

## **Personal details**

Prof. Dr. Marcel P. Timmer  
Faculty of Economics and Business, University of Groningen  
PO Box 800, 9700 AV Groningen, The Netherlands  
tel 00-31-50-3633653, fax: 00-31-50-3637337  
e-mail: m.p.timmer@eco.rug.nl

Born: 3 April 1970

Nationality: Dutch

## **Academic degrees**

MA (doctoraal) in Econometrics, with distinction: Cum laude, 1994, University of Groningen.

MA (doctoraal) in Philosophy, with distinction: Philosopher of Social Sciences, 1994, University of Groningen

Ph.D in Economics on "The Dynamics of Asian Manufacturing. A Comparative Perspective", 1999, Eindhoven University of Technology

## **Employment record**

2010- University of Groningen, Dept. of Economics and Business: Full Professor  
2007- 2010: University of Groningen, Dept. of Economics and Business: Associate Professor  
2003- 2007: University of Groningen, Dept. of Economics: Assistant Professor  
1999- 2003: University of Groningen, Dept. of Economics: Post-doc (on NWO grant)  
1998- 1999: University of Groningen, Dept. of Economics: Lecturer in Economics  
1994- 1999: Eindhoven University of Technology, Dept. of Technology Management: Ph.D. Student  
1993- 1994: University of Groningen, Dept. of Economics: Research Assistant

## **Visiting positions**

1995: University of New England, Armidale  
1997: Australian National University, Canberra  
1997: Institute of Economic Growth, Delhi and CUSAT, Cochin  
1997: Indonesian Institute of Sciences, PEP-LIPI, Jakarta  
1999: Kennedy School of Government, Harvard University  
2000: Keio University and Research Institute of MITI, Tokyo  
2000: Seoul National University, Seoul  
2002: Academia Sinica, Taipeh  
2004: University of California, Davis

## Research Grants

- 2012-2014: Economic and Social Research Council of the U.K. and DFID Growth Programme, *Structural Change and productivity Growth in Africa*, co-principal investigator, GBP 298,000
- 2011-2014: European Union FP7 Coordinating action, “E-Frame - European Framework for Measuring Progress”, consortium partner, €60,000
- 2011-2013: Sloan Foundation, *The Next Generation of the Penn World Table*, co-principal investigator, US\$ 150,000
- 2011-2013: National Science Foundation, *International Comparisons Project*, consultant to Feenstra (UC Davis), US\$ 40,000
- 2010-2013: European Union FP7 Collaborative action "European Framework for Measuring Progress", consortium partner, €60,000
- 2009-2012: INDICSER (Indicators for evaluating international performance in service sectors), funded by the European Commission, grant no. 244709. Total grant € 2,349,725 of which € 453,000 for RUG. Co-applicant and member of management team.
- 2009-2012: WIOD project (World Input-Output Database: Construction and Applications), funded by the European Commission, grant no. 225 281. Total grant € 3,991,449 of which € 1,070,970 for RUG. Co-applicant and member of management team.
- 2010-2014: Netherlands Organization for Scientific Research (NWO), funding for Ph D Position, grant 400-09-310, €210,000. Applicant.
- 2005-2011: NSF projects, *Integrating Expenditure and Production Estimates in International Comparisons* and *Measuring Real GDP*, together with Rob Feenstra, University of California, Davis and A. Heston, Univ. of Pennsylvania. Co-investigator.
- 2004-2008: EUKLEMS project (Productivity in the European Union: A Comparative Industry Approach), funded by European Commission, grant no. 502049. Researcher and member of management team
- 2000-2004: EPKE project (Employment Prospects in the Knowledge Economy), funded by European Commission. Researcher.
- 2000-2003: TEG-project (Technology and Economic Growth), funded by Netherlands Organization for Scientific Research (NWO). Applicant and researcher.

