

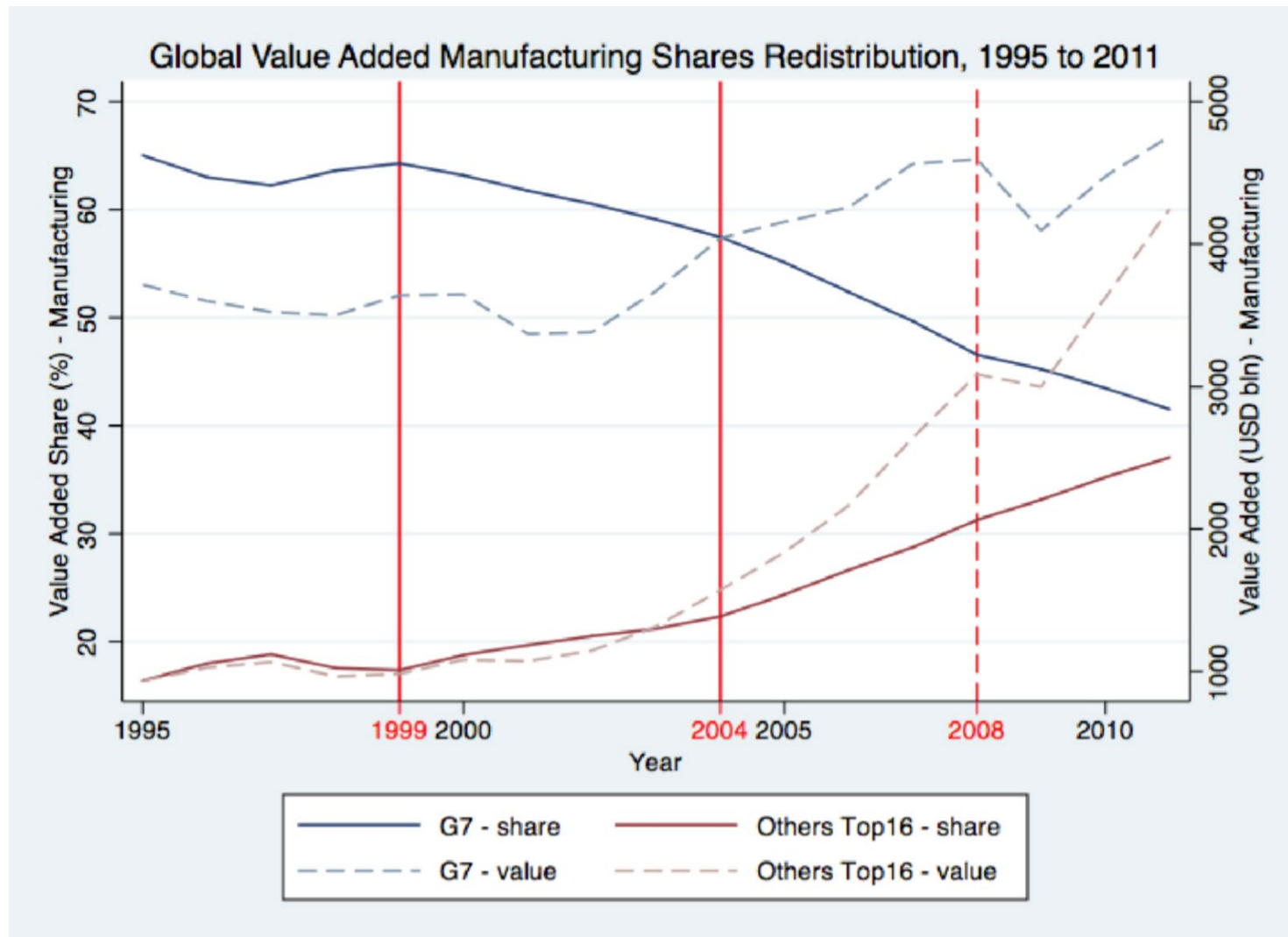
# Politica industriale: esperienze internazionali verso una roadmap per l'Italia

