

# Role and future issues for national universities: a discussion

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# What have we learned about the role of national universities?

- High share in research and research-related service
  - But highly concentrated in a small group of institutions
- Education role less visible in quantitative terms
  - but as noted likely to be different qualitatively
  - More pronounced in ‘regional’ national universities
- National universities as a highly diverse group
  - Geographical distribution, research/teaching orientation and subject coverage
- Different national universities may have different regional roles to play?
  - Important research role in almost all regions – played sometimes by former imperial universities?
  - ‘regional universities’ have different kinds of local ties

# How do we think about the future issues?

- These characteristics are largely the legacies of the past
  - Their roles could be strengthened/weakened by future funding systems
  - Key is to build on strengths – but not just to perpetuate the past
- To think about the future issues, we need to explore further:
  - What kind of universities do we need?
  - What are the issues for national and institutional governance in shaping the future roles of national universities?

# What kind of universities do we need?

- Intense debate internationally – and an emerging consensus about:
  - The need for universities to contribute to innovation and economic development
  - The need for ‘diversity’ in higher education
- In particular two types of universities under discussion
  - Research oriented universities actively engaged in scientific discoveries but also contributing directly to innovations in the real world
  - Universities that can respond to professional needs through education and application oriented research

# What kind of universities do we need?

## Responding to economic needs

		no	yes
Basic science orientation	yes	<b>Basic research oriented universities</b>	<b>Universities with both basic and applied research</b>  Some American Unis
	no	<b>Teaching focussed universities</b>  e.g. liberal arts colleges In the US	<b>Professionally oriented Universities with both teaching and applied research</b>  e.g. polytechnics

# Role of national universities revisited

- Japanese national universities have potential to for the core groups in two types of economically responsive institutions
  - Already strong in research and research-related functions
  - Include diverse institutions with professional education focus – but with research and graduate education
- Role of private universities
  - Many with educational emphasis
  - Some in each of other 3 types – likely to exert healthy competitive pressures for National Universities in forming the core group in each
- However, still significant development potential for both economic responsiveness and basic science orientation

## Some comparative stats (2005-6)

	Japan	US	UK
Contract income from industry (million yen) Per capita	53,803 (119,833) 421	280,754 938	114,775 1894
Licensing income (million yen)	801	180,154	12,420
No. of spinoff companies	171	418	187