## Professional Activities

### *Project management*

- 2011-2014: European Union FP7 Coordinating action, “E-Frame - European Framework for Measuring Progress”, Workpackage leader,
- 2009-2012: member of three-headed management team INDICSER project (consortium of 8 research institutes).
- 2009-2012: member of three-headed management team WIOD project (consortium of 9 research institutes)
- 2004-2008: member of three-headed management team EU KLEMS project (consortium of 17 research institutes)
- 2008-: Director of Groningen Growth and Development Centre, Centre of Expertise, Faculty of Economics and Business, University of Groningen

### ***Editorial activities***

- from 2010: Associate editor *Journal of Productivity Analysis*
- from 2004: Editorial board member *Review of Income and Wealth*
- 2007-2009: Assistant managing editor of *Review of Income and Wealth*
- 2007: Guest Editor special issue for *Economic Systems Research*, vol. 19(3)

### ***Refereeing journals (selection)***

Review of Economics and Statistics; Oxford Economic Papers; Southern Economic Journal; Journal of International Economics; International Economic Review; Review of Income and Wealth; Economic Systems Research; Scandinavian Journal of Economics; Structural Change and Economic Dynamics; European Journal of Political Economy; Journal of Productivity Analysis; Canadian Journal of Economics; Empirical Economics; European Economic Review; Journal of Macroeconomics.

### ***Refereeing proposals***

Evaluator for proposals in 7<sup>th</sup> framework programme for European Commission Services.  
Evaluator for proposals Dutch Science Foundation (NWO); Social Sciences and Humanities Research Council Canada; Sloan Foundation

### ***Membership advisory board***

- from 2008: Statistics Netherlands, Advisory Board Macro-economic Statistics (Raad van Advies voor de Macro-economische Statistieken)
- from 2009: Statistics Netherlands, Advisory Board Sustainability work program.
- From 2010: Member Technical Advisory Group for International Comparison Program of the World Bank
- From 2010: Member of Conference on Research in Income and Wealth (CRIW)

### ***Consultancies***

- 1998: Asian Development Bank: for Infrastructure, Energy & Financial Sectors Department.
- 1999: The Conference Board: Feasibility study for EU KLEMS project.
- 2001: The Conference Board: Proposal for Eurostat tender “CPI and PPPs”
- 2002: OECD: Development of Reader “Measuring Productivity Levels”
- 2005: Ministry of Economics, Trade and Industry (METI), Japan. ICPA project (International Comparison of the Productivity among Pan-Pacific Countries).
- 2006: OECD: Background study for “OECD Economic Survey of India”
- 2006: CPB (Netherlands Bureau for Economic Policy Research) Part of project feedback team.
- 2009: Statistics Netherlands, contribution to audit “Evaluation of Biases in Economic Growth Statistics”, April-July 2009

### ***Organisation of Seminars and Conferences***

- 2002: TEG/SOM-conferentie “The Empirical Implications of Technology-Based Growth Theories”, Groningen.
- 2005: Workshop on “Construction of time-series of Supply and Use tables” Groningen.
- 2006: Session at International Input-Output Association meetings, Sendai, 2006.
- 2007: Workshop on “Recent Developments in International Comparisons of Output and Productivity” Groningen, April 23, 2007
- 2009: Kick-off meeting for WIOD project, May, 14-15, 2009, Schiphol.
- 2009: WIOD/OECD workshop on International IO-tables, December, 2009, Paris.
- 2010: First World KLEMS conference, Harvard, Boston, 17-18 August
- 2011: Workshop on International Comparisons of Output and Productivity, Groningen 12/13 May
- 2011: Workshop Advances in International Trade, May 14
- 2012: Conference “Causes and consequences of globalisation”, Groningen, 23-25 April 2012
- 2012: Session at 32nd IARIW General Conference, Boston, 5-8 August.
- 2012: Second World KLEMS conference, Harvard, Boston, 9-10 August

### ***Invited presentations (selection)***

- 2003: European Union Institute for Prospective Technological Studies (IPTS), Seville, “The Big Divide: is it IT?”.
- 2005: Statistics Sweden, Saltsjöbadsconference on “Swedish Productivity Performance”
- 2005: Banque France/CEPPI, “Divergences in Productivity between Europe and the US”.
- 2006: Statistics Netherlands, Conference on “Productiviteit en groei rekeningen”.
- 2006: Research Institute for Economy, Trade and Industry (RIETI), Tokyo, Policy Symposium on “Determinants of Total Factor Productivity and Japan’s Potential Growth: An International Perspective”
- 2007: ZEW, Mannheim, Workshop “Explaining Productivity Growth in EU, US and Asia”
- 2008: Toulouse School of Economics and French Ministry for Higher Education and Research “Knowledge for Growth: European Strategies in the Global Economy”, Toulouse, 7 July
- 2008: CERGE-EI (Centre for Economic Research and Graduate Economics Institute), Prague, 9 November.
- 2010: OECD Conference Global Value chains, Paris, 21 September, 2010
- 2010: Korea Productivity Centre, Seoul, International Conference on Productivity in East Asia, 20 October, 2010
- 2010: Research Institute for Economy, Trade and Industry (RIETI), Tokyo, RIETI/G-COE Hi-Stat International Workshop on Establishing Industrial Productivity Database for East Asia, 22 October 2010
- 2010: University of Munich (LMU), Key-note lecture at ICT & Economic Growth Conference, Munich November 5.
- 2011: World Bank workshop, “The Fragmentation of Global Production and Trade in Value Added”, Washington, June 9-10, 2011
- 2012: EU Directorate-General Trade High-level meeting on high-level conference on "Competitiveness, trade, environment and jobs in Europe: Insights from the new World Input Output Database (WIOD)“
- 2012: OECD/ECLAC/World Bank conference “Latin America’s Prospects for Upgrading in Global Value Chains”, Mexico City, March 14-15 2012

