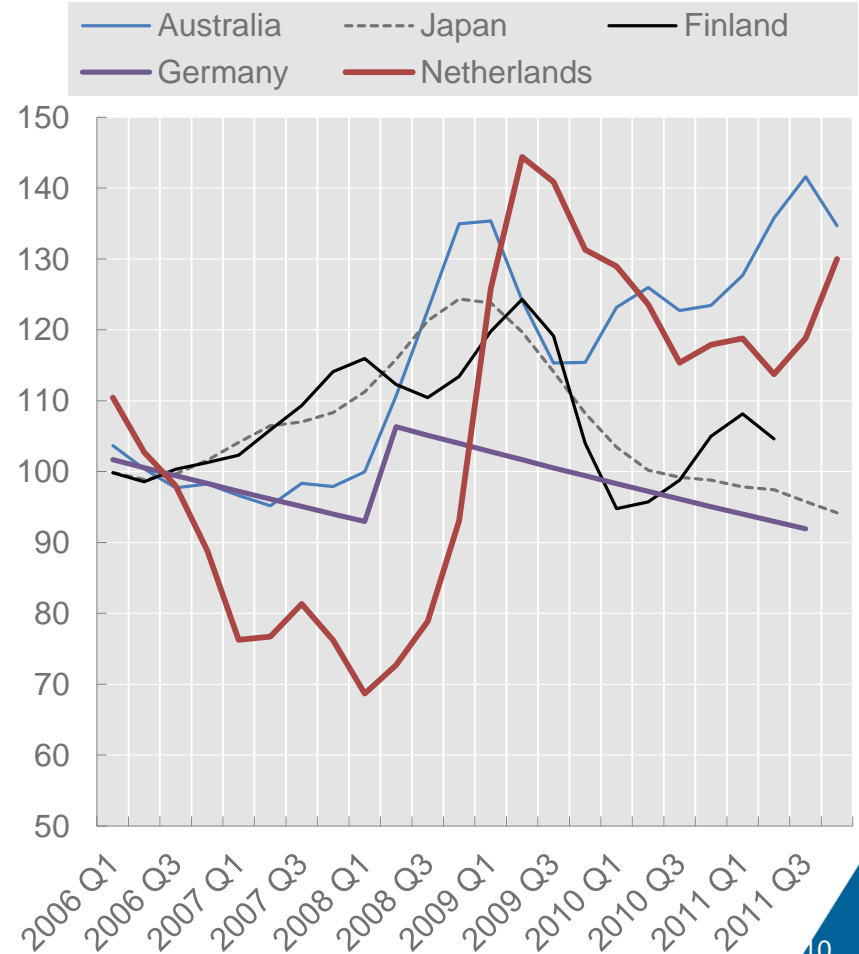


Business dynamics: More destruction than creation

Creation of new businesses



Bankruptcies



Source: OECD STI Outlook 2012 based on OECD (2012), *Entrepreneurship at a Glance*.



