

## ***Understanding ...***

- 1. New Context***
- 2. New Effect / Aspect***
- 3. New Management***

## ***Structural Change in National Economy :***

**new industry :** promising new tech. opportunity #3

**broad national economic benefit #6**

**newly emerging key industries #7**

...

**new method:** industry leadership / sunset ... #6

**national plan #16**

**tech. roadmapping #20**

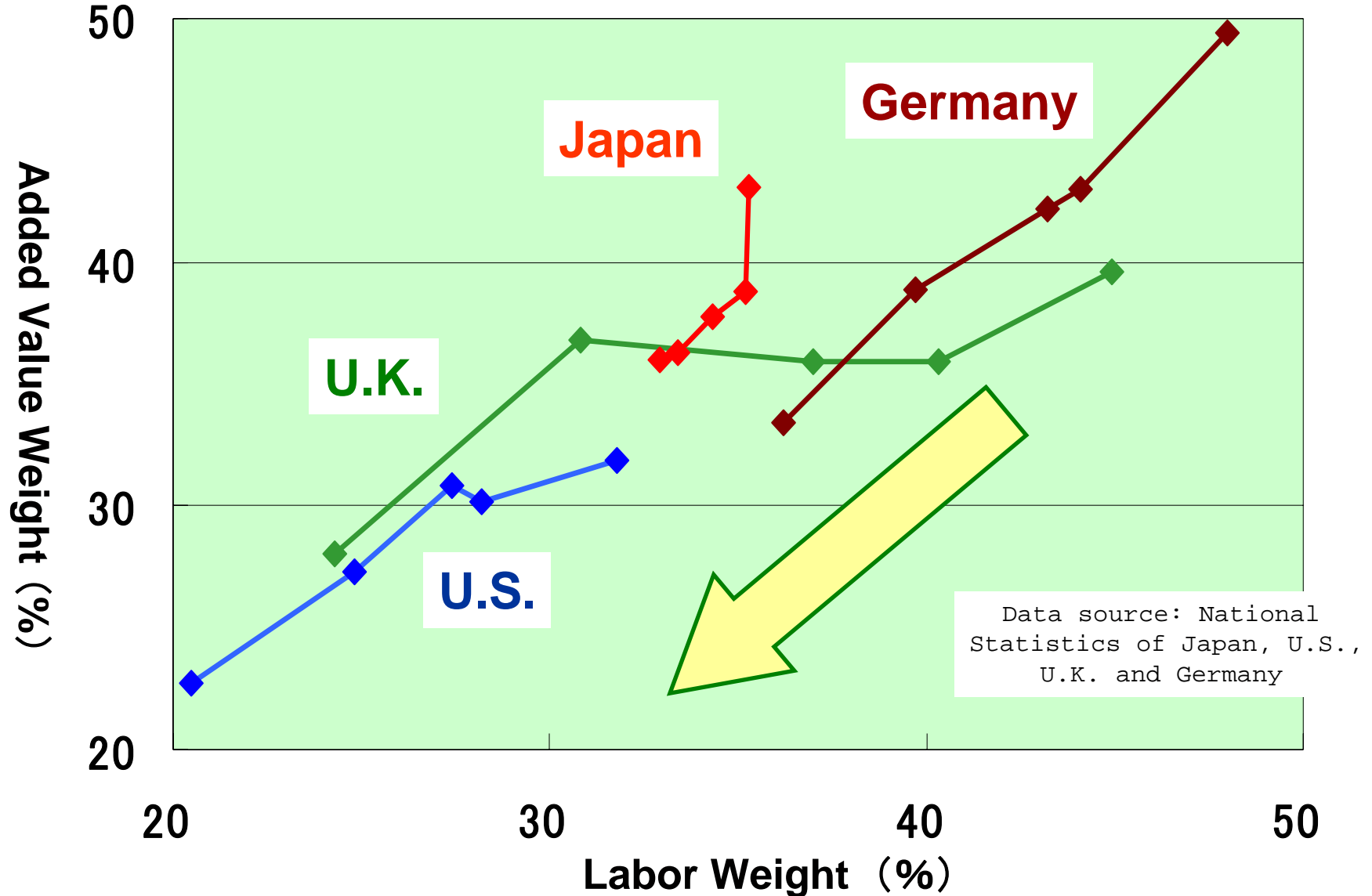
**tax policy change #23-24**

...

