

WORKING PAPER 08-16



WP

Nabanita Datta Gupta, Nicolai Kristensen and Dario Pozzoli

The Validity of Vignettes in Cross-Country Health Studies

Department of Economics

ISBN 9788778823694 (print)

ISBN 9788778823700 (online)

The Validity of Vignettes in Cross-Country Health Studies*

Nabanita Datta Gupta

The Danish National Centre for Social Research
ndg@sfi.dk

Nicolai Kristensen

Institute of Government Studies & Aarhus School of Business,
University of Aarhus, CIM and CCP
nik@asb.dk

Dario Pozzoli

Aarhus School of Business, University of Aarhus and CIM
dpozzoli@asb.dk

September 8, 2008

Abstract

Cross-country comparisons of subjective assessments may be hampered by sub-population specific response style. To correct for this, the use of vignettes has become increasingly popular - notably within cross-country health studies. However, the validity of vignettes as a means to re-scale across sample sub-populations critically rests on the assumption of "response consistency" (RC): vignettes and self-assessments are evaluated on the same scale. In this paper we seek to test this assumption by using objective measures of health along with subjective measures and vignettes. Our results indicate that the assumption of RC is not innocuous and that our extended model improves the fit and significantly changes the cross-country rankings of health vis-à-vis the standard Chopit model.

JEL Classification: C25, I10

Keywords: Cross-country Health Comparison, Vignettes, Subjective Measures.

*We are indebted with Teresa Bago d'Uva for helpful discussions. We also thank seminar participants at the CIM Workshop, Aarhus, 2008. All responsibility and errors are ours.

1 Introduction

Cross-country comparisons of subjective responses frequently appear in empirical studies. Direct comparisons may be misleading, however, due to country specific response behaviour. In order to correct for systematic differences in response scales across sub-populations, King et al. (2004) suggested the use of anchoring vignettes, which permit identification of country-specific threshold parameters in ordered probit models. The method of anchoring vignettes has been applied to achieve valid cross-country comparison in various disciplines including political science (King et al., 2004), medicine (Salomon et al., 2004), work disability (Kapteyn et al., 2007), job satisfaction (Kristensen and Johansson, 2008), life satisfaction (Angelini et al., 2008) and notably health (see Bago d’Uva et al. (2008) and the references therein).

The validity of the vignette approach hinges on important assumptions, including the assumption about response consistency. response consistency implies that individuals use the same response categories for their subjective assessment (e.g. of own health) as the categories used for the hypothetical scenarios presented to them in vignettes.¹ This could arise, for example, in settings where individuals overplay their own health problems because they have a financial incentive to report themselves ill for the purpose of gaining windfall disability benefits (e.g. Kerhofs and Lindeboom, 1995) but do not face similar incentives when it comes to rating the health problems of the vignette person.

In this paper we seek to evaluate the use of the vignettes as a means to appropriately re-scale self-assessments and obtain valid cross-country comparisons. We seek to test whether response consistency is a tenable assumption. In order to do this we use cross-country health data, which include self-assessment of health (a self reported health according to the U.S. categorization) and vignettes, but in addition also an objective measure of health (measured hand grip strength). Including this objective measure allows us to free up on the assumption of response consistency.

A similar approach was first suggested by van Soest et al. (2007) who study self-assessments of drinking behavior among students in Ireland. The

¹The other main assumption is that of Vignette Equivalence. This means that the domain levels represented in each vignette are understood in the same way by all respondents, irrespective of their country of residence or other sociodemographic variables. In this paper we do not seek to test this assumption. While Murray et al (2003) do report some systematic differences in how individuals rank vignettes by age, education and gender, the differences do not appear to be big enough to reject this assumption, therefore our focus on response consistency.

method applied in this paper follow their approach, but the application here has several advantages compared to van Soest et al.

Firstly, they use self-reported drinking as their objective measure and compare this to a self-assessment of how the respondent characterizes his or her drinking pattern over the last year. Self-reported drinking is at best semi-objective and bias can easily arise as a result of measurement error due to norms or social desirability (respondents report what is politically correct). Secondly, van Soest et al. (2007) only have two sub-populations: Irish and non-Irish students. However, it appears that the group of non-Irish students can be a blend of students from countries with higher levels than Irish students for what constitutes, say, "severe drinking" and students from countries with lower levels than Irish students of "severe drinking".

Our application avoids these potential shortcomings and it therefore seems natural to assume that it is better equipped to assess whether response consistency is a tenable assumption. By using data across eight countries we seek to validate the vignette method using the type of application where it has been most predominant, namely within Health Economics. Hence, this paper may also be seen as a sensitivity check of the burgeoning literature that uses vignettes to perform valid cross-country comparisons of health.

We find that the model log likelihood improves a lot when we do not impose the response consistency assumption. Model comparisons using both the Akaike and the Bayesian information criterion support a specification not imposing response consistency and vignette corrected response scales. A robustness check using an alternative objective and self reported measures of health confirms the main results.

The paper is organized as follows. In the next section we very briefly describe the data set. Next, in Section 3, we present an extended version of the vignette Chopit model, which we name Ochopit (objective-extended Chopit). In Section 4 we present and discuss the results. Section 5 concludes.

2 Data

Data for the empirical analysis comes from Release 2 of the Survey of Health, Ageing and Retirement in Europe (SHARE): it is a multi-disciplinary and cross-national dataset which contains information on the individual life circumstances of, in principle, all eligible members of about 18,000 households. A household is eligible for participation in SHARE if at least one household member was born in or before 1954. An individual member of the house-

hold is eligible for interview if she or he, or his/her partner, was born in or before 1954². Release 2 of the SHARE data was gathered in 2004 and consists of probability samples drawn from each participating country.³ The survey contains information on over 26,000 individuals. SHARE covers 11 countries: Austria, Belgium, Denmark, France, Germany, Greece, Italy, the Netherlands, Spain, Sweden and Switzerland. The dataset is designed after the Health and Retirement Study (HRS) and the English Longitudinal Study of Ageing (ELSA). The data include information about respondents' health overall as well as six specific domains of health (breath, pain, mobility, work disability, depression and memory). Vignettes have been collected for each of these domains as well. An important feature of this study is to compare the self reported health measure with an objective one. In order for this comparison to be valid, we mainly focus on self-assessed general health, which we tie to both vignette questions⁴ on three different health domains and to the objective measure of respondents' grip strength. We do this because grip strength in middle age has been found to predict rather closely late-life disability degree and mortality (Frederiksen et al., 2002, Rantanen et al., 1998). This reduces the sample size to about 20,000 individuals.

The explanatory variables are selected in order to keep the model relatively parsimonious. For this reason we follow Bago d'Uva et al. (2008) and include age, age squared and log of household income (normalized by household size) as well as indicators for education, gender and for whether or not the respondent lives in an urban area. And of course, country dummies for seven of the eight countries for which we have vignette information (Belgium, Germany, Sweden, Netherlands, Spain, Italy, France and Greece). In contrast to Juerges (2007) and Peracchi and Rossetti (2008), we don't include among the covariates the reported health conditions, as they could be potentially measured with error and may be not comparable across countries. If there are systematic differences in reporting health conditions across countries, this might bias our results (Kapteyn et al 2007). Frequencies and sample means are reported in Table 1.

[Table 1 about here].

²Share contains information on a few respondents who are younger than 50. These spouses or partners of age eligible respondents are omitted from the analysis.

³The data from Belgium and France were collected in 2004/2005.

⁴The vignette subsample does not include the following countries: Austria, Denmark and Switzerland.

Figures 1 and 2 show the distribution of self reported general health across the eight countries. According to their self reports, the healthiest respondents live in Sweden, Netherlands and Greece. The least healthy respondents live in Spain, Italy and Germany. This is true for both the male and female subsamples. Figures 3 and 4 show the distribution of our objective measure of health. According to grip strength, the healthiest respondents live in Germany, Sweden and Netherlands while the least healthy live in Mediterranean countries (Italy, Spain and Greece). Hence the ranking of the countries by self reported health is somewhat at odds with ranking by hand grip strength. This could be related to systematic differences in response scales across sub-populations. In this paper, we will correct for these differences employing the tool of anchoring vignettes relaxing the response consistency assumption.

3 Methodology

The model presented here follows van Soest et al. (2007) and extends the Chopit model formulated by King et al. (2004) by allowing the threshold parameters in the self-assessment equation to differ from the thresholds in the vignette equation. In other words, we avoid the potentially unsavory assumption of response consistency. Subsequently, we can test whether threshold parameters indeed are significantly different from each other by comparing with estimates from a model where the assumption of response consistency is maintained.

