

# Kilder til økonomisk vækst og produktivitet i EU: Sammenligninger på lande- og brancheniveau

22. oktober 2007

## 1. Deltagere

- Martin Junge, senioranalytiker, PhD, CEBR (koordinator)
- Anders Sørensen, professor, PhD, CEBR
- Battista Severgnini, PhD student, Humboldt Universität og CEBR

## 2. Projektbeskrivelse

### *Baggrund:*

Sammen med kolleger fra andre europæiske lande og USA har forskere fra CEBR nu afsluttet arbejdet med at opbygge en database – EU-KLEMS - som gør det muligt at stille skarpt på produktionen i alle EU-lande på sektorniveau. Det er velkendt, at meget af variationen i produktionen på aggregerede data kommer fra bestemte sektorer eller brancher. Med fremkomsten af EU-KLEMS er det således blevet muligt at opnå kendskab til betydningen af særlige forhold i enkeltsektorer af en økonomi. Derudover er det blevet muligt på en meningsfuld måde at lave internationale sammenligninger.

### *EUKLEMS databasen:*

EUKLEMS databasen indeholder data for arbejdskraft, kapital og sekundære input. Hvert input er opdelt i forskellige typer, hvilket giver mulighed for at korrigere for kvalitetsændringer. Arbejdskraft er fordelt på aldersgrupper og forskellige typer af uddannelse. Kapital er opdelt i flere forskellige typer, herunder IT-kapital. Sekundære input er opdelt i energi, materialer og service. Der er data for perioden 1970-2005, dog kun fra 1995 for nogle EU-lande. Databasen er opdelt på ca. 60 brancher, der varierer med tidsperioden; men med flest brancher for de seneste år. Data er tilgængelige for de 25 EU-lande samt USA og Japan. Udover den store detaljeringsgrad i brancher og faktorinput er den internationale dimension en attraktiv egenskab ved databasen.

Ved hjælp af et vækstregnskab (Jorgenson, Gollop og Fraumeni (1987)) er der konstrueret vækstrater for multifaktorproduktivitet på brancheniveau for landene i databasen.

I det følgende præsenteres to projektforslag, som vi gerne vil gennemføre:

### *Projekt # 1:*

*Særlige træk ved fremstillings- og servicesektoren i EU-landene*

Med detaljerede input og output data for de 25 EU lande kan der fokuseres på udviklingen i økonomisk vækst i fremstillings- og servicesektoren for mellemlang og

lang tidshorizont. Den aggregerede vækst kan dekomponeres i en lang række faktorer, herunder betydningen af

- erhvervsstrukturen,
- sammensætningen af arbejdsstyrken på uddannelse og aldersgrupper, og
- fordelingen af kapital på IT- og ikke IT-kapital.

Det er velkendt at produktiviteten i EU har været lavere end i USA og nogle af hypoteserne, som forsøger at forklare dette, kan afprøves.

Specielt vil forskellen mellem service og fremstilling være interessant at undersøge. Fremstillingserhvervene har haft en meget høj produktivitet i mange år og ligger stadig foran servicebrancherne i EU. I USA har de IT-forbrugende brancher, som i høj grad er servicebrancher, overtaget rollen som vækstdrivere for den aggregerede vækst. På trods af at EU har ligeså stor spredning af IT-kapital som USA, er denne fremgang ikke sket i EU.

Men fremstillings- og servicebrancherne er relaterede gennem leverancer til hinanden. Udlicitering af lav-produktive serviceopgaver i fremstillingssektoren kan opretholde en høj produktivitet. Et vigtigt spørgsmål er i den forbindelse, hvor udbredt udliciteringen af service er i EU.

#### *Projekt # 2:*

##### *Efterspørgslen efter arbejdskraft i EU*

Med EUKLEMS databasen kan efterspørgslen af arbejdskraft dekomponeres mht. alder og uddannelse. Dette er som med opdeling af kapital efter forskellige typer et unikt forhold for denne type af database. Databasen muliggør derfor analyser af, hvordan kvalifikationer er blevet opgraderet inden for enkelte erhverv, hvilket ofte hævdes at være af stor betydning. Således er det af stor interesse at belyse sammensætningen af beskæftigelsen efter uddannelsesgrupper.

