

## **JOHN CANTWELL : CURRICULUM VITAE**

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## **Personal Career**

### **Degrees held:**

B.A. in Philosophy, Politics and Economics (University of Oxford, 1976).

M.Sc. in Economics (University of London, 1978).

Ph.D. in Economics (University of Reading, 1986).

### **Present positions:**

Professor of International Business, Rutgers University (since 2002).

Professor of International Economics, University of Reading (since 1993; on leave of absence from 2002).

### **Visiting posts:**

Visiting Professor of Economics, University of Rome "La Sapienza" (March - April 1988; and March - April 1990).

Visiting Professor of Economics, University of Toulouse (February 1990).

Visiting Professor lecturing on International Aspects of Technological Change, Rutgers University (September 1993; and October 1995).

Visiting Professor of Economics, University of Economics and Business Administration, Vienna (October 1999 - January 2000).

Visiting Research Scholar, Earth Institute, Columbia University, New York (since October 2003).

### **Previous appointments:**

Economic Consultant, Economic Models Ltd., London (1976-1977).

Research Librarian, Department of Economics, University of Reading (1980-1984).

Lecturer in Economics, University of Reading (1984-1991).

Reader in International Economics, University of Reading (1991-1993).

### Awards received

OECD Research Grant (with J.H.Dunning), 1983-84; to study new forms of involvement by British companies in the third world (£6,000).

EEC Research Grant, 1984-85; to study technological competition between European and US companies in the post-war period (£2,500).

Research Grant from the Istituto Affari Internazionali (with F. Sanna Randaccio of the University of Rome), 1985-86; to study recent direct investment by Italian companies in the USA (£12,500).

ESRC Research Linked Studentship (with J.H. Dunning), 1986-89; to support a research student working in the area of global competition, the location of activities by multinational companies, and UK industrial policy.

Consultant to the World Bank, January-May 1987, on their project on foreign direct investment in Africa.

ESRC Research Grant (with M.C. Casson, J.H. Dunning and R.D. Pearce), January 1988 - December 1989; to study global research strategies by industrial firms and international competitiveness (£76,460).

Research Grant from the Consiglio Nazionale delle Ricerche (with F. Sanna Randaccio and P.C. Padoan of the University of Rome) to investigate the long run structural determinants of the international economic policy of Italy, the UK, the USA, and Germany (£15,000).

Consultant to the United Nations Centre on Transnational Corporations, July 1988 - December 1989, to help direct the further development of a database of international investment and production statistics in cooperation with staff at the UNCTC.

Adviser to the Centro Europa Recherche project commissioned to investigate the improvement of foreign direct investment statistics in Italy, 1989.

Coordinator of a European Research Network involving researchers from six countries supported under the EC Commission's Stimulation Plan for Economic Science, October 1989 - September 1992; to undertake a project on multinational corporation activity and 1992 (ECU 45,000).

ESRC Research Grant, June 1990 - September 1993; to study the historical structure of innovative activity in the UK and Europe since 1890 (£74,790).

- Grants to support the organisation of a seminar on multinationals and 1992 held in Cargèse, Corsica in May 1991 (FF20,000 from the Corsican Regional Institute for Trade, Innovation and Management; and £1,000 from Nestlé SA).
- Grant from the University of Reading Research Endowment Trust Fund for research into the role of technology in the growth of large firms, April 1991 - July 1992 (£20,000).
- Grant from the Stockholm School of Economics (Institute of International Business) to support a joint research project on technology and the growth of Swedish firms, 1992 (£8,920).
- Grant from the European Science Foundation to organise a workshop in Reading on technology and the theory of the firm, May 1995 (FF 120,000).
- Grant as a contributor to a project on technology, economic integration and social cohesion (coordinated by Bart Verspagen of MERIT, University of Limburg), under the European Commission's Targeted Socio-Economic Research programme, January 1996 - December 1998 (ECU 25,000).
- Grant to support a post-doctoral research fellow (Simona Iammarino) on a project in Reading on international economic integration and technology transfer in the EU, under the European Commission's Training and Mobility of Researchers programme, December 1996 - May 1998 (ECU 68,768).
- Grant as a contributor to a project on dynamic capabilities, growth and long-term competitiveness of European firms (coordinated by Giovanni Dosi of the University of Rome "La Sapienza"), under the European Commission's Targeted Socio-Economic Research programme, April 1998 - February 2000 (ECU 30,000).
- Grant as a contributor to a project on assessing the impact of technological innovation and globalisation: the effects on growth and employment (coordinated by Jonathan Michie of Birkbeck College, London), under the European Commission's Key Action for Socio-Economic Research programme, March 2000 - March 2002 (EURO 42,300).
- Grant as a contributor to a project on the relationship between the technological strategies of multinational companies and national systems of innovation (coordinated by Jose Molero of Complutense University, Madrid), under the European Commission's Key Action for Socio-Economic Research programme, March 2000 - June 2002 (EURO 41,200).
- Grant as a contributor to a project on mergers and acquisitions and science and technology policy (coordinated by Geert Steurs in Brussels, with Massimo Colombo, Leo Sleuwagen and Reinhilde Veugelers), as part of the implementation of the European Commission's Common Basis for Science, Technology and Innovation Indicators, March 2000 - April 2002 (EURO 32,968).

Grant as a contributor to a project on industrial districts' re-location processes: identifying policies in the perspective of EU enlargement (coordinated by Ruggiera Sarcina in Rome), under the European Commission's programme for Improving the Human Research Potential and the Socio-Economic Knowledge Base, September 2001 - August 2004 (EURO 87,960).

Grant from the Rutgers Business School Research Resources Committee for research into the internationalization of corporate technology, July 2004 - June 2005 (\$6,000).

Grant from the Rutgers Business School Research Resources Committee for research into knowledge flows between developed and developing nations, July 2005 - June 2006 (\$3,000).