In order to identify two sets of threshold parameters we need more information than self-assessments and answers to vignettes provide. This is obtained by employing objective measures of hand grip strength.

Model for Subjective Self-Assessment The self-assessment measure of general health (denoted Y_{si} for respondent i) is based on answers to the following question:

How would you describe your health, would you say is it? (1=excellent, 2=very good, 3=good, 4=fair, 5=poor)⁵.

Relatively few reply severe or extreme so we combine these two and thus work on with four categories.

⁵We also have estimated the model using the self rated health, ranging from "very good" to "very poor", and the results are fairly similar to the ones obtained in our analysis.

The subjective answer is assumed to reflect an underlying continuous latent measure of health but will also mirror individual thresholds and an error term that captures the inherent noise related to subjective assessments. The model therefore becomes

$$Y_{si}^* = X_i \beta_s + \xi_{si} \quad (1)$$

$$Y_{si} = j \text{ if } \tau_{si}^{j-1} < Y_{si}^* \leq \tau_{si}^j, \quad j = 0, \dots, 4.$$

X includes a set of covariates describing the respondent and ξ_{si} denotes the error term (including unobserved heterogeneity) assumed to be i.i.d. normally distributed with variance, σ_ξ^2 , normalized to 1.

The thresholds τ_{si}^j are modeled as

$$\tau_{si}^0 = -\infty, \quad \tau_{si}^1 = \gamma_s^1 X_i + u_i, \quad \tau_{si}^j = \tau_{si}^{j-1} + \exp(\gamma_s^j X_i), \quad j = 2, 3 \text{ and } \tau_{si}^4 = \infty.$$

where u_i is iid normally distributed, $u_i \sim N(0, \sigma_u^2)$. It is important to note that these response scales may differ across respondents, thus introducing DIF.⁶

Model for Vignettes The vignettes describe hypothetical persons in specific situations that reveal aspects of the hypothetical person's health. The respondents are asked to rank these vignette-persons' health on a similar five point scale (also collapsed to four points). As the same vignettes are used across all countries the answers can be used to re-scale to adjust for DIF (see Appendix A for the exact phrasing of the vignettes).

Answers to the vignettes are also modeled as an ordered latent variable and can be written as

$$Y_{li}^* = \theta_l + \xi_{li} \quad (2)$$

$$Y_{li} = j \text{ if } \tau_{li}^{j-1} < Y_{li}^* \leq \tau_{li}^j, \quad j = 0, \dots, 4.$$

θ_l denotes indicator variables for the vignettes and ξ_{li} denotes the error term (including unobserved heterogeneity) assumed to be i.i.d. normally distributed with variance, σ_ξ^2 , normalized to 1.

⁶Differential Item Functioning (DIF), cf. King et al. (2004), i.e. the fact that there are differences in response scales.

Similarly, the thresholds τ_{vi}^j for each of the v vignettes, $v=1,\dots,3$ are modeled as

$$\tau_{vi}^0 = -\infty, \tau_{vi}^1 = \gamma_v^1 X_i + u_i, \tau^j = \tau^{j-1} + \exp(\gamma_v^j X_i), j = 2, 3 \text{ and } \tau_{vi}^4 = \infty.$$

response consistency would entail that

$$RC : \gamma_v^j = \gamma_s^j, j = 1, 2, 3. \quad (3)$$

Equation 3 imposes the key assumption and it is the validity of this constraint we seek to evaluate in this paper.

Model for Objective Measure response consistency is normally necessary for identification but with the availability of an objective measure of general health (hand grip strength) we can allow $\gamma_v^j \neq \gamma_s^j$.⁷ We categorize grip strength as an ordered variable so that we can model it as an ordered probit

$$Y_{oi}^* = X_i \beta_o + \xi_{oi} \quad (4)$$

$$Y_{oi} = j \text{ if } \tau_o^{j-1} < Y_{oi}^* \leq \tau_o^j, \quad j = 0, \dots, 4.$$

where $\tau_o^0 = -\infty$ and $\tau_o^4 = \infty$. Note that the objective thresholds are constant across individuals and are chosen as the gender and age specific quartiles across the empirical distribution of grip strength. The error term ξ_{oi} is independent of X_i , u_i , and ξ_{li} . Again, following van Soest et al. (2007) we impose a one factor assumption, which states that subjective and objective measures are driven by the same latent health (true health) process, i.e. that

$$OF : \beta_s = \beta_o. \quad (5)$$

This assumption is necessary for the objective measure to yield identification when RE is *not* imposed. It is assumed that (ξ_{oi}, ξ_{si}) is bivariate normally distributed and hence we allow ξ_{oi} to be correlated with ξ_{si} .

⁷See Appendix B for details about how the test for hand grip strength was carried out.

The Combined Ochopit Model The likelihood for the combined model where both self-assessments, vignettes and the objective measure enter can be written as the product of a bivariate ordered probit for self-assessment and the objective measure and an ordered probit model for the vignettes.

The likelihood for the self-assessment and objective components reads

$$\begin{aligned}
L_{so} = & \prod_{i=1}^N \prod_{j=1}^4 \prod_{k=1}^4 \Pr(\text{subjective} = j, \text{objective} = k) = & (6) \\
& \Phi_2[c_{1j} - x_{1i}'\beta_1, c_{2k} - x_{2i}'\beta_2, \rho] - \\
& \Phi_2[c_{1j-1} - x_{1i}'\beta_1, c_{2k} - x_{2i}'\beta_2, \rho] - \\
& \Phi_2[c_{1j} - x_{1i}'\beta_1, c_{2k-1} - x_{2i}'\beta_2, \rho] + \\
& \Phi_2[c_{1j-1} - x_{1i}'\beta_1, c_{2k-1} - x_{2i}'\beta_2, \rho],
\end{aligned}$$

where Φ_2 is the bivariate standard normal cumulative distribution function, ρ is the correlation between error terms from the self-assessed and the objective measures and the product is estimated over N individuals.

The likelihood component for the vignettes reads

$$L_v = \prod_{i=1}^N \prod_{l=1}^3 \prod_{k=1}^4 [\Phi(\tau_l^k) - \Phi(\tau_l^{k-1})]^{\mathbf{I}(v_{i,j}=k)}. \quad (7)$$

The joint likelihood therefore becomes

$$L = L_{so} \times L_v. \quad (8)$$

We name this model, first formulated by van Soest et al. (2007), Ochopit in short for Objective-extended Chopit. The maximization routine is written in MATA, the matrix programming language of STATA, and is based on the Newton-Raphson algorithm, with numerical first and second derivatives.

4 Results

4.1 Main Results

We estimate three models: a standard ordered probit model, a Chopit model using vignettes and an Ochopit model using both vignettes and objective measures⁸.

⁸We always take account of the complex survey design. The potentially biasing effects on descriptive statistics and estimates are accounted for by using sampling weights in the data set: these weights being approximately equal to the inverse of the probability of selection of each individual into the sample. We use calibrated weights for the main and vignette samples together together to compensate to some extent for unit nonresponse.

[Table 2, 3 and 4 about here].

We first focus on the impact of differential response scales on within-country variation in health. In the ordered probit model, i.e. without the DIF correction, the probability of reporting good or excellent health falls significantly with age and rises with household income. Health is positively associated with the highest educational level and with residence in a urban area. Women seem to be more likely to report better health. The DIF corrected results imply that health is not significantly different for men and women since a lower initial threshold for self reported general health is used by women. This is true either under the response consistency assumption (Chopit model) or under the one factor assumption (Ochopit model) There is also evidence of correlation between the response scale and education level but the sign of this relation is different according to whether we impose the response consistency or not. In this case the DIF corrected results, under the response consistency assumption, imply a larger fall in health across education groups compared to the uncorrected results. If we consider the model correcting for DIF but relaxing response consistency, we find opposite results. This could be an indication that response consistency assumption is not very palusible in this application. This is also supported by the fact that most of the parameter estimates in the Ochopit vignette threshold part differs widely from their corresponding parameter estimates in the Ochopit self-reported threshold part, and a Wald test for equality of coefficients reveals that they are significantly different, cf. Table 3.

As far as the country dummies are concerned, although they generally are significant in the threshold equation for the Chopit model (Table 2, the mid columns), the results reveal that the country ranking only differs very little between the Chopit model and the ordered probit model, cf. Table 4. Testing for rank correlation (Kendall's tau) we cannot reject that they have the same order. According to these country rankings, one of the healthiest countries is Greece while Germany is the least healthy. This is somewhat at odds with what has been found in Juerges (2007). Applying a generalised ordered probit model to the first release of SHARE, Juerges (2007) computes a cross-country comparable health index and according to this he finds that Germany (Greece) is one of the healthiest (least healthy) country. When we relax the assumption of response consistency the country rankings shuffle around much more, cf. the right-most column of Table 4. We also find that a rank order test rejects equality of country rankings between the Ochopit country ranking and the two other models' country rankings.