Desuden er det muligt at undersøge hypotesen om "capital-skill complementarity". Ideen er, at kapital - såsom IT-kapital - og uddannet arbejdskraft er komplementære størrelser, hvorimod uuddannet arbejdskraft og kapital er substitutter. Hvis dette forhold gælder, vil den store stigning i IT-kapital, som kan observeres i alle EU-lande, have ført til forøget efterspørgsel efter uddannet arbejdskraft på bekostning af uuddannet. En sådan analyse vil øge forståelsen af, om beskæftigelsens kvalifikationsniveau delvis er bestemt af IT-kapitalens størrelse.

#### *Metode:*

Til det første delprojekt anvendes (multifaktor-)produktivitetsmål fra EU-KLEMS databasen, der er udviklet efter anbefalingerne i Jorgenson, Gollop og Fraumeni (1987). Til trods for den tidlige metodiske udvikling forbliver vækstregnskabet at være det mest

udbredte værktøj til at beskrive trenden i økonomisk vækst og dens dekomponering i bidrag fra input og produktivitet. Med EUKLEMS kan det foretages ikke alene på data som er opgjort konsistent over landene; men beregninger i vækstregnskabet foregår under de samme forudsætninger. Et lignende projekt for Europa (Frankrig, England, Holland og Tyskland) er foretaget i Inklaar, O'Mahony og Timmer (2005), dog med andre data (OECD's STAN database) og dermed ikke med EUKLEMS databasens fordele.

Til det andet delprojekt anvendes en dekomponering af skift mod større efterspørgsel af uddannet arbejdskraft i ændringer som foregik mellem brancher og ændringer som foregik indenfor brancher (Berman, Bound og Griliches (1994)). Hertil kommer en estimering af arbejdskraft efterspørgselsfunktioner udledt fra en fleksibel produktionsfunktion (fx Translog som i Baltagi og Rich (2005) eller Generalized Leontief som i Mellander (1999)), hvor forskellige typer af arbejdskraft og kapital indgår som input. Den fleksible produktionsfunktion tillader substitution eller komplementaritet mellem fx IT-kapital og højtuddannede, og hypoteser kan dermed afprøves.

### **3. Arbejds- og publikationsplan**

Projektet er "ready to go". De to delprojekter tænkes gennemført efter følgende tidsplan:

Projekt # 1: December 2007 – april 2008

Projekt # 2: Februar 2008 – juni 2008

Hensigten er at frembringe to papirer med henblik på publicering i henholdsvis et velrenommeret tidsskrift for anvendt økonomi (fx *Empirical Economics* eller *National Institute Economic Review*) og et i *Nationaløkonomisk Tidsskrift*. Derudover vil projektet søge at knytte bånd til fx Økonomi- og Erhvervsministeriet eller Videnskabsministeriet med henblik på at gøre analyserne relevante i en dansk kontekst. Endvidere skulle der gerne ske en synliggørelse af resultaterne gennem bidrag til den offentlige debat i form af kronikker, conferenceindlæg m.v.

### **4. Referencer:**

Baltagi og Rich (2005) "Skill-biased technical change in US manufacturing: a general index approach", *Journal of econometrics* Vol 126, Issue 2, Juni 2005

Berman, Bound og Griliches (1994) "Changes in the Demand for Skilled Labor within U.S. manufacturing: Evidence from the Annual Survey of Manufactures", *Quarterly Journal of Economics* 109, 2

Jorgenson, Gollop og Fraumeni (1987) "Productivity and U.S. Economic Growth", Cambridge MA, Harvard University Press

Inklaar, O'Mahony og Timmer (2005) "ICT and Europe's productivity performance: Industry-level growth account comparisons with the United States", Review of Income and Wealth, Series 51, Number 4, December 2005

Mellander (1999) "The Multi-Dimensional Nature of Labor Demand and Skill-Biased Technical Change", Mimeo, Research Institute of Industrial Economics

## 5. Budget:

- Løn til videnskabelig medarbejder (AS, professor)
  - i. Forventet forbrug af forskningstid 1 md.
  - ii. Månedlig lønsats 75.000 kr.
  - iii. I alt 75.000 kr.
  
- Løn til videnskabelig medarbejder (MJ, senioranalytiker)
  - i. Forventet forbrug af forskningstid 2 md.
  - ii. Månedlig lønsats 40.000 kr.
  - iii. I alt 80.000 kr.
  