Grant from the Rutgers Business School Blanche and Irwin Lerner Center for Pharmaceutical Management Studies for research into transnational technology networks in the pharmaceutical industry - investigating the challenges for firms and governments, January 2006 - December 2006 (\$5,000).

Grant from the Rutgers University Academic Excellence Fund to support the formation of an East Asian Business Center, March 2005 - June 2007 (\$75,000).

Grant from the Rutgers Business School Research Resources Committee for research into international knowledge sourcing in the pharmaceutical industry in the US and Germany, July 2006 - June 2007 (\$8,400).

## **Research Output**

### **(i) Books:**

- (1) (With J.H. Dunning) *The IRM Directory of Statistics of International Investment and Production*, London: Macmillan, and New York: New York University Press, 1987, 820pp.
- (2) *Technological Innovation and Multinational Corporations*, Oxford: Basil Blackwell, 1989; reprinted, 1990, xvi + 239pp.
- (3) (Editor) *Multinational Investment in Modern Europe: Strategic Interaction in the Integrated Community*, Aldershot: Edward Elgar, 1992, xiii + 397pp.
- (4) (Editor) *Transnational Corporations and Innovatory Activities*, London: Routledge, 1994, ix + 447pp. (Volume 17 in the Series of Readings on Transnational Corporations).
- (5) (Editor) *Foreign Direct Investment and Technological Change*, Cheltenham: Edward Elgar, 1999, Volume I xxiv + 518pp., Volume II x + 489pp. (Volume 8 in the Series on The Globalization of the World Economy).
- (6) (With S. Iammarino) *Multinational Corporations and European Regional Systems of Innovation*, London: Routledge, 2003, xv + 199pp.
- (7) (With R. Narula, Editors) *International Business and the Eclectic Paradigm: Developing the OLI Framework*, London: Routledge, 2003, xvi + 304pp.
- (8) (With J. Molero, Editors) *Multinational Enterprises, Innovative Strategies and Systems of Innovation*, Cheltenham: Edward Elgar, 2003, xxiv + 323pp.
- (9) (With A. Gambardella and O. Granstrand, Editors) *The Economics and Management of Technological Diversification*, London: Routledge, 2004, xxiv + 356pp.
- (10) (Editor) *Globalization and the Location of Firms*, Cheltenham: Edward Elgar, 2004, xxv + 529pp. (Volume 15 in the Series on The Globalization of the World Economy).
- (11) *The History of Technological Development in Europe and the United States*, Oxford: Oxford University Press, 2007, forthcoming.

### **(ii) Reports:**

- (1) (With J.H. Dunning) *The New Forms of International Involvement of British Firms in the Third World*, Report submitted to the OECD, January 1985, 56pp.

- (2) *Technological Competition Between European and US Companies in the Post-War Period*, Report submitted to the Commission of the European Communities, October 1985, 115pp.
- (3) (With F. Sanna Randaccio) *L'Espansione delle Imprese Multinazionali Italiane negli Stati Uniti*, Rome: Istituto Affari Internazionali, 1987, 88pp.

**(iii) Papers in refereed journals:**

- (1) (With J.H. Dunning) "Investissements Américaines direct et compétitivité technologique Européenne", *L'Actualité Économique*, Vol. 58, No. 3, July-September 1982, pp. 341 -379.
- (2) "The reorganisation of European industries after integration: selected evidence on the role of multinational enterprise activities", *Journal of Common Market Studies*, Vol. 26, No. 2, December 1987, pp. 127-151; reprinted in J.H. Dunning and P. Robson (Eds.), *Multinationals and the European Community*, Oxford: Basil Blackwell, 1988, pp. 25-49; in M.C. Casson (Ed.), *Multinational Corporations*, Aldershot: Edward Elgar, 1990, pp. 417-441; and in P. Robson (Ed.), *Transnational Corporations and Regional Economic Integration*, London: Routledge, 1993, pp. 173-198.
- (3) (With F. Sanna Randaccio) "The growth of multinationals and the catching up effect", *Economic Notes*, Vol. 19, No. 1, 1990, pp. 1-23.
- (4) (With F. Sanna Randaccio) "Effetti della attività multinazionale delle grande imprese: una verifica econometrica", *Economia e Politica Industriale*, Vol. 66, 1990, pp. 85-112.
- (5) (With J.H. Dunning) "Multinationals, technology and the competitiveness of European industries", *Aussenwirtschaft*, Vol. 46, No. 1, 1991, pp. 45-65; reprinted in J.A. Cantwell (Ed.), *Transnational Corporations and Innovatory Activities*, London: Routledge, 1994, pp. 408-425; and in J.E. Oxley and B. Yeung (Eds.), *Structural Change, Industrial Location and Competitiveness*, Aldershot: Edward Elgar, 1998, pp. 305-325; a different version appears in G.R. Faulhaber and G. Tamburini (Eds.), *European Economic Integration: The Role of Technology*, Boston: Kluwer Academic Publishers, 1991, pp. 117-148.
- (6) "The methodological problems raised by the collection of foreign direct investment data", *Scandinavian International Business Review*, Vol. 1, No. 1, 1992, pp. 86-102; reprinted in W. Grabendorff (Ed.), *Foreign Direct Investment in Developing Countries: The Case of Latin America*, Madrid: IRELA, 1994, pp. 9-27.
- (7) (With F. Sanna Randaccio) "Multinationality and firm growth", *Weltwirtschaftliches Archiv*, Vol. 129, No. 2, June 1993, pp. 275-299.