## Teaching

- 1998-: at Faculty of Economics, University of Groningen, including:
- Introduction to Economics (BA);
  - Methodology in Economics (BA)
  - Dutch Economic History (BA);
  - International Institutions and Business (BA);
  - Introduction to Development Studies (BA);
  - Development Economics (BA, MA and PhD);
  - Economic Growth and Development (PhD);
  - Honours projects;
  - Master thesis supervision (12 completed)
- 1999, 2007: UNU-INTECH PhD course "Productivity Measurement" and "Empirical Analysis of Innovation and Industrial Development" (guest lectures)
- 2002: ESTER/Posthumus research school, Athens, PhD course on "Industrialisation - Past and Present"
- 2004-2012 NOHA (Humanitarian Assistance) program, RUG: guest lectures

## PhD supervision

- 1999-2003 Peter Hein van Mulligen on "The Role of Quality Change in International Comparisons of Output and Productivity", Co-promoter.
- 2003-2008 Abul Azeez Erumban on "Innovation, Investment and the Measurement of Capital, Promoter.
- 2005-2010 Gaaitzen de Vries on "Explaining Latin-American Growth: Understanding Macro-trends from a micro-perspective".
- 2007-2011 Janneke Pieters on "Essays on Socio-economic Development in India".
- 2008- Ilya Voskoboynikov on "The Effects of Disorganisation: the Case of Russia"
- 2008- Adissu Lashitew on "Resource allocation and economic growth"
- 2008- Jop Woltjer on "Economic Growth in Europe, 1918-1960"
- 2009- Joost Veenstra on "Comparative growth patterns in Europe, pre World War I"
- 2010- Nikita Bos on "Economic Growth in Europe from 1950 onwards"
- 2010- Javier Arnaut on "Latin-American Development"
- 2011- Wen Chen on "Intangibles and growth"

## Publications

### *Books*

Timmer, M.P., R. Inklaar, M. O'Mahony, and B. van Ark (2010), *Economic Growth in Europe*, Cambridge University Press.

Timmer, M.P. (2000), *The Dynamics of Asian Manufacturing. A Comparison in the late Twentieth Century*, Edward Elgar Publishers, Cheltenham.

### *Journal Articles*

Vries, de G, A.A. Erumban, M.P. Timmer, I. Voskoboynikov and H. Wu (2012, in press), "Deconstructing the BRICs: Structural Transformation and Aggregate Productivity Growth", *Journal of Comparative Economics*, accepted for publication

Erumban, A.A. and M.P. Timmer (2012, in press), "The Dark Side of Creative Destruction: Innovation and Retirement of Capital", *Industrial and Corporate Change*, accepted for publication

Temurshoev, U. and M.P. Timmer (2011), "Joint estimation of supply and use tables", *Papers in Regional Science*, 90(4), pp. 863-882.

Jorgenson, D.W. and M.P. Timmer (2011), "Structural Change in Advanced Nations: A New Set of Stylised Facts", *Scandinavian Journal of Economics*, 113(1), pp. 1-29.

Timmer, M.P. and G.J. de Vries (2009), "Structural change and growth accelerations in Asia and Latin America: a new sectoral data set", *Cliometrica*, 3(2) pp. 165-190.

Inklaar, R. and M. P. Timmer (2009), "Productivity Convergence Across Industries and Countries: The Importance of Theory-based Measurement", *Macroeconomic Dynamics*, vol. 13(S2), pages 218-240.

