Opening seminar

COHERE – Centre of Health Economics Research

Department of Business and Economics &

Institute of Public Health

University of Southern Denmark

COHERE

where health economics and society meet

Director Mickael Bech

COHERE – Centre of Health Economics Research

University of Southern Denmark

Strategic importance

- Health economics research is one of the brands for SDU – now we are upgrading

- Close collaboration between two departments and two faculties
  - Department of Business and Economics – Faculty of Social Sciences
  - Institute of Public Health – Faculty of Health Sciences

Mission

- We are among the best in Scandinavia – but we can do better

- We aim to
  - make world class research and be among the top international research centres
  - provide and disseminate policy relevant knowledge on population health, health care and health care systems
  - sustain credibility among policy makers at all levels

Six research programmes

- Behavioural Economics
- Equity in Health and Health care
- Health Econometrics
- Organization and Regulation of Health care
- Production Economics
- Resource Optimization in Hospitals

Cross disciplinary collaboration

- The best health economics research environment in close collaboration with other disciplines
  - Broad range of economic disciplines
  - Close collaboration with other social sciences – organisation theory, management, law etc.
  - Fruitful and close collaboration with health and public health sciences

International collaboration

- International research environment
  - Recruitment of international researchers
  - Guest researchers and affiliated international researchers
  - International visitors and seminars – you are very welcome to look at our seminars

National collaboration

- Corporate network programme – network of collaborating firms, public authorities and NGOs
- Temporary employee placement programme
- Applied and commissioned research projects

Teaching

- Specialisation for economics students in health economics
- The Public Health programme
- The Medical programme
- Executive master programmes
  - Master in Hospital Ward Management
  - Master of Public Quality and Management
  - Master of Public Management
- PhD courses

Physical location

J.B. Winsløws Vej 9

& Campusvej 55

In the future

Programme

- 10.00 – Director Mickael Bech, Dean Jesper Strandskov & Dean Ole Skøtt
- 10.30 – Short presentations of research projects
- 11.30 – Professor Alan Maynard, University of York
- 12.00 – Professor Jonas Schreyögg, University of Hamburg
- 12.30 – Lunch outside O100
- 13.15 – Professor Alistair McGuire, LSE
- 13.45 – Short presentations of research projects (Danish)
- 14.15 – Policy presentations and discussion
- 16.15 – Reception

Dean Jesper Strandskov

Faculty of Social Sciences

Dean Ole Skøtt

Faculty of Health Sciences

COHERE – Centre of Health Economics Research

www.cohere.dk

The Danish public's perception of self-control and attitudes towards government intervention –

in relation to health-related life style behaviours

Dorte Gyrd-Hansen, Professor & Trine Kjær, Associate Professor
COHERE – Centre of Health Economics Research
Department of Business and Economics
University of Southern Denmark

Is there justification for interventions targeting health related behaviour?

- If individuals' health related behavioural patterns are a product of rational and fully informed decisions…
- And if this behaviour does not impact on others' utility…
- Then there is no argument for introducing government interventions to promote healthier life-styles.
- Necessary grounds for intervention:
  - Externalities, including caring externalities and/or
  - Irrational behaviour

Research questions:

- In which aspects of every-day life do individuals find it more difficult to adhere to behavioural patterns that they believe is best for them and their family?
  - Are such difficulties associated with economic strata?
- What are the Danish public's support for different types of government interventions targeting life-style?
  - Do these preferences differ across target and non-target groups?

Methods

- Web-based survey: 3650 invited
- 1511 responses obtained
- Questions on health, wellbeing, health related behaviours
- Questions on self control:
  - "*Not all thoughts find expression in action. Even though people would like to change life-style and live a healthier life, it can be difficult to change habits and routines. In the following we ask you to consider how good you are at doing what you think is best for you and your closest family with respect to different areas of everyday life*".
  - Respondents were to rate their ability to do what they deem best on a scale from 1 to 10
- Questions on degree of support for government interventions:
  - Respondents were to indicate their support on a scale from 1 (do not support) to 10 (fully support)

Self reported health, wellbeing, life-satisfaction & health related behaviour

- Subjective health and well-being is better amongst those with higher income and/or higher level of education
- Individuals with higher level of education smoke markedly less and eat more healthy food
- Men exercise more than women
- Men eat less healthily than women
- The elderly are more satisfied with their lives and more often feel that life is full of opportunities
- The elderly smoke less, exercise more and report that they eat more healthily. They do, however, tend to drink more alcohol

Self-control rating – areas of life

Table II. Rating of self-control. Mean rating per area of life.

Area of life	Self control rating 10= Really good at making right choices 1= Really bad at making right choices
Child immunisation	8.97
Alcohol consumption	7.41
Dentist visits	7.38
Buying food	7.12
Visiting general practitioner	6.94
Smoking	6.87
Participation in screening programmes	6.58
Volunteering as organ donor	6.23
Exercising	6.06

Who feel more/less in control?

LESS in control:

- Men – in general
- Younger individuals
  - Specifically: use of health care services: child immunisation, dentist and general practitioner visits
- Low income groups
  - Specifically: child immunisation, dentist visits, buying healthy food and exercising

MORE in control:

- Individuals with higher levels of education generally
  - Except: child immunisation and alcohol consumption

- *There is a high positive correlation between poor subjective health-related behaviour and perception of decreased self-control*

Support for different types of interventions

Table IV. Extent of support for list of interventions

Intervention	Support for the intervention (mean) 1= no support at all 10=full support
Legislation: Safety belt in car *Is currently introduced*	9.10
Legislation: Higher minimum age (18 yrs) for buying alcohol	7.70
Legislation: banning of cigarette smoking in (some) restaurants and bars *Is currently introduced*	7.58
Increasing price: Higher tax on cigarettes	7.13
Legislation: banning of cigarette smoking in all public places	6.59
Legislation: cycle helmets must be worn	6.43
Increasing price: higher taxes on alcohol	6.12
Increasing prices: higher taxes on unhealthy foods	5.72
Improving attractiveness: Free membership to fitness centres for obese people	5.45
Improving attractiveness: Payment for signing up as organ donor	4.06
Improving attractiveness: Bonus for full participation in child immunisation programme	3.97
Improving attractiveness: Payment for participation in screening programme	3.89

Support for intervention across target and non-target group

Table VI. Support for intervention across target and non-target group

Intervention	Support for the intervention (mean) Target group*	Support for the intervention Non-target group	Difference in support (p-value)
Legislation: banning of cigarette smoking in (some) restaurants and bars	5.30	8.22	0.000
Increasing price: Higher tax on cigarettes	4.03	7.99	0.000
Legislation: banning of cigarette smoking in all public places	3.74	7.37	0.000
Increasing price: higher taxes on alcohol	4.72	6.30	0.000
Increasing prices: higher taxes on unhealthy foods	4.71	6.05	0.000
Improving attractiveness: Payment for signing up as organ donor	4.00	4.13	0.513
Improving attractiveness: Bonus for full participation in child immunisation programme	3.71	3.96	0.621
Improving attractiveness: Payment for participation in screening programme	3.35	3.23	0.682

*Alcohol consumption: individuals drinking more than 15 units per week; Buying food: individual who report they often buy unhealthy food; Smoking: everyday smokers; Participation in screening programmes: invited individuals who never or only sometimes participate; Organ donation: individuals who have not signed up as organ donors.

Conclusions – from the survey

- The question on self-control seemed to "work" – people acknowledge that they have problems in doing what is right
- Support for interventions is mainly found amongst individuals who – within a specific life area – exhibit a high level of self-control
- Overall the interventions find no support amongst the target group *even* when lack of self-control is acknowledged
- Main justification for government intervention:
  - Externalities, caring externalities, paternalism
  - Not libertarianism – those targeted are not supportive
- Clearly more work needs to be done….