- Udgifter til udenlandsk gæsteforsker (BS, Postdoc)
  - i. Forventet forbrug af forskningstid 1 måned
  - ii. Månedlig lønsats 35.000 kr.
  - iii. I alt 35.000 kr.
  
- Udgifter til data:
  - i. Forskningsassistance 50000 kr.
  - ii. I alt 50000 kr.
  
- Andre udgifter
  - i. Rejser/ophold (AS/MJ/BS) 50.000 kr.
  - ii. I alt 50.000 kr.
  
- Overhead (20 % af udgifter) 58.000 kr.
  
- TOTAL 348.000 kr.**

CURRICULUM VITAE  
FOR MARTIN JUNGE  
OCTOBER 2007

**PERSONAL DATA:**

**FULL NAME:** Martin Junge

**DATE OF BIRTH:** 12. September 1969

**NATIONALITY:** Danish

**MARITAL STATUS:** Married to Lisbeth Junge, 2 children (Aleksander (Born 1999) and Freja (Born 2001)).

**EDUCATION:** PHD in Economics

**PRESENT EMPLOYMENT:** Senior analyst, Centre of Economic and Business Research, Copenhagen Business School.

**ADDRESS:** Annavej 3, DK-2740 Skovlunde

**TELEPHONE:** (+45) 44 61 16 21 (home)

**PROFESSIONAL CAREER:**

2006 – 2007 **Senior Analyst, Centre of Economic and Business Research**

Tasks consist of econometrics and data analysis. Participated in the following project:  
i/ The return to education in the field of information and communication technology  
ii/ Migration behaviour of Danish highly educated personnel  
iii/ Disproportional ownership of firms across Europe

2003 – 2006 **Head of Office, Economic Modelling Group, Statistics Denmark**

Modelling and maintenance of the macroeconomic model ADAM. In particular, consumption and housing, technological progress in the production function, pension databank.

1998 – 1999 **Research Assistant, Department of Economics, University of Copenhagen**

Worked for Prof. Martin Browning on displaced workers.

**Short Term Consultancies:**

2005 – 2006 **Associated Analyst, Centre of Economic and Business Research**

Project: EUKLEMS. Building and maintaining the EUKLEMS data base (Danish part)

2003 **Associated Analyst, Centre of Economic and Business Research**

Project: Growth drivers and productivity.

## **EDUCATION:**

1999 – 2002 **PhD in Economics (handed in Marts 2007)**

Contains three chapters on Social Insurance.

1. An Econometric Model of Early or Ordinary Retirement in Denmark
2. The interaction of Long-term unemployment and retirement
3. Labour Supply in an Economy with a very generous UI system (with Browning and Carrasco)

1989 – 1998 **M.Sc. in Economics**

Policy oriented courses, general equilibrium theory, and econometrics. Master thesis: Estimation of consumer demand systems with information from micro and macro data.

1995 – 1996 **First and second year of Computer Science, University of Copenhagen**

Functional programming, object oriented programming, algorithms, machine programming (drivers, operating system etc.)

1993 **First year of Mathematics, University of Copenhagen**

Algebra and mathematical analysis.

## **ORGANISATIONAL ACTIVITIES:**

2001 Organised PhD course on “Empirical Decision Processes”.

2000 – 2002 Representative of PhD students in the cooperation committee (Samarbejdsudvalget) at the Department of Economics, University of Copenhagen,

## **TEACHING:**

1994 – 1995 Teaching assistant in Economics I, Department of Economics, University of Copenhagen

1999 – 2000 Teaching assistant in Economics I, Department of Economics, University of Copenhagen

2001 – 2002 Teaching assistant in Consumption and investment theory, Department of Economics,  
University of Copenhagen  
2005 Short course on dynamic economics, AKF  
2005 Short course on dynamic economics, CAM

### **LANGUAGE PROFICIENCIES:**

Danish: Mother tongue  
English: Excellent in speech, writing and understanding

### **PUBLICATIONS:**

Jensen, Raffelhüschen, Jakobsen and Junge (1996): "Et generationsregnskab for Danmark", NØT 134 (1996), pp.39-60

Jensen, Hansen and Junge (1999): "Government Solvency, Social Security and Debt Reduction in Denmark", in "Macroeconomic perspectives on the Danish economy", Ed. Torben M. Andersen, Svend Erik H, Jensen and Ole Risager, MacMillian Press 1999.

