

RENEWING EUROPEAN INDUSTRIAL POLICY

A French perspective of theory and practice

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pour la recherche en économie

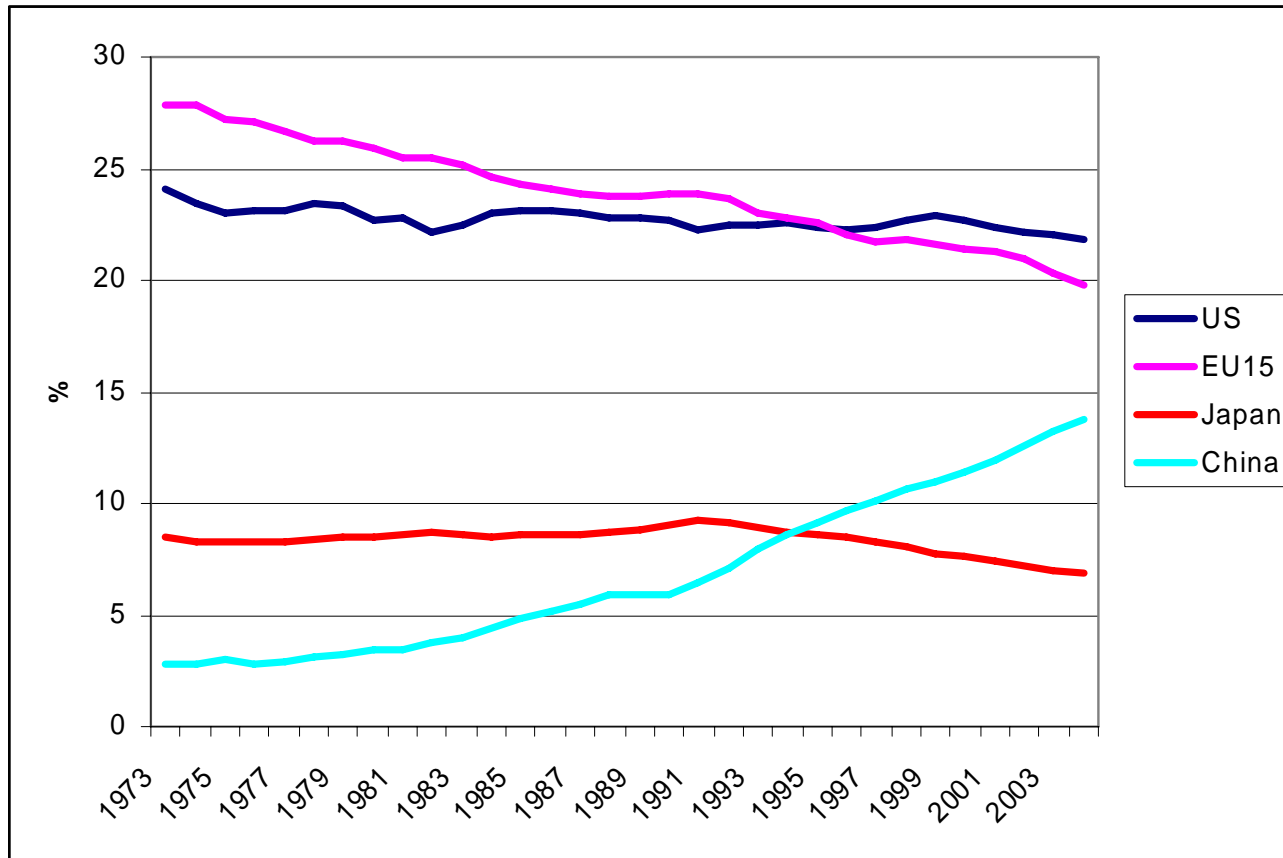
Plan

- I. A brief report on the state of industry in Europe: the prerequisites for defining industrial policy
- II. The goals of an industrial policy: institutional complementarity in knowledge production
- III. The specificity of the French case and the ambitions for the European partnership