**Antonio Andreoni**  
**CNEL 17.9.2019**

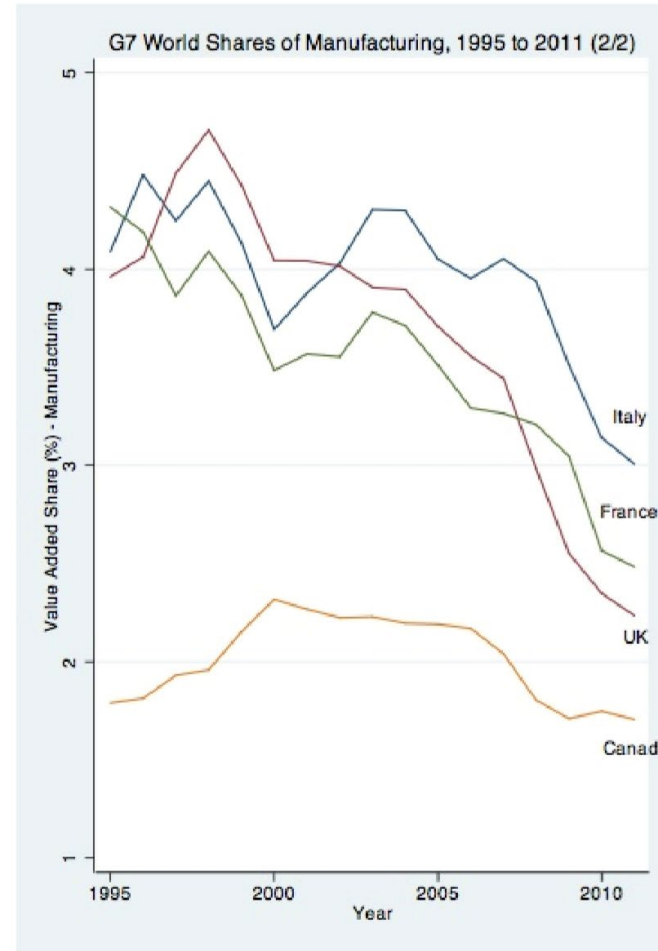
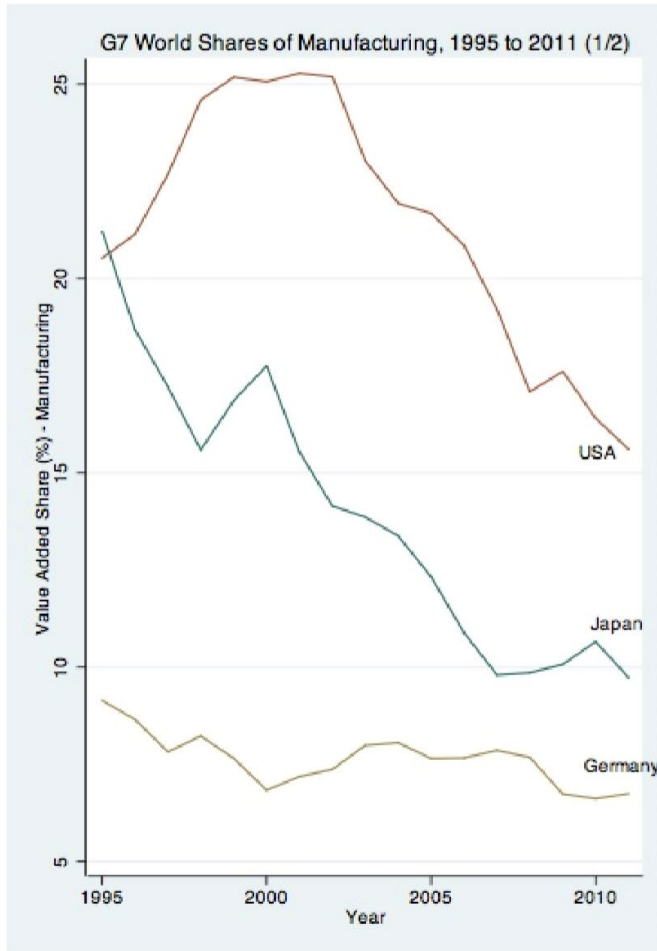
# Outline

1. Contesto globale di politica industriale
2. Tre game changers per la politica industriale
3. Trends di politica industriale in Europa e OECD
4. Approcci, quantum e strumenti di politica industriale in Europa: similarita' e differenze
5. Verso una roadmap per l'Italia

