

## CURRICULUM VITAE

**Rita Asplund:** PhD (University of Helsinki)

### **Current employment**

Research Director at the Research Institute of the Finnish Economy ETLA (Helsinki) with responsibility for the research programme Labour Market and Education Economics. For more information, please visit ETLA's web-site <http://www.etla.fi/eng>

### **Other affiliations include**

Docent in labour market economics for the Åbo Akademi University.

### **Previous employment includes**

University of Helsinki (temporary acting professor in economics), Swedish School of Economics and Business Administration (temporary acting professor in economics, lecturer), Åbo Akademi University (research assistant), Economic Planning Centre (research officer).

### **Core areas of research**

Has worked for many years on research projects concerning the economic significance of investments in human capital; wage determination and labour market institutions; individual labour market outcomes involving aspects of flexibility and dynamics such as individual mobility (in various dimensions and with special emphasis on the low-paid), adjustment to technological progress and skills upgrading and training. Additionally her research has focused on R&D, public funding to companies, intellectual capital, and the interplay between technology policies and labour market flexibility for improved company and national economic performance.

Major past and current research in labour market and education economics includes PhD thesis on education and wages 1993; coordinator of the EU-TSER funded PURE project 1998–2000; coordinator of the EU-IHP funded EDWIN project 2002–2005; coordinator of a NOS-S funded Nordic project involving crucial labour market and educational aspects 2003–2006; responsible for a large national project concerning evaluation of education investments in Finland (2003–2006); responsible for a large national project concerning pay structures in Finland (2007–2010); partner in three European Structural Fund financed projects concerning Finland, one on the labour market costs and effects of parental leave (2006–2008), one on labour market segregation (2007–2008), one on the role of new pay schemes for gender pay inequality (2008–2010).

### **Past and current contracts with the European Commission**

- Public Funding and Private Returns to Education – PURE (SOE2-CT98-2044)(co-ordinator);
- Measuring Intangibles to Understand and Improve Innovation Management – MERITUM (SOE1-CT98-1104)(partner);
- European Low-Wage Employment Research Network – LoWER (SOE2-CT95-3004) (partner);
- Developing Sectoral Strategies To Address Gender Pay Gaps (VS/2001/0538)(partner); Flexibility and Competitiveness: Labour Market Flexibility,

Innovation and Organisational Performance – Flex.Com (HPSE-CT2001-00093)(partner);

- A European Research Arena on Intangibles – E\*KNOW-NET (STPN 2000-00005)(partner);
- Can improving low-skilled consumer services jobs help European job growth? (SHPSE-CT1999-00021)(partner);
- Education and Wage Inequality in Europe – EDWIN (HPSE-CT-2002-00108)(coordinator);
- Socio-economic and Occupational Effects on the Health Inequality of the Older Workforce –SOCIOOLD (QLK6-CT-2002-02292)(partner);
- Societal and Economic Effects on Quality of Life and Well-being: Preference Identification and Priority Setting in Response to Changes in Labour Market Status – EPICURUS (HPSE-CT-2002-00143)(partner);
- The Insecure Perspectives of the Low Skilled in the Knowledge Society – LoWER3 (CIT2-CT-2004-506480) (partner).

#### **Past and current contracts with Nordic financing bodies**

- Changing Wage Structures and Wage Negotiation Systems: the Nordic Model Under Hard Pressure (NOS-S funded project involving all five Nordic countries)(coordinator);
- Challenges of Nordic labour markets: a polarisation of working life? (funded by the Nordic Council of Ministers)(partner).

For more information on the above projects, please visit ETLA's web-site at the address: <http://www.etla.fi/eng/tutkimushaku.php?id=1>

