

Work Disability Reporting and Disability Programs in Europe and the U.S.

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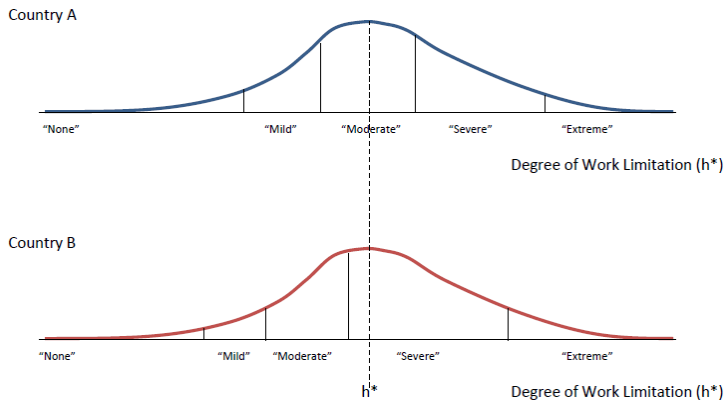
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Prepared for the 28th REVES Meeting

Motivation

- Work disability is a complex social construct related to work capacity.
- Researchers often rely on self-reported disability measures.
 - Such measures combine a variety of factors determining work limitations into a single measure.
 - Many household surveys ask respondents to rate the severity of their work limitations on a five-point scale.
- An important concern with these instruments is reporting heterogeneity:
 - Individuals may characterize the same objective level of work limitation differently by adopting a personal classification rule.

Introduction - Illustration



Motivation (cont.)

- Recent studies have documented substantial variation across countries in disability reporting heterogeneity.
 - E.g. Sadana et al., 2002; Murray et al., 2003; Kapteyn et al., 2007 and 2009; Bago d'Uva et al., 2008; Angelini et al., 2012.
- To date systematic analysis of the potential mechanisms underlying those cross-country differences has been lacking.

Research Question

- We explore the role that cross-country differences in disability policies play in disability reporting heterogeneity.
- The cross-national comparative approach is particularly appealing for examining the effects of institutional differences on disability reporting styles.

Preview of the Results

- People in countries with more generous disability programs apply a more inclusive scale when assessing work limitations.
- Various disability policy dimensions affect the disability classifications in different ways.

Vignette Approach

- Self-reported disability a mixture of health effects and reporting effects
- Vignette data used to study the impact of scaling heterogeneity and correct for it
- A vignette question describes the work limitations of a hypothetical person and then asks the respondent to evaluate the vignette character's work disability on the same five-point scale that was used for the self-report of their own work limitation.
- Since the actual work disability of the vignette person is the same, the differences in evaluations across countries must be due to reporting heterogeneity.

- 2004 wave of the Health and Retirement Study (HRS) and 2004 wave of the Survey of Health, Ageing and Retirement in Europe (SHARE)
- HRS and SHARE are harmonized high quality datasets on American and European population of age 50 and older and their spouses.
- Disability vignette survey: a subsample of HRS and SHARE respondents who completed a face-to-face interview and drop-off questionnaire consisting of work disability vignettes (use sample weights)
- The seven European countries that participated in this vignette experiment and are included in our study are Germany, France, Spain, Belgium, Italy, the Netherlands, and Sweden.

- Vignettes deal with typical health problems in three domains:
 - 1 Pain,
 - 2 Depression, and
 - 3 Cardio-vascular health (CVD)
- Three vignettes in each of the three domains

- Example of CVD vignette: *Lori has had heart problems in the past and she has been told to watch her cholesterol level. Sometimes if she feels stressed at work she feels pain in her chest and occasionally in her arms.*
- Respondent is asked: *How much is [Lori] limited in the kind or amount of work she could do?*
 - ① "Not at all limited",
 - ② "Mildly limited",
 - ③ "Moderately limited",
 - ④ "Severely limited",
 - ⑤ "Extremely limited/Cannot do any work".
- Preceding the vignette questions, respondents are asked about their own work limitations:

"Do you have any impairment or health problem that limits the kind or amount of work you can do?"

with the same answer categories as above.

- We are interested in relating a country's disability institutional arrangements to its residents' disability reporting styles.
- An index that characterizes the generosity of the disability policy in each country covers ten policy dimensions (OECD) :
 - 1 Coverage
 - 2 Minimum disability level required
 - 3 Disability levels qualified for full disability
 - 4 Maximum benefit level
 - 5 Permanence of benefits
 - 6 Medical assessment
 - 7 Vocational assessment
 - 8 Sickness benefit level
 - 9 Sickness benefit duration
 - 10 Unemployment insurance benefit level and duration

- OECD gives scores from 0 to 5 for each of ten policy aspects and for each country: a higher score represents a more inclusive system
- The OECD variables capture:
 - 1 Formal disability program rules
 - 2 Implementation and administration of the rules
- A fairly strong correlation between a country's disability policy generosity and its residents' ratings of the vignette work disability.