Junge and Pedersen (2003): "Multifaktorproduktivitet og vækstdrivere: Måling og internationale sammenligninger", CEBR report 2003:1

Jespersen and Junge (2005) "Afkast af IKT-uddannelser i Danmark", CEBR REP 2005:06

Jespersen, Junge, Munk and Olsen (2007) "Brain Drain or Brain Gain? Migration of Highly Educated Persons to and from Denmark", SFI 07:04

Bennedsen, Junge, Jakobsen, Jespersen, Nielsen (2007): "Ownership structure and Economic Performance", CEBR REP 2007:3

## *Curriculum Vitae*

Name: Anders Sørensen

### **Education**

- May 1997: Ph.D., Economic Policy Research Unit (EPRU), Copenhagen Business School, Denmark  
Title of Dissertation: *Growth, R&D, and Education*  
Supervisor: Professor Peter Birch Sørensen, University of Copenhagen  
Examiners: Professor Ole Risager (Head of Committee), Copenhagen Business School, Professor Christian Keuschnigg, University of St. Gallen (IFF), Switzerland, Professor Ben Heijdra, University of Groningen, the Netherlands
- 1994-95: Visiting Graduate Student, Department of Economics, University of California at Berkeley
- October 1993: Master of Science (Economics), University of Aarhus, Denmark. Title of Thesis: *Endogenous Growth in R&D-models and Open Economies*

### **Work Experience**

- January 2006  
-present: Professor of Economics, Copenhagen Business School, Department of Economics
- September 2004  
-December 2005: Associate Professor of Economics, Copenhagen Business School, Department of Economics
- September 2002  
-July 2004: Assistant Professor of Economics, Johns Hopkins University, The Paul H. Nitze School of Advanced International Studies (SAIS), Washington DC, USA
- September 2002  
-present: CEBR Core Member, Centre for Economic and Business Research (CEBR), Denmark
- September 1999  
-September 2002: Research Fellow, Centre for Economic and Business Research (CEBR), Denmark
- September 2000  
- January 2001: Adjunct Professor, Institute of Economics, University of Copenhagen, Denmark
- September 1998  
- September 1999: Special Advisor, Ministry of Trade and Industry, Denmark
- January 1997-  
- August 1998: Economist, COWI, Consulting Engineers and Planners, Denmark
- November  
-December 1996: Visiting Assistant Professor, Department of Economics, University of Iceland, Iceland
- January 1991  
-September 1996: Teaching Assistant, Institute of Economics, Copenhagen Business School, Denmark and Institute of Economics, University of Aarhus, Denmark



## Publications

### Books:

1. “Denmark and the Information Society: Challenges for Research and Education Policy”, with Svend Erik Hougaard Jensen, Ulrich Kaiser, Nikolaj Malchow-Møller, and Jan Rose Skaksen DJØF forlag 2003. Awarded the Grundfos Prize 2003
2. “Growth, R&D, and Education”, (Ph.D. dissertation), Copenhagen Business School, 1997