#### **SELECTED PUBLICATIONS:**

- 2009 **Sources of Increased Wage Differentials in the Finnish Private Sector.** ETLA, The Research Institute of the Finnish Economy, Discussion Papers no. 1206, Helsinki.
- 2009 **Student Loans and the Likelihood of Graduation: Evidence from Finnish Cohort Data** (co-authors: Oussama Ben-Abdelkarim & Ali Skalli), *Higher Education in Europe* 2(34), 243–255.
- 2009 **Työvoimapolitiikan vaikuttavuus Suomen näkökulmasta katsottuna (The effect of labour market policies from a Finnish perspective)**, *Työpoliittinen Aikakauskirja* 2009:3, 6–20. (in Finnish with English summary)
- 2009 **Työmarkkinoiden toiminnan ja toimivuuden vaikutus työllisyyteen ja työttömyyteen. (The effect of labour market functioning on employment and unemployment).** Ministry of Employment and the Economy, MEE Publications, Employment and Entrepreneurship 40/2009. (in Finnish with English summary)
- 2009 Co-editor (together with Peter Dolton & Erling Barth) of *Education and Inequality Across Europe*. Edward Elgar Publishing Ltd., Cheltenham.
- 2009 **Education and Income Inequality: A Macroeconomic Perspective**, chapter 2 in P. Dolton, R. Asplund & E. Barth (eds), *Education and Inequality Across Europe*. Edward Elgar Publishing Ltd., Cheltenham.
- 2009 **Inequality in Access to and Finance of Tertiary Education** (co-authors: Oussama Ben-Abdelkarim & Ali Skalli), chapter 5 in P. Dolton, R. Asplund & E.

Barth (eds), *Education and Inequality Across Europe*. Edward Elgar Publishing Ltd., Cheltenham.

- 2008 **An Equity Perspective on Access to, Enrolment in and Finance of Tertiary Education** (co-authors: Oussama Ben-Abdelkarim & Ali Skalli), *Education Economics* 16(3), 261–274.
- 2008 **Sukupuolten palkkaerot Suomessa. Yksityisen sektorin miesten ja naisten palkkojen ja palkkaerojen tarkastelu (Gender wage differences in Finland: The structure and trend of private-sector male and female wages and wage gaps)**. ETLA, The Research Institute of the Finnish Economy, Series B233, Helsinki. (in Finnish with English summary)
- 2008 **Palkkaerot Suomessa. Yksityisen sektorin palkkojen rakenteen ja kehityksen tarkastelu (Wage differences in Finland: The structure and trend of private-sector wages)** (co-author: Petri Böckerman). ETLA, The Research Institute of the Finnish Economy, Series B231, Helsinki. (in Finnish with English summary)
- 2007 Co-editor (together with R. Lilja & K. Kauppinen) of *Perhevapaavalinnat ja perhevapaiden kustannukset sukupuolten välisen tasa-arvon jarruina työelämässä? (Do the choices and costs of family leave hamper gender equality in working life?)*. Ministry of Social Affairs and Health, Report 2007:69, Helsinki. (in Finnish with extensive English summary)
- 2007 **Training and hiring strategies to improve firm performance** (co-author: Mika Maliranta), ETLA, The Research Institute of the Finnish Economy, Discussion Papers No. 1105, Helsinki.
- 2007 **An Equity Perspective on Access to, Enrolment in and Finance of Tertiary Education** (co-authors: Oussama Ben-Abdelkarim & Ali Skalli). ETLA, The Research Institute of the Finnish Economy, Discussion Papers 1098, Helsinki.
- 2007 **Finland: Decentralisation Tendencies within a Collective Wage Bargaining System**. ETLA, The Research Institute of the Finnish Economy, Discussion Papers 1077, Helsinki.
- 2007 **Tuottavuutta inhimillisestä pääomasta ja teknologiasta** (co-author: Mika Maliranta), chapter in J. Jalava, J. Eloranta & J. Ojala (eds), *Muutoksen merkit. Kvantitatiivisia perspektiivejä Suomen taloushistoriaan*. Tilastokeskus, Tutkimuksia 245, Helsinki. (Finnish version of the below book: The Road to Prosperity)
- 2006 **Productivity Growth: The Role of Human Capital and Technology** (co-author: Mika Maliranta), chapter in J. Ojala, J. Eloranta & J. Jalava (eds), *The Road to Prosperity. An Economic History of Finland*. Suomen Kirjallisuuden Seura, Helsinki, & Gummerus Oy, Jyväskylä.
- 2006 **Koulutuksen taloudelliset vaikutukset (The Economic Effects of Education)** (co-author: Mika Maliranta). Sitra Reports No. 60, Helsinki. (in Finnish)
- 2005 **Koulutus talouskasvun kiihdyttävä – myytti vai fakta? (Education as an Engine of Growth – Myth or Fact?)** (co-author: Mika Maliranta), chapter in A. Hyytinen & P. Rouvinen (eds), *Mistä talouskasvu syntyy? (What feeds economic growth?)*. ETLA, The Research Institute of the Finnish Economy, Series B214, Helsinki. (in Finnish)