- (8) "The contribution of recent foreign direct investment in services to a changing international division of labour", *Development and International Cooperation*, Vol. 9, No. 17, December 1993, pp. 193-222.
- (9) "The globalisation of technology: what remains of the product cycle model?", *Cambridge Journal of Economics*, Vol. 19, No. 1, February 1995, pp. 155-174; reprinted in D. Archibugi and J. Michie (Eds.), *Technology, Globalisation and Economic Performance*, Cambridge: Cambridge University Press, 1997, pp. 215-240; in A.D. Chandler, P. Hagström and O. Sölvell (Eds.), *The Dynamic Firm*, Oxford: Oxford University Press, 1998, pp. 263-288; and in J.A. Cantwell (Ed.), *Foreign Direct Investment and Technological Change*, Vol. II, Cheltenham: Edward Elgar, 1999, pp. 102-121.
- (10) (With M.P. Barrera) "Inter-company agreements for technological development", *International Studies of Management and Organization*, Vol. 25, Nos. 1-2, Spring-Summer 1995, pp. 75-95.
- (11) (With C. Bellak) "FDI - how much is it worth? Comment on S.J. Gray and A.M. Rugman", *Transnational Corporations*, Vol. 5, No. 1, April 1996, pp. 85-97.
- (12) (With H.B. Andersen) "A statistical analysis of corporate technological leadership historically", *Economics of Innovation and New Technology*, Vol. 4, No. 3, Summer 1996, pp. 211-234.
- (13) (With C. Bellak) "Small latecomer countries in a globalising environment: constraints and opportunities for catching-up", *Development and International Cooperation*, Vol. 13, Nos. 24-25, June-December 1997, pp. 139-179.
- (14) (With R. Harding) "The internationalisation of German companies' R&D", *National Institute Economic Review*, Vol. 163, January 1998, pp. 99-115.
- (15) (With C. Bellak) "How important is foreign direct investment?", *Oxford Bulletin of Economics and Statistics*, Vol. 60, No. 1, 1998, pp. 99-106.
- (16) "Knowledge, capabilities, imagination and cooperation in business: introduction", *Journal of Economic Behavior and Organization*, Vol. 35, No. 2, February 1998, pp. 133-137.
- (17) (With A. Bachmann) "Changing patterns of technological leadership: evidence from the pharmaceutical industry", *International Journal of Innovation Management*, Vol. 2, No. 1, March 1998, pp. 45-77.
- (18) (With M.P. Barrera) "The localisation of corporate technological trajectories in the interwar cartels: cooperative learning versus an exchange of knowledge", *Economics of Innovation and New Technology*, Vol. 6, Nos. 2-3, Summer 1998, pp. 257-290.
- (19) "Technology and the firm: introduction", *Research Policy*, Vol. 27, No. 5, September 1998, pp. iii-v.

- (20) (With S. Iammarino) "MNCs, technological innovation and regional systems in the EU: some evidence in the Italian case", *International Journal of the Economics of Business*, Vol. 5, No.3, November 1998, pp. 383-408.
- (21) (With O.E.M. Janne) "Technological globalisation and innovative centres: the role of corporate technological leadership and locational hierarchy", *Research Policy*, Vol. 28, Nos. 2-3, 1999, pp. 119-144; reprinted in J.A Cantwell (Ed.), *Globalization and the Location of Firms*, Cheltenham: Edward Elgar, 2004, pp. 409-434.
- (22) (With L. Piscitello) "The emergence of corporate international networks for the accumulation of dispersed technological competences", *Management International Review*, Vol. 39, Special Issue No. 1, 1999, pp. 123-147.
- (23) (With G.D. Santangelo) "The frontier of international technology networks: sourcing abroad the most highly tacit capabilities", *Information Economics and Policy*, Vol. 11, No. 1, 1999, pp. 101-123.
- (24) (With F.M. Fai) "Firms as the source of innovation and growth: the evolution of technological competence", *Journal of Evolutionary Economics*, Vol. 9, No. 3, 1999, pp. 331-366.
- (25) "From the early internationalization of corporate technology to global technology sourcing", *Transnational Corporations*, Vol. 8, No. 2, 1999, pp. 71-92.
- (26) (With G.D. Santangelo) "Capitalism, profits and innovation in the new techno-economic paradigm", *Journal of Evolutionary Economics*, Vol. 10, Nos. 1-2, 2000, pp. 131-157; reprinted in D.C. Mueller and U. Cantner (Eds.), *Capitalism and Democracy in the 21<sup>st</sup> Century*, Berlin: Springer, 2001, pp. 137-164.
- (27) (With L. Piscitello) "Accumulating technological competence: its changing impact on corporate diversification and internationalisation", *Industrial and Corporate Change*, Vol. 9, No. 1, 2000, pp. 21-51.
- (28) (With S. Iammarino) "Multinational corporations and the location of technological innovation in the UK regions", *Regional Studies*, Vol. 34, No. 4, June 2000, pp. 317-332.
- (29) (With O.E.M. Janne) "The role of multinational corporations and nation states in the globalisation of innovatory capacity: the European perspective", *Technology Analysis and Strategic Management*, Vol. 12, No. 2, June 2000, pp. 243-262.
- (30) (With R. Mudambi) "The location of MNE R&D activity: the role of investment incentives", *Management International Review*, Vol. 40, Special Issue No. 1, 2000, pp. 127-148.
- (31) "Technological lock-in of large firms since the interwar period", *European Review of Economic History*, Vol. 4, No. 2, August 2000, pp. 147-174.