Eye Disease and Development

Thomas Barnebeck Andersen, Professor
COHERE – Centre of Health Economics Research
Department of Business and Economics
University of Southern Denmark

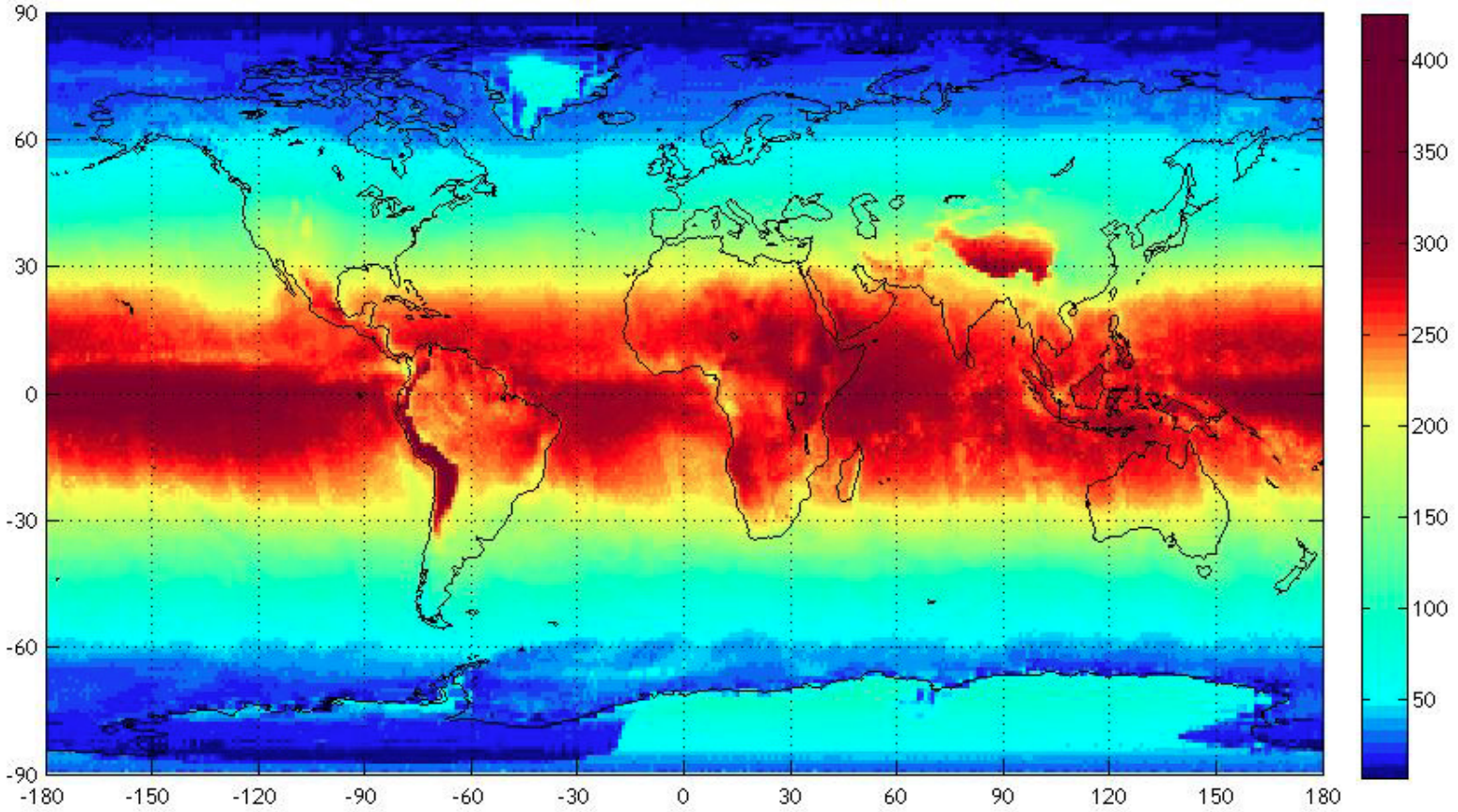
Joint with

Carl-Johan Dalgaard and Pablo Selaya
Department of Economics
University of Copenhagen

Background

- Geography is commonly identified as a deep determinant of income: e.g., absolute distance to equator strongly predicts comparative development
- "Absolute distance to equator" is a kitchen-sink variable
- One contribution of this research is an "unbundling" of the impact of "absolute distance to equator"
- Point of departure: Corr(UV-R, absolute distance to equator) > 0.9

Satellite-Based Data on Ultraviolet Radiation (UV-R)



Hypothesis

- UV-R is known to influence several eye diseases (e.g. cataract), which are very prevalent in low- and middle-income countries

- How can eye diseases influence development?

  - **Static effect**: untreated eye disease reduces labor market effort by working-age individuals

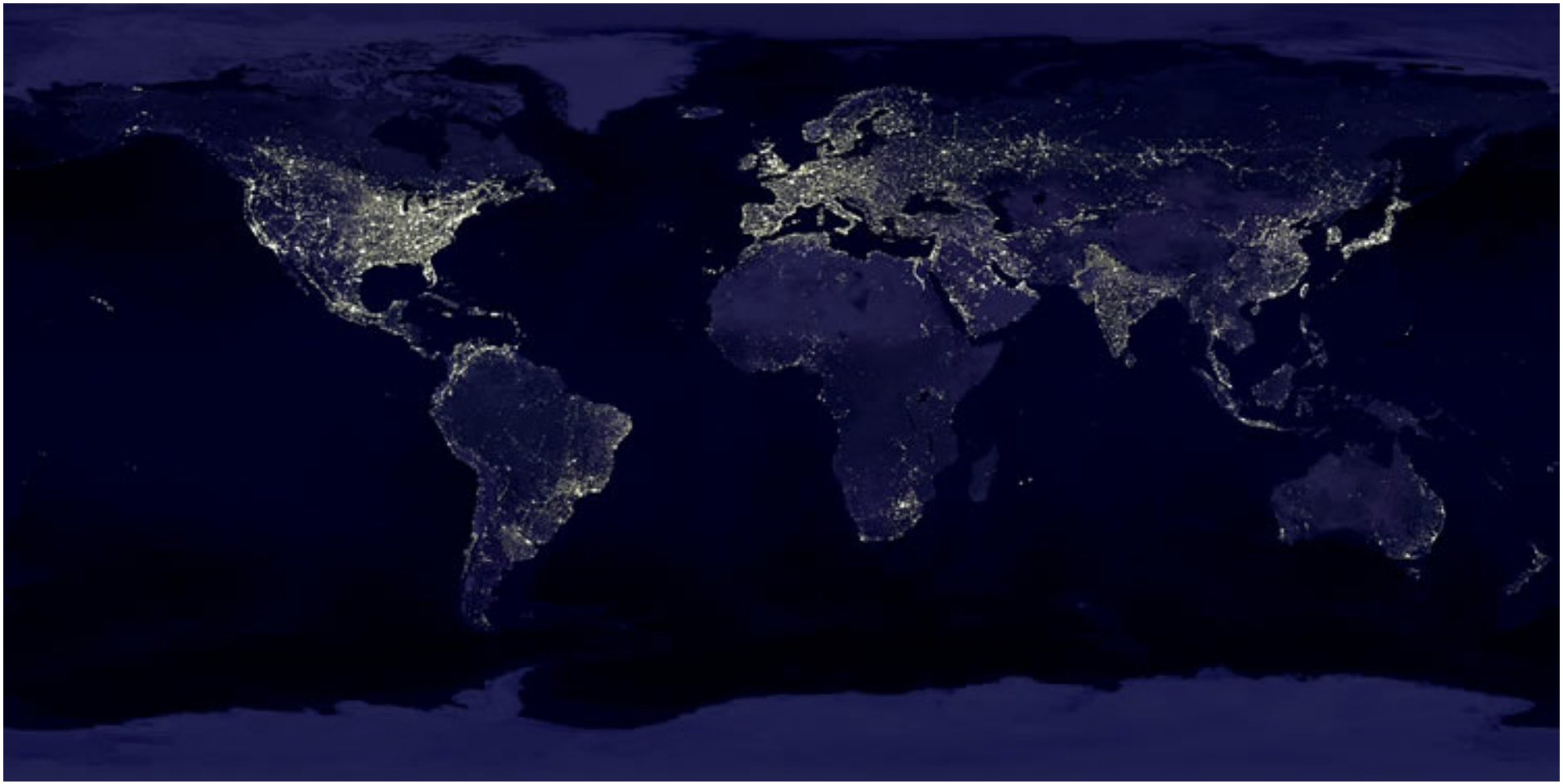
  - **Dynamic effect**: prospect of early retreat from work life may impact investments in human capital