- 2005 **Careers and earnings growth in IT and retail trade** (co-author: Reija Lilja), chapter in S. Bazen, C. Lucifora and W. Salverda (eds), *Job Quality and Employer Behaviour in the Service Sector*. Palgrave Macmillan.
- 2005 **The Provision and Effects of Company Training – A Brief Review of the Literature**. *Nordic Journal of Political Economy* 31(1), pp. 47–73.
- 2005 **Employers and training: What do we know and what do we not know?**, chapter in I. Marx & W. Salverda (eds), *Low-wage Employment in Europe: Perspectives for Improvement*. Acco, Leuven.
- 2005 **Education, Training and Active Labour Market Policy**, in E. Hönekopp (ed.), *The Report of the European Employment Task Force. Impetus to European Employment Policy – Impulses for Germany*. BMWA / IAB, BeitrAB 293, Nürnberg.
- 2005 **Education and Wage Inequality in Finland: A Review of the Empirical Literature** (co-author: Liisa Leijola), chapter in R. Asplund & E. Barth (eds), *Education and Wage Inequality in Europe: A Literature Review*. ETLA, The Research Institute of the Finnish Economy, Series B212, Helsinki.
- 2005 **A Macroeconomic Perspective on Education and Inequality**, chapter in R. Asplund & E. Barth (eds), *Education and Wage Inequality in Europe: A Literature Review*. ETLA, The Research Institute of the Finnish Economy, Series B212, Helsinki.
- 2005 Editor (together with Erling Barth) of *Education and Wage Inequality in Europe: A Literature Review*. ETLA, The Research Institute of the Finnish Economy, Series B212, Helsinki.
- 2004 Editor (together with Wiemer Salverda) of a special issue on Company Training And Services With A Focus On Low Skills of *The International Journal of Manpower* 1/2004.
- 2004 **Provision and Effects of Company Training – A Brief Review of the Literature**. ETLA, Research Institute of the Finnish Economy ETLA, Discussion Paper No. 907, Helsinki.
- 2003 **IT sector and retail trade careers – Does gender matter?** (co-author: Reija Lilja), chapter in *Developing Sectoral Strategies to Address Gender Pay Gaps*. Finnish Ministry of Health and Social Affairs, Research reports 2003:1.
- 2003 **Yritystukimuotojen arviointi ja vertailu – kirjallisuuskatsaus (Evaluation and Comparison of Modes of Aid to Business – A Literature Review)** (co-author: Jaakko Kiander). Finnish Ministry of Trade and Industry, Studies and Reports 5/2003.
- 2003 **Innovation and performance in manufacturing industries: A comparison of the Nordic countries** (co-authors: Hans Lööf, Almas Heshmati & Svein O. Nåås), *The Icfaian Journal of Management Research* 11(3), 5–35.
- 2002 **Ikääntyvien työttömyysriski Suomen tehdasteollisuudessa The Unemployment Risk of Ageing Workers in Finnish Manufacturing)**, *Gerontologia* 2/2002.
- 2002 **Risk, Pay, and Productivity. The Case of Finland, 1980-1996** (co-authors: Eva M. Meyerson & Trond Petersen), *Finnish Economic Papers* 1/2002, 3–23.

