

Intellectual Property Rights and International Trade: Theory and Evidence

International Symposium “Intellectual
Property and East Asian Renaissance”

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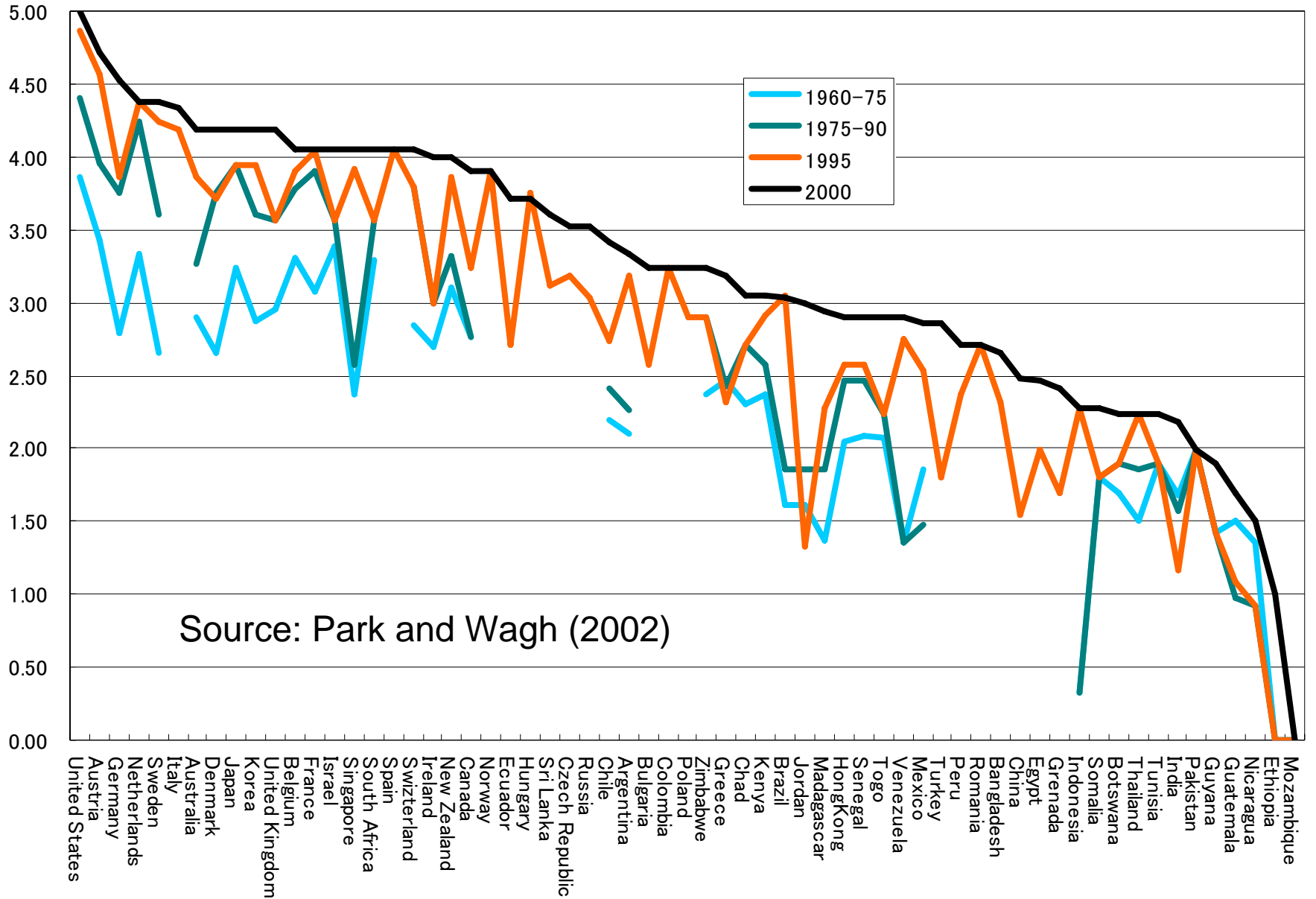
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Outline