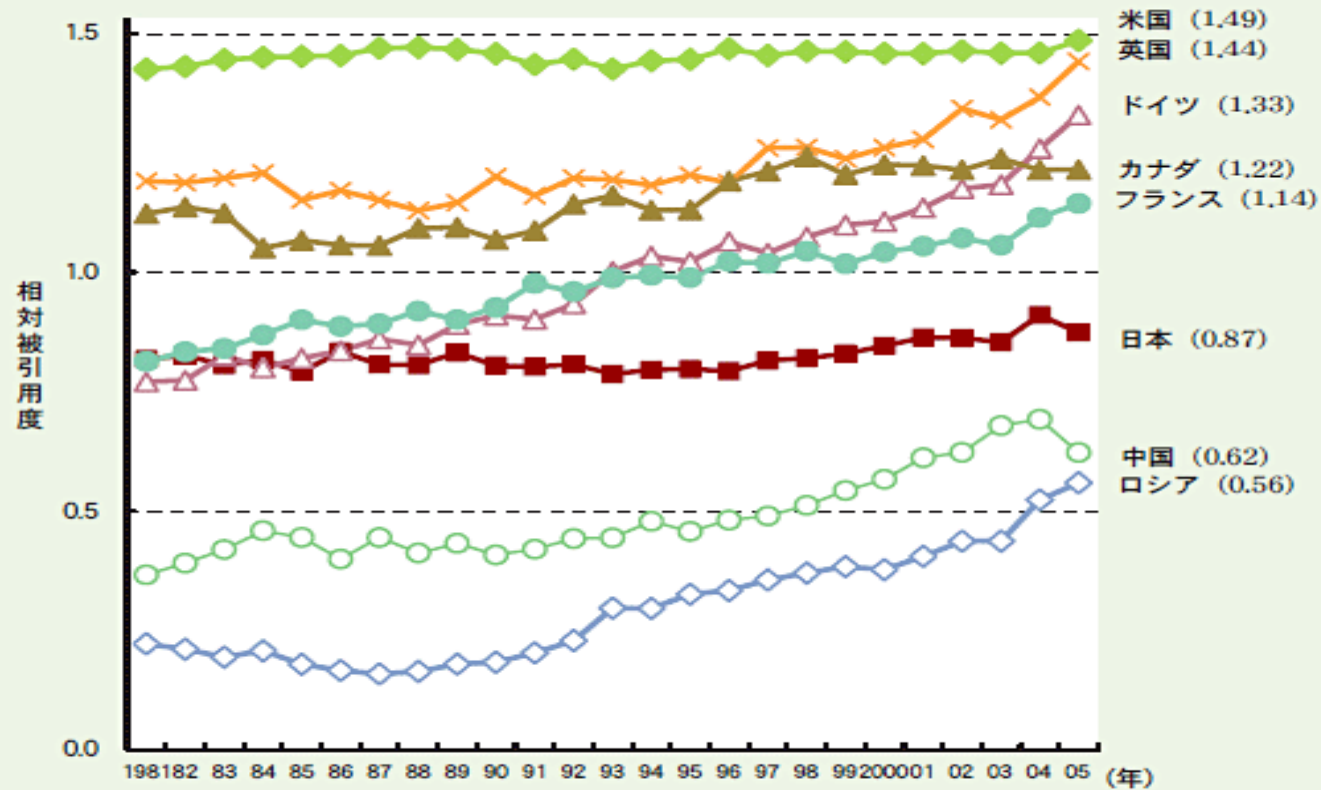
# More indications of university- industry

- Weak collaboration with foreign firms (MEXT 2006)
  - Joint research: 83 cases out of the total 15000 cases, less than 1% of monetary value
  - Contracted research: 73 out of 18000 cases, 0.2% of monetary value
- But significant and increasing evidence of university-industry co-authorship
  - Proactive industry (receiver-active?) rather than proactive universities? (Kodama and Suzuki 2007)
  - Japanese style collaboration?



# Relative citation rate

第 2 - 3 - 2 図 主要国の論文の相対被引用度の推移



資料：Thomson Scientific社「National Science Indicators, 1981-2005」をもとに文部科学省で集計

- Source: MEXT estimates based on Thomson Scientific data

# Issues for national governance

- Enabling environment for institutional diversity
  - Fostering both economic responsiveness and basic science orientation
- Diverse and user-oriented funding as a possible remedy
  - UK funding model an interesting example of separating teaching and research - though it could not stop all to aspire to become research universities until recently
  - Government funding for research through multiple 'mission-oriented' bodies (US)
  - Innovation oriented R&D funding linking universities with public research institutes and industry (Finland)
  - Increased funding role of local governments (UK)
  - Private foundations (US)

# National level governance (2)

- How to fund as important as how much to fund
  - DARPA as a good practice example of 'relevant research' (US)
- Government as champions of universities
  - universities can/should help society ?
  - Basic science can really lead to innovations?
- Quality assurance
  - Simple performance metrics can lead to uniformity rather than diversity
  - Experience of Research Assessment Exercise (UK)

# Issues for institutional level governance

- Organizational infrastructure for ‘responding’ : case of MIT
  - Interdisciplinary research centres as organizational infrastructure for new research and new education
  - Importance of bottom up and role of top-down decisions
  - Externally sensitive organization – at all levels
    - Role of the President – not only internal management but external relationships
    - Governing/management board – with external members
    - Outsiders in departmental advisory boards - visiting committee at MIT
    - Individual professors with own networks as key for effective bottom up
- National universities have much to work on!