- 2001 **Who gets unemployed and from where?**, chapter in T.P. Jensen & A. Holm (eds), *Nordic Labour Market Research on Register Data*. TemaNord 2001:593, Nordic Council of Ministers, Copenhagen.
- 2001 **Koulutus ja palkkaerot (Education and wage differences)**, *Yliopistotieto* 3-4/2001, Helsinki. (in Finnish)
- 2001 **Kannattaako Suomessa kouluttautua? (Is investment in education beneficial in Finland?)**, chapter in E. Tuominen (ed.): *Muuttuva työ ja eläketurva (Changing work and pension security)*. Eläketurvakeskuksen tutkimuksia 2001/1, Helsinki. (in Finnish)
- 2001 **Koulutus, palkkaerot ja syrjäytyminen (Education, wage inequality and marginalisation)**. ETLA, The Research Institute of the Finnish Economy, Discussion papers Nro 777, Helsinki.
- 2001 Editor of the book *Education and Earnings. Further Evidence from Europe*. ETLA, The Research Institute of the Finnish Economy, Series B 183, Helsinki.
- 2001 **Private Returns to Education**, *The Finnish Economy and Society* 3/2001.
- 2001 **Public funding and private returns to education – PURE . Final report**. Downloadable from <http://www.etla.fi/PURE/publications>
- 2001 **Mobility and Earnings. An analysis of Finnish manufacturing and services**. ETLA, The Research Institute of the Finnish Economy, Discussion papers Nro 753, Helsinki.
- 2001 **Finland**, chapter in C. Harmon, I. Walker & N. Westergaard-Nielsen (eds), *Education and Earnings in Europe. A Cross Country Analysis of Returns to Education*. Edward Elgar Publishing Ltd.
- 2000 **Arbetslösheten bland industrianställda i Finland på 90-talet (Unemployment among manufacturing workers in Finland in the 90s)**, *Sökelys på arbetsmarkedet* 2000, årgång 17.
- 2000 **Dimensions of the wage-unemployment relationship in the Nordic countries: Wage flexibility without wage curves** (co-authors: K. Albæk, S. Blomskog, E. Barth, B.R. Gudmundsson, V. Karlsson & E. Strøjer Madsen), chapter in S.W. Polachek (ed.), *Worker Well-being. Research in Labor Economics*, Volume 19, JAI & Elsevier Science.
- 2000 **Low pay – A special affliction of women** (co-author: Inga Persson), chapter in M. Gregory, W. Salverda & S. Bazen (eds), *Labour Market Inequalities: Problems and Policies in International Perspective*. Oxford University Press.
- 2000 Editor of the book *Public R&D Funding, Technological Competitiveness, Productivity, and Job Creation*. ETLA The Research Institute of the Finnish Economy, Series B 168, Helsinki.
- 2000 **Private Returns to Education in Finland: Back to Basics**. ETLA, The Research Institute of the Finnish Economy, Discussion papers No 720, Helsinki. [In Finnish: *Inhimillinen pääoma ja palkat Suomessa: Paluu perusmalliin*. ETLA, The Research Institute of the Finnish Economy, Discussion papers No 721, Helsinki.]
- 2000 **Låglönejobb — fällor och språngbräden: Nordiska erfarenheter i internationell belysning (Low-paid jobs — traps and stepping-stones: Nordic experience in an international setting)** (co-author: Tor Eriksson). ETLA, The Research Institute of the Finnish Economy, Series B 167, Helsinki. (in Swedish)

- 2000 **Has the Finnish Labour Market Bumped the Least Educated?** (co-author: Reija Lilja), chapter in L. Borghans & A. de Grip (eds), *The Overeducated Worker? The Economics of Skill Utilization*. Edward Elgar Publishing Ltd.
- 2000 **Employment and unemployment in Finnish manufacturing 1985-1995: Is technological progress the cause or the cure?** (co-author: Reija Lilja). ETLA, The Research Institute of the Finnish Economy, Discussion papers No 717, Helsinki.
- 1999 **The Wage Curve in the Nordic Countries** (co-authors: K. Albæk, S. Blomskog, E. Barth, B.R. Gudmundsson, V. Karlsson & E. Strøjer Madsen). Nordic Council of Ministers, TemaNord 1999:597, Copenhagen.
- 1999 **Earnings and Human Capital: Evidence for Finland**, in R. Asplund & P.T. Pereira (eds), *Returns to Human Capital in Europe. A Literature Review*. ETLA The Research Institute of the Finnish Economy, Series B 156, Helsinki.
- 1999 Editor of the book (co-editor Pedro Telhado Pereira) *Returns to Human Capital in Europe. A Literature Review*. ETLA The Research Institute of the Finnish Economy, Series B 156, Helsinki.
- 1999 **Förutsätter ekonomisk tillväxt investeringar i utbildning? (Does economic growth require investments in education?)**, chapter in *Den nya tillväxtteorin – Att växa i kunskapssamhället (The new growth theory – To grow in the knowledge based economy)*. Regeringskansliet, Stockholm. (in Swedish)
- 1999 **Teknologinen muutos ja työvoiman rakenne (Technological change and the structure of the labour force)** (co-author Reija Lilja), chapter in P. Vartia & P. Ylä-Anttila (eds), *Teknologia ja työ (Technology and work)*. Taloustieto Oy, Helsinki. (in Finnish)
- 1999 **Osaamisen taloudellinen arvo (The economic value of competencies)**, chapter in P. Heino & H. Westermarck (eds), *Studia Generalia, Ikääntyminen ja Oppiminen (Ageing and Learning)*. Helsingin Yliopisto, Vapaan sivistystyön toimikunta, Helsinki. (in Finnish)
- 1998 **Are Computer Skills Rewarded in the Labour Market? – Evidence for Finland**. SNF Yearbook 1998, Bergen.
- 1998 Editor of the seminar report *Flexibility in the Nordic Labour Markets*, Nordic Council of Ministers, TemaNord 1998:586.
- 1998 **Measuring wage effects of plant size** (co-authors: Karsten Albæk, Mahmood Arai, Erling Barth & Erik Strøjer Madsen), *Labour Economics* (5)4.
- 1998 **Labour Market Transitions in Finland, Does background matter?** (co-author: Reija Lilja) ETLA, The Research Institute of the Finnish Economy, Discussion papers No. 660, Helsinki.
- 1998 **Löner och arbetslöshet i Norden: Finns det ett samband? (Wages and Unemployment in the Nordic Countries: Is there a Connection?)**, *The Journal of the Economic Society of Finland*, 3:1998. (in Swedish)
- 1998 Editor of the book *Low Pay and Earnings Mobility in Europe* (co-editors: Peter J. Sloane and Ioannis Theodossiou ). Edward Elgar Publishing Ltd.
- 1998 **Wage Mobility for Low-Paid Earners in Denmark and Finland** (co-authors: Paul Bingley & Niels Westergård-Nielsen), chapter in R. Asplund, P.J. Sloane & I.