Empirical Approach

- Does UV-R predict differences in income across countries and cells, conditional on a long list of controls (including of course "abs distance to equator")

- 170 countries, 17,320 G-ECON cells, and 18400 night lights cells

Earth's Night Lights Observed from Outer Space



Main Findings

- UV-R holds strong explanatory power vis-à-vis contemporary income differences conditional on an extensive set of controls; it does so across both cells and countries

- Could we be picking up something else?

- Perhaps. But while UV-R predicts cataract, it does not predict other diseases that thrive in tropical areas

Duty rosting – how can we improve the organization of hospital personnel

Professor Niels Chr. Petersen

COHERE – Centre of Health Economics Research

Department of Business and Economics

University of Southern Denmark

Is geography important for health care utilization?

Jørgen T. Lauridsen, professor, Ph.D.
The Health Econometrics Research Programme
COHERE – Centre of Health Economics Research
Department of Business and Economics
University of Southern Denmark

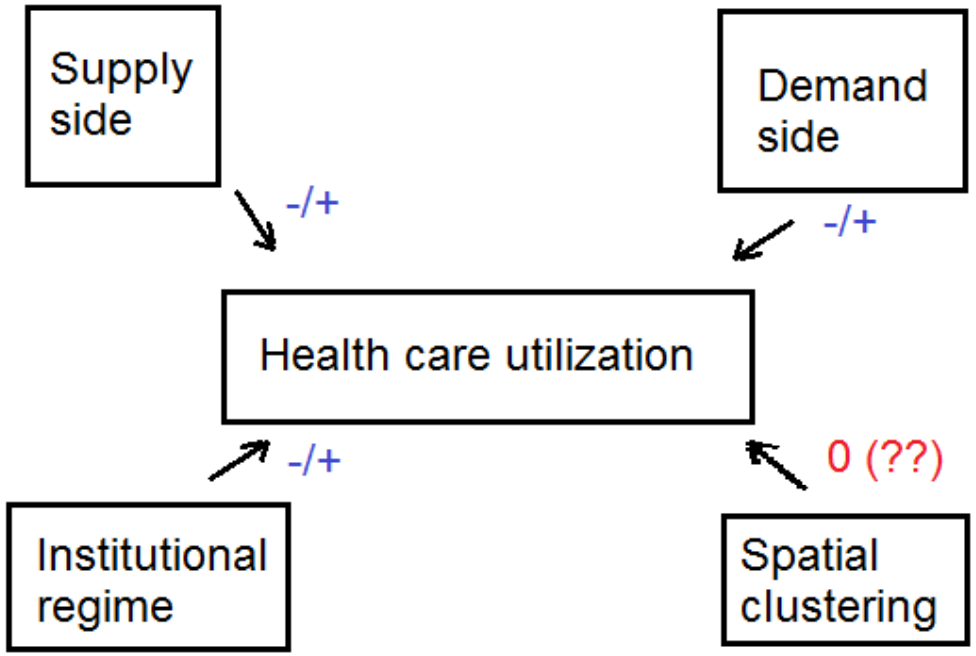
- Why should it be ??

Health care utilization is determined by factors:

- Population characteristics (*demand side*)
- Characteristics of health care system (*supply side*)
- Policy making (*institutional regime*)

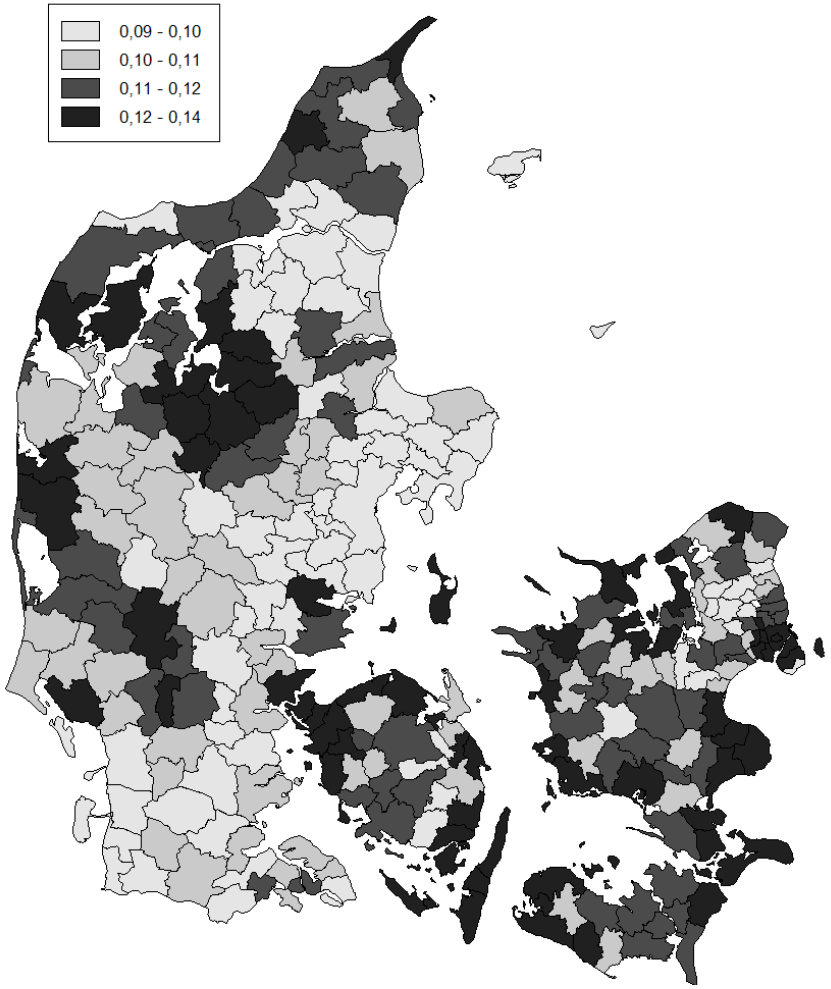
- Geographical variation in health care utilization should be caused by geographical variation in these factors
- Geographical variation (after controlling for factors) is unwarranted
  - Under – or over utilization of health care in play
- Desirable to be able to reveal such unwarranted geographical variation

A simple model:



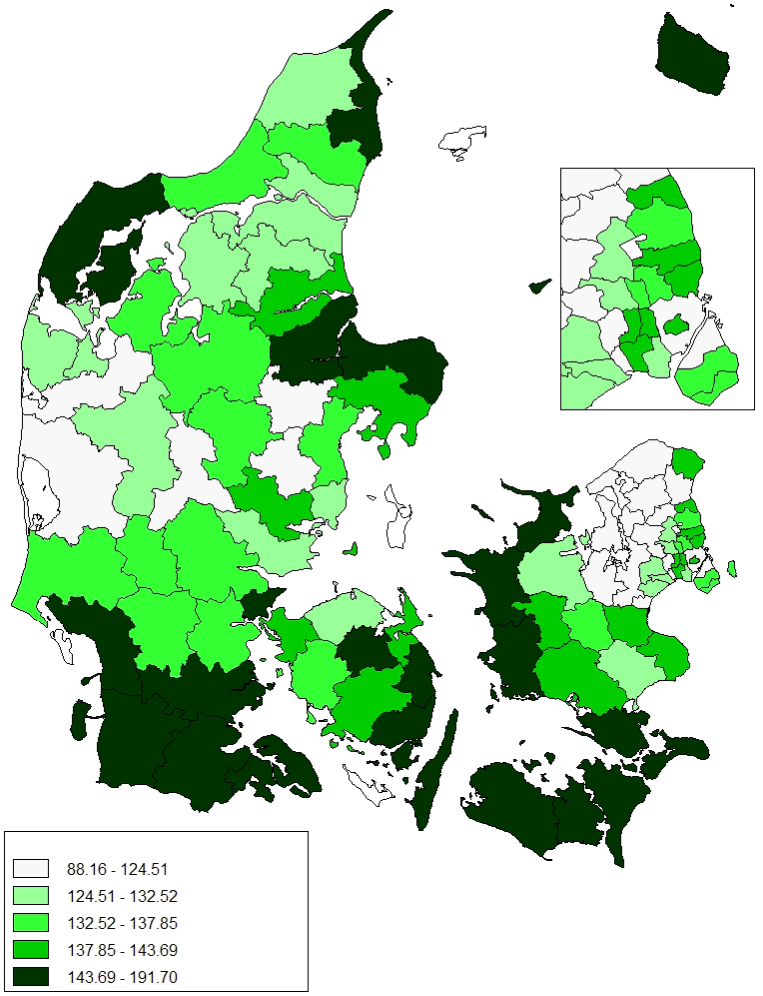
- Significant spatial clustering after control for factors is unwarranted – should call for action.
- Ideally, it should not be found.
- But how is reality ??

Example:



- Hospital admissions per 1000 inhabitants (2006)
- Spatial clustering – even after controlling for factors

Example:



- Medicated for mental diseases per 1000 inhabitants (2007)
- Spatial clustering – even after controlling for factors

Summary of investigations

Health care item	Spatial clust.?
In-hospital admissions	YES
Out-patient treatment	YES
General Practice expenditure	YES
Dental care for children	NO
Medication of mental diseases	YES
Medication of Type II diabetes	YES
Medication of cardiovascular diseases	YES
Medication of asthma / COL	YES
Pharmaceutical expenditure (Spain)	YES

Spatial clustering in 8 of 9 items (!)

Conclusion

- Considerable systematic geographical variation (after controlling for reasonable factors) is present in health care utilization
  - I.e., under – and over utilization of health care in play
- Should call for policy action
  - Aiming at reducing geographical inequality in health care

Thank you for your attention

How can we compare inequalities in self-assessed health? Evidence from Denmark

Lars Peter Østerdal

COHERE – Centre of Health Economics Research

Department of Business and Economics

University of Southern Denmark

Presentation draws on joint work with:

Mette Møller Jørgensen,
University of Copenhagen, and University of Southern Denmark

Mette Bjerrum Koch,
National Institute of Public Health, University of Southern Denmark.

Introduction

Denmark is among the most equal countries in the world with respect to **income inequality.***

Reducing **inequalities in health** has become one of the main health policy issues.

This talk: How can we evaluate inequalities in health?
What type of health inequalities do have in Denmark?

*** Gini coefficient : 0.22 in 2001, 0.269 in 2010. (Source: Eurostat)**

Self-assessed health

an overall indication as to how you feel and how well you are able to do your usual activities. For each of the following questions, please mark an ☒ in the one box that best describes your answer. If you are in doubt as to what to answer, please answer as best you can.

1. In general, would you say your health is:

(Only one check mark)

- Excellent ☐ 1
- Very good ☐ 2
- Good ☐ 3
- Fair ☐ 4
- Poor ☐ 5

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2. Compared to one year ago, how would you rate your health in general now?

(Only one check mark)

- Much better now than one year ago ☐ 1
- Somewhat better now than one year ago ☐ 2
- About the same as one year ago ☐ 3
- Somewhat worse now than one year ago ☐ 4
- Much worse now than one year ago ☐ 5

Excerpt from the Danish Health Interview Survey, National Institute of Public Health, University of Southern Denmark

How to compare self-assessed health?

Self-assessed health in Denmark among the 25-44-year-old*

	Poor	Fair	Good	Very good	Excellent	Average
	1	2	3	4	5	
Unmarried	1,8%	7,95%	32,53%	42,13%	15,59%	3,62
						^
Cohabiting	0,69%	5,11%	32,35%	47,49%	14,36%	3,70

* **Danish Health Interview Survey 2010, National Institute of Public Health, University of Southern Denmark**

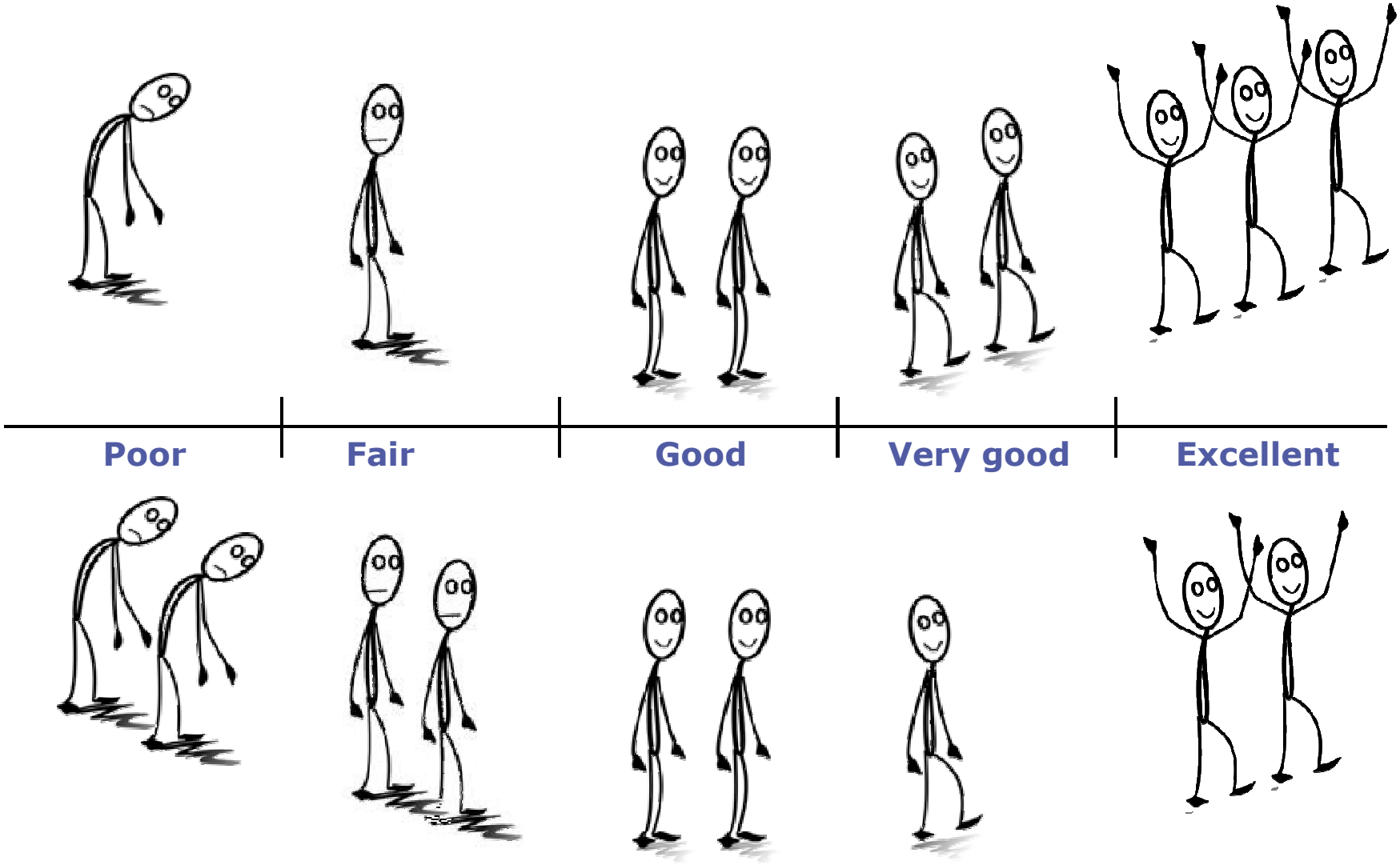
How to compare self-assessed health?