O'Mahony, M. and M.P. Timmer (2009), "Output, Input and Productivity Measures at the Industry Level: the EU KLEMS Database", *Economic Journal*, 119(538), pp. F374-F403.

Feenstra, R., A. Heston, M.P. Timmer and H. Deng (2009), "Estimating Real Production and Expenditures Across Nations: A Proposal for Improving the Penn World Tables", *Review of Economics and Statistics*, 91(1), pp. 201-212.

Timmer, M.P. and G.J. de Vries (2009), "Structural change and growth accelerations in Asia and Latin America: a new sectoral data set", *Cliometrica*, 3(2) pp. 165-190.

Ark, van B., M. O'Mahony and M.P. Timmer (2008), "The Productivity Gap between Europe and the U.S.: Trends and Causes", *Journal of Economic Perspectives*, 22(1), pp. 25-44.

Inklaar, R., M. P. Timmer and B. van Ark (2008), "Market Services Productivity", *Economic Policy*, 23, pp. 141-194.

Inklaar, R. and M. P. Timmer (2008), "Accounting for Growth in Retail Trade: An International Productivity Comparison", *Journal of Productivity Analysis*, 29(1), pp. 23-31.

Inklaar, R. and M. P. Timmer (2007), "International Comparisons of Industry Output, Inputs and Productivity Levels: Methodology and New Results", *Economic Systems Research*, 19(3), pp. 343-364.

- Fremdling, R. H. de Jong and M. P. Timmer (2007), “British and German Manufacturing Productivity Compared. A New Benchmark for 1935/36 Based on Double Deflated Value Added”, *Journal of Economic History*, 67(2), pp. 350-377.
- Inklaar, R. and M. P. Timmer (2007), “Of yeast and mushrooms: Patterns of industry-level productivity growth”, *German Economic Review*, 8(2): 174–187
- Inklaar, R. M. P. Timmer and B. van Ark (2007), “Mind the gap! International comparisons of productivity in services and goods production”, *German Economic Review*, 8(2): 281–307
- Hill, R. and M.P. Timmer (2006), “Standard Errors as Weights in Multilateral Price Indexes”, *Journal of Business and Economic Statistics* 24(3), pp. 366-377.
- Inklaar, R. and M.P. Timmer (2006), “Resurgence of Employment Growth in the European Union: The Role of Cycles and Labour Market Reforms”, *Economic Letters*, 61(1), pp.61-66.
- Timmer, M.P. and B. van Ark (2005), “Does Information And Communication Technology Drive Productivity Growth Differentials? A Comparison Of The European Union Countries And The United States”, *Oxford Economic Papers*, 57(4), pp. 693-716.
- Inklaar, R., M. O’Mahony and M.P. Timmer (2005), “ICT and Europe’s Productivity Performance: Industry-level growth account comparisons with the United States”, *Review of Income and Wealth*, 51(4), pp.505-536.
- Timmer, M.P., R. Inklaar and B. van Ark (2005), “Alternative output measurement for the U.S. retail trade sector”, *Monthly Labour Review*, July 2005, pp. 2-8.
- Los, B. and M.P. Timmer (2005), “The ‘Appropriate Technology’ Explanation of Productivity Growth Differentials: An Empirical Approach”, *Journal of Development Economics*, 77(2), pp.517-531.
- Timmer, M.P. and B. Los (2005), “Localized Innovation and Productivity Growth in Asia: An Intertemporal DEA Approach”, *Journal of Productivity Analysis*, 23(1), pp. 47-64.
- Rao, D.S.P. and M.P. Timmer (2003), “Purchasing Power Parities for Industry Comparisons Using Weighted Elteto-Koves-Szulc (EKS) Methods”, *The Review of Income and Wealth*, 49(4), pp. 491-512.
- Timmer, M.P. (2003), “Technological development and rates of return to investment in a catching-up economy: the case of South Korea”, *Structural Change and Economic Dynamics*, 14(4), pp. 405-425.
- Broersma, L., R.H. McGuckin and M.P. Timmer (2003), “The Impact of Computers on Productivity in the Trade Sector: Explorations with Dutch Microdata”, *De Economist*, 151(1), pp. 53-79.
- Szirmai, A., M. Timmer and R. van der Kamp (2002), “Measuring Embodied Technological Change in Indonesian Textiles: The Core Machinery Approach”, *Journal of Development Studies*, 39(2), pp. 155-177.
- Serrano, L. and M.P. Timmer (2002), “Is Technical Change Directed By The Supply Of Skills? The Case Of South Korea”, *Economic Letters*, 76, pp. 289-293.
- Timmer, M.P. (2002), “Climbing the Technology Ladder Too Fast? New Evidence on Comparative Productivity Performance in Asian Manufacturing”, *Journal of Japanese and International Economies*, 16, pp.50-72.
- Ark, B. van, and M.P.Timmer (2002), “Notes and Communications. Industry Productivity Comparisons”, *De Economist* 150(1), pp. 95-109.
- Timmer, M.P. (2001), “Financial and Economic Crises in Asia”, *The Review of Income and Wealth*, 47(1), pp.125-133.