- Theodossiou (eds), *Low Pay and Earnings Mobility in Europe*. Edward Elgar Publishing Ltd.
- 1998 **Low Pay, A Matter of Occupation** (co-authors: Mahmood Arai & Erling Barth), chapter in R. Asplund, P.J. Sloane & I. Theodossiou (eds), *Low Pay and Earnings Mobility in Europe*. Edward Elgar Publishing Ltd.
- 1998 **Private- vs. Public-Sector Returns to Human Capital in Finland**, *Journal of Human Resource Accounting*, Vol. 3, No. 1.
- 1998 **The Gender Wage Gap in Finnish Industry in 1980**, chapter in I. Persson & C. Jonung (eds), *Women's Work and Wages*. Routledge.
- 1998 **Palkkaliikkuvuus Suomessa (Earnings Mobility in Finland)**. ETLA, The Research Institute of the Finnish Economy, Discussion papers No. 635, Helsinki. Expert report to the governmental committee Työmarkkinat 2000 (Labour Market 2000). (in Finnish)
- 1998 **Adult Vocational Education and Training in Finland**. Expert report to ECOTEC Research & Consulting Ltd, Birmingham, UK.
- 1997 **The Disappearing Wage Premium of Computer Skills**. ETLA, The Research Institute of the Finnish Economy, Discussion papers No. 619, Helsinki.
- 1997 **Löneflexibilitet inom finländsk industri – utopi eller realitet? (Wage Flexibility in Finnish Industry – Utopia or Reality?)**, *Journal of the Economic Society of Finland* 1:1997. (in Swedish)
- 1996 **Koulutuksen taloudellinen hyöty yksilön kannalta (The Profitability of Education from an Individual Point of View)**, chapter in R. Lilja & A. Mäkilä (eds.), *Koulutuksen talous Nyky-Suomessa*. ETLA The Research Institute of the Finnish Economy, Series B 124, Helsinki. (in Finnish)
- 1996 **Wage Mobility in Finnish Industry in 1980-1994** (co-author: Paul Bingley). ETLA, The Research Institute of the Finnish Economy, B 123, Helsinki.
- 1996 **Wage Mobility in Denmark and Finland: A Comparative Analysis for the Years 1980-1994** (co-authors: Paul Bingley & Niels Westergård-Nielsen). Invited paper presented at the conference on *Comparaisons Internationales de Salaires* held in Paris 1-2.2.1996. Seminar report published by INSEE and Ministère du travail et des affaires sociales, Paris.
- 1996 **Labour Force Response to Technological Change: An Analysis of Finnish Manufacturing in 1980-1994** (co-author: Synnöve Vuori). ETLA, The Research Institute of the Finnish Economy, Series B 118, Helsinki.
- 1996 **Employer Size-Wage Differentials in the Nordic Countries** (co-authors: Karsten Albæk, Mahmood Arai, Erling Barth & Erik Strøyer Madsen). Centre for Labour Market and Social Research, Working Paper 96-03, Århus.
- 1996 **Är humankapital en lönsam investering? (Is Human Capital a Profitable Investment?)**, chapter in *Report 6: Utmaningar för den offentliga sektorn (Challenges of the Public Sector)*. The Nordic Economic Research Council, Uppsala. (in Swedish)
- 1996 **Wage Distribution across Individuals** (co-authors: Erling Barth, Carl le Grand, Arne Mastekaasa & Niels Westergård-Nielsen), chapter in E. Wadensjö (ed.), *The Nordic Labour Markets in the 1990's*. North-Holland, Amsterdam.