- (32) (With M.G. Colombo) "Technological and output complementarities: inter-firm cooperation in information technology ventures", *Journal of Management and Governance*, Vol. 4, Nos. 1-2, 2000, pp. 117-147.
- (33) (With R. Narula) "The eclectic paradigm in the global economy", *International Journal of the Economics of Business*, Vol. 8, No. 2, July 2001, pp. 155-172.
- (34) "Centres of excellence, and information and communications technologies in multinational corporations: new research directions and evidence", *Economia e Politica Industriale*, Vol. 109, 2001, pp. 157-162.
- (35) (With S. Iammarino) "EU regions and multinational corporations: change, stability and strengthening of technological comparative advantages", *Industrial and Corporate Change*, Vol. 10, No. 4, 2001, pp. 1007-1037.
- (36) (With G.D. Santangelo) "The new geography of corporate research in information and communications technology", *Journal of Evolutionary Economics*, Vol. 12, No. 1, 2002, pp. 163-197; reprinted in J.S. Metcalfe and U. Cantner (Eds.), *Change, Transformation and Development*, Berlin: Springer, 2003, pp. 343-377.
- (37) (With J.H. Dunning and O.E.M. Janne) "Evolution of multinational corporate technological systems in the UK and US", *Journal of Interdisciplinary Economics*, Vol. 13, Nos. 1-2, 2002, pp. 135-163.
- (38) (With L. Piscitello) "The location of technological activities of MNCs in European regions: the role of spillovers and local competencies", *Journal of International Management*, Vol. 8, No. 1, 2002, pp. 69-96.
- (39) (With G.D. Santangelo) "The significance of European small country regions in the geographical division of labour of European information and communications technology (ICT) corporations", *International Journal of Technology Management*, Vol. 24, Nos. 7-8, 2002, pp. 663-679.
- (40) (With G.D. Santangelo) "M&As and the global strategies of TNCs", *The Developing Economies*, Vol. 40, No. 4, December 2002, pp. 400-434.
- (41) (With C. Bellak) "Revaluing the capital stock of international production", *International Business Review*, Vol. 13, No. 1, February 2004, pp. 1-18.
- (42) (With J.H. Dunning and O.E.M. Janne) "Towards a technology-seeking explanation of US direct investment in the UK", *Journal of International Management*, Vol. 10, No. 1, 2004, pp. 5-20.
- (43) (With G. Vertova) "Historical evolution of technological diversification", *Research Policy*, Vol. 33, No. 3, 2004, pp. 511-529.

- (44) (With K. Glac and R. Harding) "The internationalization of R&D - the Swiss case", *Management International Review*, Vol. 44, Special Issue No. 3, 2004, pp. 57-82.
- (45) (With K. Glac) "La estrategia tecnológica de las empresas multinacionales y el desarrollo de capacidades tecnológicas locales", *Cuadernos de Economía y Dirección de la Empresa*, Vol. 20, No. 3, July-September 2004, pp. 83-101.
- (46) (With L. Piscitello) "Recent location of foreign-owned R&D activities by large multinational corporations in the European regions: the role of spillovers and externalities", *Regional Studies*, Vol. 39, No. 1, February 2005, pp. 1-16.
- (47) (With S. Iammarino) "The technological innovation of multinational corporations in the French regions", *Revue d'Économie Industrielle*, No. 109, March 2005, pp. 9-28.
- (48) (With R. Mudambi) "MNE competence-creating subsidiary mandates", *Strategic Management Journal*, Vol. 26, No. 12, December 2005, pp. 1109-1128.
- (49) (With H. Barnard) "Knowledge in the theory of the firm and MNC: asset or action?", *Journal of Management and Governance*, Vol. 10, No. 1, March 2006, pp. 21-27.
- (50) (With G.D. Santangelo) "The boundaries of firms in the new economy: M&As as a strategic tool toward corporate technological diversification", *Structural Change and Economic Dynamics*, Vol. 17, No. 2, 2006, forthcoming.
- (51) (With Y. Zhang) "Why is the R&D internationalization of Japanese firms so low? A path-dependent explanation", *Asian Business and Management*, Vol. 5, 2006, forthcoming.

**(iv) Chapters in books:**

- (1) (With J.H. Dunning) "The emergence of multinationals in the growth of international production" in A. Fonseca (Ed.), *Multinationals in Third World Countries*, Rome: IFCU Centre of Research, 1984, pp. 22-31.
- (2) (With J.H. Dunning and T.A.B. Corley) "The theory of international production : some historical antecedents", in G. Jones and P. Hertner (Eds.), *Multinationals: Theory and History*, Farnborough: Gower, 1986, pp. 19-41.
- (3) "Recent trends in foreign direct investment in Africa" in V. Cable (Ed.), *Foreign Investment Policies and Prospects in Africa*, London : Commonwealth Secretariat, 1986, pp. 75-94.
- (4) "The changing form of multinational enterprise expansion in the twentieth century", in A. Teichova, M Lévy-Leboyer and H. Nussbaum (Eds.), *Historical Studies in International Corporate Business*, Cambridge: Cambridge University Press, 1989, pp.15-28.