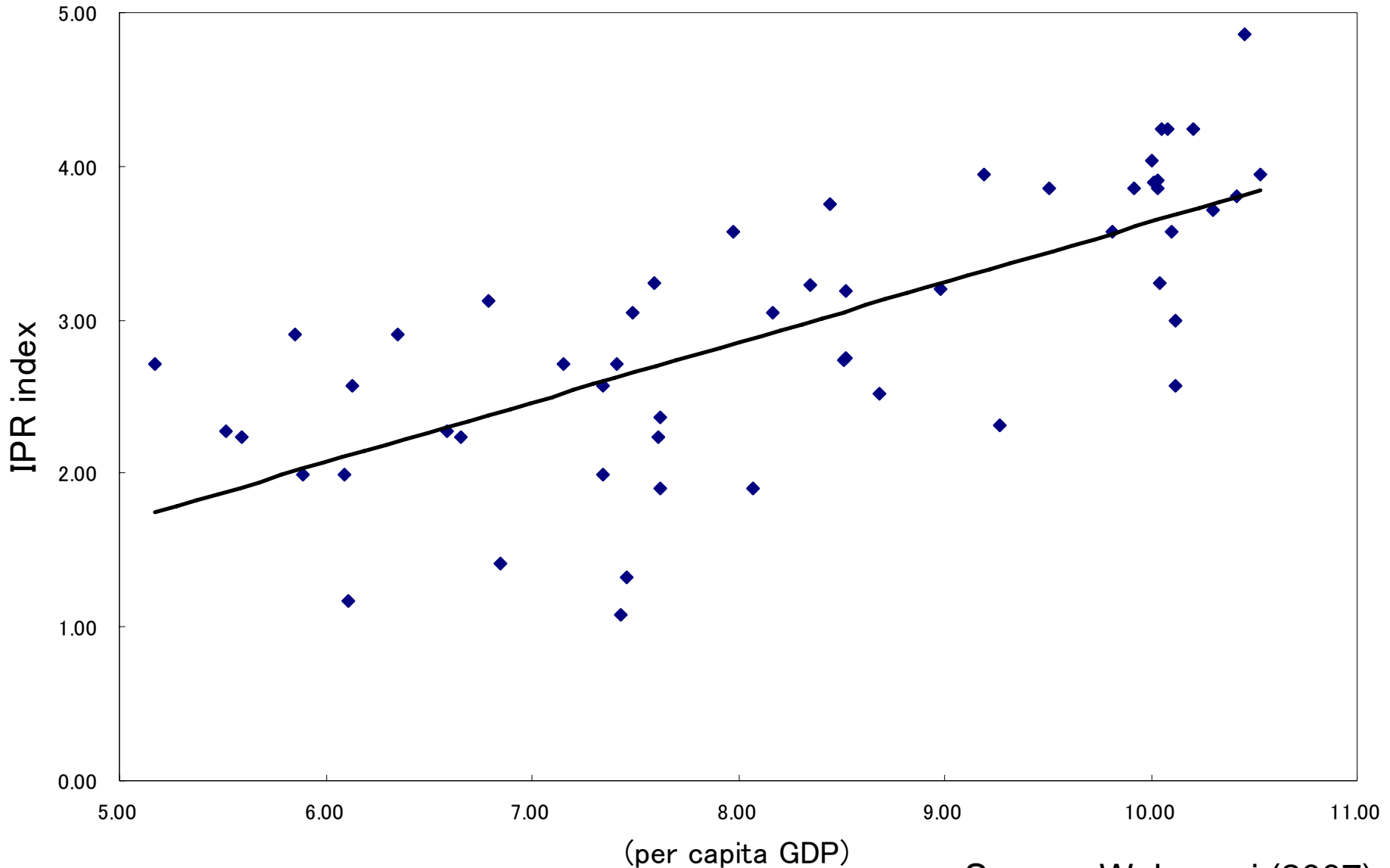
- (1) How actually the protection of IPR is dispersed among countries?
- (2) Why the harmonization of IPR protection is so difficult?
- (3) Stronger IPR will be better: evidences from the export, the local production and the offshore R&D of Japanese firms.
- (4) New paradigm of international trade: importance of IPR enforcement in East Asian countries
- (5) Policy suggestion: importance of international coordination and cooperation

How actually the protection of IPR is dispersed among countries?