Self-assessed health in Denmark among the 25-44-year-old*

	Poor	Fair	Good	Very good	Excellent	Average
	1	2	3	4	12	
Unmarried	1,8%	7,95%	32,53%	42,13%	15,59%	4,71
						v
Cohabiting	0,69%	5,11%	32,35%	47,49%	14,36%	4,70

* **Danish Health Interview Survey 2010, National Institute of Public Health, University of Southern Denmark**

Which population is better off (health-wise)?

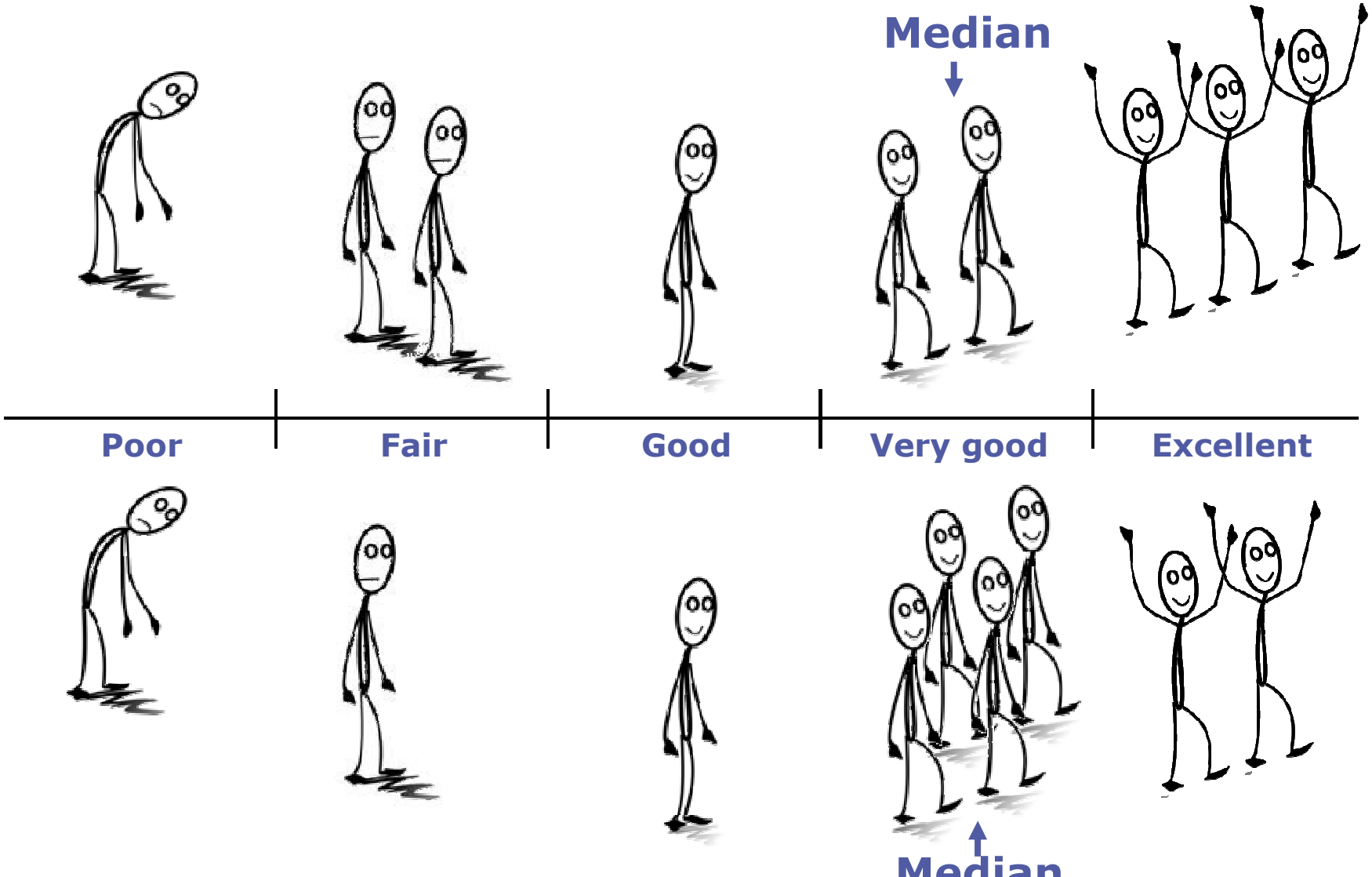


The First order dominance concept

Population UP **(first order) dominates** population DOWN if you can obtain UP by moving people in DOWN to better outcomes.*

* Note that there is no need for assigning numbers to outcomes (i.e. the concept is ordinal).

Which population is (health-wise) most unequal?