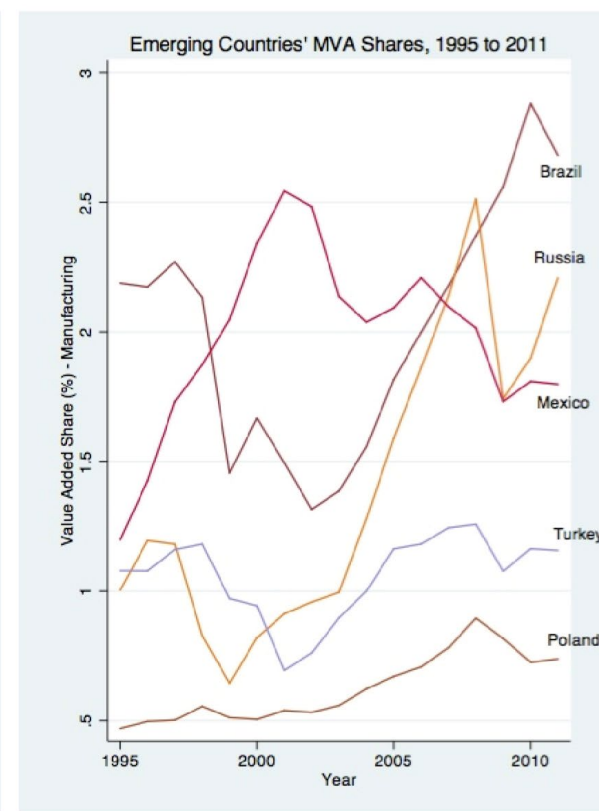
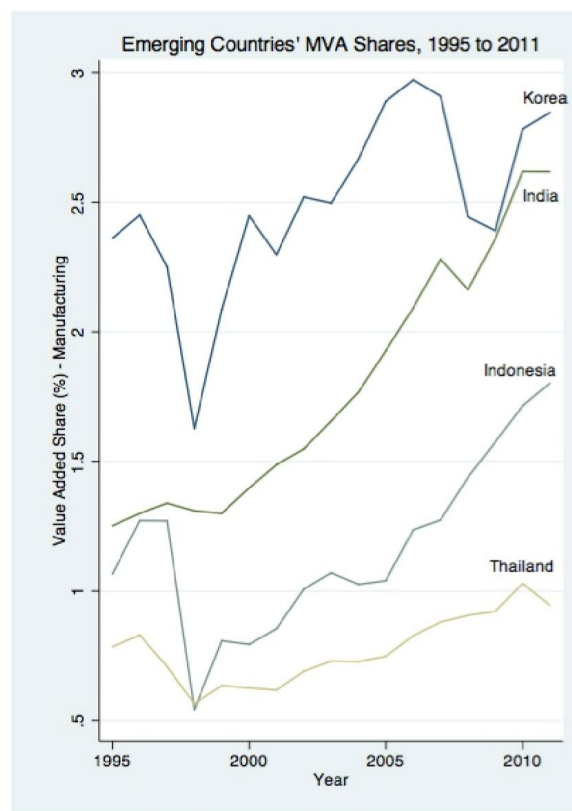
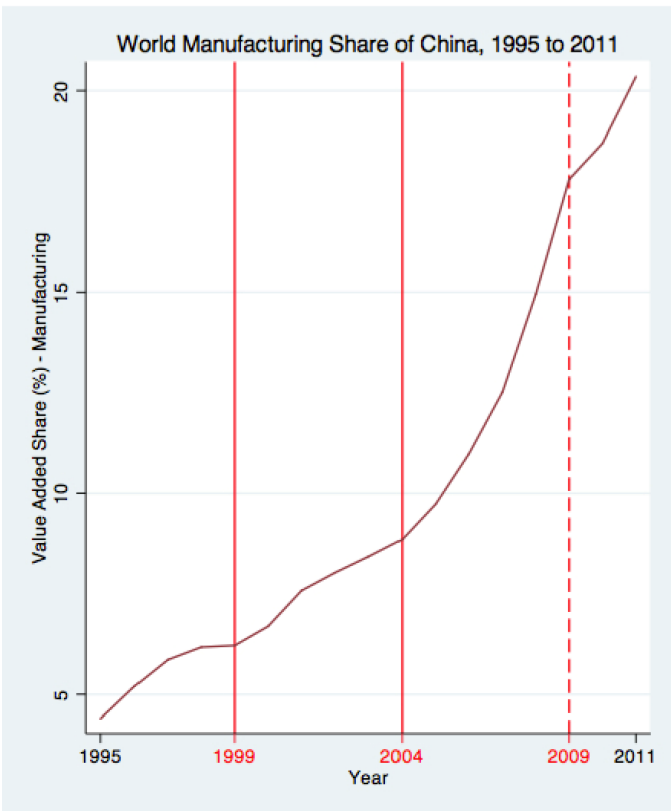
# Contesto globale di politica industriale



# Contesto globale di politica industriale: G7



# Contesto globale di politica industriale: Cina plus



# Game changer (1): scala e qualita' della PI

Salto di livello nella scala di politica industriale (investimenti e concentrazione) e entrata della Cina (e altri paesi) su settori manifatturieri avanzati



## Made in China 2025 The 10 key sectors



New information technology



Numerical control tools



Aerospace equipment



High-tech ships



Railway equipment



Energy saving



New materials



Medical devices



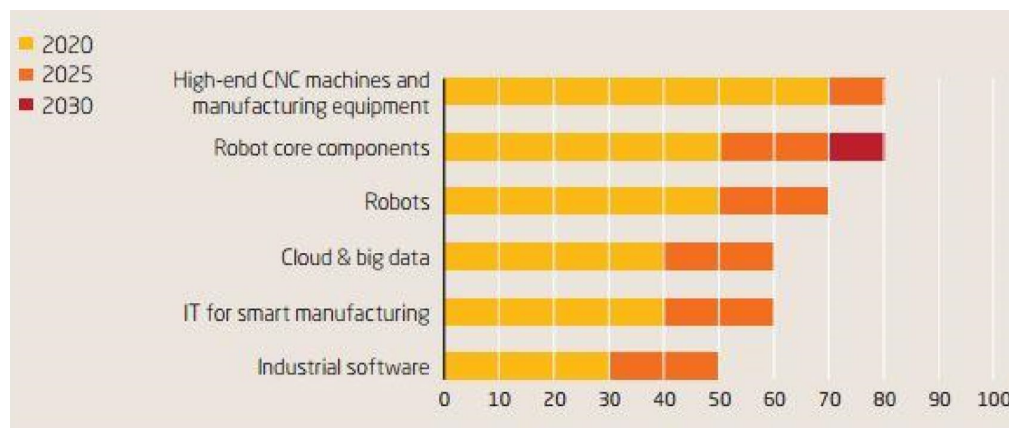
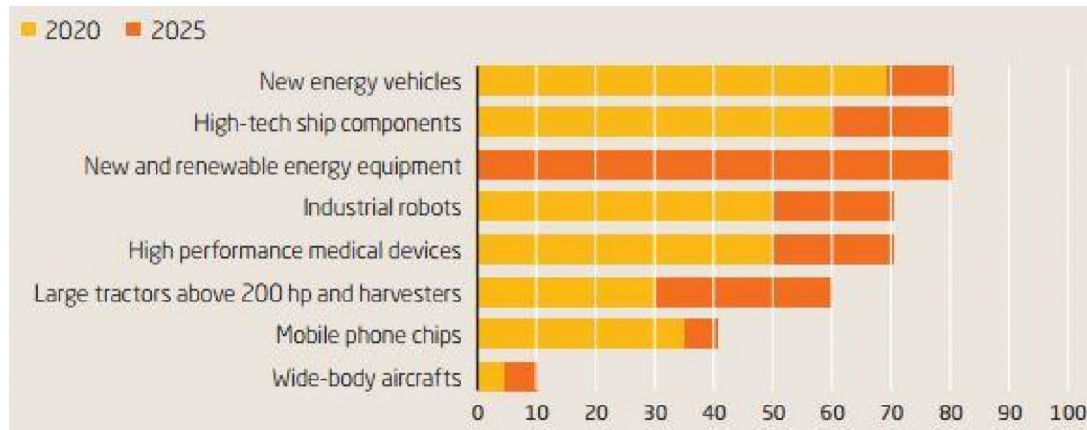
Agricultural machinery