Venture Capital Investment has partially recovered in the US

Sum of deal value, quarterly amount, billion USD



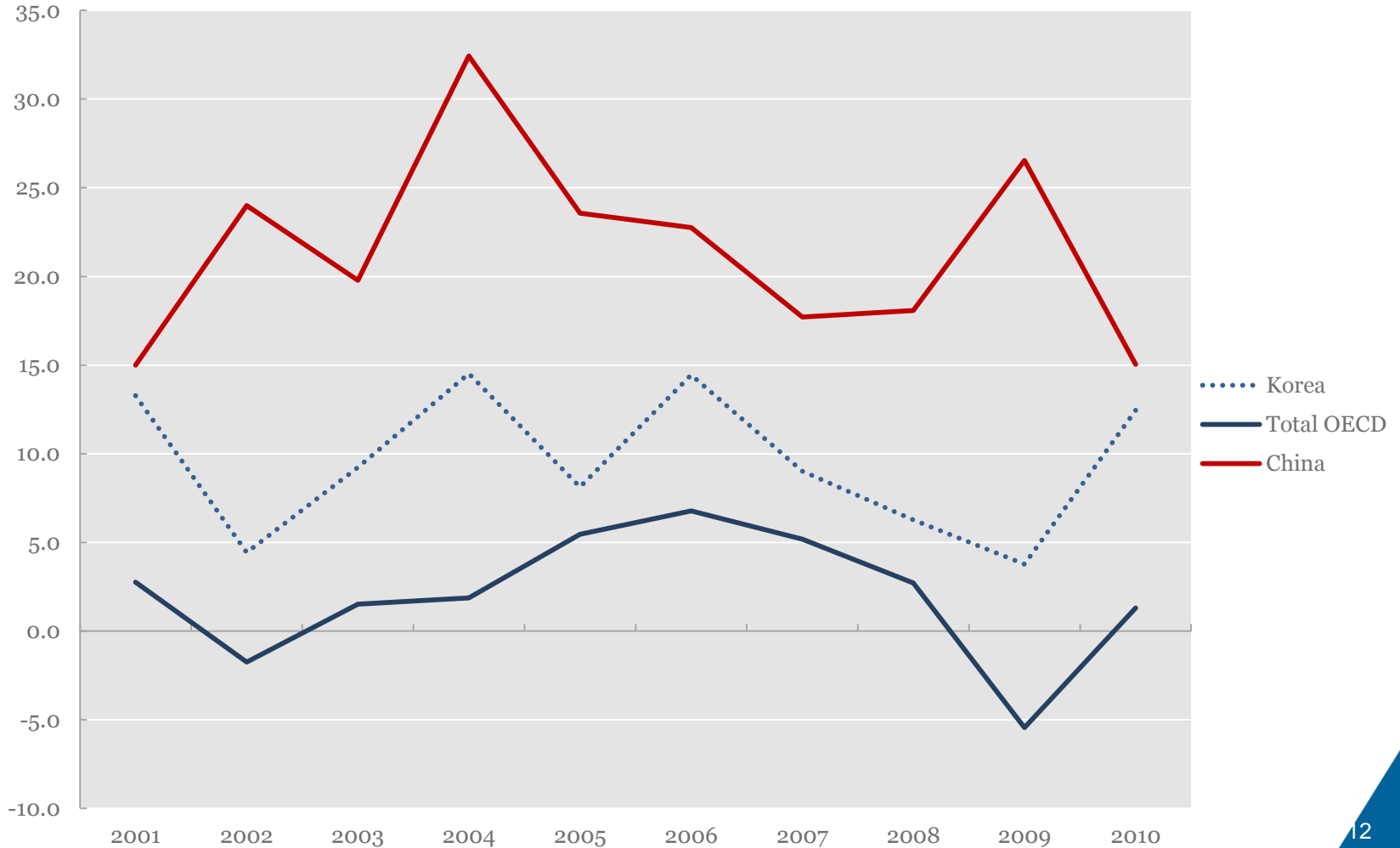
Source: Extracted from the *OECD STI Outlook 2012* based on Venture One, Money Tree.



Certain countries have better resisted to the crisis than others: China, Korea



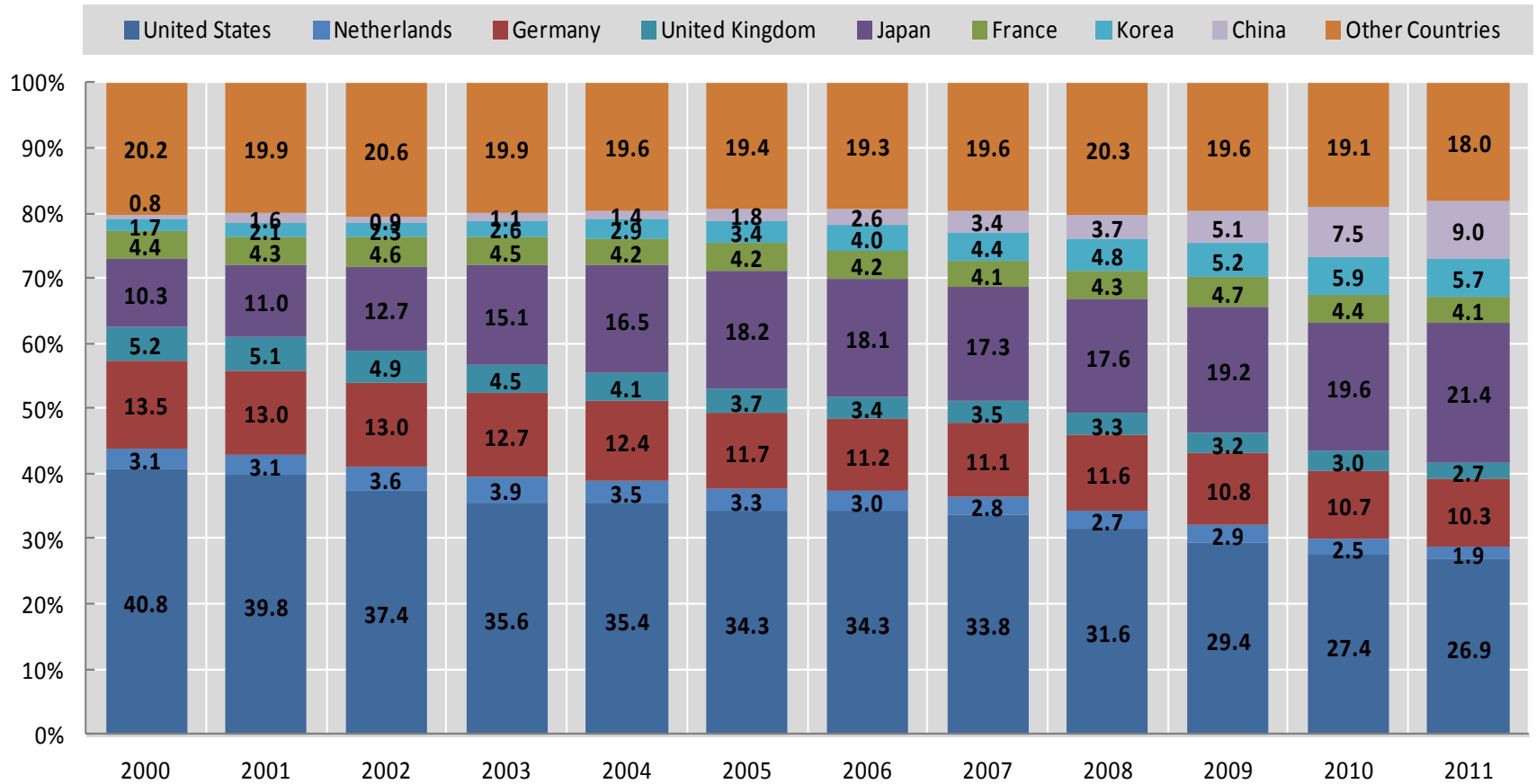
Business funded R&D, yearly growth rate (%)