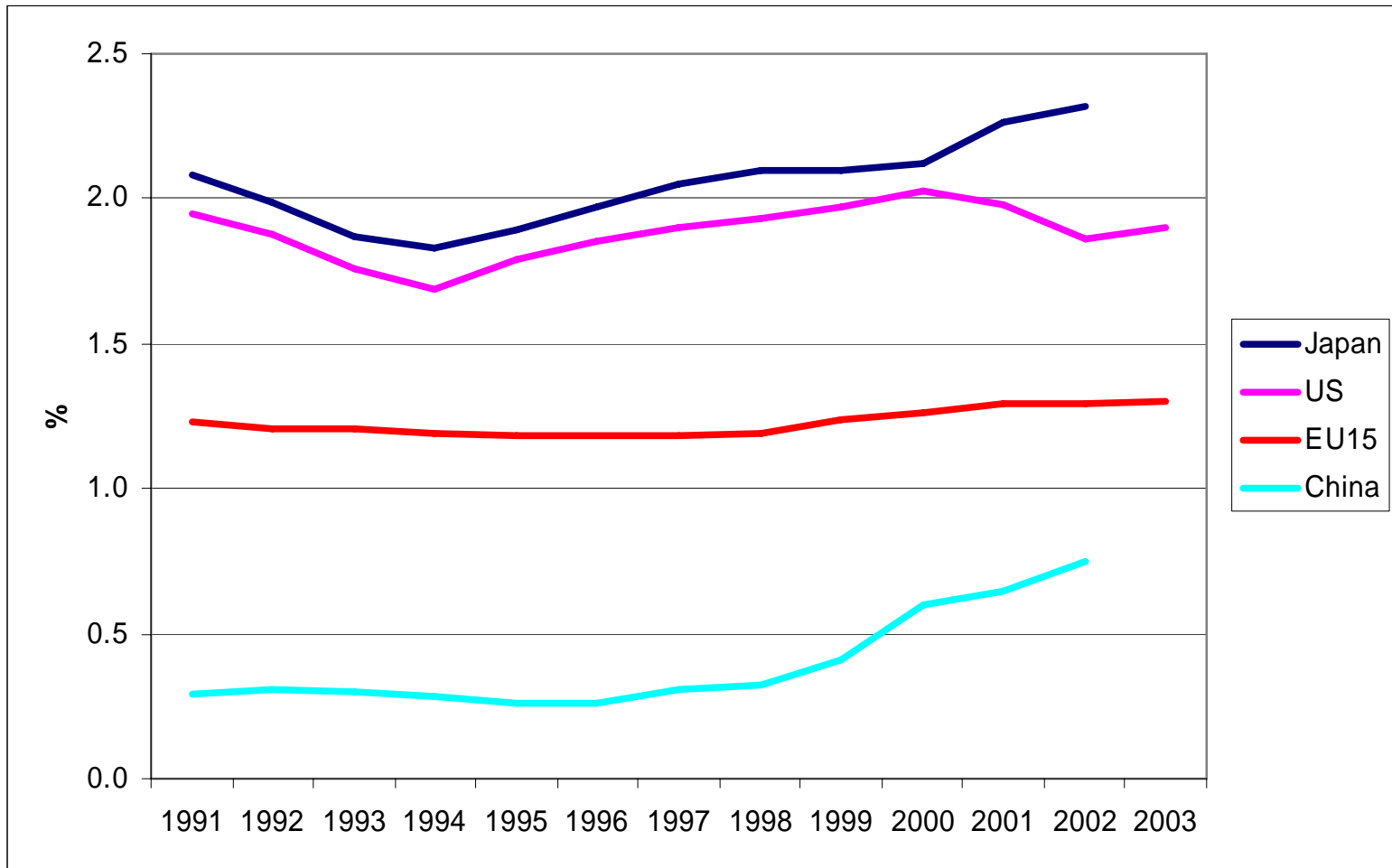
I. All about knowledge ? a historical background

- From public to private goods: definitional issues
 - *Science: non-rivalry and non-excludability*
 - *Technique*
 - *Technology*
 - *Innovation*
- From labs to markets
- French science in crisis: a solution for innovation but not for knowledge.