More importantly, the country rankings obtained from the Ochofit model are more consistent with what has been found in Juerges (2007).

The correlation coefficient is estimated to be about 0.3 and very significant. This is clearly smaller than the estimate of 0.6 found in van Soest et al. (2007) but their high correlation could partly be a reflection of a non-ideal objective measure used in their study.

Interestingly, the log likelihood improves a lot when we do not impose the response consistency assumption. As the models are non-nested we can not use a likelihood ratio test, but AIC and BIC tests indicate that our Ochofit is the preferred model.

4.2 Sensitivity Analysis

This section briefly discusses the results obtained using the self-assessment and vignette question on mobility to examine the sensitivity of the main results to an alternative definition of health. To relax the response consistency assumption, the specification now includes an objective measure of mobility (walking speed).⁹ Walking speed, which declines rapidly with age, is an excellent measure of general mobility. In this case the sample is relatively small, only 2,321 observations in total, and the mean age is very high (almost 79 years), given the walking speed is available only for those 75 and over or respondents with self-reported mobility limitations. We perform the analysis using this objective measure, despite this small sample size because the one factor assumption, which is a key assumption for this approach to be valid, seems most likely to hold when we use walking speed as the objective measure.¹⁰ As in the main analysis, we find that the country ranking differs only very little between the Chopit model and the ordered probit one but when we relax the response consistency assumption the country ranking shuffles around much more. The results also confirm that the Ochofit model is significantly better than the Chopit one according to AIC and BIC, so the response consistency would be rejected under the maintained assumption of one factor, which seems plausible in this case given the high estimated correlation coefficient (0.40).

⁹See Appendix B for details about how the test for walking speed was carried out.

¹⁰We also tried to estimate alternative models where we use the self-assessments and vignette questions on all set of health domains (pain, mobility, sleeping problems, shortness of breath, concentration problems, depression and work limitations) and grip strength. However, the estimated correlations between unobservables was very low, around 10%. We interpreted this result as an indication that the one factor assumption is not very plausible in these cases.

5 Conclusion

In this paper, we have investigated the validity of anchoring vignettes, which have been used to correct for systematic differences in response scales across individuals when answering questions on a subjective scale. Following the approach suggested by van Soest et al. (2007), we seek to test the validity of anchoring vignettes assessing whether the key identifying assumption of response consistency is a tenable assumption. In order to do this we use cross-country health data, which include self-assessment of health (a self reported health according to the U.S. categorisation) and vignettes, but in addition also an objective measure of health (measured hand grip strength). Including this objective measure allows us to free up on the assumption of response consistency.

We find that the model log likelihood improves a lot when we do not impose the response consistency assumption. Model comparisons using both the Akaike and the Bayesian information criterion support a specification not imposing response consistency and vignette corrected response scales. A robustness check using an alternative objective and self reported measures of health confirms the main results. We also find that a rank order test rejects equality of country rankings between the Ochopit country ranking and the two other models' country rankings. More importantly, the country rankings obtained from the Ochopit model are more consistent with what has been found in Juerges (2007).

References

- [1] Angelini, V., Cavapozzi, D., Corazzini, L. and Paccagnella, O. (2008). Do Danes and Italians Rate Life Satisfaction in the Same Way? Using Vignettes to Correct for Individual-Specific Scale Biases. Manuscript. University of Padua.
- [2] Bago d’Uva, T. , Doorslear, E.v., Lindeboom, M. and O’Donnell, O. (2008). Does Reporting Heterogeneity bias the Measurement of Health Disparities?. *Health Economics*, 17, 351-375.
- [3] Frederiksen, H., Gaist D., and Petersen, HC. (2002). Hand grip strength: a phenotype suitable for identifying genetic variants affecting mid- and late-life physical functioning. *Genetic Epidemiology* 23, 110-122.
- [4] Murray CJL., Ozaltin E., Tandon A., Salomon J. (2003). Empirical evaluation of the anchoring vignettes approach in health surveys. In *Health Systems Performance Assessment: Debates, Methods and Empiricism*, Murray CJL, Evans, DB (eds). World Health Organization, Geneva.
- [5] Kapteyn, A., Smith, J.P. and van Soest, A. (2007). Vignettes and Self-Reports of Work Disability in the United States and the Netherlands. *American Economic Review*, 97(1), 461-473.
- [6] Kerkhofs, MKM. and Lindeboom, M. (1995). Subjective health measurements and state dependent reporting errors. *Health Economics* 4, 221-235.
- [7] King, G. A., Murray, C. J. L., Salomon, J.A., and Tandon, A. (2004). Enhancing the Validity and Cross-Cultural Comparability of Measurement in Survey Research. *American Political Science Review*, 98 (1), 191-207.
- [8] Kristensen, N. and Johansson, E. (2008). New Evidence on cross-country differences in job satisfaction using anchoring vignettes. *Labour Economics*, 15, 96-117.
- [9] Juerges H. (2007). True Health vs Response Styles: Exploring cross-country differences in self-reported health. *Health Economics* 16 (2) 2007, 163-178.

- [10] Peracchi, F. and Rosetti, C. (2008). Gender and regional differences in self-rated health in Europe. Manuscript, Tor Vergata University.
- [11] Rantanen, T, Masaki K, Foley D, Izmirlian G, White L, Guralnik JM. (1998). Grip strength changes over 27 years in Japanese-American men. *Journal of Applied Physiology* 85: 2047-2053.
- [12] Salomon, J. A., Tandon, A., and Murray, C.J. (2004), Comparability of Self Related Health: Cross Sectional Multi-Country Survey Using Anchoring Vignettes. *British Medical Journal*, 328, 258-264.
- [13] van Soest, A., Delaney, A., Harmon, C., Kapteyn, A. and Smith, J.P. (2007). Validating the use of vignettes for subjective threshold scales. Tilburg University, Discussion Paper 43.

6 Appendix: The pain, mobility and breath vignettes

In the main analysis, we use the following set of vignettes related to three different health domains (pain, mobility and breath):

1. "Paul has a headache once a month that is relieved after taking a pill. During the headache he can carry on with his day-to-day affairs.

Overall in the last 30 days, how much of bodily aches or pains did Paul have?" None, Mild, Moderate, Severe and Extreme.

2. "Kevin does not exercise. He cannot climb stairs or do other physical activities because he is obese. He is able to carry the groceries and do some light household work. Overall in the last 30 days, how much of a problem did Kevin have with

moving around?" None, Mild, Moderate, Severe and Extreme.

3. "Paul suffers from respiratory infections about once every year. He is short of breath 3 or 4 times a week and had to be admitted in hospital

twice in the past month with a bad cough that required treatment with antibiotics. In the last 30 days, how much of a problem did Paul have because of

shortness of breath?." None, Mild, Moderate, Severe and Extreme.

As far as the sensitivity analysis is concerned, we use the following set of vignettes related to mobility :

1."Tom has a lot of swelling in his legs due to his health condition. He has to make an effort to walk around his home as his legs feel heavy.

Overall in the last 30 days, how much of a problem did Tom have with moving around?" None, Mild, Moderate, Severe and Extreme.

2."Kevin does not exercise. He cannot climb stairs or do other physical activities because he is obese. He is able to carry the groceries and do some light household work.

Overall in the last 30 days, how much of a problem did Kevin have with moving around?" None, Mild, Moderate, Severe and Extreme.

3. "Rob is able to walk distances of up to 200 meters without any problems but feels tired after walking one kilometer or climbing more than

one flight of stairs. He has no problems with day-to-day activities, such as carrying food from the market.

Overall in the last 30 days, how much of a problem did Rob have with moving around?" None, Mild, Moderate, Severe and Extreme.

7 Appendix: Grip strength and walking speed

The objective measure we use in the main analysis is hand grip strength. It is measured using a hand-held dynamometer, where respondents are asked to press a lever as hard as they can. The dynamometer shows grip strength in kilograms. We take the maximum of up to four measurements: two on the left hand and two on the right hand. This variable is missing if the original does not have two measurements on at least one hand or if these differ by more than 20 kg or had implausible values. In the analyses, we drop missing values and we categorize grip strength taking the age and gender specific quartiles across its empirical distribution.

For the robustness check, we use walking speed. This is a measure of mobility and functioning of the lower limbs that strongly declines with age (available only for those 75 and over or respondents with self-reported mobility limitations). It is measured by a timed walk over a short distance (2.5m). Two measurements were made, of which we take the fastest.

Table 1: Descriptive statistics of covariates.