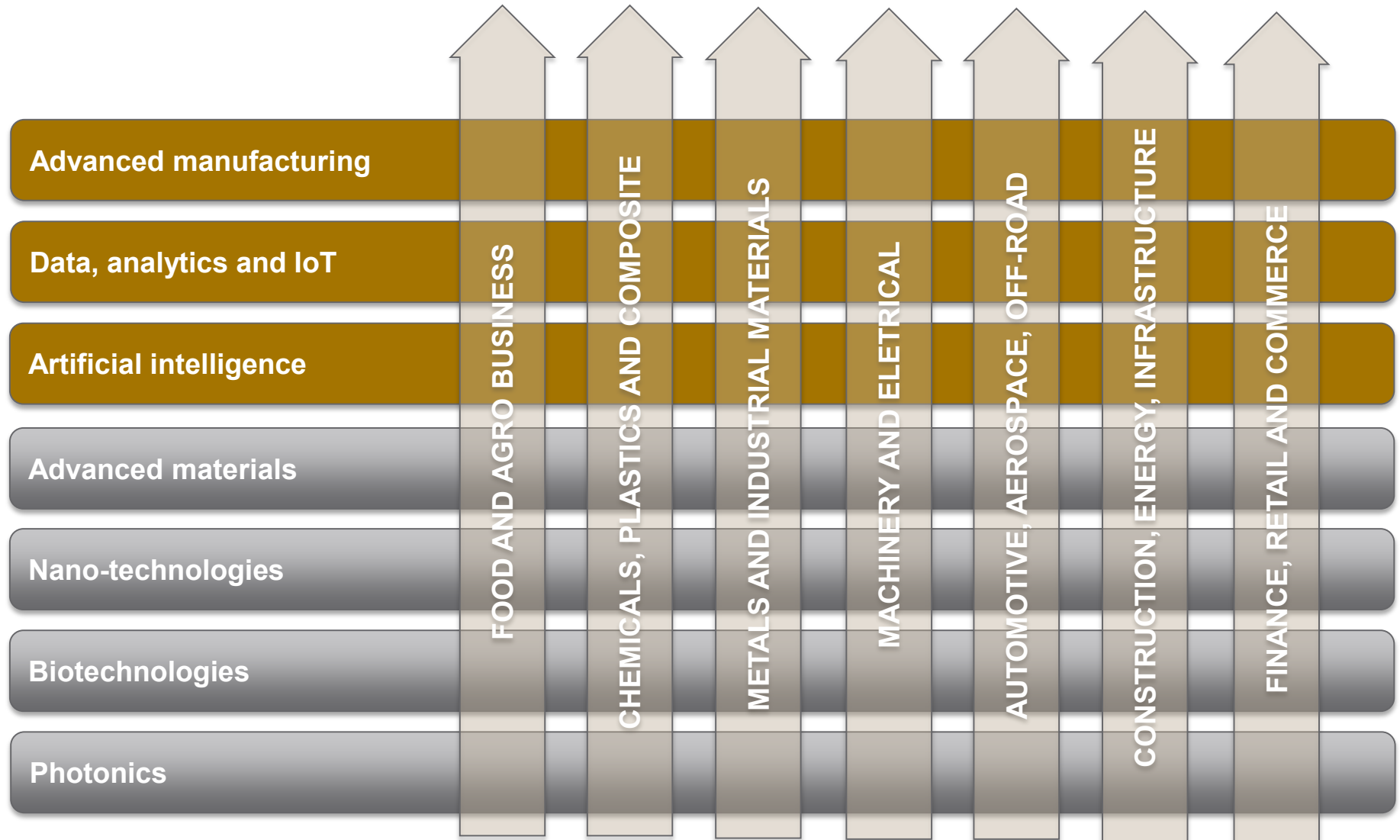
Power equipment

# Game changer (2): quali mercati/integrazione?

Chiusura dei mercati: politica commerciale degli US e politica industriale della Cina