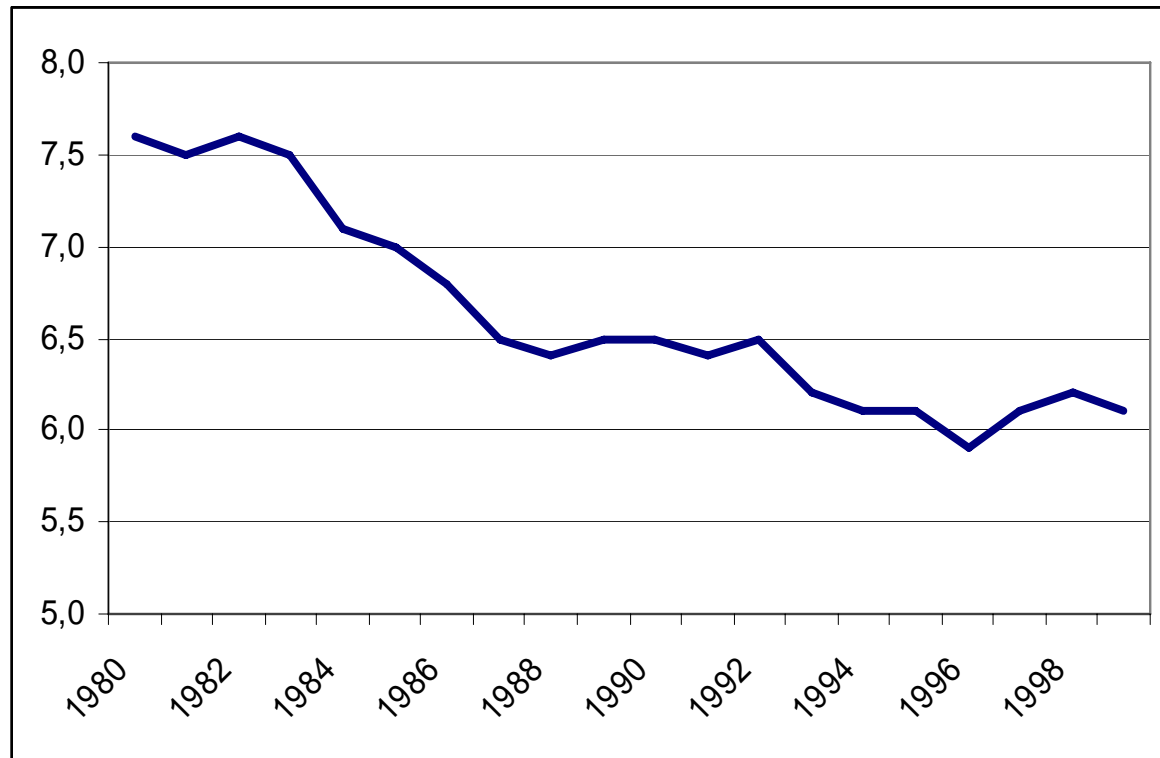
European Union (15) in World GDP



Private R&D Spending as a % of GDP

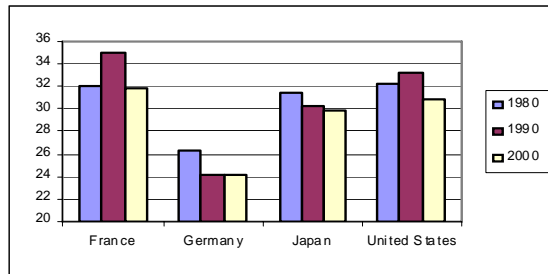


manufacturing industries of 15 OECD countries (source: OECD)