- Timmer, M.P. and A.Szirmai (2000), "Productivity Growth in Asian Manufacturing: The Structural Bonus Hypothesis Re-examined", *Structural Change and Economic Dynamics*, 11(4), pp. 371-391.
- Timmer, M.P. and A.Szirmai (1999), "International Comparison of Productivity Performance in Manufacturing in South- and East Asia, 1963-1993", *Oxford Development Studies*, vol.27(1), pp.57-79.
- Timmer, M.P. (1999), "Indonesia's Ascent on the Technology Ladder: Capital Stock and Total Factor Productivity in Indonesian Manufacturing, 1975-1995", *Bulletin of Indonesian Economic Studies*, vol 35(1), pp. 75-97.

### ***Contributions to Books***

- Ark, B., M. O'Mahony and M. P. Timmer (2012), " Europe's productivity performance in comparative perspective: trends, causes and recent developments", Chapter 3 in M. Mas and R. Stehrer (eds), *Industrial Productivity in Europe, Growth and Crisis*, Edward Elgar, pp.337-368.
- Inklaar, R. and M. P. Timmer (2012), " Productivity convergence across industries and countries: the importance of theory- based measurement", Chapter 11 in M. Mas and R. Stehrer (eds), *Industrial Productivity in Europe, Growth and Crisis*, Edward Elgar, pp.337-368.
- Ark, B., M. O'Mahony and M. P. Timmer (2010), "ICT and productivity growth in Europe: an update and comparison with the US", Chapter 3 in Cimoli, M., A. Hofman and N. Mulder (eds), *Innovation and Economic Development The Impact of Information and Communication Technologies in Latin America*, Edward Elgar, pp. 74-96.
- Ark, B. van and M.P. Timmer (2009), "Purchasing Power Parity Adjustments for Productivity Level Comparisons", Chapter 13 in D.S. Prasada Rao (ed.), *Purchasing Power Parities of Currencies: Recent Advances in Methods and Applications*, Edward Elgar, pp. 334-367.
- Inklaar, R. and M. P. Timmer (2007), "Yeasty Investment and Mushroom Productivity Growth: an Industry Perspective on European and American Performance, 1987–2003", Chapter 4 in G. Cetto, M. Fouquin and H-W Sinn (eds), *Divergences in Productivity between Europe and the US*, Edward Elgar.
- Timmer, M.P. and G. Ypma (2007), "Purchasing Power Parities for International Comparison of Output and Productivity in Japan, South Korea, Taiwan and the U.S", Chapter 7 in D.W. Jorgenson, M.Kuroda and K. Motohashi (eds), *Productivity in Asia Economic Growth and Competitiveness*, Edward Elgar.
- Ark, B. van and M.P. Timmer (2006), "Computers and the Big Divide: Productivity Growth in the European Union and the United States", Chapter 5 in M. Mas and P. Schreyer (eds), *Growth, Capital and New Technologies*, Fundación BBVA, Bilbao.
- Inklaar, R., Mary O'Mahony, Catherine Robinson and M.P. Timmer (2003), *Productivity and Competitiveness in the EU and the US*, Chapter III in M. O'Mahony and B. van Ark (eds) *EU Productivity and Competitiveness: A Sectoral Perspective. Can Europe Resume the Catching-up Process?*, Report for European Commission, October 2003.
- Inklaar, R., Lucy Stokes, Edwin Stuivenwold, Marcel P. Timmer and Gerard Ypma (2003), *Data Sources and Methodology*, Chapter VII in M. O'Mahony and B. van Ark (eds) *EU Productivity and Competitiveness: A Sectoral Perspective. Can Europe Resume the Catching-up Process?*, Report for European Commission, October 2003.