- (5) "Teorie della produzione internazionale", in N. Acocella and R. Schiattarella (Eds.), *Teorie dell'Internazionalizzazione e Realtà Italiana*, Napoli: Ligouri, 1989, pp. 19-66.
- (6) (With J.H. Dunning) "Le nuove forme di coinvolgimento delle imprese britanniche nel Terzo Mondo", in R. Burlando (Ed.), *Transferimenti di Tecnologie e Finanziamenti ai Paesi in Via di Sviluppo*, Milano: Franco Angeli, 1989, pp. 127-166.
- (7) "The growing internationalisation of industry: a comparison of the changing structure of company activity in the major industrialised countries", in A.D. Webster and J.H. Dunning (Eds.), *Structural Change through the World Economy*, London: Routledge 1990, pp. 91-113.
- (8) "Historical trends in international patterns of technological innovation", in J. Foreman-Peck (Ed.), *New Perspectives on the Late Victorian Economy: Quantitative Essays on British Economic History*, Cambridge: Cambridge University Press, 1991, pp. 37-72.
- (9) (With J.H. Dunning) "Japanese direct investment in Europe", in B. Bürgenmeier and J.L. Mucchielli (Eds.), *Multinationals and Europe 1992: Strategies for the Future*, London: Routledge, 1991, pp. 155-184.
- (10) "A survey of theories of international production", in C.N. Pitelis and R. Sugden (Eds.), *The Nature of the Transnational Firm*, London: Routledge, 1991, pp. 16-63; revised and reprinted, 2000, pp. 10-56.
- (11) "Foreign multinationals and industrial development in Africa", in P.J. Buckley and L.J. Clegg (Eds.), *Multinational Enterprises in Less Developed Countries*, London: Macmillan, 1991, pp. 183-224; reprinted in D. Chudnovsky (Ed.), *Transnational Corporations and Industrialisation*, London: Routledge, 1993, pp. 243-278.
- (12) (With C. Hodson) "Global R&D and British competitiveness", in M.C. Casson (Ed.), *Global Research Strategy and International Competitiveness*, Oxford: Basil Blackwell, 1991, pp. 133-182.
- (13) "The international agglomeration of technological activity", in M.C. Casson (Ed.), *Global Research Strategy and International Competitiveness*, Oxford: Basil Blackwell, 1991, pp. 104-132.
- (14) "The theory of technological competence and its application to international production", in D.G. McFetridge (Ed.), *Foreign Investment, Technology and Economic Growth*, Calgary: University of Calgary Press, 1991, pp. 33-67; reprinted in J.A. Cantwell (Ed.), *Transnational Corporations and Innovative Activities*, London: Routledge, 1994, pp. 107-143; and in J.A. Cantwell (Ed.), *Foreign Direct Investment and Technological Change*, Vol. I, Cheltenham: Edward Elgar, 1999, pp. 202-236.
- (15) "The effects of integration on the structure of multinational corporation activity in the EC", in M. Klein and P.J.J. Welfens (Eds.) *Multinationals in the New Europe and Global Trade*, Berlin: Springer Verlag, 1992, pp. 193-233; a shorter version appears

in J.H. Dunning and K.P. Sauvant (Eds.), *From the Common Market to EC 92: Regional Economic Integration in the European Community and Transnational Corporations* New York: United Nations, 1993, pp. 57-85.

- (16) "The changing dynamics of international production", in J. Van Den Broeck and D. Van Den Bulcke (Eds.), *Changing Economic Order*, Groningen: Wolters-Noordhoff, 1992, pp. 117-126.
- (17) "Innovation and technological competitiveness", in P.J. Buckley and M.C. Casson (Eds.), *Multinational Enterprises in the World Economy: Essays in Honour of John Dunning*, Aldershot: Edward Elgar, 1992, pp. 20-40.
- (18) "The internationalisation of technological activity and its implications for competitiveness", in O. Granstrand, L. Håkanson and S. Sjölander (Eds.), *The Internationalisation of R&D and Technology*, Chichester: John Wiley, 1992, pp. 75-95.
- (19) "Japan's industrial competitiveness and the technological capabilities of the leading Japanese firms", in T.S. Arrison, C.F. Bergsten, E.M. Graham and M.C. Harris (Eds.), *Japan's Growing Technological Capability: Implications for the US Economy*, Washington DC: National Academy Press, 1992, pp. 165-188.
- (20) "Introduction", in J.A. Cantwell (Ed.), *Multinational Investment in Modern Europe: Strategic Interaction in the Integrated Community*, Aldershot: Edward Elgar, 1992, pp. 1-12.
- (21) (With F. Sanna Randaccio) "Intra-industry direct investment in the European Community: oligopolistic rivalry and technological competition", in J.A. Cantwell (Ed.), *Multinational Investment in Modern Europe: Strategic Interaction in the Integrated Community*, Aldershot: Edward Elgar, 1992, pp. 71-106.
- (22) "Technological competence and evolving patterns of international production", in H. Cox, L.J. Clegg and G. Ietto-Gillies (Eds.), *International Business: Three Agendas for the 1990s*, London: Routledge, 1993, pp. 19-37.
- (23) "Corporate technological specialisation in international industries", in M.C. Casson and J. Creedy (Eds.), *Industrial Concentration and Economic Inequality: Essays in Honour of Peter Hart*, Aldershot: Edward Elgar, 1993, pp. 216-232.
- (24) "The internationalisation of technological activity in historical perspective", in V.C. Simões (Ed.), *International Business and Europe After 1992*, Vol. 1, Lisbon: CEDE, 1993, pp. 263-283.
- (25) (With U. Kotecha) "L'internationalisation des activités technologiques: le cas français en perspective", in F. Sachwald (Ed.), *Les Défis de la Mondialisation: Innovation et Concurrence*, Paris: Masson, 1994, pp. 107-152; English language version "The internationalisation of technological activity: the French evidence in a comparative

- setting", in J. Howells and J. Michie (Eds.), *Technology, Innovation and Competitiveness*, Aldershot: Edward Elgar, 1997, pp. 126-173.
- (26) "Introduction", in J.A. Cantwell (Ed.), *Transnational Corporations and Innovatory Activities*, London: Routledge, 1994, pp. 1-32.
- (27) "The relationship between international trade and international production", in D. Greenaway and L.A. Winters (Eds.), *Surveys in International Trade*, Oxford: Basil Blackwell, 1994, pp. 303-328.
- (28) "Teorie della internazionalizzazione della produzione", in N. Acocella (Ed.), *L'Impresa Multinazionale: Prospettive per una Teoria*, Trieste: Edizioni Lint, 1994, pp. 15-38.
- (29) (With M.P. Barrera) "The influence of international cartels on technological development in large firms", in D. Barjot (Ed.), *International Cartels Revisited, 1880-1980*, Caen: University of Caen Press, 1994, pp. 301-324.
- (30) "The evolution of European industrial technology in the interwar period", in F. Caron, P. Erker and W. Fischer (Eds.), *Innovations in the European Economy Between the Wars*, Berlin: de Gruyter, 1995, pp. 277-319.
- (31) "Multinational corporations and innovatory activities: towards a new, evolutionary approach", in J. Molero (Ed.), *Technological Innovation, Multinational Corporations and New International Competitiveness*, Chur: Harwood, 1995, pp. 21-57; reprinted in W.W. Liang, D.F. Simon and W.M. Denny (Eds.), *Technology Transfer in the Globally Networked Pacific Basin*, Hong Kong: Pacific Economic Cooperation Council, 1995, pp. 110-135; reprinted as "Imprese multinazionali e attività innovative: verso un approccio evoluzionista", in D. Archibugi and G. Imperatori (Eds.), *Economia Globale e Innovazione: La Sfida dell'Industria Italiana*, Rome: Donzelli Editore, 1997, pp. 73-112.
- (32) (With L. Piscitello) "The internationalisation of business and the economic development of Central and Eastern Europe", in G. Csáki, G. Fóti and D. Mayes (Eds.), *Foreign Direct Investment and Transition - The Case of the Visegrad Countries*, Budapest: Hungarian Academy of Sciences Press, 1996, pp. 57-72.
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of the Third European Congress on Innovation, Management and Patents - Patinnova '94), 1997, pp. 12-16.