- 1996 **The Male-Female Wage Gap in the Nordic Countries** (co-authors: Erling Barth, Nina Smith & Eskil Wadensjö), chapter in E. Wadensjö (ed.), *The Nordic Labour Markets in the 1990's*. North-Holland, Amsterdam.
- 1996 **Inter-Industry Wage Differentials in the Nordic Countries** (co-authors: Karsten Albæk, Mahmood Arai, Erling Barth & Erik Strøjer Madsen), chapter in E. Wadensjö (ed.), *The Nordic Labour Markets in the 1990's*. North-Holland, Amsterdam.
- 1995 **Palkkaerot Suomessa ja muissa maissa (Wage differentials in Finland and other countries)**, *The Finnish Economic Journal* 4/1995. (in Finnish)
- 1995 **Teollisuustyöntekijöiden ylityöt 1980-1993 (Overtime working of manual industrial workers in 1980-1993)**, *The Finnish Economic Journal* 1/1995. (in Finnish)
- 1995 **Fakta och myter kring den finländska arbetsmarknaden (Facts and Myths About the Finnish Labour Market)**, chapter in *Arbetsmarknadspolitiken – vad kan vi lära för framtiden (Labour Market Policy – What Can We Learn for the Future)*. Seminar report published by SAF, Stockholm. (in Swedish)
- 1994 **Human Capital and Industry Wage Differentials in Finland**, chapter in T. Eriksson, S. Leppänen & P. Tossavainen (eds.), *Proceedings of the Symposium on Unemployment*. Government Institute for Economic Research, VATT-publications No. 14, Helsinki.
- 1994 **Human Capital and Earnings in the Nordic Countries** (co-authors: Erling Barth, Carl le Grand, Arne Mastekaasa & Niels Westergård-Nielsen), chapter in R. Asplund (ed.), *Human Capital Creation in an Economic Perspective*. Physica-Verlag, Heidelberg.
- 1994 Editor of the book *Human Capital Creation in an Economic Perspective*. Physica-Verlag, Heidelberg.
- 1994 **Suomen teollisuuden työntekijäryhmien palkat ja inhimillinen pääoma (Human Capital and Earnings of Manual Industrial Workers)**. ETLA, The Research Institute of the Finnish Economy, Discussion Papers No. 484, Helsinki. (in Finnish with English Summary)
- 1994 **Palkkaerot Suomen teollisuudessa (Earnings Differentials in Finnish Industry)**. ETLA, The Research Institute of the Finnish Economy, Series B 91, Helsinki. (in Finnish with English Summary)
- 1994 **Arbetskraftens kunskaper ekonomins viktigaste byggsten (The Knowledge Base of the Labour Force – the Key Cornerstone of the Economy)**, *The Journal of the Economic Society of Finland* 1:1994. (in Swedish)
- 1994 **Työttömyysturvan rahoitus ja sen uudistaminen (Reforming the Financing of Unemployment Insurance)** (co-author: Juha Kettunen). ETLA, The Research Institute of the Finnish Economy, Series B 104, Helsinki. (in Finnish with English Summary)
- 1994 **Wage Differentials, Wage Mobility and Skills in Finnish Industry. An empirical analysis of the years 1980-92**. ETLA, The Research Institute of the Finnish Economy, Discussion papers No. 525, Helsinki.
- 1993 **Essays on Human Capital and Earnings in Finland**. ETLA, The Research Institute of the Finnish Economy, Series A 18, Helsinki. (Ph.D-thesis)