Variables	Observations	Mean	Std. Dev.	Min	Max
Personal characteristics					
Age	19918	65.178	10.206	50	100
Low education	19918	0.347	0.476	0	1
Average education	19918	0.174	0.379	0	1
Above average education	19918	0.297	0.457	0	1
High education	19918	0.182	0.386	0	1
Gender (1, female)	19918	0.537	0.499	0	1
Log of household income normalised by household size	19591	10.982	1.787	2.273	15.201
Living in a urban area	19918	0.281	0.450	0	1
Countries					
Germany	19918	0.298	0.457	0	1
Sweden	19918	0.033	0.178	0	1
Netherlands	19918	0.052	0.223	0	1
Spain	19918	0.141	0.348	0	1
Italy	19918	0.215	0.411	0	1
France	19918	0.187	0.390	0	1
Greece	19918	0.038	0.190	0	1
Belgium	19918	0.037	0.188	0	1

Notes: Weighted results. Source: SHARE release 2.

Table 2: Self reported health Equation: Ordered Probit, Chopit and O-Chopit.

Self-reported Health	Ordered Probit		Chopit		O-Chopit			
	Coeff	Std. Err.	Coeff	Std. Err.	Coeff	Std. Err.		
Personal characteristics								
Age	0.081*	0.015	0.072*	0.013	-0.078*	0.039		
Age square	-3.974*	1.085	-3.552*	0.968	4.707*	2.637		
Low education	0.505*	0.038	0.742*	0.064	0.220*	0.120		
Average education	0.259*	0.040	0.408*	0.075	0.153	0.127		
Above average education	0.246*	0.035	0.322*	0.063	-0.063	0.140		
Gender (1, female)	0.096*	0.022	-0.020	0.044	-0.073	0.070		
Log of household income	-0.067*	0.007	-0.060*	0.006	-0.043*	0.014		
Living in a urban area	-0.073*	0.026	-0.064*	0.023	-0.019	0.054		
Country indicator (ref: Belgium):								
Germany	0.365*	0.033	0.469*	0.065	0.241*	0.109		
Sweden	-0.524*	0.032	-0.852*	0.077	-0.250*	0.090		
Netherlands	-0.006	0.033	-0.002	0.063	-0.333*	0.094		
Spain	0.240*	0.037	-0.023	0.063	0.427*	0.100		
Italy	0.232*	0.035	0.038	0.075	0.420*	0.131		
France	0.193*	0.031	0.078	0.055	0.229*	0.084		
Greece	-0.112*	0.034	0.018	0.055	0.462*	0.101		
Thresholds								
<i>Threshold 1</i>			<i>Vignette=Selfreported</i>		<i>Selfreported</i>		<i>Vignette</i>	
Low education			0.353*	0.065	0.736*	0.114	-0.238	0.217
Average education			0.223*	0.080	0.543*	0.134	-0.127	0.281
Above average education			0.091	0.063	0.329*	0.110	-0.205	0.247
Gender (1, female)			-0.142*	0.048	-0.136*	0.077	-0.009	0.132
Germany			0.200*	0.069	0.615*	0.119	-0.270	0.236
Sweden			-0.443*	0.076	-0.302*	0.165	0.246*	0.136
Netherlands			-0.015	0.064	0.082	0.125	-0.062	0.135
Spain			-0.233*	0.065	-0.182	0.123	0.158	0.165
Italy			-0.148*	0.081	0.169	0.141	0.233	0.197
France			-0.115*	0.058	0.140	0.109	-0.115	0.148
Greece			0.187*	0.054	0.411*	0.099	0.635*	0.160
Constant	2.560*	0.486	-2.197*	0.068	-2.770*	0.119	-4.512*	1.449
<i>Threshold 2</i>								
Low education			0.227*	0.056	0.153*	0.059	0.009	0.185
Average education			0.118*	0.069	0.119*	0.070	0.008	0.205
Above average education			0.101*	0.055	0.049	0.058	-0.051	0.204
Gender (1, female)			-0.094*	0.041	-0.073*	0.043	-0.061	0.097
Germany			0.080	0.061	0.042	0.064	-0.162	0.165
Sweden			-0.243*	0.065	-0.459*	0.076	0.645	0.134
Netherlands			0.029	0.055	0.126*	0.055	-0.262*	0.120
Spain			-0.287*	0.056	-0.426*	0.065	-0.047*	0.138
Italy			-0.213*	0.071	-0.283*	0.077	-0.055*	0.171
France			-0.084*	0.048	-0.181*	0.052	-0.059	0.109
Greece			0.029	0.049	0.040	0.054	0.241*	0.135
Constant	3.784*	0.486	-1.012*	0.055	-0.891*	0.058	-3.361*	1.446
<i>Threshold 3</i>								
Low education			0.259*	0.054	0.171*	0.055	0.170	0.226
Average education			0.187*	0.065	0.072	0.065	0.298	0.249
Above average education			0.121*	0.054	0.073	0.055	0.332	0.261
Gender (1, female)			-0.029	0.037	-0.040	0.037	0.168	0.113
Germany			0.132*	0.056	-0.015	0.057	-0.050	0.205
Sweden			-0.298*	0.059	-0.264*	0.061	0.224	0.197
Netherlands			-0.004	0.053	-0.098*	0.053	-0.115	0.181
Spain			-0.134*	0.059	-0.094*	0.068	0.075	0.158
Italy			-0.111*	0.065	-0.191*	0.062	0.143	0.199
France			-0.061*	0.046	-0.107*	0.047	-0.077	0.145
Greece			0.109*	0.049	0.021	0.052	0.364*	0.176
Constant	4.938*	0.487	-0.141*	0.055	-0.015	0.055	-2.328	1.456
Theta values			Yes					
<i>Thresholds objective</i>								
Threshold 1					-4.192	1.441		
Threshold 2					-3.473	1.437		
Threshold 3					-2.758	1.435		
Sigma self reported			1.000	0.000	1.000	0.000		
Sigma vignette			0.890	0.023	1.000	0.000		
Sigma objective					1.000	0.000		
Rho self reported and objective					0.299	0.035		
Log Likelihood	-22947.918		-1.49E+08		-76289593			

Notes: *: significant at two-sided 5-percent level. Weighted results. Source: SHARE release 2.

Table 3: Models log likelihood and tests of equality of thresholds coefficients.

Health domain	Models	Log Pseudo Likelihood	AIC	BIC
Self reported health	Chopit (parameters)	-1.49E+08	297800110	297800409.2
	O-Chopit (parameters)	-76289593	152579384	152579595.2

Wald test	P-values
Threshold1(vignette) = Threshold1(selfreported)	0.000
Threshold1(vignette) = Threshold1(selfreported)	0.000
Threshold1(vignette) = Threshold1(selfreported)	0.000

Notes: Source: SHARE release 2.

Table 4: Country rankings.

Self reported health			
Rank	Ordered Probit	Chopit	O-Chopit
1	Sweden	Sweden	Netherlands
2	Greece	Spain	Sweden
3	Netherlands	Netherlands	Belgium
4	Belgium	Belgium	France
5	France	Greece	Germany
6	Italy	Italy	Italy
7	Spain	France	Spain
8	Germany	Germany	Greece

Notes: Source: SHARE release 2.

Table 5: Mobility Equation: Ordered Probit, Chopit and O-Chopit.