## Game changer (3): Settori, piattaforme tecnologiche, ecosistemi?



# Leaders internazionali

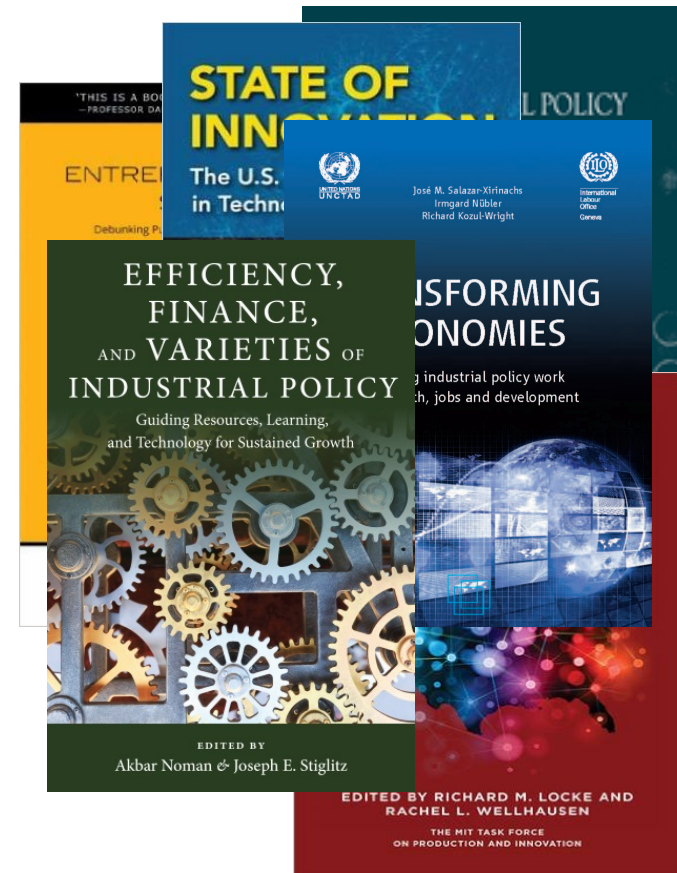
## 1. Esperienze internazionali

- Leaders globali: China, US

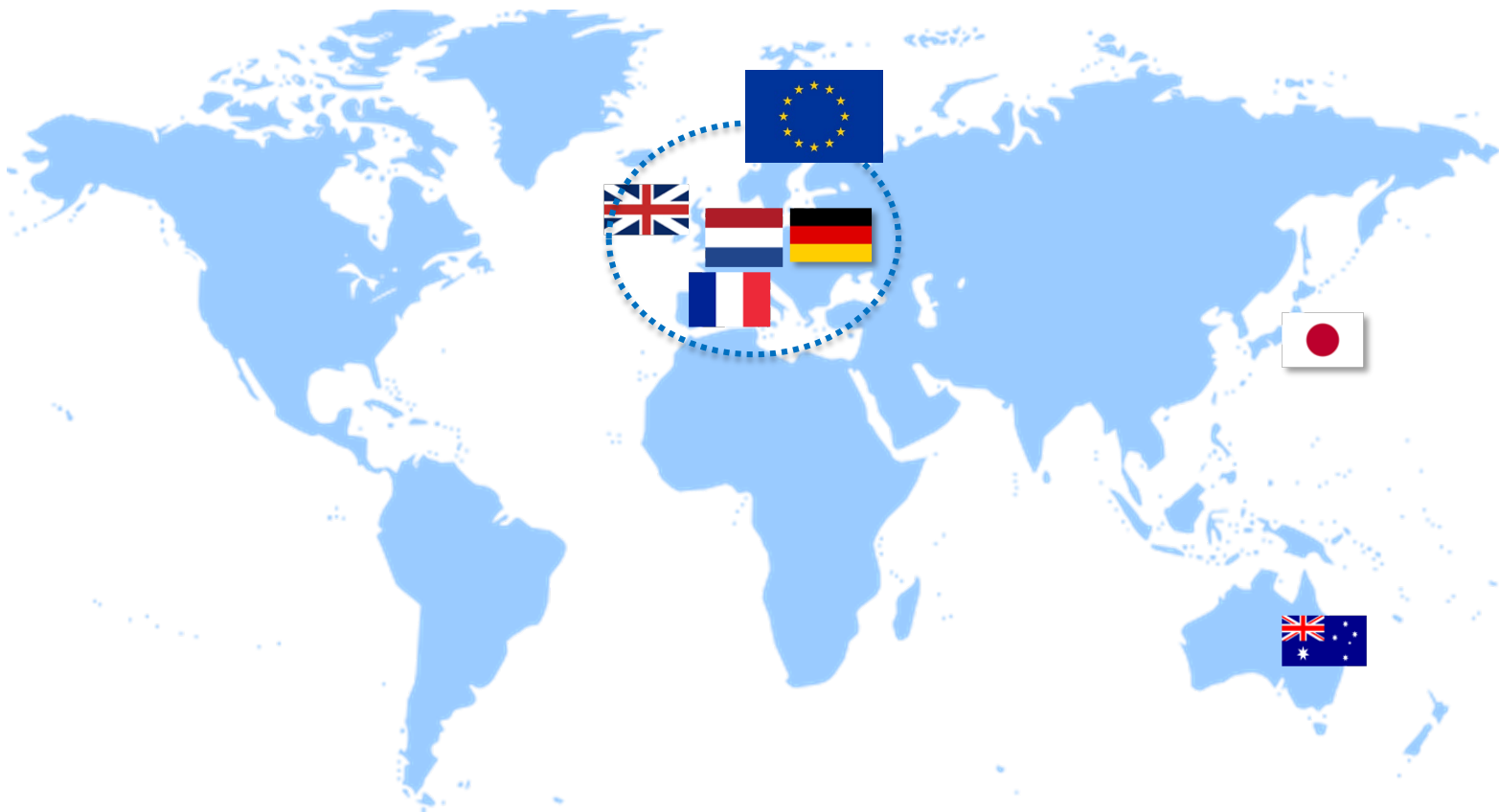
## 2. OECD: Japan, South Korea and others