The Allison-Foster (2004) inequality concept*

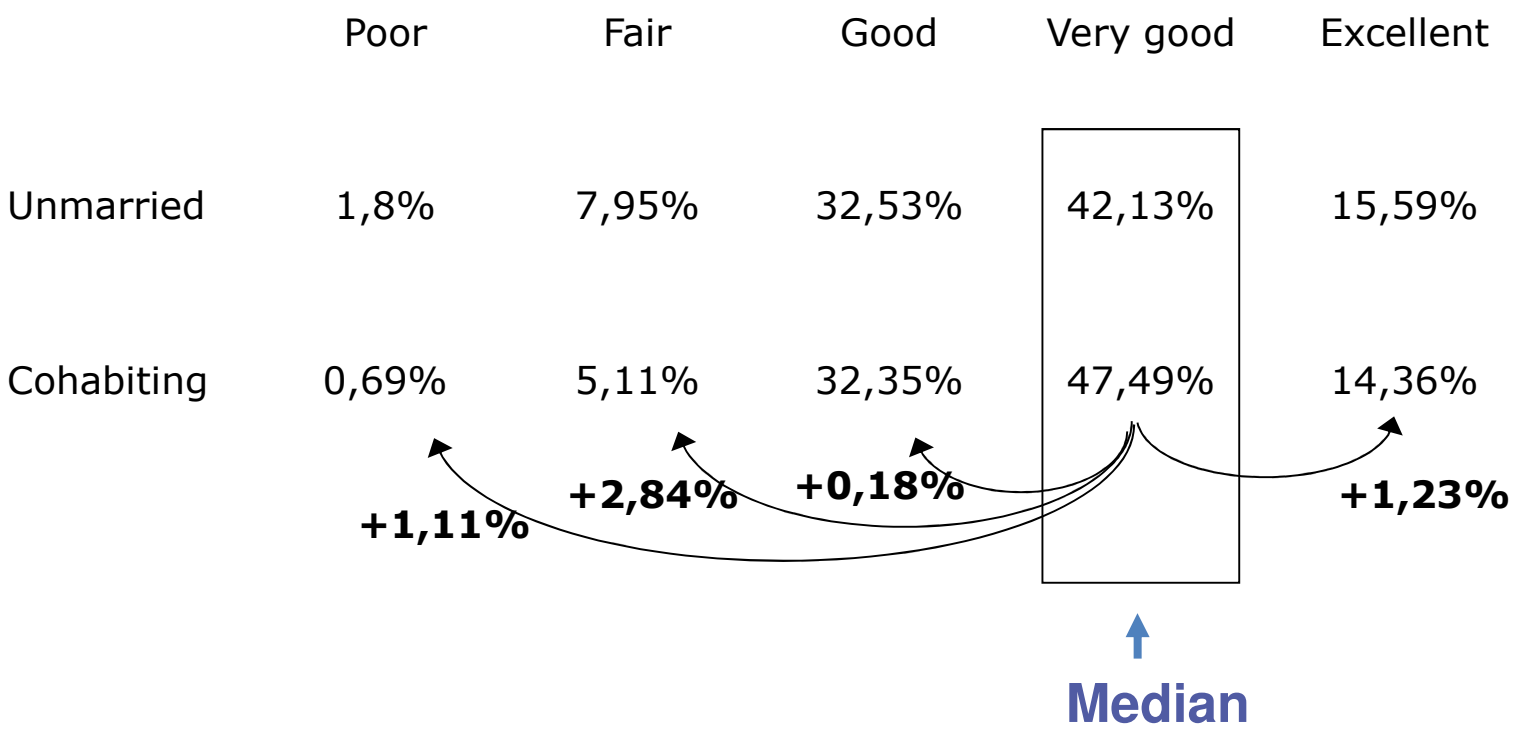
There is more **inequality** in population UP than in population DOWN if they have a common median and you can get UP from DOWN by moving people away from the median.

The Allison-Foster concept is an ordinal inequality concept

* Allison RA, Foster JE, Measuring health inequality using qualitative data, *Journal of Health Economics*, 2004.

Which population has (health-wise) the most inequality?

Self-assessed health in Denmark among the 25-44-year-old*



Results*: Age

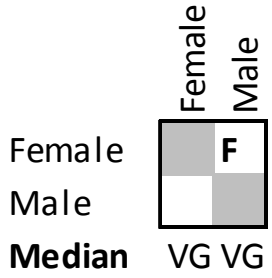
	16-24	25-44	45-64	65+
16-24				
25-44	**F**			
45-64	**F**	**F**		
65+	**F**	**F**	**F**	
Median	VG	VG	G	G

An **F** in a cell indicates that the column group first order dominates the row group.

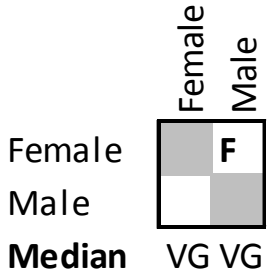
* **Data source: Danish Health Interview Survey 2010, National Institute of Public Health, University of Southern Denmark**

Gender

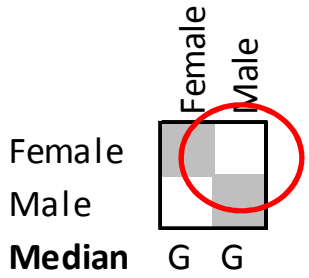
16-24-year-old



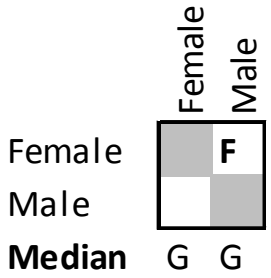
25-44-year-old



45-64-year-old



65+ -year-old



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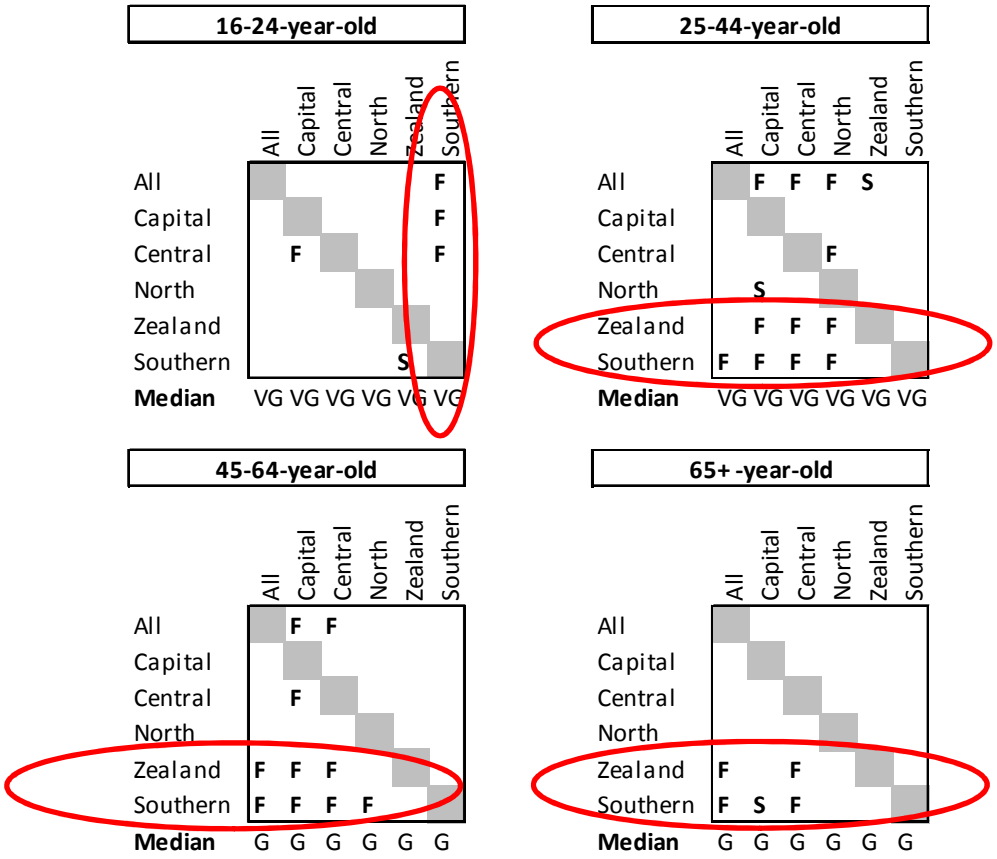
Regional Denmark



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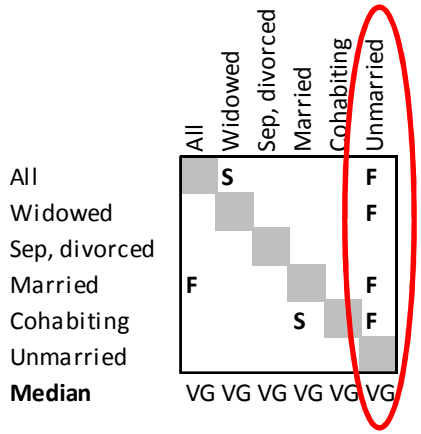
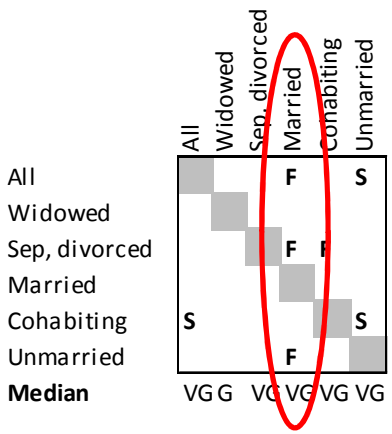
An **S** in a cell indicates that the column group is more unequal than the row group.