### Refereed Articles and Chapters:

3. “Productivity Measurement in Manufacturing and the Expenditure Approach”, with Bertel Schjerning, *Review of International Economics* (forthcoming, 2008)
4. “Inter-industry Wage Differentials and Allocative Inefficiency”, *International Economic Journal*, Vol. 21, No. 1, 1–26, March 2007
5. “R&D Subsidies and the Surplus Appropriability Problem”, *The B.E. Journals in Macroeconomics, Topics in Macroeconomics*, Vol. 6; Issue 2, Article 3, 2006  
<http://www.bepress.com/bejm/topics/vol6/iss2/art3>
6. “Capital-Skill Complementarity and Rigid Relative Wages: Inference from the Business Cycle”, with Jan Rose Skaksen, *The B.E. Journals in Macroeconomics, Contributions to Macroeconomics*, Vol. 5: No. 1, Article 7, 2005.  
<http://www.bepress.com/bejm/contributions/vol5/iss1/art7>
7. “Changing Characteristics of Growth-Generating Processes: R&D and Learning”, in “*Economic Growth Issues*”, L.A. Finley (Ed.) Nova Science: Hauppauge, New York., 2005
8. “On the Measurement of Relative Demand Shifts for Educated Labor”, with Svend E. Hougaard Jensen, *Economics Letters*, 83(2), 245-249, 2004
9. “R&D, Public Innovation Policy, and Productivity: The Case of Danish Manufacturing”, with Hans Christian Kongsted and Mats Marcusson, *Economics of Innovation and New Technology*, 12(2), 163-178, 2003
10. “Measuring Educational Heterogeneity and Labor Quality: A Note”, with Mogens Fosgerau and Svend E. Hougaard Jensen, *Review of Income and Wealth*, 48(2), 251-259, 2002
11. “Education, Employment and Economic Growth”, *Danish Journal of Economics (Nationaløkonomisk Tidsskrift)* 140, 1-17, 2002, with Svend E. Hougaard Jensen
12. “Comparing Apples to Oranges: Productivity Convergence and Measurement Across Industries and Countries: Comment”, *American Economic Review*, September, 1160-67, 2001
13. “R&D, Learning, and Phases of Economic Growth”, *Journal of Economic Growth* 4(4), 429-45, 1999
14. “Policy Rules for Exploitation of Renewable Resources: A Macroeconomic Perspective”, *Environmental and Resource Economics* 12(1), 53-76, 1998, with Tryggvi T. Herbertsson
15. “Growth-Enhancing Policies in a Small Open Economy”, J. Fagerberg, P. Hansson, L. Lundberg, and A. Melchior (ed.), *Technology and International Trade*, Edward Elgar, 158-76, 1997

### Proceedings:

16. “Relative Demand for Labour with Different Type and Length of Education: Evidence from Denmark and the USA”, with Svend E. Hougaard Jensen, *Symposium i Anvendt Statistik*, 233-260, 2005
17. “A Model for Freight Transport Crossing Storebælt”. *Trafikdage på Aalborg Universitet, Suppleringsrapport*, 297-306, 1997

### Working Papers:

18. “Information Technology and Productivity Growth in the Danish Economy” in *Danish* (revise and resubmit, *Danish Journal of Economics (Nationaløkonomisk Tidsskrift)*)
19. “The Returns to Schooling in Self-employment”, with Jens Iversen and Nikolaj Malchow-Møller, CEPR DP 2006-19 (*submitted*)
20. “Shakespeare vs. Marx vs. Einstein: Which Type of Education Offers the Highest Return?”, with Carl-Johan Dalgaard, Michael Rosholm, and Esben Anton Schultz CEPR DP 2007-XX
21. “The Implications of Globalization for Firms' Demand for Skilled and Unskilled Labor”, with Michael Rosholm and Christian Scheuer, CEPR DP 2007-XX

22. “Skill-Upgrading and Internationalization: Country-of-Origin or End-Use of Products”, CEBR DP 2007-XX
23. “Optimal Policy under Restricted Government Spending”, CEBR DP 2006-04 (*under revision*)
24. “Innovation, Accumulation and the Ranking of Instruments for Foreign Aid”, CEBR DP 2002-3, with Morten I. Lau and Thomas F. Rutherford (*under revision*)
25. “Decomposition of Economic Growth and Productivity in Denmark”, CEBR DP 2000-2, with Mogens Fosgerau (*not published*)

**Work in Progress:**

26. “ICT and Productivity Growth in the 1990's: The European Evidence”, with Hans Christian Kongsted and Christian Dahl
27. “Capital-Skill Complementarity in Europe”, with Esben Anton Schultz and Battista Severgnini

**Articles in Danish (refereed and unrefereed):**

28. “Denmark and the Information Society: Challenges for Research and Education Policy”, *Samfundsøkonomen*, 2003, with Svend Erik Hougaard Jensen, Ulrich Kaiser, Nikolaj Malchow-Møller, and Jan Rose Skaksen
29. “New Economy – IT and Economic Growth”, *Samfundsøkonomen*, 10-16, 2001:4, with Svend E. Hougaard Jensen
30. “Productivity and R&D: The Case of Danish Manufacturing”, Jensen, S.H. (Ed.), Økonomi og Erhvervspolitik, *Handelshøjskolens Forlag*, 257-74, 2000, with Svend E. Hougaard Jensen and Torsten Sløk
31. “Is There a Productivity Problem in the Danish Economy?”, Jensen, S.H. (Ed.), Økonomi og Erhvervspolitik, *Handelshøjskolens Forlag*, 147-70, 2000, with Svend E. Hougaard Jensen and Thomas V. Pedersen
32. “Productivity Growth in Denmark - 1966 to 1998”, Jensen, S.H. (Ed.), Økonomi og Erhvervspolitik, *Handelshøjskolens Forlag*, s. 115-46, 2000, with Mogens Fosgerau