## 3. Esperienze (multi-livello) europee

- Politica industriale europea (EU)
- Politiche nazionali (Germania, Francia e Regno Unito)
- Politiche regionali



# Esperienze internazionali di politica industriale



**Quali tecnologie, quali settori, quali strumenti?**

# Evidence on industrial policy across six OECD countries (2)

Selected countries	Emerging technologies and new technology systems			Strategic sectors
	Digital tech (ICT, IoT, M2M)	Biotech	Nanotech	
<b>Germany</b>	Advanced manufacturing systems (Industry 4.0) Big data, cloud computing & IoT Digital networking ICT for electric mobility IT security Autonomics	Bio-economy Advanced & functional materials	Microelectronics Energy storage	Mechanical engineering Energy and renewables Bio-economy Sustainable agriculture Health Intelligent mobility Electric cars Buildings and city of the future
<b>Japan</b>	Big data, cloud computing & IoT Sensors and human interface Robotics Ecological IT equipment	Innovative pharmaceuticals	Nano-technologies	Agriculture, forestry & fisheries Medical care Robotics Energy beyond nuclear Smart mobility Creative industries

# Quali tecnologie, quali settori?

Selected countries	Emerging technologies and new technology systems			Strategic sectors
	Digital technologies (ICT, IoT, M2M)	Biotech	Nanotech	
<b>Australia</b>	Big data, cloud computing & IoT  Quantum computing  Cyber security	Biotechnologies	Quantum tech	Gas Mining services Medical devices Pharmaceuticals Food processing Agriculture
<b>France</b>	Big data, cloud computing & IoT  Embedded software and systems  Energy storage Digital Healthcare Industrial plant of the future Augmented reality Robotics Supercomputers Cybersecurity Driver-less vehicles	Plant-based proteins Plant-based chemistry Nano-biotech Bio-informatics Medical biotech Green materials, chemical and biofuels Metals recycling	Nano-electronics Energy storage Electric planes	Healthcare & Personalised medicine Medical device Silver economy Smart textile Smart grids Thermal renovation of buildings Renewable energies Environmental friendly ships Universal cars Heavy-lift airships High-speed train Universal cars

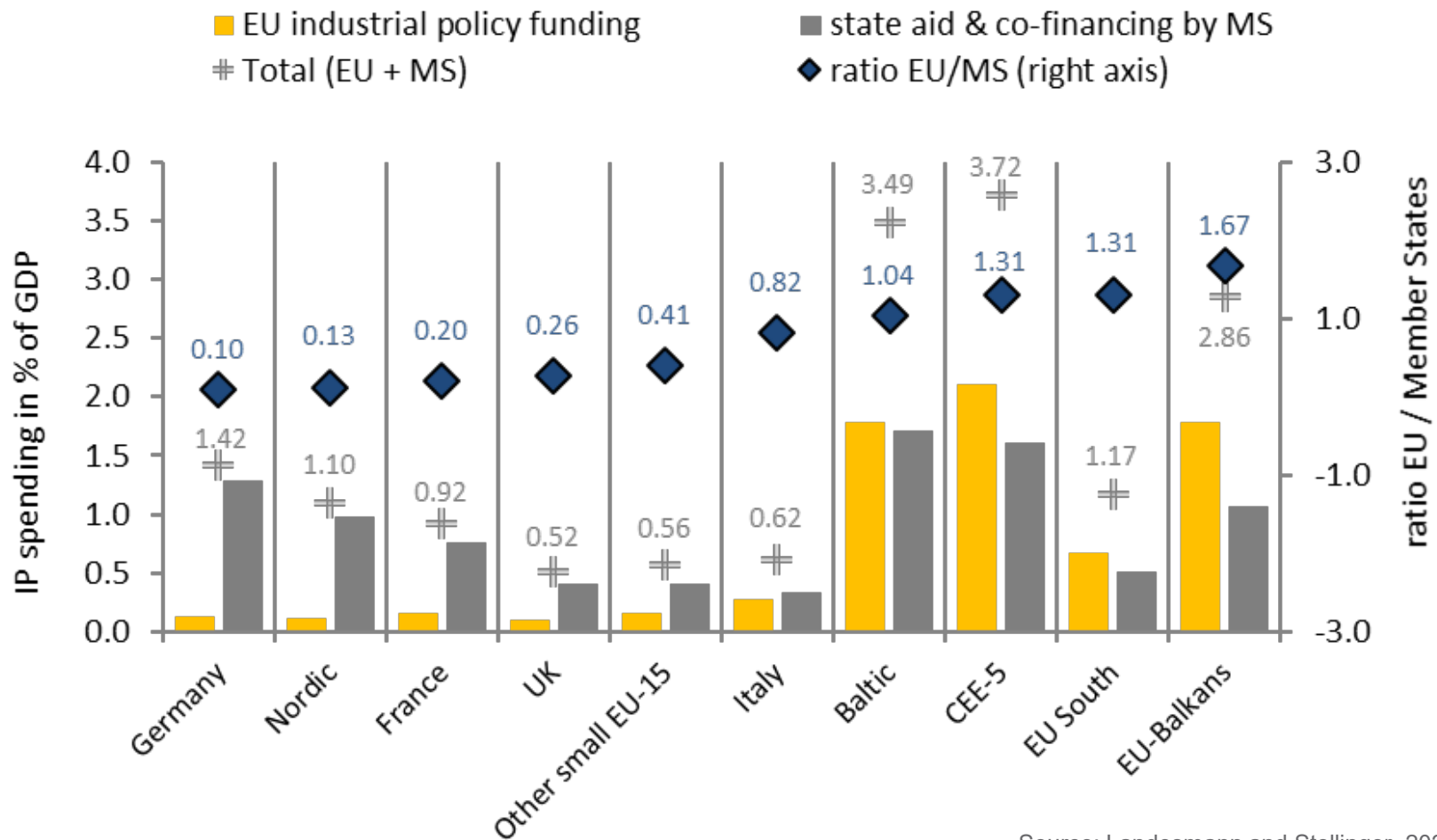
# Evidence on industrial policy across six OECD countries (1)

