

## Physical capital, knowledge capital, and the choice between FDI and outsourcing

### *Capital physique, capital de connaissance, et le choix entre l'investissement direct à l'étranger et la sous-traitance.*

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## Abstract

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**Abstract** There exist two approaches in the literature concerning the multinational firm's mode choice for foreign production between an owned subsidiary and a licensing contract. One approach considers environments where the firm transfers primarily knowledge-based assets and assumes that knowledge is non-excludable. A more recent approach takes the property-right view of the firm and assumes that physical capital is fully excludable. This paper combines both forms of capital assets in a single model. There are subtleties, and added structure is needed to establish what ex ante seems a straightforward testable hypothesis: relatively physical-capital-intensive firms choose outsourcing while relatively knowledge-capital-intensive firms choose FDI.

## References

Antrás, Pol (2003) 'Firms, contracts, and trade structure,' *Quarterly Journal of Economics* 118, 1375–418

[Web of Science®](#) | [Google Scholar](#)

Antrás, Pol (2005) 'Incomplete contracts and the product cycle,' *American Economic Review* 95, 1054–71

[Web of Science®](#) | [Google Scholar](#)

Arora, Ashish (1996) 'Contracting for tacit knowledge: the provision of technical services in technology licensing contracts,' *Journal of Development Economics* 50, 233–56

[Web of Science®](#) | [Google Scholar](#)

---

Caves, Richard E. (2007) *Multinational Enterprise and Economic Analysis*, 3rd ed. ( Cambridge : Cambridge University Press)

[Web of Science®](#) | [Google Scholar](#)

---

Chen, Yongmin, Ignatius J. Horstmann, and James Markusen (2008) 'Physical capital, knowledge capital and the choice between FDI and outsourcing,' NBER Working Paper No. 14515

[Google Scholar](#)

---

Davidson, William H., and Donald G. McFetridge (1984) 'International technology transactions and the theory of the firm,' *Journal of Industrial Economics* **32**, 253-64

[Web of Science®](#) | [Google Scholar](#)

---

Ethier, Wilfred J., and James R. Markusen (1996) 'Multinational firms, technology diffusion and trade,' *Journal of International Economics* **41**, 1-28

[Web of Science®](#) | [Google Scholar](#)

---

Feenstra, Robert C., and Gordon H. Hanson (2005) 'Ownership and control in outsourcing to China: estimating the property-rights theory of the firm,' *Quarterly Journal of Economics* **120**, 729-61

[Web of Science®](#) | [Google Scholar](#)

---

Fosfuri, Andrea, Massimo Motta, and Thomas Rønde (2001) 'Foreign direct investments and spillovers through workers' mobility,' *Journal of International Economics* **53**, 205-22

[Web of Science®](#) | [Google Scholar](#)

---

Glass, Amy J., and Kamal Saggi (2002) 'Multinational firms and technology transfer,' *Scandinavian Journal of Economics* **104**, 495-513

[Web of Science®](#) | [Google Scholar](#)

---

Grossman, Sanford J., and Oliver D. Hart (1986) 'The costs and benefits of ownership: a theory of vertical and lateral integration,' *Journal of Political Economy* **94**, 691-719

[Web of Science®](#) | [Google Scholar](#)

---

Grossman, Gene, and Elhanan Helpman (2002) 'Integration versus outsourcing in industry equilibrium,' *Quarterly Journal of Economics* **117**, 85-120

[Web of Science®](#) | [Google Scholar](#)

Grossman, Gene M., and Elhanan Helpman (2004) 'Managerial incentives and the international organization of production,' *Journal of International Economics* **63**, 237–62

[Web of Science®](#) | [Google Scholar](#)

---

Hart, Oliver D., and John Moore (1990) 'Property rights and the nature of the firm,' *Journal of Political Economy* **98**, 1119–58

[Web of Science®](#) | [Google Scholar](#)

---

Horstmann, Ignatius J., and James R. Markusen (1987) 'Licensing versus direct investment, a model of internalization by the multinational enterprise,' *Canadian Journal of Economics* **20**, 464–81

[Web of Science®](#) | [Google Scholar](#)

---

Jinji, Naoto, Xingyuan Zhang, and Shoji Haruna (2011) 'Does Tobin's  $q$  matter for firms' choices of globalization mode?' RIETI Discussion Paper Series 11-E-061

[Google Scholar](#)

---

Mansfield, Edwin, and Anthony Romeo (1980) 'Technology transfer to overseas subsidiaries by U.S. firms,' *Quarterly Journal of Economics* **94**, 737–50

[Web of Science®](#) | [Google Scholar](#)

---

Markusen, James R. (1995) 'The boundaries of multinational enterprises and the theory of international trade,' *Journal of Economic Perspectives* **9**, 169–89

[Web of Science®](#) | [Google Scholar](#)

---

Markusen, James R. (2001) 'Contracts, intellectual property rights, and multinational investment in developing countries,' *Journal of International Economics* **53**, 189–204

[Web of Science®](#) | [Google Scholar](#)

---

Markusen, James R. (2002) *Multinational Firms and the Theory of International Trade* ( Cambridge , MA : MIT Press)

[Web of Science®](#) | [Google Scholar](#)

---

Maskus, Keith E., Kamal Saggi, and Thitima Puttitanun (2005) ' Patent rights and international technology transfer through direct investment and licensing,' in *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime*, ed. Keith E. Maskus and Jerome H. Reichman ( Cambridge : Cambridge University Press)

[Google Scholar](#)

---

Morck, Randall, and Bernard Yeung (1991) 'Why investors value multinationality,' *Journal of Business* **64**, 165–87

---

Morck, Randall, and Bernard Yeung (1992) 'Internalization: an event study,' *Journal of International Economics* 33, 41-56

---

Smith, Pamela (2001) 'Patent rights and bilateral exchange: a cross-country analysis of U.S. exports, FDI, and licensing,' *Journal of International Economics* 52, 411-39

---

Teece, David (1986) *The Multinational Corporation and the Resource Cost of International Technology Transfer* (Cambridge, MA : Ballinger)

---

Wilson, Robert W. (1977) 'The effect of technological environment and product rivalry on R&D effort and licensing of inventions,' *Review of Economics and Statistics* 59, 171-78

---

Yang, G.F., and Keith E. Maskus (2001) 'Intellectual property rights and licensing: an econometric investigation,' *Weltwirtschaftliches Archiv* 137, 58-79

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