Empirical Setup: Hierarchical Ordered Probit (HOPIT) Model

- Standard ordered regression models of self-reported work limitation
- h_i^s be a self-reported categorical measure, generated by a latent variable h_i^{s*} : $h_i^{s*} = x_i\beta + \epsilon_i^s, \epsilon_i^s \sim N(0, 1)$
- h_i^s relates to h_i^{s*} as follows:
 $h_i^s = k$ if $\mu^{k-1} \leq h_i^{s*} < \mu^k, k = 1, \dots, 5; \mu_i^0 < \mu_i^1 < \mu_i^2 \dots < \mu_i^5;$
 $\mu_i^0 = -\infty$ and $\mu_i^5 = +\infty$.
- Assuming homogeneous reporting: the cut-points μ^k that respondents use to categorize the severity of their work limitations are constant.
- But what if the cut-points vary with covariates x_i , such as individual-level and country-level factors?
 - x_i affects the actual work limitation (Health Effects); x_i also affects the reporting scales (Reporting Effects)
 - Need external information to separately identify the two effects

Empirical Setup: Hierarchical Ordered Probit (HOPIT) Model

- External vignette information used to model the cut-points as functions of the respondent's characteristics.
 - Vignettes represent fixed levels of health; Individual variation in vignette ratings must be due to reporting heterogeneity.
- Cut-points can then be imposed on the model for self-reported health, making it possible to identify health effects rather than a mixture of health effects and reporting effects.
- These can be done using the Hierarchical Ordered Probit - HOPIT (Tandon et al., 2003; King et al., 2004).

Empirical Setup: Hierarchical Ordered Probit (HOPIT) Model

- The HOPIT model has two components:
 - 1 **Vignette component** reflects reporting behavior: cut-points modeled as functions of covariates (both individual level and country-level factors, particularly a **disability policy generosity index**), thus allowing for reporting heterogeneity
 - 2 **Health component** represents the relationship between the individual's own work disability and covariates (with cut-points determined by the vignette component).

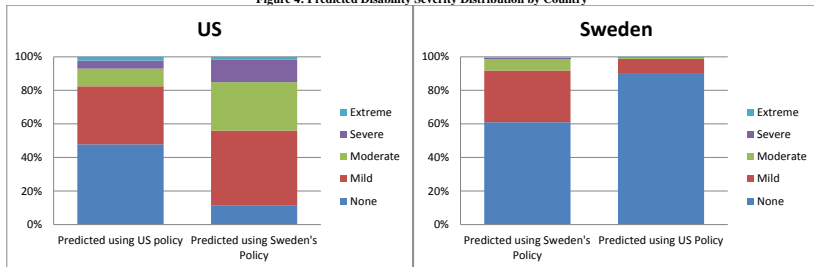
Main Estimation Results

- Respondents under more generous disability regimes tend to apply a more inclusive scale in classifying a mild, or moderate or severe work limitation.
- But the classifying scales become less inclusive as the policy generosity increases when it comes to classify an extreme work limitation.
- The reporting patterns may relate to the fact that the relatively more generous disability systems set a more lenient standard for admitting people with less serious work limitations but a stricter requirement for allowing the most severe work limitations.

Counterfactual Policy Simulations:

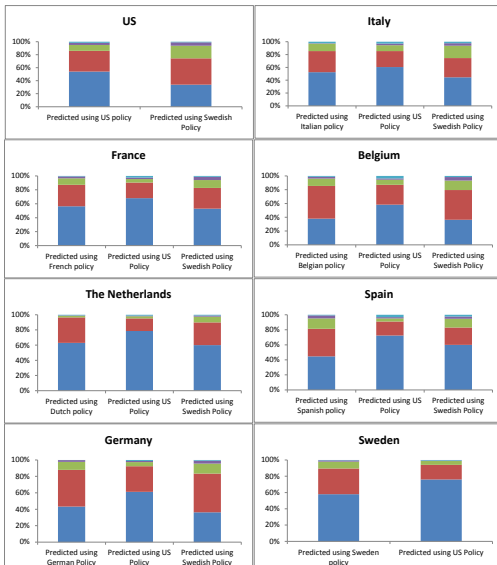
To illustrate policy effects on response scales and thus on disability severity distributions;
US the least generous and Sweden the most generous

Figure 4: Predicted Disability Severity Distribution by Country



Counterfactual Policy Simulation

Figure 3: Predicted Disability Severity Distribution by Country



- Self-reported categorical measures of work limitations are commonly used in empirical studies in the field of health and social sciences.
- An important concern with using such measures is heterogeneity in the reporting scale.
- We provide evidence of substantial variations in reporting scales across countries in Europe and the US.
- We investigate the role of disability policies in explaining the cross-country differentials in response scales for work disability.

- We use anchoring vignettes available in the US and the European data to test and adjust for reporting differences in self-reported work disability measures.
- Using the disability policy generosity scores provided by OECD, we link the variations in disability institutional context across countries to the systematic differences in disability reporting.
- We find evidence that people under more generous disability regimes apply a more inclusive scale in their assessments of work limitations.

- The results suggest caution in relying on self-reported work limitation measures in empirical disability studies.
- The results have important implications for disability policy reforms such as loosening or restricting medical eligibility requirements, and any policy changes that would affect individuals' perception about disability, which has been a rarely studied aspect of policy effect.

- Some caveats when we interpret the results:
 - Disability policy could be endogenous to disability severity ratings.
 - Disability policy and disability perception have reciprocal effects on each other.
- As data become available on the evolution of both institutions and cultural beliefs, we hope that researchers will revisit these questions to more fully understand the complementarities between disability culture and disability institutions and the dynamic effects of disability reform on disability perceptions.