Source: OECD, Main Science and Technology Indicators (MSTI) Database, June 2012.



An further step in the rise of the innovative strength of China and Korea



Source: OECD, STI Outlook 2012.



The policy reaction to the crisis

Policy responses: Recovery plans (2009) were heavily loaded in S&T and innovation related expenses.

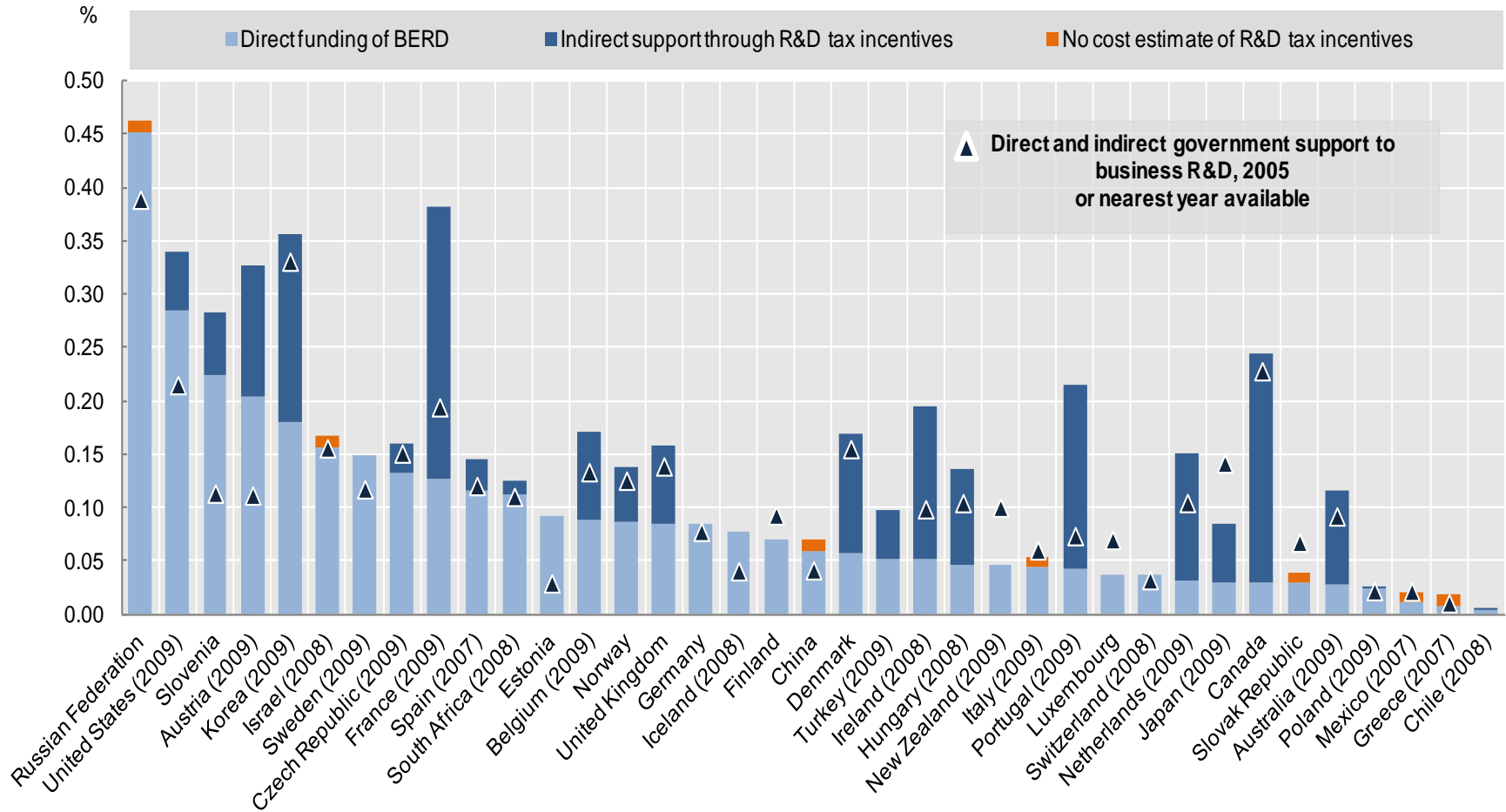
Examples of measures:

