5.4 Work Disability and Health

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Disability insurance—the insurance against the loss of the ability to work—is a substantial part of social security expenditures in almost all European countries. Disability insurance faces a trade-off like many elements of modern social security systems: One the one hand, disability insurance is a welcome and necessary part of the social safety net as it prevents income losses for those who lose their ability to work before the normal retirement age. One the other hand, disability insurance may be misused to serve as an early retirement route even if the normal ability to work is not affected at all. Understanding the trade-off between social safety provision and its misuse is important for the design of a modern social security system which maximizes social safety provision under increasingly tight financial budget constraints (Aarts et al. 1996).

A striking finding is the great variation across European countries in the number of persons who receive disability insurance benefits. This is shown in Figure 1.

![Disability insurance enrolment in Europe, 2004](image)

**Figure 1** Disability insurance enrolment in Europe, 2004

*Note: Based on 17,731 individuals aged 50 through 65 interviewed in the SHARE 2004 survey. Weighted data. Standard errors are indicated. The data refers to disability insurance take-up, unlike disability definitions according to health or labour force status used elsewhere in this book. Disability insurance is: Sweden (SE): “fördjupning (spåravläsning)”; “grundnladspension”, and “grundbidrag”. Denmark (DK): “offentlig sygeindenkomst” and “offentlig fortskridspension”. Germany (DE): “Erwerbsminderungsrente” and “Beamtentreuend Rente wegen Dienstunfähigkeit”. The Netherlands (NL): “WAO, Wiz of invaliditeits en Arbeidsongeschiktheid (AOW), FOAW/IOAZ, aansluitende bijkomende bijstandswerving, Toeslagomen (TW)”. France (FR): “prestation publique d’invalidité (AAH, APA)”. Switzerland (CH): “invalidenrente aus TV”, “assurance invalidité légale (AI)” and “Rentenbeihilfe (AI)”. Austria (AT): “Staatliche Invaliditätspension”. Italy (IT): “Assicurazione pubblica di disabilità (anche assegno di accompagnamento)” and “pensioni pubbliche di invalidità o di inabilità”. Spain (ES): “pension publica contributiva y no contributiva de invalididad/incapacidad”. Greece (GR): “Συντάξιμο εισφορών”.

We can distinguish four country groups. Very high enrolment rates exist in Denmark, Sweden and the Netherlands. Between 14 and 16 percent of individuals aged between 50 and 65 receive disability insurance benefits in this first group of countries. Lower, but still above average enrolment rates exist in the second country group consisting of Spain and Switzerland. Here the enrolment ranges from 7 to 9 percent. France, Germany and Italy, the third group, feature below average enrolment rates between 4 and 5 percent. Finally,
in Austria and Greece less than 3 percent of individuals aged between 50 and 65 receive disability insurance benefits.

**Potential Causes for Disability Insurance Enrolment**

How did these strikingly different enrolment rates emerge? There are three popular explanations: demographics, health and institutions. First, while all European countries are aging, the extent of population varies considerably. We have seen this in Chapter 2. The first explanation claims that a country with an older population also has a higher prevalence of disability insurance uptake. A second potential cause for the cross-national variation is differences in health status. Can the differences in physical and mental health which we have described in Chapter 3 explain why disability insurance is taken up so much more frequently in some countries than in others? Third and finally, recent studies such as Blöndal and Scarpetta (1998) based on the Gruber and Wise (1999) methodology have shown that public old age pension systems exert large incentive effects which, according to each country’s legislation, significantly increase the uptake of early retirement provisions. Do similar incentive effects arise also from disability insurance? Are differences in the European countries’ legislations causing different disability insurance take-up rates?

The SHARE data permit a new look at this question because they include a detailed description of which kind of public transfer payments each individual receives and at the same time carry an extensive and comparable inventory of physical and mental health measures across ten European countries. Hence, the SHARE data provide a unique opportunity to relate disability insurance enrolment of European individuals to their demographic characteristics as well as their health status.

Figure 2 shows the disability insurance enrolment rates by age.

![Figure 2: Disability insurance enrolment by age, SHARE countries, 2004](image)

Note: Percentage of individuals enrolled in disability insurance by age.

Enrolment rises steeply from 4% on average across all SHARE countries at age 50 to almost 10% at age 65. In most countries, disability insurance benefits are automatically converted to old-age pension benefits at age 65. Disability insurance enrolment rates therefore decline after age 65 to percentages lower than at age 50.

We restrict our analysis to individuals in the “window” from age 50 to age 65 in which disability insurance may serve as an early retirement device. Our aim is to look which weight each of the three potential causes—demographics, health and institutions—has in
explaining disability enrolment in Europe. Our strategy is straightforward. We exploit the richness of the SHARE data to first relate individual disability insurance enrolment probabilities to demographic characteristics and a broad set of health measures ranging from self-reported health to more objective measurements of the functional physical and mental health status. We then predict how enrolment rates would look like if demographics were equal across countries. If demographic differences were the main cause, enrolment rates should be very similar after taking demographic differences out. We then go through the same procedure for differences in health status. If enrolment rates are still very different after accounting for demographic and health differences, the third explanation—differences in the institutional regulations—is a likely cause.

Can Demographic Differences Explain Disability Insurance Enrolment?

Our first step is to normalize disability insurance enrolment with respect to demographic differences across countries. Italy, for instance, has an older population than the European average, while Denmark has a younger population. We take out demographic differences by first establishing the influence of age and gender on disability insurance take up. We then predict which share of our sample individuals would take up disability insurance if all countries had the same age and gender distribution as the average of the SHARE countries. The result is shown in Figure 3.