Dispersion of patent protection system



Higher income, stronger patent protection



Source: Wakasugi (2007)

Why the harmonization of IPR protection
is so difficult: theoretical aspects

Conflicts of national interests

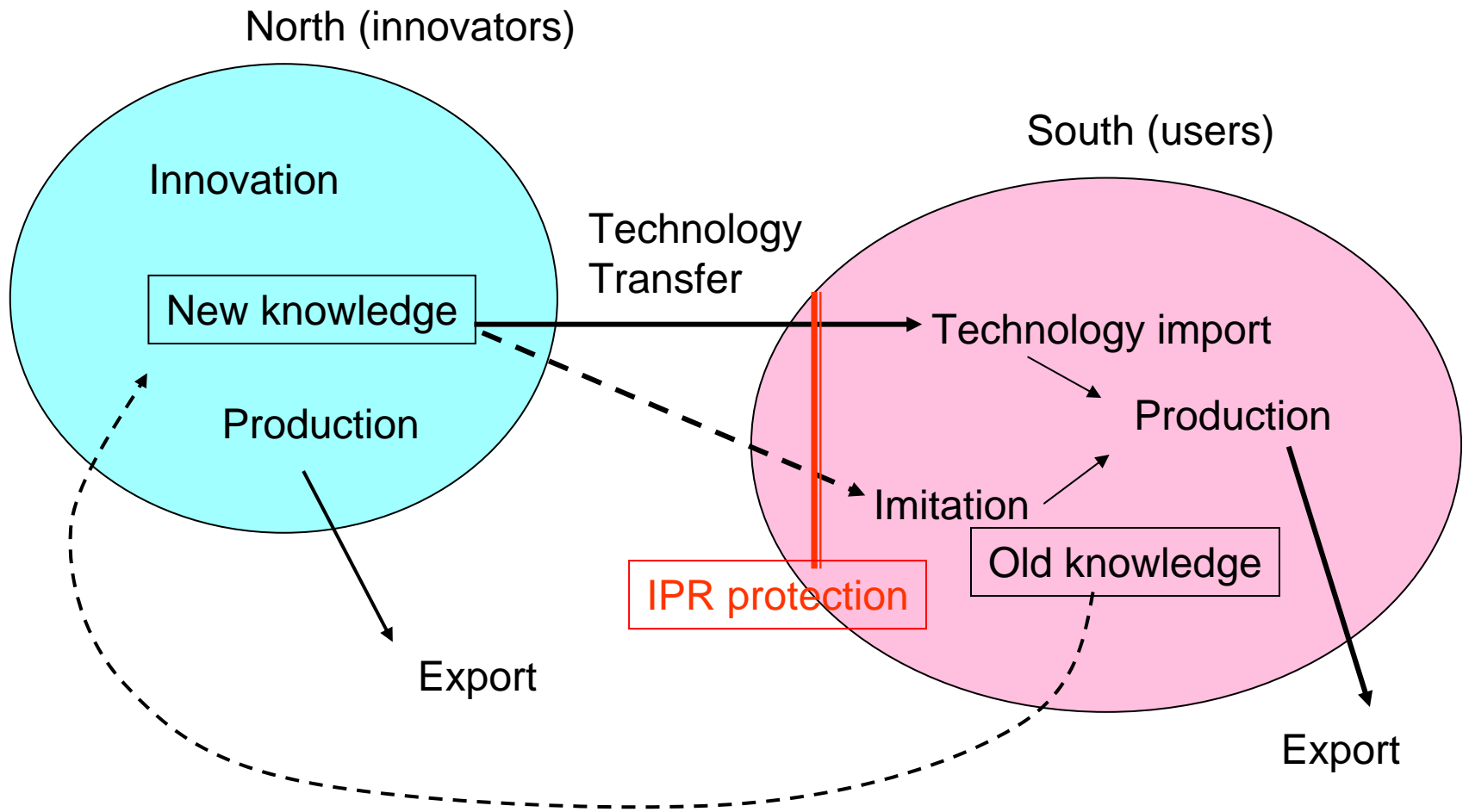
- Suppose a country maximizes the total welfare of its own country (consumer's surplus and innovators profit)
 - The country wants the strongest protection of patent in foreign countries, and weakest protection in its own domestic markets.
- The smaller or more innovative country prefers longer-than-optimal protection, while the larger country prefers shorter-than-optimal protection.
- Countries disagree on the harmonized protection.