Selected countries	Emerging technologies and new technology systems			Strategic sectors
	Digital tech (ICT, IoT, M2M)	Biotech	Nanotech	
<b>Netherlands</b>	<ul style="list-style-type: none"> <li>Big data, cloud computing &amp; IoT</li> <li>Smart industry</li> </ul>	<ul style="list-style-type: none"> <li>Advanced &amp; functional materials</li> <li>Regenerative medicine</li> </ul>	<ul style="list-style-type: none"> <li>Nanotechnologies</li> <li>Advanced &amp; functional materials</li> <li>Quantum tech</li> </ul>	<ul style="list-style-type: none"> <li>Personalised medicine</li> <li>Life sciences</li> <li>Agro &amp; food</li> <li>Horticulture</li> <li>Logistics</li> <li>Water</li> <li>Creative industries</li> <li>Smart cities</li> </ul>
<b>UK</b>	<ul style="list-style-type: none"> <li>Big data and knowledge based automation</li> <li>IoT</li> <li>Sensors</li> <li>Energy efficient computing</li> <li>Satellites &amp; space applications</li> <li>Robotics &amp; autonomous systems</li> <li>Energy storage</li> </ul>	<ul style="list-style-type: none"> <li>Biotechnologies</li> <li>Advanced &amp; functional materials</li> <li>Synthetic biology</li> <li>Graphene</li> <li>Regenerative medicine</li> <li>Agri-science</li> </ul>	<ul style="list-style-type: none"> <li>Nanotechnologies</li> <li>Advanced &amp; functional materials</li> <li>Quantum tech</li> <li>Energy storage</li> </ul>	<ul style="list-style-type: none"> <li>Aerospace</li> <li>Automotive</li> <li>Life Sciences</li> <li>International Education</li> <li>Business services</li> <li>Information economy</li> <li>Creative industries</li> <li>Construction</li> <li>Agriculture tech</li> <li>Oil and Gas</li> <li>Nuclear</li> <li>Off-shore wind</li> </ul>

## Approcci di politica industriale: similarita'

- **Politiche settoriali** per settori avanzati, e per una ristrutturazione innovativa dei settori tradizionali
- **Creazione di nuovi settori e mercati** con investimenti sulle tecnologie digitali trasversali (ben oltre fallimenti di mercato!)
- **'Picking missions'**
  - come strumento di coordinamento sistemico
  - con particolare attenzione alla transizione energetica
  - ma attenzione al design e implementazione (e.g. EU)<sub>14</sub>

# Quantum di politica industriale: differenze nazionali



# Quantum di politica industriale: prioritá'

Industrial Policy Field	EU Industrial Policy	State Aid by Member States
	Absolute amounts (in EUR bn)	
Ecological Transformation	0.29	51.90
Employment, Education, Training	0.44	3.13
Infrastructure	1.44	0.00
RDI and Technology	7.47	9.07
Regional Policy	40.96	11.13
SME Support	0.09	4.68
Sectoral Industrial Policy	1.32	7.02
Other	0.00	12.33
<b>TOTAL</b>	<b>52.01</b>	<b>99.25</b>

**EU Green New Deal**

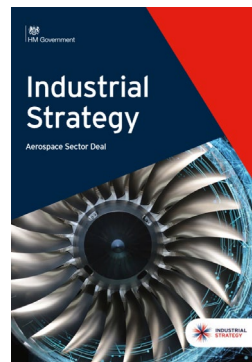
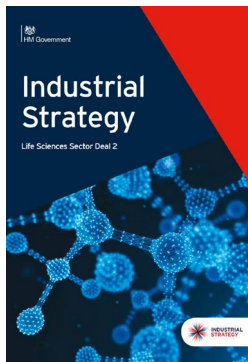
**“becoming the world first climate-neutral continent”**