# Industrial Evolution : same direction, different speed

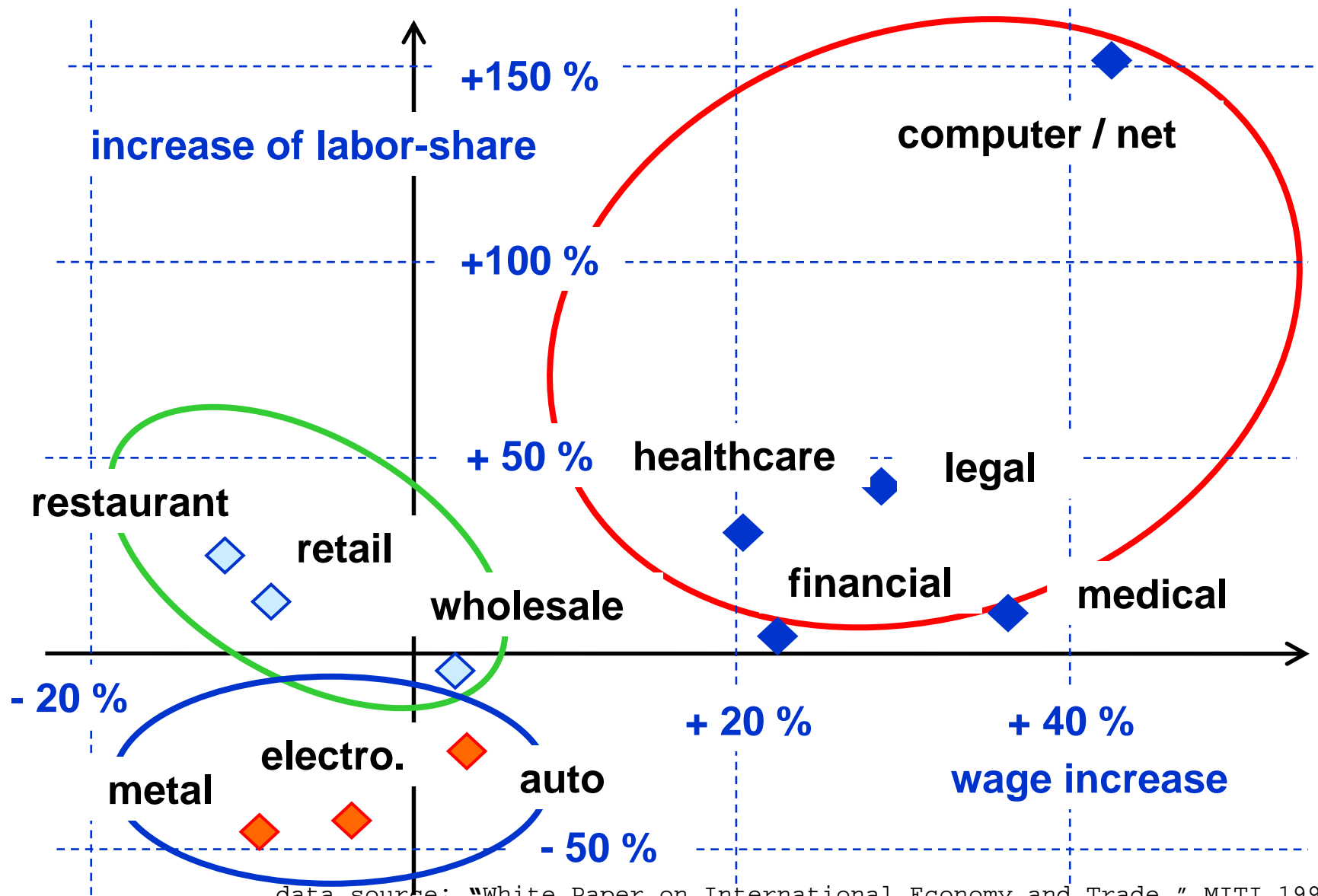
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Manufacturing sector weight in national economy 1970 - 93