Is IPR protection consistent with innovation and growth?

- The case for weak protection
 - IPR protection guarantees the monopoly power in market and may not stimulus to innovation in the closed and less competitive market.
 - Strong IPR protection limits the dissemination of new ideas and opportunities for economic growth.
 - In the innovation-consuming countries, the cost of monopolization offsets the contribution of stronger IPR protection.

- The case for strong protection
 - In open trade, weak IPR protection impedes the efforts of technology-importing countries because innovating firms refuse to license or lease new technology, deter FDI and joint venture in R&D. This limits the dissemination of new knowledge.

Dynamic Equilibrium of Innovation and Growth between “North” and “South”



Is IPR protection consistent with innovation and growth?

- long run
 - in open trade, North produces more old-technology goods, which takes resources away from innovation because the stronger protection limits the imitation which enables South to develop the production of new goods.
 - The rate of innovation falls in the world.
 - Better market access to North promotes the production by South, then mitigates the deficiency of the stronger IPR.

No clear-cut relation between IPR, trade and economic growth

Stronger IPR will be better: some empirical evidences of Japanese firms

- Export and local production of Japanese MNC: asymmetry
- Offshore R&D
- Modes of offshore R&D
- Intra-firm technology transfer

Many studies using US and European firm data by Keith Maskus.

Effects of IPR on Japanese export and local production: asymmetry between high and low income countries

Source: Wakasugi (2007)	Export 1995–98	Local Production 1995–98
Constant	17.5842 *** (4.3976)	2.8657 (0.3995)
North country	-7.5422 *** (-4.6466)	-2.7817 (-0.9554)
GDP	0.2022 * (1.8034)	0.6258 *** (3.1117)
Per capita GDP	0.8369 *** (2.9360)	0.5047 (0.9870)
Distance	-1.1496 *** (-5.4939)	-0.9008 ** (-2.3999)
Patent Index*South country dummy	-0.1462 (-0.3138)	1.3497 (1.6265)
Patent Index*North country dummy	1.7013 *** (6.0068)	1.5872 *** (3.1242)
N	40	40
R ²	0.7703	0.5829

Positive effect on offshore R&D

Dependent variable: R&D/Local sales	Constant	-8.904 **
		(2.33700)
	per capita GDP	-2.033 **
		(0.30000)
	Infrastructe	1.347 **
		(0.35300)
	IPR	8.807 **
		(0.51100)
	Export	0.151 **
		(0.00800)
Operating period	0.21 **	
	(0.06800)	
Industry dummy	**	
Year dummy	**	
R ²	0.094236	
N	10578	

Source: Wakasugi (2007)

IPR and modes of offshore R&D

Variable	1998 Marginal Effects		
	No, R&D	No, Lab	Yes, Lab
SalesEx	-0.0006	0.0002	0.0005
Age	-0.0021	0.0002	0.0019
Sales	-0.0010	0.0007	0.0004
P_R&D	-0.018	0.008	0.010
P_Sales	-0.000004	0.000002	0.000002
Researchers	-0.360	0.134	0.226
Tech	-0.047	0.002	0.045
R_IPR	-0.159	0.073	0.086

Source: Ito and Wakasugi (2007)