![Figure 3](image)

*Figure 3* Actual and predicted disability insurance enrolment if age and gender were identical in all SHARE countries.

*Note*: Based on logistic regression of disability insurance enrolment on demographic (age polynomial, five-year age range dummies, and gender dummy) and health variables.

Quite clearly, taking account of demographic differences does not make a substantive difference. Italy and Spain, featuring the highest average age of individuals aged between 50 and 65 years among the ten SHARE countries, would have a slightly lower disability insurance enrolment if they had the age distribution of the average SHARE country. In Denmark, which is younger than average, the opposite would happen. The effects, however, are very small. Demographic differences across Europe cannot explain why the enrolment rates in disability insurance are so different in Europe.
Can Health Differences Explain Disability Insurance Enrolment?

Our second step is therefore to account for differences in the health status of the population. The health status differs along many dimensions across countries. A first dimension is self-assessed health. Self-assessed health is relatively poor in Italy and Spain, it is best in Switzerland. As we have seen in Chapter 3, self-assessed health does not always correspond to the physical performance in daily activities such as walking or bathing. In this second dimension, Germany exhibits the most limitations and Greece the least. A third and important health dimension is physical strength, e.g. as measured by hand grip strength. Also this health measure features remarkable cross-national differences. Again, Spain and Italy show the lowest readings, while Germany and the Netherlands perform strongest on this scale. A fourth dimension is mental health. Depression, an often named reason for taking up disability insurance, varies quite substantially across the SHARE countries. Spain, Italy and France show the worst scores on the EURO-D depression scale, while Denmark, Germany and Switzerland have the lowest share of depression cases. Hence, the cross-national variation in health status looks like a good candidate to explain the variation in disability insurance enrolment.

We use the same methodology to correct for the influence of the multidimensional health differences as we did with demographics. We first establish the influence of health on disability insurance take up, and then predict which share of our sample individuals would take up disability insurance if the health status measured along the above four dimensions would be identical to the average of our ten SHARE countries. The results are shown in Figure 4.

![Figure 4: Predicted disability insurance enrolment if health status were identical in all SHARE countries](image)

Note: Based on logistic regression of disability insurance enrolment on demographic and health variables (EU and US variant of self-reported health, GAFI (physical functioning index), EURO-D depression scale, measure of grip strength).

The differences between enrolment rates under the actual and a hypothetically identical health status are now more pronounced. If the Italians and Spaniards had the same health status as the average SHARE European person, their disability insurance enrolment would
be much lower, less than half of the actual enrolment. In Switzerland, it would be slightly higher. However, if health would be the dominant explanation for disability insurance enrolment, the predicted shares should be equal across countries, once health is identical in all countries. As Figure 4 shows, this is clearly not the case. There are still pronounced differences, even after accounting for the statistical errors as depicted in Figure 1 and after carefully including a broad spectrum of health dimensions. Especially the high enrolment rates in Sweden, Denmark and the Netherlands remain relatively stable after correcting for health differences. We conclude that differences in health across Europe cannot explain the cross-national variation in the European disability insurance enrolment.

![Image]

**Figure 5** Predicted disability insurance enrolment if age, gender and health status were identical in all SHARE countries

*Note: Based on logistic regression of disability insurance enrolment on demographic and health variables.*

**If It Is Not Demographics and Health, What Is It?**

A logical next step is to correct for differences in demographics and health simultaneously, using the same methodology as in Figures 3 and 4. Figure 5 shows the results.

The picture changes only slightly from the last one. Hence, counterfactually making all SHARE countries have an identical age, gender and health distribution does not make the striking variation in the uptake of disability insurance across the SHARE countries vanish. Especially the large enrolment rates in Sweden, Denmark and the Netherlands must have different reasons than an older population or a worse health status in these countries.

Which reasons could it be? By exclusion of the first two of the three popular ex-planations—demographic and health-related differences—the third popular explanation remains, namely institutional differences, specifically enrolment and eligibility rules that make disability insurance benefits easier to receive and more generous in some countries than in others. Such rules may create incentive effects similar to those exerted by old-age pensions which often provide a financial incentive to retire early. In many countries, health requirements for disability insurance eligibility are weak. Under such circumstances, disability
insurance may work as a labour market exit route to early retirement (Börsch-Supan 2001). Many countries have established very lenient work disability eligibility rules under the conditions of high unemployment.

A final step of our argument would therefore be a counterfactual analysis which makes disability eligibility rules identical for all individuals in the SHARE sample and then predicts the take-up outcomes in the same spirit as Figures 3 through 5 did. The SHARE data are an ideal starting point for such an institutional analysis. Eligibility rules can be expressed as variables to be constructed from individual employment history data in combination with detailed institutional knowledge, similar to the variables constructed by the Gruber and Wise (1999) project. This is not an easy task which requires time and international cooperation, such as in the SHARE team. It is very promising future research which will shed light on the working of our European social institutions.

Conclusions

- The variation in disability insurance take-up rates across European coun-tries is striking. It reaches from some 15 percent of individuals aged be-tween 50 and 65 in Den-
mark, Sweden and the Netherlands to less than 3 percent in Austria and Greece.

- Correcting for differences in the age, gender and health distribution across countries does not explain this striking variation. Especially the large enrolment rates in Sweden, Denmark and the Netherlands have different rea-
sons than an older population or a worse health status than in the other European countries.

- Institutional factors—incentives created by enrolment and eligibility rules—are a more likely explanation. The SHARE data are an ideal starting point for a deeper analysis of this hypothesis because they uniquely cover health status, income components and institutional variation comparably measured across Europe.

References

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