# US Industrial Evolution in 1980 - 94

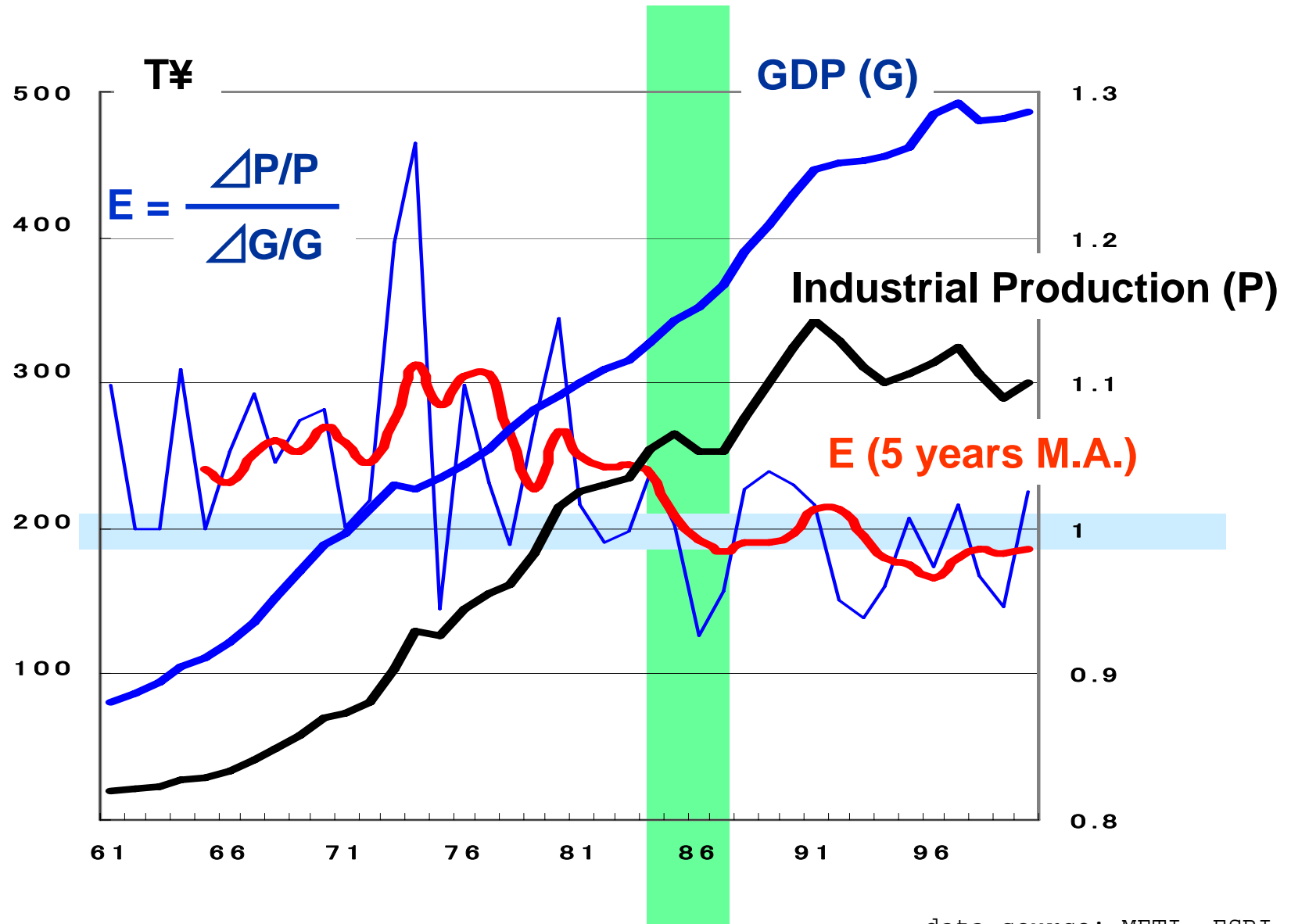
4



data source: "White Paper on International Economy and Trade", MITI, 1996

# Industrial Change in mid-1980s (Japan)

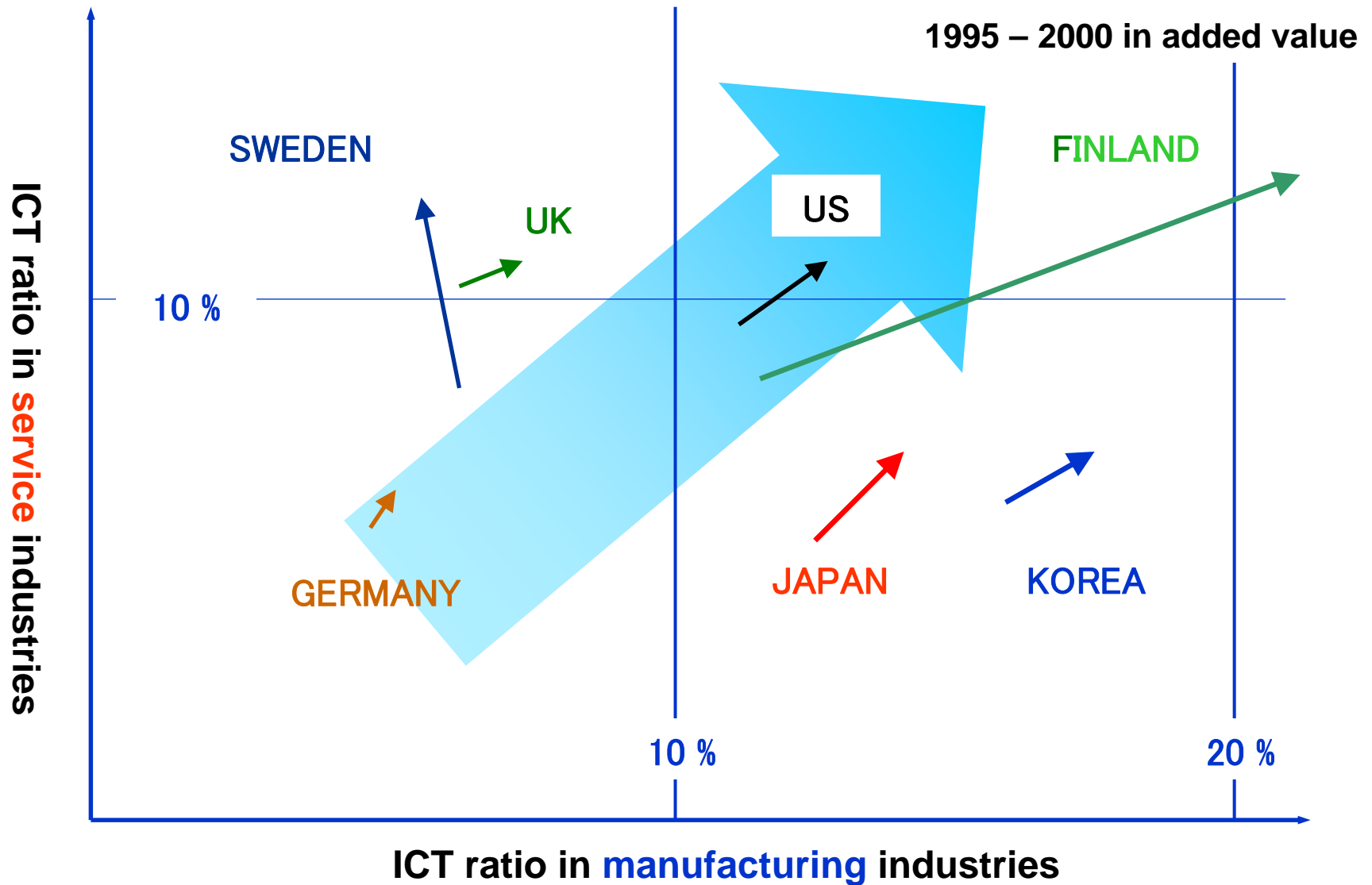
5



data source: METI, ESRI

# ICT ratio : balanced US, Japan's speed

6



data source: "Measuring the Information Economy", OECD, 2002