Health domain: Mobility	Ordered Probit		Chopit		O-Chopit			
	Coeff	Std. Err.	Coeff	Std. Err.	Coeff	Std. Err.		
Personal characteristics								
Age	-0.188	0.106	-0.238*	0.126	-0.098	0.084		
Age square	11.699	6.995	14.817	8.362	6.994	5.711		
Low education	0.388	0.356	0.678	0.497	1.510	0.331		
Average education	0.557	0.376	0.761	0.539	1.174*	0.379		
Above average education	0.558	0.346	0.739	0.535	0.601*	0.356		
Gender (1, female)	0.059	0.144	-0.027	0.213	-0.447*	0.158		
Log of household income	-0.053	0.037	-0.069	0.047	-0.033	0.029		
Living in a urban area	-0.005	0.163	0.002	0.202	0.063	0.135		
Country indicator (ref: Belgium):								
Germany	-0.152	0.255	-0.563	0.397	0.434	0.275		
Sweden	0.234	0.280	-0.346	0.347	-0.536	0.290		
Netherlands	-0.236	0.264	-0.636*	0.342	-0.590*	0.263		
Spain	-0.083	0.303	-0.635*	0.360	0.019	0.312		
Italy	-0.414	0.311	-1.191*	0.427	0.135	0.341		
France	-0.045	0.232	-0.508	0.303	0.151	0.243		
Greece	-0.132	0.285	-0.691*	0.377	0.078	0.301		
Thresholds								
<i>Threshold 1</i>								
			<i>Vignette=Self reported</i>		<i>Selfreported</i>	<i>Vignette</i>		
Low education			0.222	0.374	0.327	0.482	1.025*	0.394
Average education			0.049	0.391	0.396	0.477	0.184	0.444
Above average education			-0.226	0.389	-0.012	0.486	-0.497	0.411
Gender (1, female)			-0.166	0.177	-0.194	0.206	-0.519*	0.188
Germany			-0.380	0.302	-0.211	0.328	0.422	0.352
Sweden			-0.709*	0.367	-0.746	0.451	-0.870*	0.429
Netherlands			-0.390	0.289	-0.366	0.364	-0.454	0.319
Spain			-0.482	0.302	-0.393	0.358	-0.084	0.385
Italy			-0.692*	0.322	-0.472	0.361	0.187	0.431
France			-0.592*	0.241	-0.614*	0.295	0.008	0.302
Greece			-0.827*	0.256	-1.191*	0.403	-0.048	0.371
Constant	-8.149*	3.998	-1.417*	0.339	-1.620*	0.425	-3.359	3.114
<i>Threshold 2</i>								
Low education			0.278	0.268	0.346	0.273	1.023*	0.357
Average education			0.264	0.343	0.353	0.337	0.426	0.478
Above average education			0.365	0.297	0.432	0.312	0.020	0.431
Gender (1, female)			0.037	0.155	0.017	0.161	-0.346*	0.179
Germany			-0.551*	0.265	-0.499	0.268	0.426	0.392
Sweden			-0.661*	0.274	-0.645*	0.287	-0.882*	0.418
Netherlands			-0.258	0.199	-0.218	0.205	-0.405	0.304
Spain			-0.600*	0.228	-0.667*	0.240	0.023	0.371
Italy			-0.709*	0.253	-0.731*	0.243	0.371	0.500
France			-0.512*	0.200	-0.486*	0.206	0.064	0.289
Greece			-0.324*	0.199	-0.260	0.202	0.065	0.326
Constant	-7.412*	3.988	-0.807*	0.259	-0.879*	0.269	-2.933	3.115
<i>Threshold 3</i>								
Low education			0.199	0.213	0.168	0.212	0.696	0.496
Average education			0.104	0.261	0.009	0.256	1.400*	0.623
Above average education			0.179	0.247	0.110	0.243	-0.021	0.615
Gender (1, female)			-0.055	0.125	-0.055	0.122	-0.375	0.280
Germany			-0.257	0.222	-0.333	0.217	5.451*	2.655
Sweden			-0.455*	0.220	-0.492*	0.223	-0.613	0.386
Netherlands			-0.389*	0.192	-0.430*	0.197	-0.196	0.418
Spain			-0.662*	0.231	-0.686*	0.232	0.007	0.405
Italy			-0.769*	0.197	-0.824*	0.205	0.360	0.479
France			-0.156	0.175	-0.198	0.179	0.638	0.338
Greece			-0.321	0.206	-0.343	0.208	0.352	0.409
Constant	-6.459	3.972	0.393	0.231	0.485*	0.235	-1.887	3.138
Theta values								
Yes								
<i>Thresholds objective</i>								
Threshold 1					-3.411	3.117		
Threshold 2					-2.610	3.114		
Threshold 3					-1.954	3.117		
Sigma self reported			1.243*	0.112	1.000	0.000		
Sigma vignette			1.000	0.000	1.000	0.000		
Sigma objective			1.000	0.000	1.000	0.000		
Rho self reported and objective					0.410*	0.082		
Log pseudo likelihood	-502.177		-12161926		-11595227			

Notes: *: significant at two-sided 5-percent level. Weighted results. Source: SHARE release 2.

Table 6: Models log likelihood and tests of equality of thresholds coefficients.

Health domain	Models	Log Pseudo Likelihood	AIC	BIC
Mobility	Chopit (parameters)	-12161926	24323962	24324261.23
	O-Chopit (parameters)	-11595227	23190652	23190863.23
Wald test		P-values		
Threshold1(vignette) = Threshold1(selfreported)		0.000		
Threshold1(vignette) = Threshold1(selfreported)		0.000		
Threshold1(vignette) = Threshold1(selfreported)		0.000		

Notes: Source: SHARE release 2.

Table 7: Country rankings.

Mobility			
Rank	Ordered Probit	Chopit	O-Chopit
1	Italy	Italy	Netherlands
2	Netherlands	Greece	Sweden
3	Germany	Netherlands	Belgium
4	Greece	Spain	Spain
5	Spain	Germany	Greece
6	France	France	Italy
7	Belgium	Sweden	France
8	Sweden	Belgium	Germany

Notes: Source: SHARE release 2.

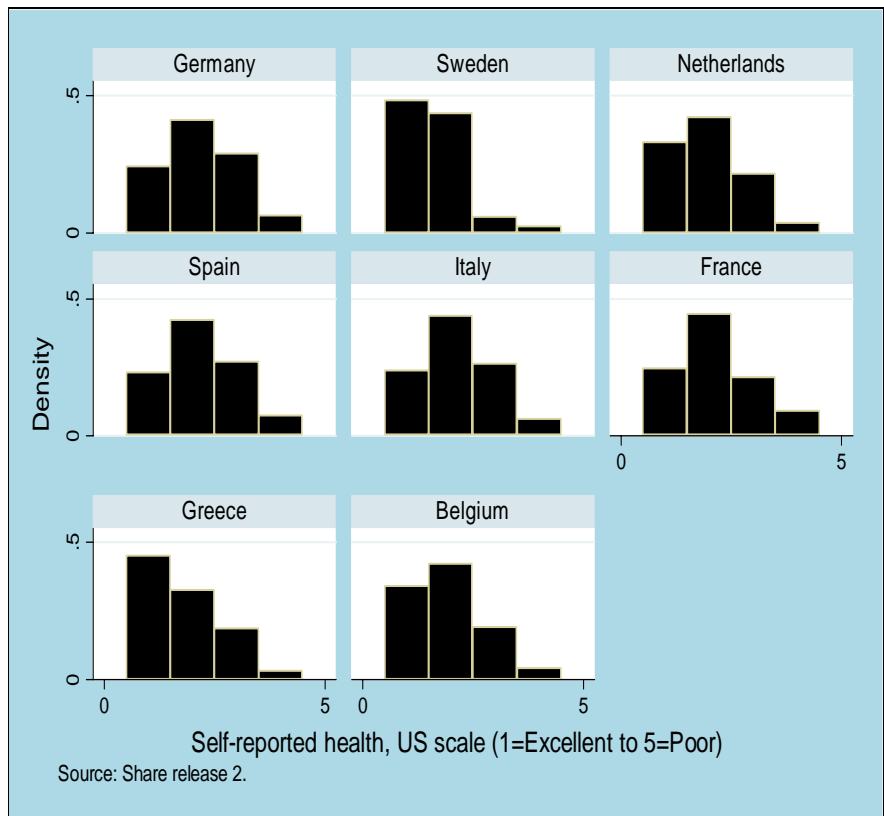


Figure 1: Histograms of self reported health of men, by country.