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- (37) (With I. Paniccia) "Technological change and vertical integration in multinational companies", in M.G. Colombo (Ed.), *The Changing Boundaries of the Firm: Explaining Evolving Inter-Firm Relations*, London: Routledge, 1998, pp. 158-184.
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- (39) "Introduction", in J.A. Cantwell (Ed.), *Foreign Direct Investment and Technological Change*, Vol. I, Cheltenham: Edward Elgar, 1999, pp. ix-xxiv.
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- (42) (With O.E.M. Janne) "Globalisation of innovatory capacity: the structure of competence accumulation in European home and host countries", in F. Chesnais, G. Ietto-Gillies and R. Simonetti (Eds.), *European Integration and Global Corporate Strategies*, London: Routledge, 2000, pp. 121-177; reprinted as "Globalización de la capacidad innovadora: la estructura de la acumulación de competencias en los países europeos emisores y receptores", in J. Molero (Ed.), *Competencia Global y Cambio Tecnológico*, Madrid: Ediciones Pirámide, 2000, pp. 143-222.
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- (56) (With A. Gambardella and O. Granstrand) "Technological and corporate diversification", in J.A. Cantwell, A. Gambardella and O. Granstrand (Eds.), *The Economics and Management of Technological Diversification*, London: Routledge, 2004, pp. 1-17.
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- (58) "Historical shifts in corporate technological diversification", in J.A. Cantwell, A. Gambardella and O. Granstrand (Eds.), *The Economics and Management of Technological Diversification*, London: Routledge, 2004, pp. 265-296.
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- (60) "Introduction", in J.A. Cantwell (Ed.), *Globalization and the Location of Firms*, Cheltenham: Edward Elgar, 2004, pp. xi-xxv.
- (61) "Innovation and competitiveness", in J. Fagerberg, D.C. Mowery and R.R. Nelson (Eds.), *The Oxford Handbook of Innovation*, Oxford: Oxford University Press, 2005, pp. 543-567.
- (62) (With C. Iguchi) "Effects of backward linkages to local suppliers' development path: the case of the Malaysian electrical and electronics industry", in A. Giroud, A.T. Mohr and D. Yang (Eds.), *Multinationals and Asia: Organizational and Institutional Relationships*, London and New York: Routledge, 2005, pp. 54-71.
- (63) "Too little or too much?", in S. Passow and M. Runnbeck (Eds.), *What's Next? Strategic Views on Foreign Direct Investment*, Stockholm: Invest in Sweden Agency, 2005, pp. 32-37.
- (64) (With K. Glac) "TNCs, locational clustering and the process of economic development", in L. Cuyvers and F. De Beule (Eds.), *Transnational Corporations and Economic Development: From Internationalisation to Globalisation*, London: Palgrave Macmillan, 2005, pp. 84-101.
- (65) (With Y. Zhang) "Japan's R&D internationalization and its institutional environment", in M.J. Oesterle and J. Wolf (Eds.), *Internationalization and Institutions*, Wiesbaden: Gabler, 2005, pp. 297-330.
- (66) "MNCs, local clustering, and science-technology relationships", in G.D. Santangelo (Ed.), *Technological Change and Economic Catch-Up: The Role of Science and Multinationals*, Cheltenham: Edward Elgar, 2005, pp. 75-94.
- (67) "Financial and non-financial theories of international diversification", in A. Verbeke (Ed.), *Internalization, International Diversification and the MNE: Essays in Honor of*

*Alan M. Rugman*, Volume 11 in the Series on Research in Global Strategic Management, Amsterdam: Elsevier, 2005, pp. 59-73.

- (68) "Path-dependence and diversification in corporate technological histories", in C. Antonelli, D. Foray, B.H. Hall and W.E. Steinmueller (Eds.), *New Frontiers in the Economics of Innovation and New Technology: Essays in Honour of Paul David*, Cheltenham: Edward Elgar, 2006, forthcoming.
- (69) (With G.D. Santangelo) "Evolution of markets, technology and M&As", in B. Cassiman and M.G. Colombo (Eds.), *Mergers and Acquisitions: The Innovation Impact*, Cheltenham: Edward Elgar, 2006, forthcoming.