Technology transfer of Japanese MNC

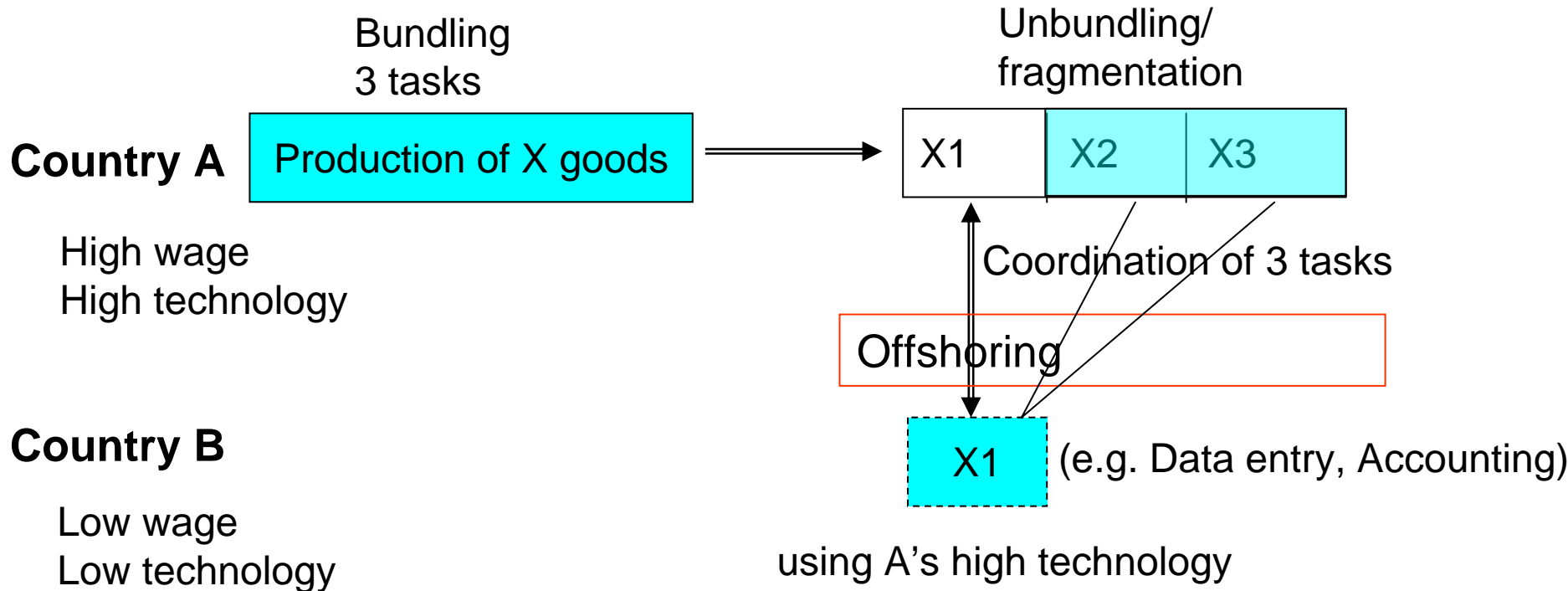
Dependent Variable: $\ln TF$ (Royalty Payments from Subsidiaries to Their Parent Firm)

	[1]Random	[2]Tobit
$\ln(IPR)$: "Index of Patent Rights" in the host country	0.536 [0.135]**	0.727 [0.231]**
$\ln(P_R\&D)$: R&D expenditures of Japanese parent firms	0.084 [0.016]**	0.120 [0.028]**
$\ln(EMP)$: the number of affiliate's employee	0.633 [0.028]**	1.157 [0.053]**
$\ln(MSIZE)$: total industrial value added in the host country	-0.163 [0.036]**	-0.282 [0.062]**
TAX : the corporate tax rate in host country minus the one in Japan	0.025 [0.007]**	0.047 [0.012]**
Industry dummy variables	Yes	Yes
Constant	2.255 [0.986]*	1.278 [1.681]
the number of observations	2,269	2,269

Source: Wakasugi and Ito (2007)

New paradigm of international trade: importance of IPR enforcement in East Asian countries