**Miscellaneous Writings:**

33. “Challenges for Research Policy”, feature article (Kronik), Jyllandsposten, May 20, 2003, with Svend Erik Hougaard Jensen, Ulrich Kaiser, Nikolaj Malchow-Møller, and Jan Rose Skaksen
34. “Designing Aid Programmes for Transition Economies – Executive Summary and Report”, 2001, with Morten Lau

**Agency Reports/Selected Consultancy Work**

35. “Entrepreneurship, Human Capital and the Labour Market”, 2007, *report prepared for the National Agency for Enterprise and Construction, Danish Ministry of Economics and Business Affairs* (with Nikolaj Malchow-Møller)
36. “Videninvesteringer, produktivitet og velstand”, 2006, *report prepared for Dansk Industri* (with Svend Erik Hougaard Jensen and Nikolaj Malchow-Møller).
37. “IKT, vækst og produktivitet: Et litteraturstudie”, 2005, *report prepared for Ministeriet for videnskab, teknologi og udvikling* (with Svend Erik Hougaard Jensen)
38. “Urban water and wastewater resources strategy for Sichuan Province - China”, Client: World Bank, 1997-98
39. “Tariff Structure for Using State Owned Infrastructure, Lithuania ”, Client: European Union, 1997
40. “A Model for Freight Transport Crossing Storebælt”, Client: A/S Storebælt, 1997
41. “Future Structure for State Owned Ports”, Client: Danish Ministry of Transport, 1997

## **Professional Activities**

### *Awards*

Statoil Research Prize in Economics 2005

Grundfos Prize 2003, with Svend Erik Hougaard Jensen, Ulrich Kaiser, Nikolaj Malchow-Møller and Jan Rose Skaksen. The price was given for the monograph: Denmark and the Information Society: Challenges for Research and Education Policy, DJØF Publishing 2003

### *Grants*

2006: EPRN, DKK 441,600

”The Impact of ICT on Productivity Growth”

2005: Tuborgfondet, DKK 5.7 mio

“The Future Demand for Educated Labour in Denmark”, 2005-2008 (project manager)

2002: EPRU, DKK 50.000

“Capital-Skill Complementarity and Rigid Relative Wages: Inference from the Business Cycle”

### *Refereeing:*

American Economic Review (1)

Danish Economic Journal (Nationaløkonomisk tidsskrift) (2)

Economic Inquiry (1)

Economics of Innovation and New Technology (3)

European Economic Review (3)

Environment and Development Economics (1)

FinanzArchiv (1)

International Tax and Public Finance (1)

Journal of Economic Growth (3)

Journal of International Economics (1)

Journal of Productivity Analysis (1)

Oxford Economic Papers (1)

Review of Income and Wealth (1)

Scandinavian Economic History Review (1)

Scandinavian Journal of Economics (5)

### *Committee Work:*

January 2007 – Assessment Committee: Associate Professorships in Economics (any field), University of Copenhagen

January 2007 – Assessment Committee: Associate Professorships in Applied Economics, University of Copenhagen

June 2007 – December 2010 - Member of steering Group

VEKSTFORSK Programme for research, innovation and economic growth, The Research Council of Norway

### *Presentations*

- “Information and Communication Technology in European Economies - Productivity Growth, ICT, and Skilled Labor”, CEPR Conference on ICT, Productivity, and Welfare, *May 2007*
- “Entrepreneurial Ability - Education, Learning or Spillovers”, CEPR conference on Entrepreneurship: Occupational Choice and Financing, *June 2006*
- “Entrepreneurial Ability - Education, Learning or Spillovers”, CBS, *May 2006*
- “Optimal Policy under Restricted Government Spending”, EPRU, Department of Economics, University of Copenhagen, *May 2005*
- “Is It Possible to Measure Sectoral Productivity Levels? The Case of Manufacturing”  
Joint ECB, Banco de España and CEPR Conference “Prices, Productivity and Growth”, Madrid, *October 2003*  
Seminar at SAIS, Johns Hopkins University, *November 2002*