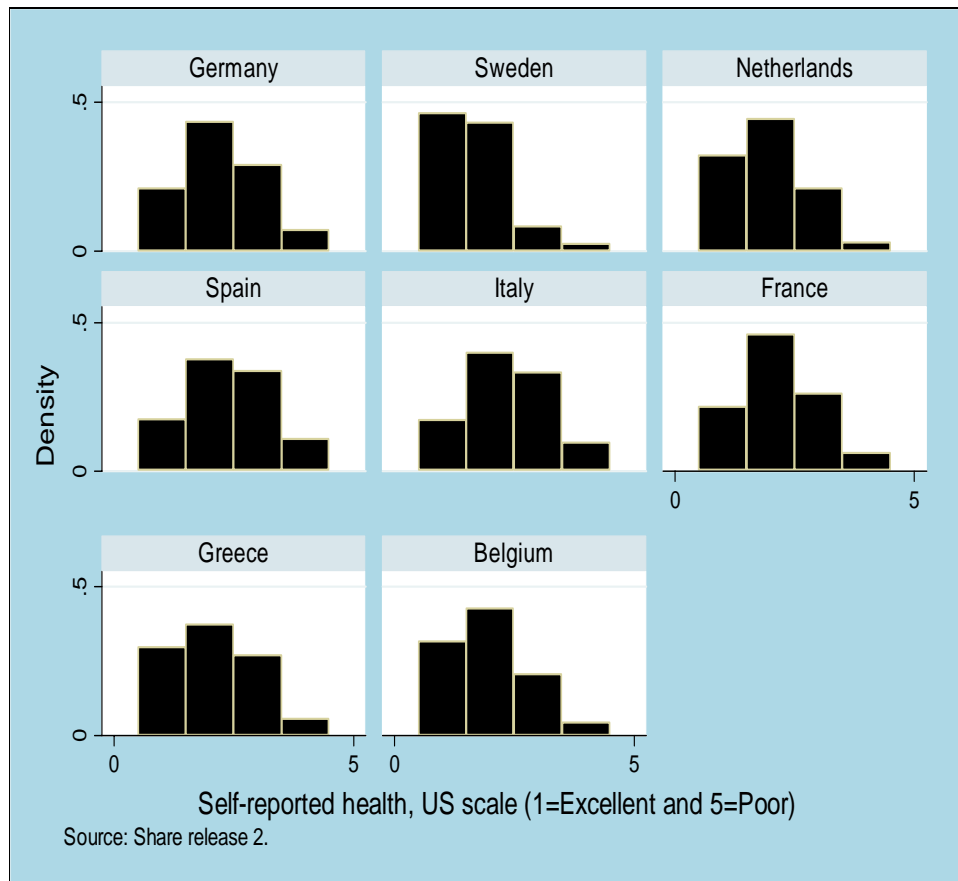


Figure 2: Histograms of self reported health of women, by country.

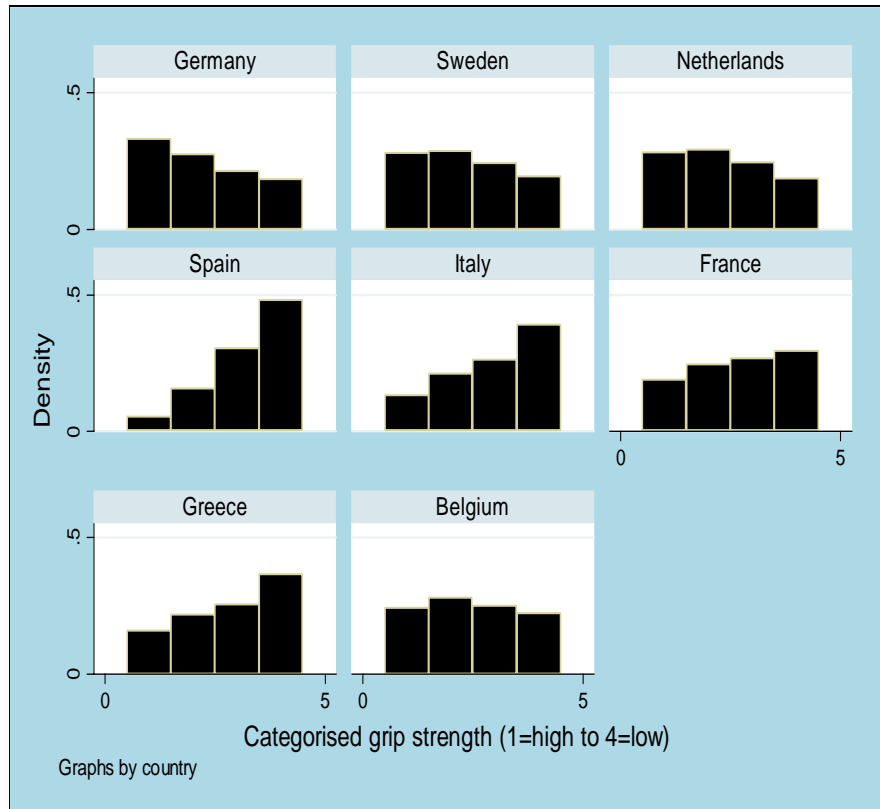


Figure 3: Histograms of grip strength of men, by country.

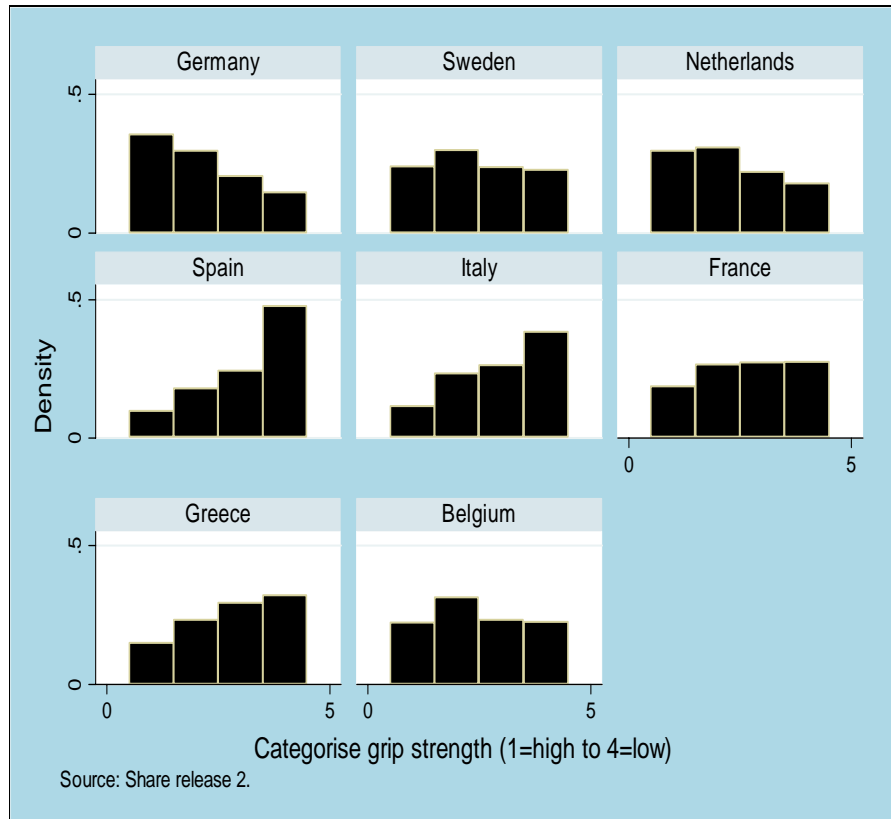


Figure 4: Histograms of grip strength of women, by country.

Department of Economics:

Skriftserie/Working Paper:

2003:

- WP 03-1 Søren Harck: Er der nu en strukturelt bestemt langsigts-ledighed i SMEC?: Phillipskurven i SMEC 99 vis-à-vis SMEC 94. ISSN 1397-4831.
- WP 03-2 Beatrice Schindler Rangvid: Evaluating Private School Quality in Denmark. ISSN 1397-4831.
- WP 03-3 Tor Eriksson: Managerial Pay and Executive Turnover in the Czech and Slovak Republics. ISSN 1397-4831.
- WP 03-4 Michael Svarer and Mette Verner: Do Children Stabilize Marriages? ISSN 1397-4831.
- WP 03-5 Christian Bjørnskov and Gert Tinggaard Svendsen: Measuring social capital – Is there a single underlying explanation? ISSN 1397-4831.
- WP 03-6 Vibeke Jakobsen and Nina Smith: The educational attainment of the children of the Danish ‘guest worker’ immigrants. ISSN 1397-4831.
- WP 03-7 Anders Poulsen: The Survival and Welfare Implications of Altruism When Preferences are Endogenous. ISSN 1397-4831.
- WP 03-8 Helena Skyt Nielsen and Mette Verner: Why are Well-educated Women not Full-timers? ISSN 1397-4831.
- WP 03-9 Anders Poulsen: On Efficiency, Tie-Breaking Rules and Role Assignment Procedures in Evolutionary Bargaining. ISSN 1397-4831.
- WP 03-10 Anders Poulsen and Gert Tinggaard Svendsen: Rise and Decline of Social Capital
– Excess Co-operation in the One-Shot Prisoner’s Dilemma Game. ISSN 1397-4831.