Marital status

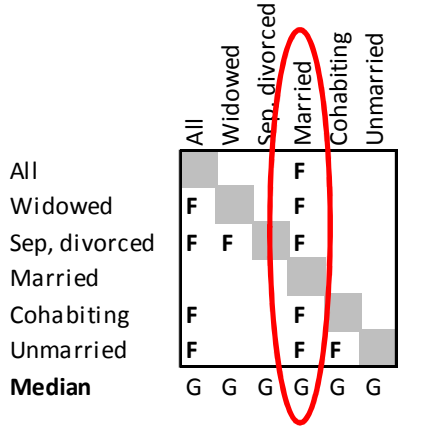
16-24-year-old



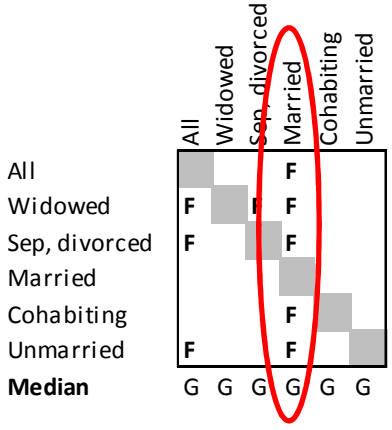
25-44-year-old



45-64-year-old



65+-year-old



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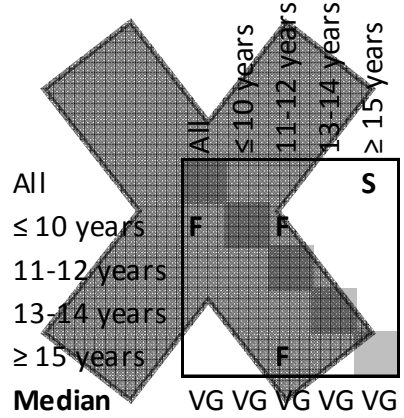
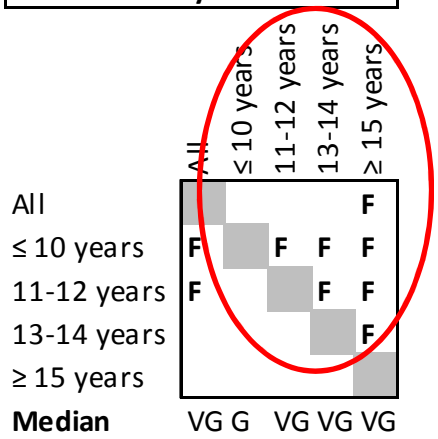
Education

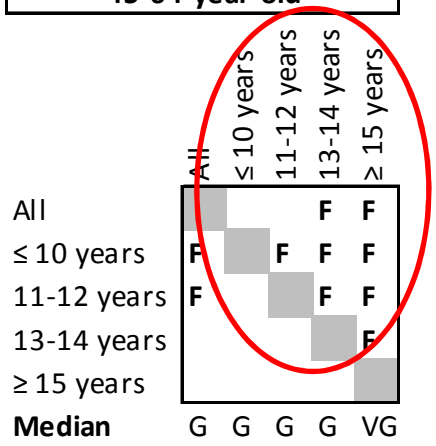
16-24-year-old



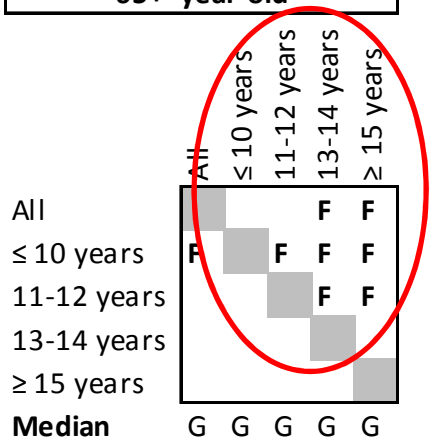
25-44-year-old



45-64-year-old



65+ -year-old



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An **S** in a cell indicates that the column group is more unequal than the row group.

Development over time

16-24-year-old

	All	1994	2000	2005	2010
All				F	S
1994			F		S
2000	S				S
2005					
2010				F	
Median	VG	VG	VG	VG	VG

25-44-year-old

	All	1994	2000	2005	2010
All			F		
1994					
2000					
2005					
2010	F		F		
Median	VG	VG	VG	VG	VG

45-64-year-old

	All	1994	2000	2005	2010
All					
1994	F		F	F	
2000					
2005			S		
2010					
Median	G	G	G	G	G

65+ -year-old

	All	1994	2000	2005	2010
All				F	
1994	F			F	F
2000	F			F	F
2005					
2010				F	
Median	G	G	G	G	G

An **F** in a cell indicates that the column group first order dominates the row group.

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Perspectives – current research

- Ordinal multidimensional comparisons of (health-related) welfare and inequality, e.g.:

C. Sonne-Schmidt and F. Tarp, L.P. Østerdal. ***Ordinal multidimensional inequality: theory and application to child deprivation in Mozambique***. Revised March 2012

C. Arndt, R. Distante, M.A. Hussain, L.P Østerdal, et al. **Ordinal Welfare Comparisons with Multiple Discrete Indicators: A First Order Dominance Approach and Application to Child Poverty**. in World Development

- Models comparing population health based on distribution of life expectancy and life quality, e.g.:
  - J.L. Hougaard, J.D. Moreno-Ternero, L.P Østerdal. **A new axiomatic approach to the evaluation of population health**. Revised april 2012.

Contact info and papers:

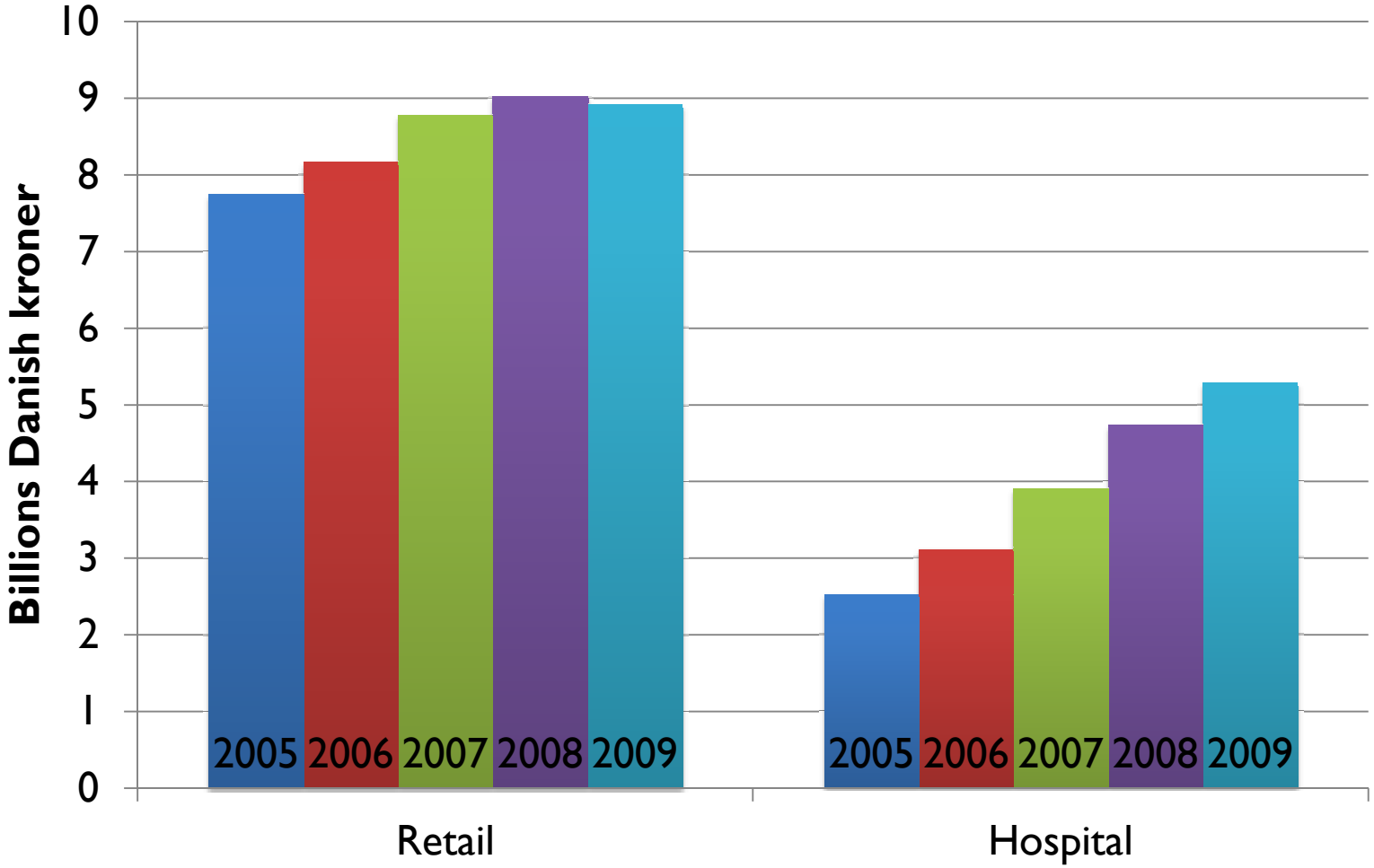
lpro@sam.sdu.dk

https://sites.google.com/site/lposterdal/

Competition in hospital pharmaceutical markets

Associate professor Christian Kronborg &
Post.doc. Gisela Hostenkamp
COHERE – Centre of Health Economics Research
Department of Business and Economics
University of Southern Denmark

Annual pharmaceutical expenditures



Source: Hostenkamp G, Nordic Journal of Health Economics 2012; 1(1): 83-97.

Growth in hospital pharmaceutical expenditures

- Expansion in volume
  - Increased activity
- New substances
  - Increase in treatment efficiency

OECD study on pricing policies

”Procurement and tendering approaches to pharmaceutical purchasing are used in many countries for purchasing hospital products and by some coverage schemes. However, the […] project revealed that there is little systematic information, even within countries among stakeholders and experts, on the procurement of pharmaceuticals by hospitals for inpatient and outpatient use.” (my emphasis)

OECD Health Policy Studies. Pharmaceutical Pricing Policies in a Global Market, 2008.

Pharmaceutical markets

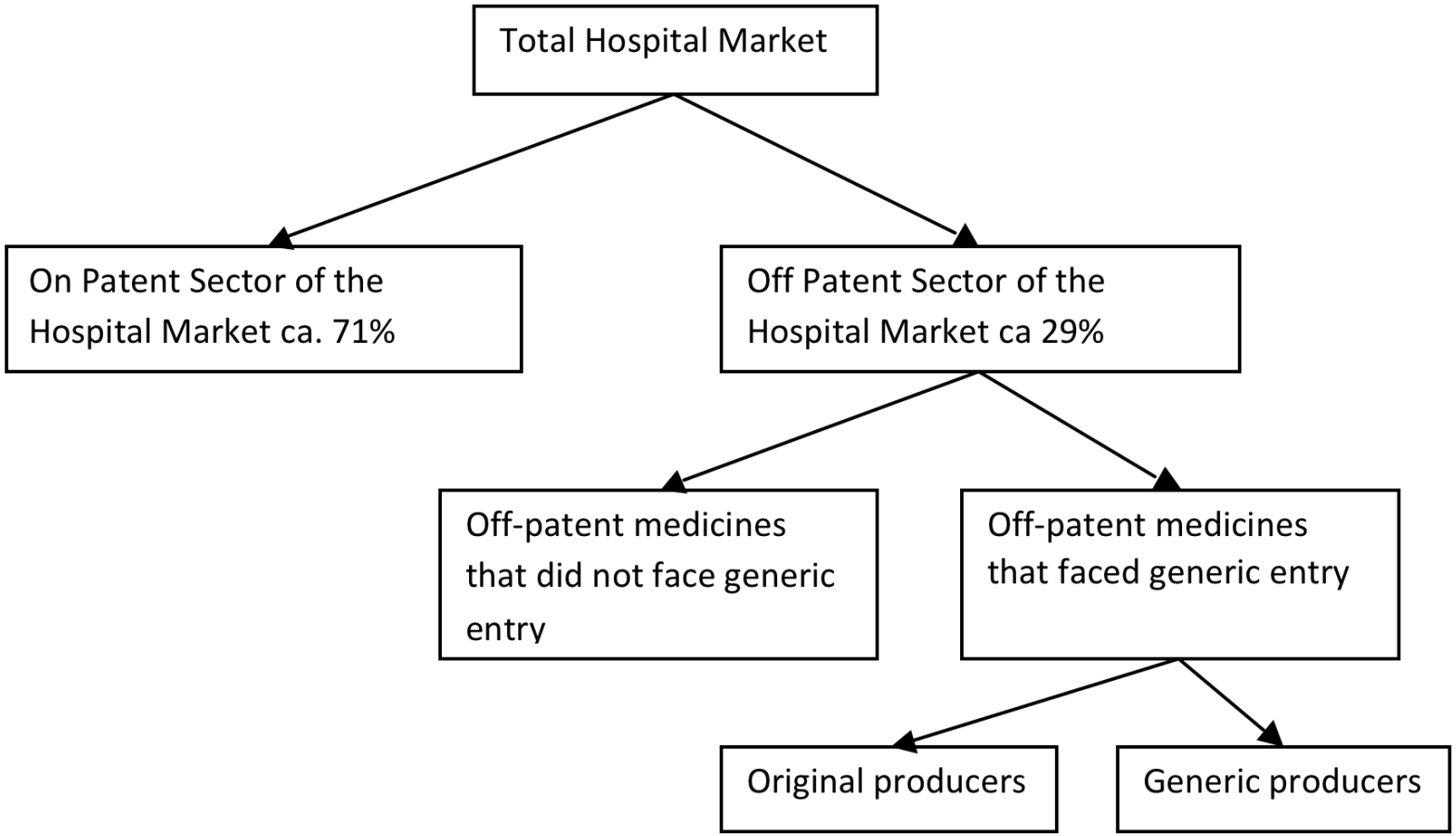
Retail sector

- Patient co-payment
- Prices fixed for 2 weeks
- Prices public available

Hospital sector

- Free of charge to patients
- Annual tenders
- Rebates confidential

Hospital pharmaceutical market



Sourse: Hostenkamp G et al, fortcomming

Data

- Provided by Amgros
- 100 top selling pharmaceutical substances in Danish hospital sector
- 2005-2009
- Submitted bids
- Supplier name
- Contract prices/rebates
- Consumed quantities
- Tendering types

Research questions

- Parallel trade
  - Whether parallel imports have an effect on pharmaceutical prices and
- Generic entry and competition
  - How original producers and potential generic competitors set prices after patent expiry
- Therapeutic competition
  - Study price competition between substitutes
- Interphase between retail and hospital sectors
  - Spillover between sectors?

Thank you