- “Welfare Effects of First- and Second-best Instruments under Restricted Government Financing”, Western Economic Association International 78<sup>th</sup> Annual Conference, Denver, *July 2003*  
Department of Economics, Brown University, *March 2003*  
CEBR Seminar, *December 2002*
- “Capital-Skill Complementarity and Relative Wages: Inference from the Business Cycle”  
EPRU-Network Conference on “Danish and International Economic Policy”, Copenhagen, *May 2002*  
IZA Workshop on “European Integration and Labor Market Performance”, Bonn, *April 2002*
- “Inter-industry Wage Differentials and Productivity Growth”  
Seminar at SAIS, Johns Hopkins University, USA, *February 2002*  
Seminar at Copenhagen Business School, Denmark, *February 2002*  
EPRU Seminar, Copenhagen University, *December 2001*  
CEBR Seminar, *December 2001*
- “Innovation, Accumulation and the Ranking of Instruments for Foreign Aid”  
Zeuthen Workshop on Competition and Growth, University of Copenhagen, *November 2001*  
Workshop on Trade, Growth and Multinationals, CEBR, *May 2001*
- Keynote Speaker at Annual Assembly of the Danish Economic Society, *October 2000*, Title “New Economy – Fiction or Reality?”
- “Decomposition of Economic Growth and Productivity in Denmark”  
EPRU Seminar, *February 2000*  
Workshop on International Comparisons of Productivity, CEBR, *December 1999*
- “Productivity, R&D Capital, and Public Innovation Policy: The Case of Danish Manufacturing”  
6<sup>th</sup> European Workshop on Efficiency and Productivity Analysis, Copenhagen, *October 1999*  
CEBR, *October 1999*
- “Growth-Enhancing Policies in a Small Open Economy”  
Conference on Technology and International Trade, Oslo, *October 1995*.  
EPRU Seminar, *October 1995*
- “Policy Rules for Exploitation of Renewable Resources: A Macroeconomic Perspective”  
University of Iceland, Workshop on Numerical Models, *November 1996*
- “R&D, Learning, and Phases of Economic Growth”  
11<sup>th</sup> Annual Congress of the European Economic Association, Istanbul, *August 1996*  
EPRU Seminar, *September 1995*;
- “International Welfare Effects from Country-Specific R&D subsidies”  
EPRU Workshop on International Economics, *May 1994*

*Organizer:*

- Workshop on “Growth, ICT, and Human Capital”, May 30, 2007, Centre for Economic and Business Research
- Workshop on “Entrepreneurship”, October 10, 2004, Centre for Economic and Business Research
- Workshop on “Trade, Growth and Multinationals”, May 21, 2001, Centre for Economic and Business Research

## BATTISTA SEVERGNINI

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### ADDRESSES

Viale Europa, 75  
I-26013  
Crema (CR)  
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[battista.severgnini@wiwi.hu-berlin.de](mailto:battista.severgnini@wiwi.hu-berlin.de)  
<http://www2.wiwi.hu-berlin.de/wt2/cv/Severgnini/bs.htm>

### PERSONAL INFORMATION

Nationality

Italian

Date and place of birth

01.04.1977 in Crema (CR)

Military service

Completed. October 2001-July 2002. Italian Air Force guard at Viterbo Airport and at the Northern Italian Headquarter in Milan

### EDUCATION

September 2004 - present: Ph.D. Candidate in Economics, Humboldt Universität zu Berlin, Berlin, Germany. Dissertation Advisor: Michael C. Burda.

October 2005: Visiting Ph.D. Candidate in Economics, Centre for Economics and Business Research, Copenhagen, Denmark.

September 2002-July 2003: M.Sc. in Economics, Universitat Pompeu Fabra, Barcelona, Spain.

September 1996-July 2000: B.A. in Economics (Laurea in Economia Politica, indirizzo: Economia Internazionale), Bocconi University, Milan, Italy. Thesis Title: "Brazil. The Real Plan Crisis". Supervisors: Prof. Francesco Giavazzi and Prof. Eliana La Ferrara.