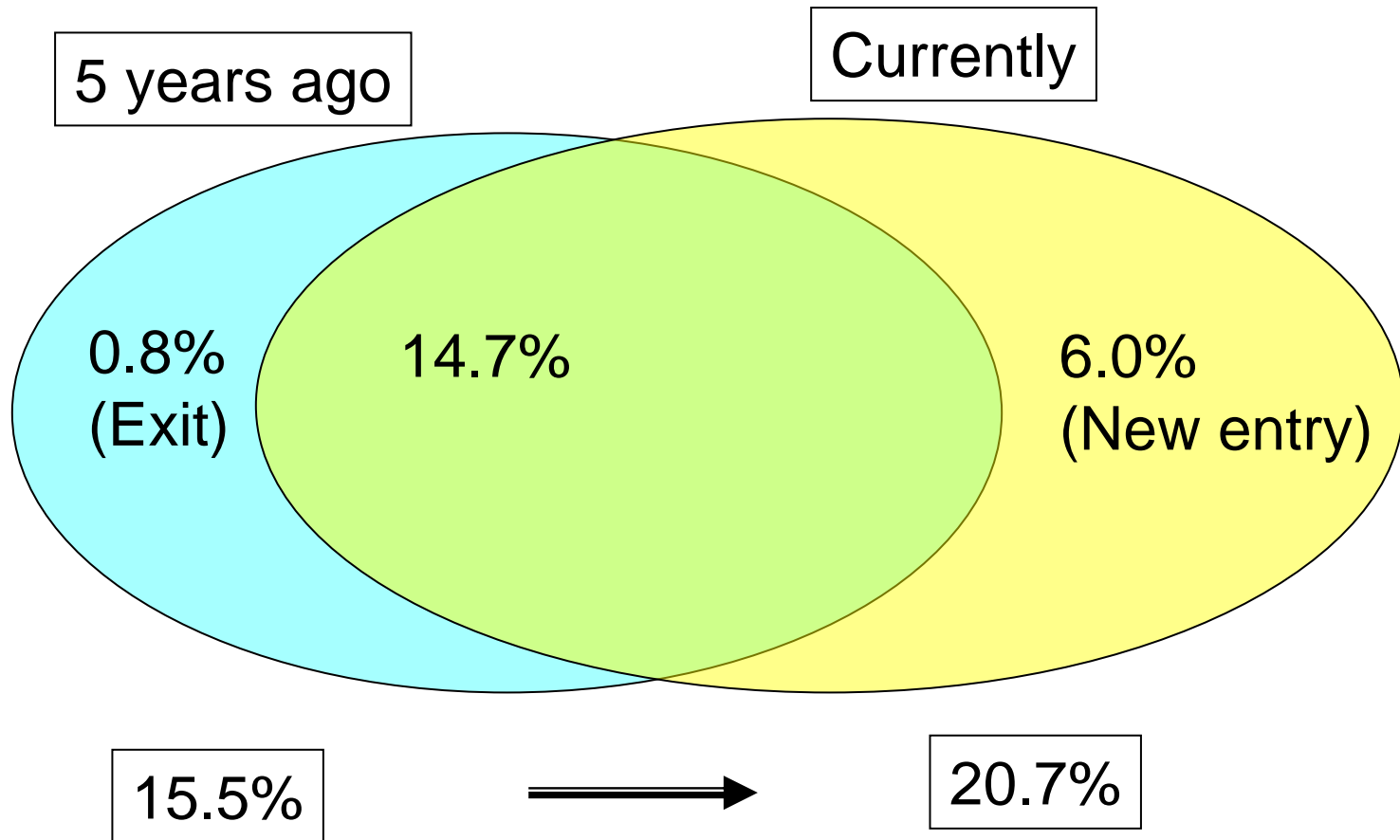
Unbundling of tasks and offshore outsourcing: A new trade paradigm



Offshore outsourcing in the production process of X1, by using A's superior technology and cheap labor in country B, with a cost to coordinate the task of X1 in B with other tasks in A