- Funding of public research organisations (accelerating ongoing projects);
- Loan guarantees to SMEs.
- Tax breaks for businesses performing R&D



Counter-cyclical STI policies

Government support to business R&D as % of GDP





Five sources of long-term risks for innovation-based growth in OECD economies!

1 Damages to human capital

- Depletion of available skills for innovation due to long-term unemployment
- Loss of valuable “tacit knowledge“ for firms with dismissals

2 Damages to investment

- Foregone investments affect future rate of innovations
- Possible “scars” to the innovation infrastructure, not for the big ones so far though

3 Relocation of innovation activities

- Probably takes much longer to materialise, yet if unequal growth performance persists there might be risks

4 Financial market conditions

5 Public support for innovation

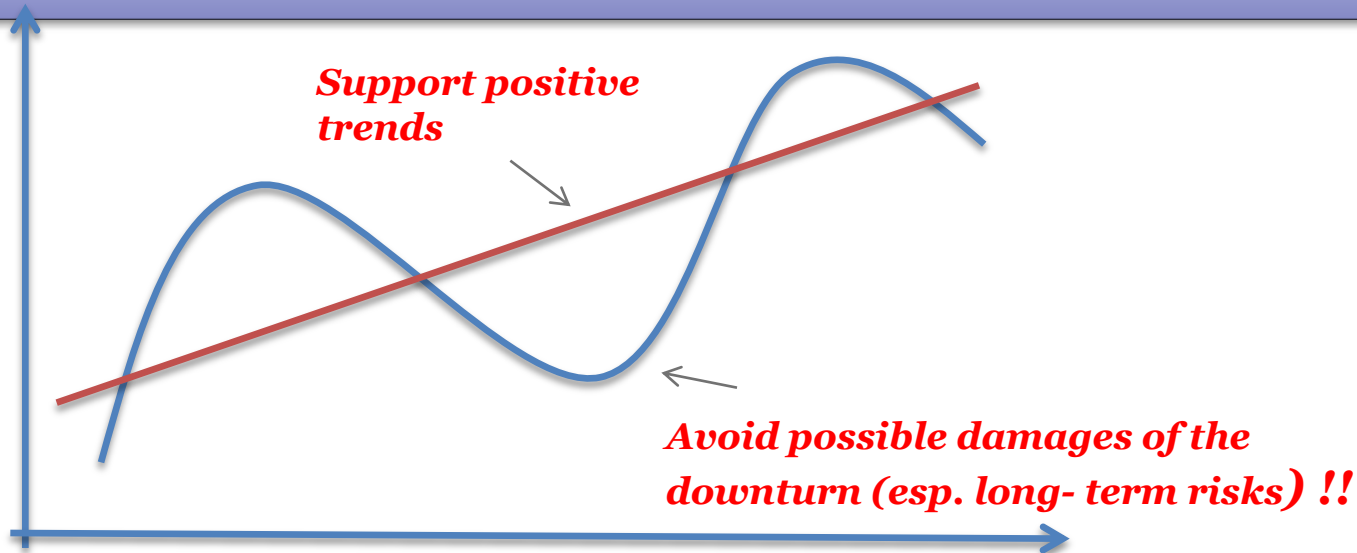


What about innovation policy?

While strong innovation performance contributes to raising growth prospects high levels of public spending in its support can be a challenge for tight budgets.



- seeking greater efficiencies in public sectors' innovation support
- concentrating funding in sectors of strategic relevance
- exploiting co-operative arrangements with the private sector





The Outlook for Innovation and public support to innovation?

Both constructive and negative forces at work in the coming years:

- The macroeconomic and budgetary picture will not be favourable. BUT:
- Innovation keeps a distinctive competitive factor in a globalised economy, both companies and governments are aware of that.
- Social and global challenges keep calling for more innovation
- Sustained opportunities in a number of industries: ICT, bio, nano



Thank you

[Oecd.org/sti/outlook](https://oecd.org/sti/outlook)

Dominique.guellec@oecd.org

Caroline.paunov@oecd.org