- WP 03-11 Nabanita Datta Gupta and Amaresh Dubey: Poverty and Fertility: An Instrumental Variables Analysis on Indian Micro Data. ISSN 1397-4831.
- WP 03-12 Tor Eriksson: The Managerial Power Impact on Compensation – Some Further Evidence. ISSN 1397-4831.
- WP 03-13 Christian Bjørnskov: Corruption and Social Capital. ISSN 1397-4831.
- WP 03-14 Debashish Bhattacharjee: The Effects of Group Incentives in an Indian Firm
– Evidence from Payroll Data. ISSN 1397-4831.
- WP 03-15 Tor Eriksson och Peter Jensen: Tidsbegränsade anställningar – danska erfarenheter. ISSN 1397-4831.
- WP 03-16 Tom Coupé, Valérie Smeets and Frédéric Warzynski: Incentives, Sorting and Productivity along the Career: Evidence from a Sample of Top Economists. ISSN 1397-4831.
- WP 03-17 Jozef Koning, Patrick Van Cayseele and Frédéric Warzynski: The Effects of Privatization and Competitive Pressure on Firms' Price-Cost Margins: Micro Evidence from Emerging Economies. ISSN 1397-4831.
- WP 03-18 Urs Steiner Brandt and Gert Tinggaard Svendsen: The coalition of industrialists and environmentalists in the climate change issue. ISSN 1397-4831.
- WP 03-19 Jan Bentzen: An empirical analysis of gasoline price convergence for 20 OECD countries. ISSN 1397-4831.
- WP 03-20 Jan Bentzen and Valdemar Smith: Regional income convergence in the Scandinavian countries. ISSN 1397-4831.
- WP 03-21 Gert Tinggaard Svendsen: Social Capital, Corruption and Economic Growth: Eastern and Western Europe. ISSN 1397-4831.
- WP 03-22 Jan Bentzen and Valdemar Smith: A Comparative Study of Wine Auction Prices: Mouton Rothschild Premier Cru Classé. ISSN 1397-4831.

- WP 03-23 Peter Guldager: Folkepensionisternes incitamenter til at arbejde. ISSN 1397-4831.
- WP 03-24 Valérie Smeets and Frédéric Warzynski: Job Creation, Job Destruction and Voting Behavior in Poland. ISSN 1397-4831.
- WP 03-25 Tom Coupé, Valérie Smeets and Frédéric Warzynski: Incentives in Economic Departments: Testing Tournaments? ISSN 1397-4831.
- WP 03-26 Erik Strøjer Madsen, Valdemar Smith and Mogens Dilling-Hansen: Industrial clusters, firm location and productivity – Some empirical evidence for Danish firms. ISSN 1397-4831.
- WP 03-27 Aycan Çelikaksoy, Helena Skyt Nielsen and Mette Verner: Marriage Migration: Just another case of positive assortative matching? ISSN 1397-4831.

2004:

- WP 04-1 Elina Pylkkänen and Nina Smith: Career Interruptions due to Parental Leave – A Comparative Study of Denmark and Sweden. ISSN 1397-4831.
- WP 04-2 Urs Steiner Brandt and Gert Tinggaard Svendsen: Switch Point and First-Mover Advantage: The Case of the Wind Turbine Industry. ISSN 1397-4831.
- WP 04-3 Tor Eriksson and Jaime Ortega: The Adoption of Job Rotation: Testing the Theories. ISSN 1397-4831.
- WP 04-4 Valérie Smeets: Are There Fast Tracks in Economic Departments? Evidence from a Sample of Top Economists. ISSN 1397-4831.
- WP 04-5 Karsten Bjerring Olsen, Rikke Ibsen and Niels Westergaard-Nielsen: Does Outsourcing Create Unemployment? The Case of the Danish Textile and Clothing Industry. ISSN 1397-4831.
- WP 04-6 Tor Eriksson and Johan Moritz Kuhn: Firm Spin-offs in Denmark 1981-2000 – Patterns of Entry and Exit. ISSN 1397-4831.

- WP 04-7 Mona Larsen and Nabanita Datta Gupta: The Impact of Health on Individual Retirement Plans: a Panel Analysis comparing Self-reported versus Diagnostic Measures. ISSN 1397-4831.
- WP 04-8 Christian Bjørnskov: Inequality, Tolerance, and Growth. ISSN 1397-4831.
- WP 04-9 Christian Bjørnskov: Legal Quality, Inequality, and Tolerance. ISSN 1397-4831.
- WP 04-10 Karsten Bjerring Olsen: Economic Cooperation and Social Identity: Towards a Model of Economic Cross-Cultural Integration. ISSN 1397-4831.
- WP 04-11 Iben Bolvig: Within- and between-firm mobility in the low-wage labour market. ISSN 1397-4831.
- WP 04-12 Odile Poulsen and Gert Tinggaard Svendsen: Social Capital and Market Centralisation: A Two-Sector Model. ISSN 1397-4831.
- WP 04-13 Aditya Goenka and Odile Poulsen: Factor Intensity Reversal and Ergodic Chaos. ISSN 1397-4831.
- WP 04-14 Jan Bentzen and Valdemar Smith: Short-run and long-run relationships in the consumption of alcohol in the Scandinavian countries.
ISBN 87-7882-010-3 (print); ISBN 87-7882-011-1 (online).
- WP 04-15 Jan Bentzen, Erik Strøjer Madsen, Valdemar Smith and Mogens Dilling-Hansen: Persistence in Corporate Performance? Empirical Evidence from Panel Unit Root Tests.
ISBN 87-7882-012-X (print); ISBN 87-7882-013-8 (online).
- WP 04-16 Anders U. Poulsen and Jonathan H.W. Tan: Can Information Backfire? Experimental Evidence from the Ultimatum Game.
ISBN 87-7882-014-6 (print); ISBN 87-7882-015-4 (online).
- WP 04-17 Werner Roeger and Frédéric Warzynski: A Joint Estimation of Price-Cost Margins and Sunk Capital: Theory and Evidence from the European Electricity Industry.
ISBN 87-7882-016-2 (print); ISBN 87-7882-017-0 (online).

- WP 04-18 Nabanita Datta Gupta and Tor Eriksson: New workplace practices and the gender wage gap.
ISBN 87-7882-018-9 (print); ISBN 87-7882-019-7 (online).
- WP 04-19 Tor Eriksson and Axel Werwatz: The Prevalence of Internal Labour Markets – New Evidence from Panel Data.
ISBN 87-7882-020-0 (print); ISBN 87-7882-021-9 (online).
- WP 04-20 Anna Piil Damm and Michael Rosholm: Employment Effects of Dispersal Policies on Refugee Immigrants: Empirical Evidence.
ISBN 87-7882-022-7 (print); ISBN 87-7882-023-5 (online).
- 2005:
- WP 05-1 Anna Piil Damm and Michael Rosholm: Employment Effects of Dispersal Policies on Refugee Immigrants: Theory.
ISBN 87-7882-024-3 (print); ISBN 87-7882-025-1 (online).
- WP 05-2 Anna Piil Damm: Immigrants' Location Preferences: Exploiting a Natural Experiment.
ISBN 87-7882-036-7 (print); ISBN 87-7882-037-5 (online).
- WP 05-3 Anna Piil Damm: The Danish Dispersal Policy on Refugee Immigrants 1986-1998: A Natural Experiment?
ISBN 87-7882-038-3 (print); ISBN 87-7882-039-1 (online).
- WP 05-4 Rikke Ibsen and Niels Westergaard-Nielsen: Job Creation and Destruction over the Business Cycles and the Impact on Individual Job Flows in Denmark 1980-2001.
ISBN 87-7882-040-5 (print); ISBN 87-7882-041-3 (online).
- WP 05-5 Anna Maria Kossowska, Nina Smith, Valdemar Smith and Mette Verner: Til gavn for bundlinjen – Forbedrer kvinder i topledelse og bestyrelse danske virksomheders bundlinje?
ISBN 87-7882-042-1 (print); ISBN 87-7882-043-X (online).
- WP 05-6 Odile Poulsen and Gert Tinggaard Svendsen: The Long and Winding Road: Social Capital and Commuting.
ISBN 87-7882-044-8 (print); ISBN 87-7882-045-6 (online).
- WP 05-7 Odile Poulsen and Gert Tinggaard Svendsen: Love Thy Neighbor: Bonding versus Bridging Trust.
ISBN 87-7882-062-6 (print); ISBN 87-7882-063-4 (online).