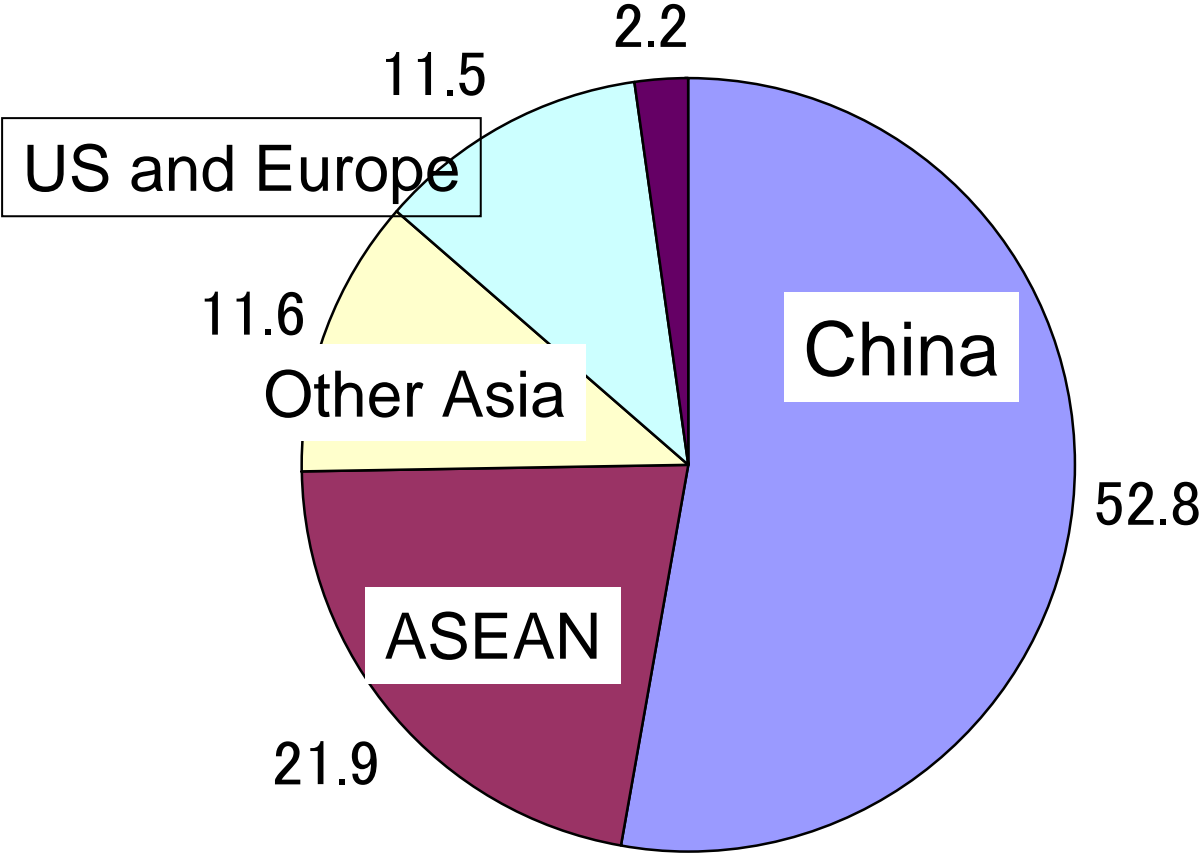
“Using A's technology in country B” must be noted