**(v) Invited papers in other journals:**

- (1) "La expansión de las empresas internacionales en una perspectiva histórica", *Informacion Comercial Española*, March 1987, pp. 9-17.
- (2) "Los factores determinantes de la internacionalización de las empresas", *Informacion Comercial Española*, October 1988, pp. 17-31.
- (3) "Współczesne teorie międzynarodowej działalności gospodarczej" (Contemporary theories of international economic activities, in Polish), *Sprawy Międzynarodowe*, Vol. 43, No. 4, 1990, pp. 91-100.
- (4) "La teoría de la competencia tecnología de la producción internacional y sus consecuencias", *Informacion Comercial Española*, April 1991, pp. 83-111.
- (5) "Innovation in a global world", *New Economy*, Vol. 2, No. 2, Summer 1995, pp.66-70.
- (6) "La globalización de la tecnología", *Economia Industrial*, No. 305, October 1995, pp. 33-48.
- (7) (With R. Harding) "German globalisation: an end to the economic miracle?", *New Economy*, Vol. 5, No. 1, Spring 1998, pp. 59-61.
- (8) (With C. Bellak) "The impact of foreign direct investment on international trade", *Journal of International Relations and Development*, Vol. 3, No. 2, June 2000, pp. 120-127.

**(vi) Discussion papers not fully incorporated into other publications:**

- (1) (With J.H. Dunning) "Joint ventures and non-equity foreign involvement by British firms, with particular reference to developing countries: an exploratory study", *University of Reading Discussion Paper in International Investment and Business Studies*, No. 68, 1982, 43pp.

- (2) "The relevance of the classical economists to the theory of international production", *University of Reading Discussion Paper in International Investment and Business Studies*, No. 79, 1984, 35pp.
- (3) (With P.E.E. Tolentino) "Technological accumulation and Third World multinationals", *University of Reading Discussion Paper in International Investment and Business Studies*, No. 139, May 1990, 58pp.
- (4) (With C. Bellak) "Measuring the importance of international production: the re-estimation of foreign direct investment at current values", *University of Reading Discussion Paper in International Investment and Business Studies*, No. 192, November 1994, 35 pp.
- (5) "The state of the theory of foreign direct investment and the multinational enterprise - comments on a paper by E.M. Graham", *Università di Roma "La Sapienza" CIDEI Working Paper*, No. 32, January 1995, 8pp.
- (6) (With H.B. Andersen) "How firms differ in their types of technological competencies, and why it matters", *University of Manchester ESRC Centre for Research on Innovation and Competition Discussion Papers*, No. 25, January 1999, 39pp.

## **Appointments in Professional Associations and to Editorships**

### **Elections or appointments to professional bodies, and key invited addresses:**

Member of the Executive Board, European International Business Association (December 1984 - December 1994).

President of the European International Business Association (December 1991 - December 1992).

Invited speaker, United Nations High Level Symposium on The Contribution of Transnational Corporations to Growth and Development in Latin America, Santiago, Chile, October 1992.

Member of the UK Treasury Academic Panel on inward investment, February 1997.

Fellow of the RSA - Royal Society for the encouragement of Arts, Manufactures and Commerce (since 1998).

Invited speaker, UK Department of Trade and Industry Conference on the Knowledge-Driven Economy, January 1999 (paper at <http://www.dti.gov.uk/comp/pdfs/kdeproc.pdf>).

Invited speaker, Academy of World Trade Law, Macau, July 2000 and July 2001.

Member of the Board of Management of the International J.A. Schumpeter Society (2000-2004).

Research Associate, Programme on International Regimes, Hamburg Institute of International Economics (HWWA) (2000-2002).

One of the four Founding Fellows of the European International Business Academy (since 2001), elected at the EIBA Annual Conference in Paris in December 2001; Secretary-Treasurer of the EIBA Fellows (since 2002).

Member of the Panel for the Junior Faculty Consortium at the Academy of International Business (AIB) Annual Conference in Puerto Rico in June 2002, and for the Junior Faculty Consortium of the International Management Division at the Academy of Management Annual Conference in New Orleans in August 2004.

Chair of the Track on Innovation, Marketing, Internationalization of R&D, and Location Choices of Knowledge Intensive Activities by MNCs for the Academy of International Business (AIB) Annual Conference in Quebec City in July 2005, and member of the Program Committee for the meeting.

Elected as a Fellow of the Academy of International Business (since 2005).

Elected as the Vice President of the Academy of International Business from June 2006 to June 2008, with responsibility for the AIB conference program in 2008.

**Editorships:**

Editor of Routledge book Series on Global Competition (since December 1992).

Member of the editorial board of Management International Review (since 1994); Journal of International Business Studies (since 1997); Cuadernos de Economía y Dirección de la Empresa (since 1998); Journal of Management and Governance (since 2001); Journal of International Management (since 2001); Journal of Economic Behavior and Organization (since 2002); International Economics and Economic Policy (since 2004); and Journal of Institutional Economics (since 2005).

Member of the Steering Committee of the ESRC's Research Programme on Intellectual Property Rights (1995-1999).

Associate Editor, Journal of International Business Studies (1997-2002).

Guest Editor of special issues of the Journal of Economic Behavior and Organization (vol. 35, no. 2, on technology and the theory of the firm) in February 1998; of Research Policy (vol. 27, no. 5, on technology and the firm) in September 1998 (both with the support of Richard Nelson and Keith Pavitt); of the Journal of International Relations and Development (vol. 3, no. 2, on foreign direct investment and trade) in June 2000 (with Christian Bellak); and of the International Journal of the Economics of Business (vol. 8, no. 2, on the eclectic paradigm) in July 2001 (with Rajneesh Narula).

Associate Editor, Journal of Economic Behavior and Organization (since 2002).