- WP 05-8 Christian Bjørnskov: Political Ideology and Economic Freedom.
ISBN 87-7882-064-2 (print); ISBN 87-7882-065-0 (online).
- WP 05-9 Sebastian Buhai and Coen Teulings: Tenure Profiles and Efficient Separation in a Stochastic Productivity Model.
ISBN 87-7882-066-9 (print); ISBN 87-7882-067-7 (online).
- WP 05-10 Christian Grund and Niels Westergård-Nielsen: Age Structure of the Workforce and Firm Performance.
ISBN 87-7882-068-5 (print); ISBN 87-7882-069-3 (online).
- WP 05-11 Søren Harck: AD-AS på dansk.
ISBN 87-7882-070-7 (print); ISBN 87-7882-071-5 (online).
- WP 05-12 Søren Harck: Hviler Dansk Økonomi på en Cobb-Douglas teknologi?
ISBN 87-7882-092-8 (print); ISBN 87-7882-093-6 (online).
- 2006:
- WP 06-1 Nicolai Kristensen and Edvard Johansson: New Evidence on Cross-Country Differences in Job Satisfaction Using Anchoring Vignettes.
ISBN 87-7882-094-4 (print); ISBN 87-7882-095-2 (online).
- WP 06-2 Christian Bjørnskov: How Does Social Trust Affect Economic Growth?
ISBN 87-7882-096-0 (print); ISBN 87-7882-097-9 (online).
- WP 06-3 Jan Bentzen, Erik Strøjer Madsen and Valdemar Smith: The Growth Opportunities for SMEs?
ISBN 87-7882-098-7 (print); ISBN 87-7882-099-5 (online).
- WP 06-4 Anna Piil Damm: Ethnic Enclaves and Immigrant Labour Market Outcomes: Quasi-Experimental Evidence.
ISBN 87-7882-100-2 (print); ISBN 87-7882-101-0 (online).
- WP 06-5 Svend Jespersen, Nicolai Kristensen og Lars Skipper: En kritik af VEU-udvalgets arbejde.
ISBN 87-7882-159-2 (print); ISBN 87-7882-160-6 (online).
- WP 06-6 Kræn Blume and Mette Verner: Welfare Dependency among Danish Immigrants.
ISBN 87-7882-161-4 (print); ISBN 87-7882-162-2 (online).

- WP 06-7 Jürgen Bitzer, Wolfram Schrettl and Philipp J.H. Schröder: Intrinsic Motivation versus Signaling in Open Source Software Development.
ISBN 87-7882-163-0 (print); ISBN 87-7882-164-9 (online).
- WP 06-8 Valérie Smeets, Kathryn Ierulli and Michael Gibbs: Mergers of Equals & Unequals.
ISBN 87-7882-165-7 (print); ISBN 87-7882-166-5 (online).
- WP 06-9 Valérie Smeets: Job Mobility and Wage Dynamics.
ISBN 87-7882-167-3 (print); ISBN 87-7882-168-1 (online).
- WP 06-10 Valérie Smeets and Frédéric Warzynski: Testing Models of Hierarchy: Span of Control, Compensation and Career Dynamics.
ISBN 87-7882-187-8 (print); ISBN 87-7882-188-6 (online).
- WP 06-11 Sebastian Buhai and Marco van der Leij: A Social Network Analysis of Occupational Segregation.
ISBN 87-7882-189-4 (print); ISBN 87-7882-190-8 (online).
- 2007:
- WP 07-1 Christina Bjerg, Christian Bjørnskov and Anne Holm: Growth, Debt Burdens and Alleviating Effects of Foreign Aid in Least Developed Countries.
ISBN 87-7882-191-6 (print); ISBN 87-7882-192-4 (online).
- WP 07-2 Jeremy T. Fox and Valérie Smeets: Do Input Quality and Structural Productivity Estimates Drive Measured Differences in Firm Productivity?
ISBN 87-7882-193-2 (print); ISBN 87-7882-194-0 (online).
- WP 07-3 Elisabetta Trevisan: Job Security and New Restrictive Permanent Contracts. Are Spanish Workers More Worried of Losing Their Job?
ISBN 87-7882-195-9 (print); ISBN 87-7882-196-7 (online).
- WP 07-4 Tor Eriksson and Jaime Ortega: Performance Pay and the “Time Squeeze”.
ISBN 9788778822079 (print); ISBN 9788778822086 (online).

- WP 07-5 Johan Moritz Kuhn: My Pay is Too Bad (I Quit). Your Pay is Too Good (You're Fired).
ISBN 9788778822093 (print); ISBN 9788778822109 (online).
- WP 07-6 Christian Bjørnskov: Social trust and the growth of schooling.
ISBN 9788778822116 (print); ISBN 9788778822123 (online).
- WP 07-7 Jan Bentzen and Valdemar Smith: Explaining champagne prices in Scandinavia – what is the best predictor?
ISBN 9788778822130 (print); ISBN 9788778822147 (online).
- WP 07-8 Sandra Cavaco, Jean-Michel Etienne and Ali Skalli: Identifying causal paths between health and socio-economic status: Evidence from European older workforce surveys
ISBN 9788778822154 (print); ISBN 9788778822161 (online).
- WP 07-9 Søren Harck: Long-run properties of some Danish macro-econometric models: an analytical approach.
ISBN 9788778822390 (print); ISBN 9788778822406 (online).
- WP 07-10 Takao Kato and Hideo Owan: Market Characteristics, Intra-Firm Coordination, and the Choice of Human Resource Management Systems: Evidence from New Japanese Data.
ISBN 9788778822413 (print); ISBN 9788778822420 (online).
- WP 07-11 Astrid Würtz: The Long-Term Effect on Children of Increasing the Length of Parents' Birth-Related Leave.
ISBN 9788778822437 (print); ISBN 9788778822444 (online).
- WP 07-12 Tor Eriksson and Marie-Claire Villeval: Performance Pay, Sorting and Social Motivation.
ISBN 9788778822451 (print); ISBN 9788778822468 (online).
- WP 07-13 Jane Greve: Obesity and Labor Market Outcomes: New Danish Evidence.
ISBN 9788778822475 (print); ISBN 9788778822482 (online).
- 2008:
- WP 08-1 Sebastian Buhai, Miguel Portela, Coen Teulings and Aico van Vuuren: Returns to Tenure or Seniority
ISBN 9788778822826 (print); ISBN 9788778822833 (online).

- WP 08-2 Flora Bellone, Patrick Musso, Lionel Nesta et Frédéric Warzynski: L'effet pro-concurrentiel de l'intégration européenne : une analyse de l'évolution des taux de marge dans les industries manufacturières françaises
ISBN 9788778822857 (print); ISBN 9788778822864 (online).
- WP 08-3 Erdal Yalcin: The Proximity-Concentration Trade-Off under Goods Price and Exchange Rate Uncertainty
ISBN 9788778822871 (print); ISBN 9788778822888 (online)
- WP 08-4 Elke J. Jahn and Herbert Brücker: Migration and the Wage Curve: A Structural Approach to Measure the Wage and Employment Effects of Migration
ISBN 9788778822895 (print); ISBN 9788778822901 (online)
- WP 08-5 Søren Harck: A Phillips curve interpretation of error-correction models of the wage and price dynamics
ISBN 9788778822918 (print); ISBN 9788778822925 (online)
- WP 08-6 Elke J. Jahn and Thomas Wagner: Job Security as an Endogenous Job Characteristic
ISBN 9788778823182 (print); ISBN 9788778823199 (online)
- WP 08-7 Jørgen Drud Hansen, Virmantas Kvedaras and Jørgen Ulff-Møller Nielsen: Monopolistic Competition, International Trade and Firm Heterogeneity - a Life Cycle Perspective -
ISBN 9788778823212 (print); ISBN 9788778823229 (online)
- WP 08-8 Dario Pozzoli: The Transition to Work for Italian University Graduates
ISBN 9788778823236 (print); ISBN 9788778823243 (online)
- WP 08-9 Annalisa Cristini and Dario Pozzoli: New Workplace Practices and Firm Performance: a Comparative Study of Italy and Britain
ISBN 9788778823250 (print); ISBN 9788778823267 (online)
- WP 08-10 Paolo Buonanno and Dario Pozzoli: Early Labour Market Returns to College Subjects
ISBN 9788778823274 (print); ISBN 9788778823281 (online)
- WP 08-11 Iben Bolvig: Low wage after unemployment - the effect of changes in the UI system
ISBN 9788778823441 (print); ISBN 9788778823458 (online)

- WP 08-12 Nina Smith, Valdemar Smith and Mette Verner: Women in Top Management and Firm Performance
ISBN 9788778823465 (print); ISBN 9788778823472 (online)
- WP 08-13 Sebastian Buhai, Elena Cottini and Niels Westergård-Nielsen: The impact of workplace conditions on firm performance
ISBN 9788778823496 (print); ISBN 9788778823502 (online)
- WP 08-14 Michael Rosholm: Experimental Evidence on the Nature of the Danish Employment Miracle
ISBN 9788778823526 (print); ISBN 9788778823533 (online)
- WP 08-15 Christian Bjørnskov and Peter Kurrild-Klitgaard: Economic Growth and Institutional Reform in Modern Monarchies and Republics: A Historical Cross-Country Perspective 1820-2000
ISBN 9788778823540 (print); ISBN 9788778823557 (online)
- WP 08-16 Nabanita Datta Gupta, Nicolai Kristensen and Dario Pozzoli: The Validity of Vignettes in Cross-Country Health Studies
ISBN 9788778823694 (print); ISBN 9788778823700 (online)