Japanese firms outsourcing offshore



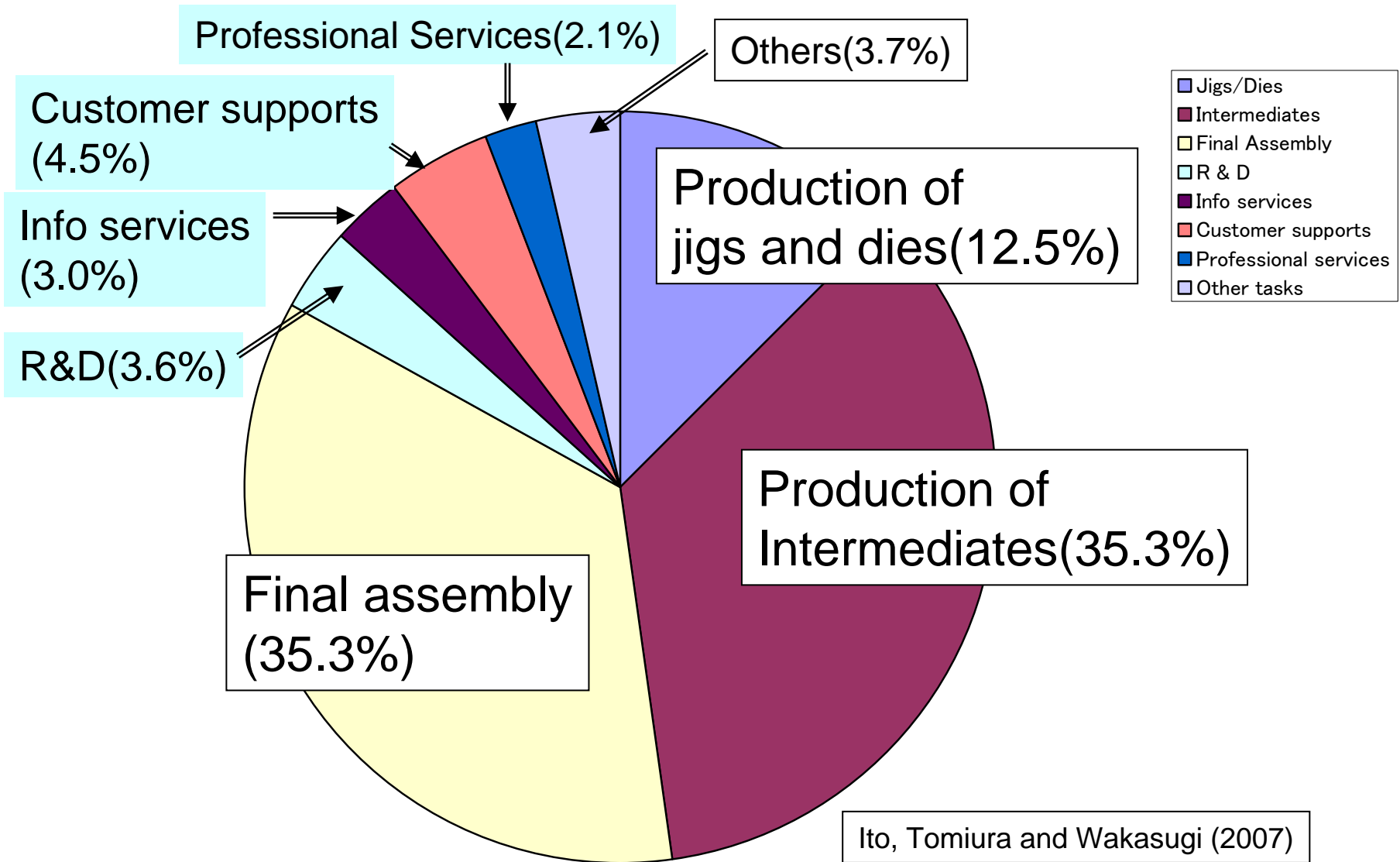
Ito, Tomiura and Wakasugi (2007)

China and East Asia: major destination



Ito, Tomiura and Wakasugi (2007)

Offshore outsourcing of production process



IPR and offshoring: A key role for trade and growth in East Asia

- Offshoring is a key for increasing trade and growth in East Asia.
- Technology transfer is crucial for unbundling the tasks and offshoring.
- Stronger IPR protection will raise the contractibility and provides a favorable market condition for technology transfer.
- Stronger IPR protection will be a key for trade and growth in East Asia under a new paradigm of international trade.

Policy suggestion: importance of international coordination and cooperation between advanced and emerging countries

Policy suggestions

- Importance of the harmonization of IPR protection among trade partners, in particular East Asian countries which absorb FDI/foreign technology and are incorporated in global outsourcing.
- Capacity building for creating innovation and absorbing foreign technology is important as well as support for establishing IPR protection and enforcement
- Trade liberalization is important for stronger IPR enforcement.
- Multilateral agreement among not only advanced countries but also emerging countries including China is crucial for the effective enforcement of IPR.

To achieve these policy goals,

(1) Establishment of APO (Asian Patent Office), like EPO (European Patent Office)

(2) Trilateral network among UPO, EPO and APO toward WPO (World Patent Office, like WTO)

are considerable for trade and economic development of the world.

Thanks!