**Leveraging EU regulatory power  
Carbon Border Tax**

# Strumenti di politica industriale: differenze (1)

## UK

- Creazione del **Department for Business, Energy & Industrial Strategy** (BEIS).
- **National Productivity Investment Fund** (37b) lancio nel 2016.
- **Industrial Strategy: Building a Britain fit for the future**” – accompagnata da **sector deals** e allocazione di fondi/matching grants per supporto ricerca avanzata (**picking companies**)



## Germany

- **High-Tech Strategy 2006 – 2013** (27b)
- **New High Tech Strategy 2014-17**
- Approccio integrato, con **allineamento di politiche tecnologiche, industriali e di finanziamento**
- Coinvolgimento dei campioni nazionali nella definizione delle linee strategiche (**acatech**)
- **Missioni industriali**



# Strumenti di politica industriale: differenze (2)

## UK

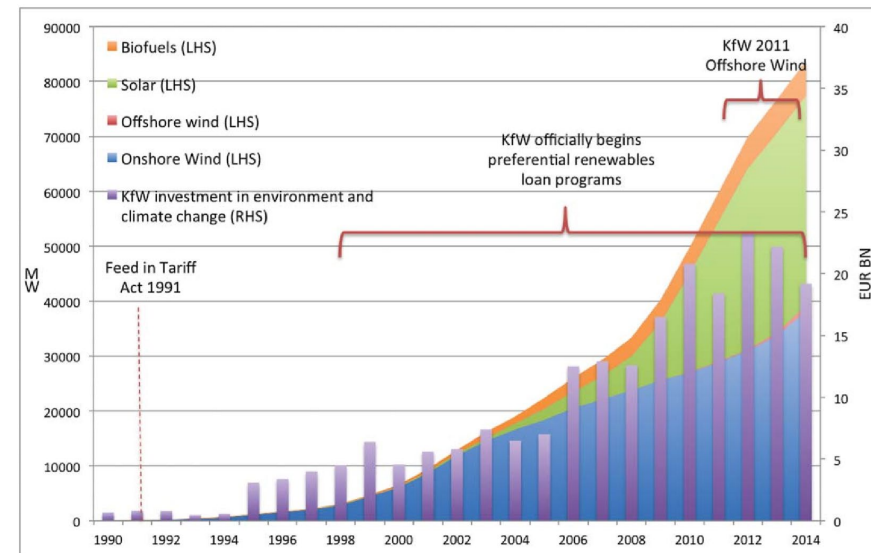
- Incentivi fiscali
- Investimenti nella ricerca di base



- CATAPULTS (sul modello Fraunhofer)
- LEPs e vouchers
- British Business Bank

## Germany

- KfW (total asset > 3% GDP)
- Fraunhofers (67 istituti >2b py), Allianz Industrie Forschung – AIF (100 istituti)



# Campioni nazionali (e EU) e 'corporate governance' come politica industriale: differenze (3)

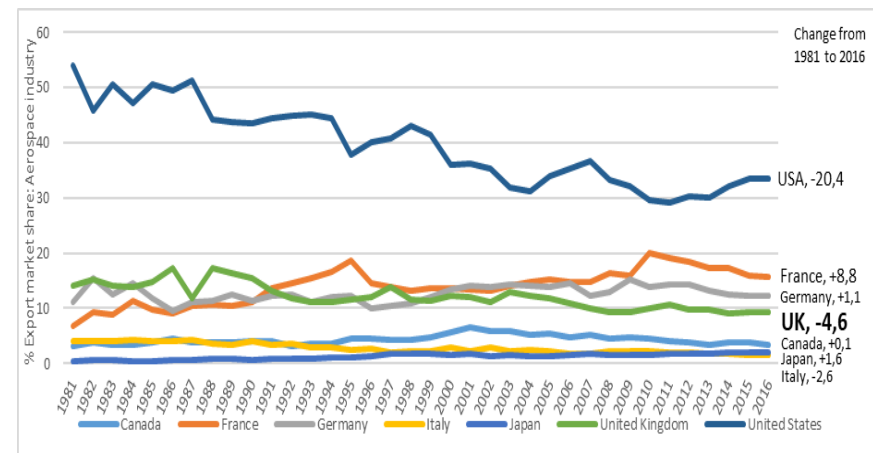
## UK

- Apertura ai take over/soft corporate governance > finanziarizzazione delle grandi imprese e disarticolazione industriale



## France / Germany

- Difesa/Controllo/Creazione di "national" and "EU-level" champions come integratori di sistema



## Verso una roadmap “strategica” per l’Italia

- Missioni come strumento di coordinamento e consolidamento delle risorse, ma con approccio strategico per rinnovare il sistema industriale
- Digitalizzazione come opportunità, ma non panacea
- Andare oltre incentivi generici e focus su start-ups, più servizi tecnologici, finanza industriale e uso strategico delle imprese partecipate
- Continuità e coordinamento (multi-level)
- Imparare da esperienze internazionali, ma anche da quelle nazionali (Emilia Romagna per esempio)