***New Aspects of Industrial R&D :***

**Science based R&D, U - I Collaboration :**

**ATP fosters collab. U-I #9, #27**

**increased importance of science #7**

**recent reforms in Univ. #25-29**

**also in National Labs #30**

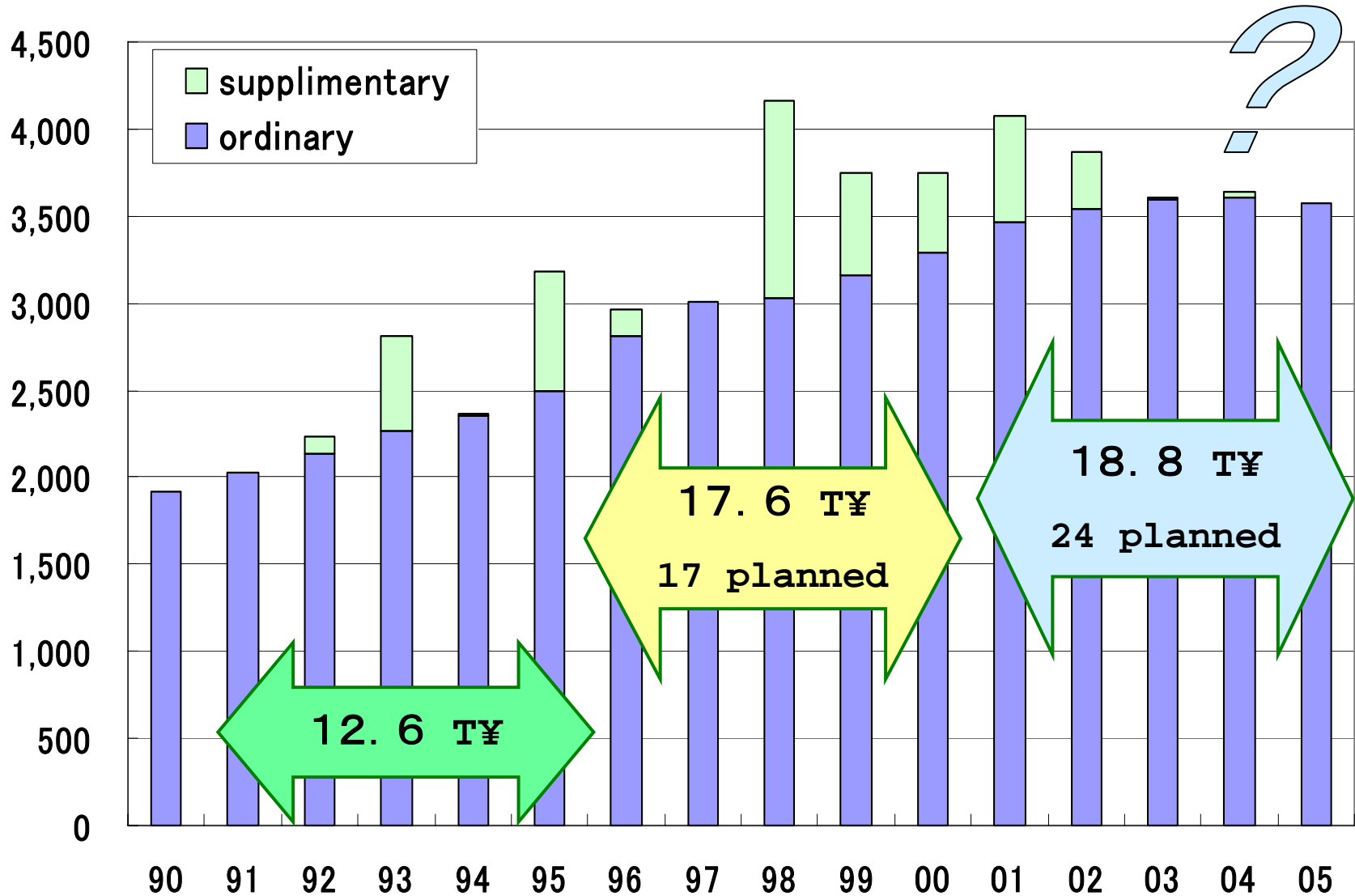
**Region (Cluster), SMEs :**

**hot spot analysis #32-34**

**SMEs / SBIR #21-22**