### WORKING EXPERIENCES

Researcher  
CEBR

September 2006 –present  
Copenhagen, Denmark

Research on impact of ICT on productivity (EUKLEMS Project)

Researcher  
Humboldt Universität zu Berlin

September 2004 –present  
Berlin, Germany

Research on impact of ICT on productivity

Research Officer  
National Economic Research Associates

December 2003 – June 2004  
Rome, Italy

Microeconomic and quantitative studies on the Italian electricity market and Southern Italian job creation

Research Assistant  
Innocenzo Gasparini Institute for Economic  
Research - IGIER

September 2003 – February 2004  
Milan, Italy

Research Assistant for Professors Olivier Blanchard (MIT), Laura Bottazzi (Bocconi University), Alejandro Cunat (LSE), Francesco Giavazzi (Bocconi University) and Giovanni Peri (UC Davis)

Research Assistant February-July 2001  
Turin University Turin, Italy  
Research Assistant for Professor Marco Da Rin

#### OTHER POSITIONS

Research Affiliate September 2004-Present  
Fondazione Rodolfo Debenedetti Milan, Italy

Contributor February 2006-Present  
www.lavoce.info Milan, Italy

Conference Organizer September 2006  
Advances in Empirical Analysis of Retailing Berlin, Germany  
(with M.Burda, L. Röller and J. Beck)

#### TEACHING EXPERIENCES

Teaching Assistant, Labour Economics, Bocconi University, 2005-2006, 2006-2007  
Teaching Assistant, European Labour Markets, Bocconi University, 2003-2004, 2004-2005  
Teacher, Master in Quantitative Finance and Insurance, Bocconi University, 2000-2001

#### WORKING PAPERS

*Stock Free TFP* (joint with M.C. Burda)  
Presented at CEBR, Copenhagen, at Humboldt University, Berlin and at the Fourth North American Productivity Workshop (NAPWIV), Stern School of Business of New York University, New York City, New York.

*State-Space Models, Technological Change, and Initial Conditions.*  
Presented at Bocconi University, Milan, CEBR, Copenhagen, at Humboldt University, Berlin, at the Tenth European Productivity Workshop (EWEPA), Lille, and at the International Conference on Measurement Error at Aston University, Birmingham.

*Concentration and Corruption* (joint with T. Boeri).  
Presented at DIW, Berlin and Bocconi University, Milan.

*Capital Skill Complementarities Across Countries and Industries* (joint with E.A. Schultz and A. Soerensen).

#### PAPERS DISCUSSED

*Prediction of latent variables in a mixture of structural equation models*, Erik Meijer (RAND Corporation and University of Groningen), Susann Rohwedder (RAND Corporation) and Tom Wansbeek (Free University Amsterdam), Aston University, Birmingham, July 2007.

*Regulation and UK Retailing Productivity: Evidence from Microdata*, Jonathan Haskel (Queen Mary, University of London) and Raffaella Sadun (LSE), WZ-Berlin September 2006.

#### POLICY ARTICLES (*in Italian*)

*Solo una Maastricht del pallone ci può salvare*, Reset, July 2006.

#### NEWSPAPER ARTICLES (*in Italian*)

2012, quanto costa la bocciatura dell'Italia"(joint with D. Corrado), *www.lavoce.info*, 07/05/2007.

"Il goal non segna la crescita"(joint with T. Boeri and C. Favero), *www.lavoce.info*, 26/06/2006.

"Quando l'Europa può darci un fischietto"(joint with T. Boeri), *www.lavoce.info*, 18/05/2006.

"La partita della diseguaglianza"(joint with L.Poggi), *www.lavoce.info*, 04/02/2006.

#### SCHOLARSHIPS

1996: Bocconi Univesrity - Undergraduate Scholarship.

#### COMPUTER SKILLS

Microsoft Office (Word, Excel, Power Point, Access)

Statistical and mathematical softwares Stata, Eviews, Matlab, RATS, GAUSS, SAS.

Text editor L<sup>A</sup>T<sub>E</sub>X.

#### LANGUAGES

Italian: Mother Language

English: Fluent

German: Good

Portuguese: Good

#### REFERENCES

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