## **Ph.D. Supervision**

Supervisor of twelve completed Ph.D. theses at the University of Reading, nine of whom now hold academic appointments. Dr. Tolentino was awarded her degree in July 1988 for a thesis on Third World multinationals. She completed it within three years, and won the 1989 Farmer Prize, an international award by the Academy of International Business for the best thesis in international business. A book derived from her thesis was published by Routledge, and she is now a lecturer at Birkbeck College, London. Dr. Campayne was an ESRC research linked student who was awarded his degree in July 1990 for a thesis on the international location of financial services by multinational banks, and he went on to a research post at the Bank of England. Dr. Driffield was another ESRC funded student who received his degree in July 1993 for his thesis on the employment effects of multinational firms, which has been published by Harwood, and he is now Professor of International Business at Aston University. Dr. Andersen was awarded her degree in July 1997 for her thesis on technological change and the evolution of corporate innovation, and she is now a senior lecturer at Birkbeck College, London. Dr. Vertova obtained her degree in July 1998 for a thesis on the historical evolution of national innovation systems, and she now holds a research post at Bergamo University, Italy. Drs. Fai, Reganati and Santangelo all received their doctorates in July 1999. Dr. Fai completed her research on corporate technological diversification, and she is now a lecturer at Bath University. Dr. Reganati's thesis was on models of international trade and production, and he is a senior researcher at Casinò University, Italy. Dr. Santangelo completed her thesis in just two and a half years on the topic of multi-technology, multinational corporations in European ICT industries, and she is now an associate professor of economics at Catania University, Italy. Dr. Bachmann obtained her degree in December 1999 for her thesis on technological leadership and diversification in British and German pharmaceutical firms, and she works now for a company in Germany. Dr. Odile Janne graduated in July 2001, having completed in 2000 her thesis on the geography of corporate technological development in Europe. She had won the prize in the EIBA (European International Business Academy) Doctoral Tutorial in International Business in 1996, in Stockholm; and she is currently a lecturer at Birkbeck College, London. Dr. Camilla Noonan was awarded her degree in July 2002, for her thesis on the regional dynamics of technology sourcing in Germany, and she is now a lecturer at University College, Dublin. She won the 2003 Farmer Prize, an international award by the Academy of International Business for the best thesis in international business. Dr Elena Kosmopoulou received her degree in July 2005, for her thesis on the determinants of international corporate technological diversification.

Chair of the dissertation committee of one completed Ph.D. thesis at Rutgers University. Dr. Hyejin Kim will be awarded her degree in May 2006 for her Global Affairs thesis on international ethnic networks in business and intra-ethnic conflict amongst Koreans in China.

Current supervisor of a further ten Ph.D. students, one of whom (Jahan Peerally, of the University of Mauritius) was a Fulbright scholar at Rutgers in 2004-05, and is research visitor at the University of Western Ontario in 2005-06, as the winner of the EIBA Fellows Award to a Promising Young Scholar in International Business (sponsored by the Wandel and Goltermann Foundation). Of the others, two are registered at the University of Reading (one of whom, Chie Iguchi, is a Lecturer in International Business at Ritsumeikan University in Kyoto, Japan, since April 2005), and seven at Rutgers University.

Member of the Faculty Panel for the EIBA Doctoral Tutorial in International Business in 1988 (Berlin), 1989 (Helsinki), 1991 (Copenhagen), 1993 (Lisbon) and 2003 (Copenhagen); Chairman of the Panel in 1990 (Madrid) and Co-Chairman in 2004 (Ljubljana) and 2005 (Oslo). Member of the Faculty Panel for the AIB Doctoral Consortium in 2002 (Puerto Rico) and 2005 (Quebec City). Presented research seminar topics at the Aristotelian University of Thessaloniki, Greece, November 1991 (under the ERASMUS scheme). Expert commentator at the ESTER doctoral seminar on Technological Change and Economic Growth, Paris, September 1996. Member of the steering committee of ESTER (European graduate School for Training in Economic and social historical Research), 1997-2002. Gave lecture and research seminar series on the theme of Globalisation and Technological Innovation to Italian doctoral students in Economics based in Engineering faculties, San Marino, April 1997; and a series of lectures on Corporate Technological Diversification and Internationalisation to doctoral students in economics at the Scuola Sant'Anna in Pisa, June 2000.

## Citations

### Social Sciences Journal Citations:

Citations of publications by John Cantwell in articles in recent issues of the social sciences journals, compiled using the ISI Social Sciences Citation Index, in a search conducted through the Web of Science, on 31 October 2004. Citations are of sources published in the year in question that were authored (or co-authored) by John Cantwell, and the figures show the number of times that these sources were cited subsequently (in the 10-year window from 1994 through to the date of search) in the social sciences journals. Figures in brackets are the equivalent citations for searches conducted on 3 August 2002 and 7 February 2003 that used social science journal articles over the 10-year window through to each of these dates - and so the fall in cites of publications in some earlier years reflects the exclusion of citations from articles that appeared in 1992-1994.

	31.10.04	(7.2.03)	(3.8.02)
1982	1	(1)	(5)
1983	0	(0)	(1)
1984	2	(1)	(2)
1985	0	(0)	(1)
1986	8	(7)	(9)
1987	25	(24)	(26)
1988	5	(4)	(7)
1989	154	(135)	(132)
1990	12	(11)	(11)
1991	96	(89)	(85)
1992	53	(50)	(47)
1993	34	(30)	(29)
1994	38	(33)	(31)
1995	74	(57)	(54)
1996	14	(13)	(10)
1997	18	(16)	(15)
1998	42	(33)	(31)
1999	52	(32)	(22)
2000	39	(18)	(14)
2001	12	(2)	(0)
2002	7	(4)	(4)
2003	4	(-)	(-)
Overall	690	(560)	(536)
Annual average (over 22 [21] years)	31.36	[26.67]	[25.52]

Notes: 661 citations were obtained by combining the results of searches under the author names Cantwell JA (170), Cantwell J (486) and Cantwell JC (5); an additional 29 citations were found by extracting the relevant citations under the co-authors Dunning JH (22), Bellak C (6), and Fai F (1). The single most cited source was the book *Technological Innovation and*

*Multinational Corporations*, Basil Blackwell, 1989 (151 citations), and the second highest was the paper 'The globalisation of technology: what remains of the product cycle model?', *Cambridge Journal of Economics*, vol. 19, 1995 (63 citations).