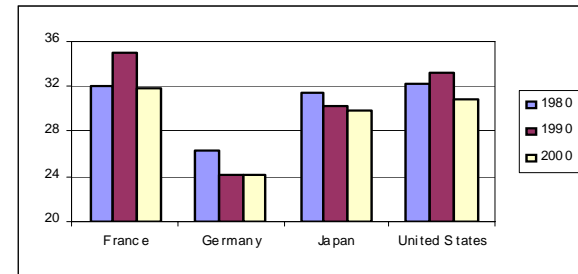


industry type to industrial added value: four cases

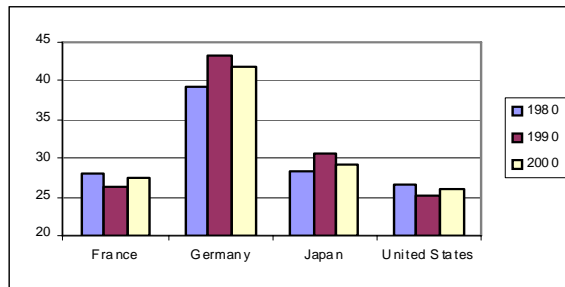
Low technology industry



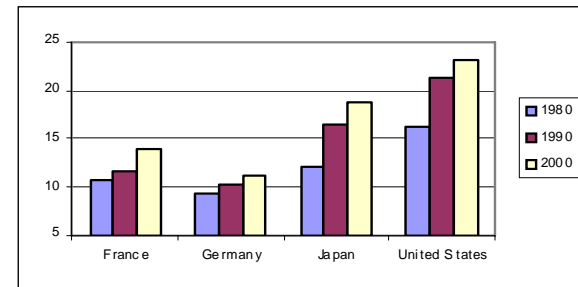
Low-medium technology industry



Medium-high technology industry

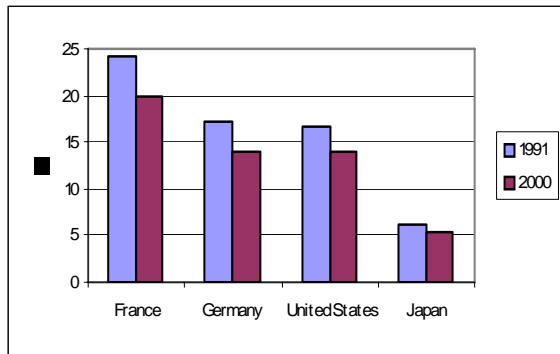


High technology industry

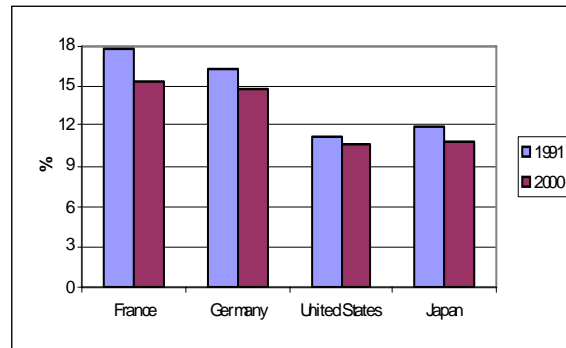


Structure of manufacturing industry exports

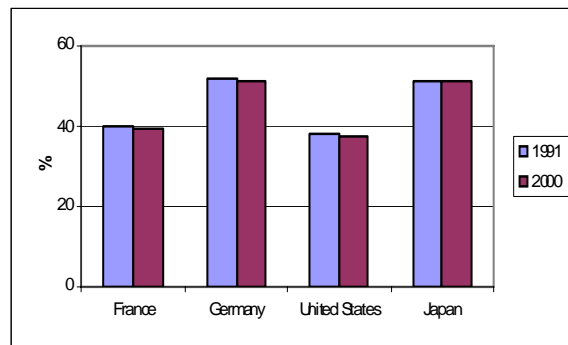
Low-tech industry



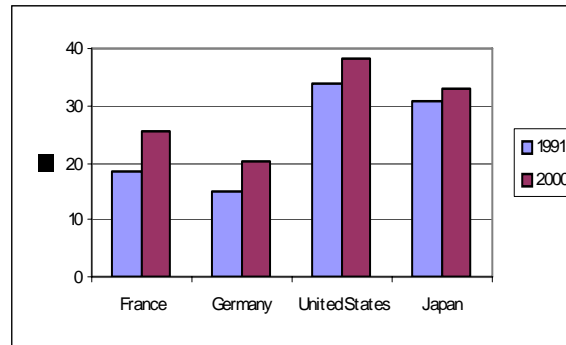
Low-tech industry



Mid-high-tech industry



High-tech industry



II. Economic justifications for targeted industrial policies

Market failures:

- ❑ The first justification relates to **problems of coordination and information dissemination, amongst all the agents**, that bedevil the industrial analysis of technologies. The fine-tuning of large-scale industrial innovation requires the coordination of the skills of different firms and different public research agents. An institutional framework is most often necessary in order to guarantee this coordination.
- ❑ The second justification is **the existence of externalities**, that is to say, global outcomes related to research into new technologies, that are not taken into account by firms. R&D efforts have secondary outcomes, that are difficult to forecast, but that increase the productivity of numerous industries.
- ❑ The third justification is the existence of very **heavy initial costs, long-term horizon and high risks in research** and development activities. Financial markets are not efficient in enabling the financing of such projects under these conditions, because the risks cannot be hedged over the time horizons involved.

The three effects highlighted above induce under-investment in long-term projects with high R&D intensity. The State must therefore play an incentivizing role.

New high technology activities in Europe

- High initial investment
- Coordination among multiple public and private actors
- Long run horizon
- High risk

Causalities

- Market failures and under-investment in new high tech industries

The US and Japan

United States : Substantial amount of public money given to the *public* and *private* sectors to increase R&D.

Japan : Coordination among government, private firms and public research institutes; significant support for public R&D.

III. A new tool specific to the French innovation system

Goals

- Stimulate investment in high tech industries and enhance R&D spending;
- Increase the risk taken by private firms
- Use of private information and market incentives

Selection Procedure

- Market-oriented program
- A bottom-up process

- Transparent selection procedures

Selection criteria

- **Proposal by a consortium of industrial companies**
- **Significant targeted share of a potentially large future world market (1-10 billion €)**
- **Disruptive technologies as a large component**
- **Cooperative research (public research, small entrepreneurial companies, large potential clients)**
- **Project duration of 5 to 10 years**
- **Expected total R&D spending of 100 to 500 million €**
- **Financed up to 50% (subventions and repayable loans if program successful)**

European Coordination

The French Industrial Innovation Agency

- Agency relevant to the social system of innovation
- European firms can apply
- Cooperation among European firms must be stimulated
- Number of countries involved must not be a selection criterion

Relevance of European Level

- European initiatives to enhance R&D spending must have priority, *but*
- national initiatives (within or between countries) are welcome, as long as they do not distort european competition.

Franco-german initiatives

- Biophotonics
- Multimedia search engines
- Ultra high magnetic nuclear resonance