- Ark, B. van, and M.P.Timmer (2003), “Economic Convergence and Divergence”, in J. Mokyr (ed), *The Oxford Encyclopedia of Economic History*, Volume 2, pp. 128-131, Oxford University Press.
- Ark, B. van, and M.P.Timmer (2002), “Realising Growth Potential: South Korea and Taiwan, 1960 to 1998”, in A. Maddison, D.S. Prasada Rao and W. Shepherd (eds), *The Asian Economies in the Twentieth Century*, Edward Elgar, pp. 226-244.
- Ark, B. van, and M.P.Timmer (2002), “Capital Formation And Foreign Direct Investment In Korea And Taiwan: Coping With Diminishing Returns”, in J.T. Lindblad (ed.), *Asian Growth and Foreign Capital: Case Studies from Eastern Asia*, Amsterdam: Aksant, pp.59-98.
- Szirmai, A., M. Timmer and R. van der Kamp (2002), “Growth of the Capital Stock and Technological Change in Indonesian Textile Industry”, J.T. Lindblad (ed.), *Asian Growth and Foreign Capital: Case Studies from Eastern Asia*, Amsterdam: Aksant, pp.153-182.
- Ark, B. van, E.J. Monnikhof and M.P. Timmer (1999), “Prices, Quantities and Productivity in Industry: A Study of Transition Economies in a Comparative Perspective”, R. Lipsey and A. Heston (eds), *International and Interarea Comparisons of Prices, Income and Output*, NBER, Chicago University Press, p.327-364.
- Szirmai, A., M. Timmer and R. van der Kamp (1998), “Technology and Human Resources in the Indonesian Textile Sector”, in: H. Hill and T.K.Wie (eds), *Indonesia's Technological Challenge*, Institute of Southeast Asian Studies, Singapore, pp. 279-301.

### **Other**

- Timmer, M.P., R. Inklaar, M. O’Mahony, and B. van Ark (2011), *Productivity and Economic Growth in Europe: an Industry*, *International Productivity Monitor*, Spring 2011, pp. 3-23, Centre for the Study of Living Standards, Ottawa.
- Inklaar, R. and M.P. Timmer (2008), “Comparisons of Industry-level Prices and Productivity”, *The ICP Bulletin*, Volume 5, No. 3, December 2008, World Bank, pp. 30-38
- Van Ark, B. A. Maddison and M.P. Timmer (2008), “Purchasing Power Parity Measurement for Industry of Origin Analysis”, *The ICP Bulletin*, Volume 5, No. 1, March 2008, [www.worldbank.org/data/icp](http://www.worldbank.org/data/icp), World Bank, pp. 29-35
- Timmer, M.P., M. O’Mahony and B. van Ark (2007), “EU KLEMS Growth and Productivity Accounts: An Overview”, *International Productivity Monitor*, Spring 2007, pp. 71-85, Centre for the Study of Living Standards, Ottawa.
- Timmer, M.P., M. O’Mahony and B. van Ark (2007), “Growth and productivity accounts from EU KLEMS: An overview”, *National Institute Economic Review*, 200, pp. 64-79.
- Timmer, M.P. (2007), “ICT and Economic Growth: Measurement and Understanding”, Chapter 2 in CBS (2007), *New Economy-New Statistics*, Voorburg/Heerlen.
- Timmer, M.P., M. O’Mahony and B. van Ark (2007), “EU KLEMS Growth and Productivity Accounts: An Overview”, *International Productivity Monitor*, 14, Spring 2007, pp. 71-84, Centre for the Study of Living Standards, Ottawa.
- Timmer, M.P. (2005), *Book review* on “Growth and Productivity in East Asia by Takatoshi Ito and Andrew K. Rose (eds)”, *Asian-Pacific Economic Literature*, Vol. 19(2), pp. 88-100.

- Ark, B. van, R. Inklaar, R.H. Guckin and M. P. Timmer (2003), “The Employment effects of the ‘new economy’. A comparison of the European Union and the United States”, *National Institute Economic Review*, 184(2), pp. 86-99.
- Ark, B. van, and M.P.Timmer (2001), “The ICOP Manufacturing Database: International Comparisons of Productivity Levels”, *International Productivity Monitor*, Fall 2001, pp. 44-51, Centre for the Study of Living Standards, Ottawa.