# Increasing R&D Budget in Japan

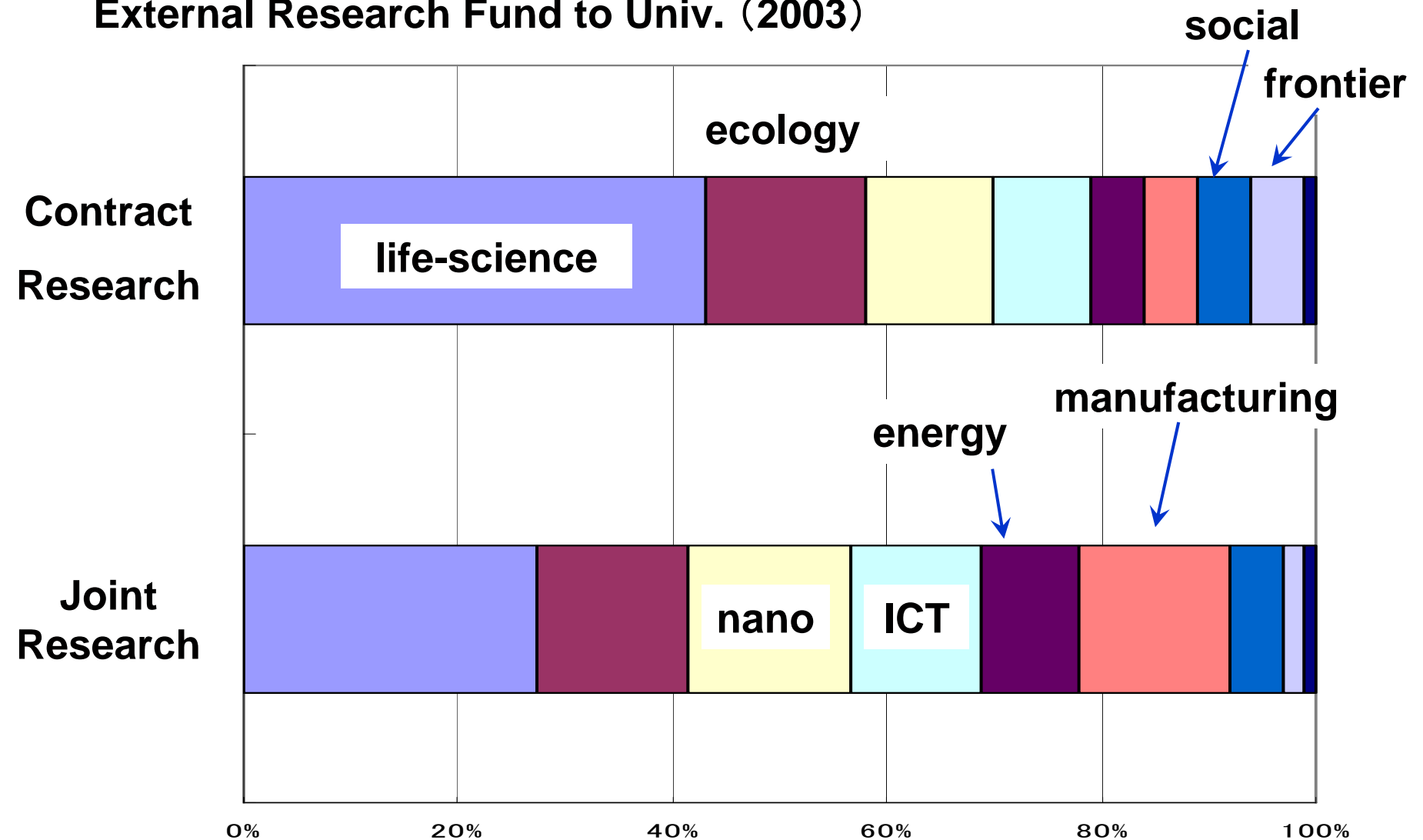
8



Data source: MEXT



## External Research Fund to Univ. (2003)



## *New Management :*

project selection #13-14

project management #15-16

project evaluation #17-21

portfolio-wide analysis #22-24

**national plan #16**

**national tech. roadmapping #20**

## < ICT >

semiconductor, storage & non-volatile memory,  
computer, network, usability, software

## < Life Science >

pharmaceutical, medical equipment, regenerative  
medicine

## < Environment, Energy >

CO2, fluorocarbon, chemical products control,  
recycle / reuse / reduce, energy

## < Manufacturing >

robotics, aeronautics, space, nano-technology

source: <http://www.nedo.go.jp/denshi/roadmap/>