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**Comment** Michael Hurd

We observe across Europe and between Europe and the United States differing levels of labor market activity and differing levels of participation in state disability programs as a function of age. For example, as shown in table 3C.1, the employment rates of men age fifty to fifty-four are similar in Sweden, France, and the United States. But then they drop sharply with age in France, reaching just 4.1 percent among those sixty to sixty-four, whereas they are 61 percent in Sweden and 57 percent in the United States. Almost no men age sixty-five or over work in Sweden or France, whereas 19.8 percent work in the United States. The table reveals that there is large variation across Europe, possibly as much as between Europe and the United States. Thus, it is inaccurate to think solely of a distinction between Europe and the United States. The table also reveals that differences are not due to a country fixed effect that is additive at all ages; rather, there are country-specific interactions with age that are surely due to public policies that induce or facilitate the employment patterns and to societal attitudes toward working at particular ages. Indeed, in countries with mandatory retirement the relationship between age and employment will be very sharp.

Because the levels of employment by age differ across countries, the rates of transition from working to not working will also differ. For example, the transition rate from working to not working of men fifty to fifty-four as they age to fifty-five to fifty-nine is approximately 17 percent in Sweden ( $1 - 73.9 \div 88.9$ ), 38 percent in France, and 10 percent in the United States. Broadly speaking, the differing levels of employment at age fifty-five or over are due to differing transition rates, not to differing initial levels at younger ages; that is, France has much lower employment rates at older ages because of high transition rates out of employment, not because men fifty to fifty-four work substantially less. Establishing this fact is an important point of studying the dynamics. The fraction of the population with self-reported disabilities also varies across countries. For example, about 12 percent of fifty-seven-year-olds in the Netherlands report that they are disabled versus just 4 percent in Denmark and 3 percent in Sweden.<sup>1</sup> There is similarly large variation in the transition rates.

A natural question is what causes these differing transition rates. A pos-

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1. Based on figure 1, chapter 5.3, Börsch-Supan et al. (2005). The figure is based on a question in SHARE about current job status (EP005). Possible responses are permanently sick or disabled, employed, retired, unemployed, homemaker, or other. I imagine that most respondents would think about disability in the context of working and so tend to equate disability with participation in the state disability program.

**Table 3C.1** Employment rate of men

Age	Sweden	France	United States
50–54	88.9	82.5	83.6
55–59	73.9	51.5	75.2
60–64	60.7	4.1	57.0
65 or over	2.0	0.3	19.8

Sources: Sweden and Europe: SHARE wave 1 (2004 table 5a3); Börsch-Supan et al. (2005); U.S.: CPS data for 2006, accessed Dec. 28, 2007 at [www.bls.gov/cps/cpsaat3.pdf](http://www.bls.gov/cps/cpsaat3.pdf).

sible answer might be differences in health; however, it seems unlikely that health could explain the employment transition rates. What could cause actual health in France to decline rapidly beginning at age fifty-five even as health remained good in Sweden and the United States? And what could cause health at sixty-five to decline in Sweden relative to the United States? A more plausible explanation is incentives. Individuals face different public programs and private pension systems with respect to generosity and structure. Employers also face differing public programs to facilitate the transition of their employees into retirement. The chapter by Kapteyn, Smith, van Soest, and Banks is the beginning of a research program to relate transition rates to the detailed structure of public retirement and disability policy. Eventually they would aim to quantify how changes in policy will affect the transition rates.

In my view, a natural and simple way of addressing the problem is to estimate hazard models or vector auto regressions (VAR) country by country as

$$\begin{bmatrix} D_t \\ W_t \end{bmatrix} = \begin{bmatrix} \pi_{11} & \pi_{12} \\ \pi_{21} & \pi_{22} \end{bmatrix} \begin{bmatrix} D_{t-1} \\ W_{t-1} \end{bmatrix} + \begin{bmatrix} \varepsilon_d \\ \varepsilon_w \end{bmatrix},$$

where  $D_t$  is a self-reported disability indicator and  $W_t$  is a work indicator.<sup>2</sup> Then one could relate the  $\pi_{ij}$  to policy variables such as the generosity of the disability system. One would think that in countries where access to the disability program is easy and generosity is high,  $\pi_{12}$  would be large and  $\pi_{22}$  would be (relatively) small. However, table 3C.1 suggests that age interactions would be required so that the  $\pi_{ij}$  would vary by country and by age.

Kapteyn, Smith, van Soest, and Banks use a more complex model

$$\begin{bmatrix} 1 & 0 \\ -\alpha & 1 \end{bmatrix} \begin{bmatrix} D_t \\ W_t \end{bmatrix} = \Gamma \begin{bmatrix} D_{t-1} \\ W_{t-1} \end{bmatrix} + \begin{bmatrix} \lambda_{11} & 0 \\ \lambda_{21} & \lambda_{22} \end{bmatrix} \begin{bmatrix} u_d \\ u_w \end{bmatrix} + \begin{bmatrix} \varepsilon_d \\ \varepsilon_w \end{bmatrix},$$

2. The actual specification leads to probit estimation, but to simplify the discussion I will illustrate with linear models.

where the  $\varepsilon$  and  $u$  are all independent and individual heterogeneity is generated by the  $u$ . This specification leads to a reduced form that has a lower triangular structure in the coefficient matrices on the error terms. That is, it is a recursive model, and, except for the heterogeneity, could be estimated by ordinary least squares.

One question concerns the use of this model and the complications about interpretations that accompany it. The model has the character of a structural model but it is not embedded in a theoretical structure, and so the interpretation is difficult. It imposes some restrictions: what difference do they make? For example, the specification for working is

$$W_t = \gamma_{21}W_{t-1} + \gamma_{22}D_{t-1} + \alpha D_t + v_t.$$

This could be simply descriptive, summarizing the fact that the transition from employment to employment is smaller (holding  $D_{t-1}$  constant) if a person reports  $D_t = 1$ . Empirically that is the case, as shown by the coefficients in table 3A.4. But to interpret beyond that one would need to say where the specification comes from. The authors do not interpret the coefficients except in a descriptive manner; rather, they present the implications via simulation. I would expect similar simulation results from the simple hazard model.

A second question about the specification is that it lacks an interaction between  $W_{t-1}$  and  $D_{t-1}$ . In that state disability programs are aimed at accommodating workers who become disabled, I would think that work transitions would be different for disabled workers than for disabled nonworkers. The difference would be revealing about the effects of public programs.

Unemployment is an important intermediate point in the transition from working to retired in some European countries. For example, according to Survey of Health, Aging, and Retirement in Europe (SHARE) data, about 12 percent of fifty-seven-year-olds in Denmark are unemployed, compared with just 3 percent in the Netherlands. The sum of the fraction disabled and the fraction unemployed is about 15 percent in the two countries, but the division is quite different, illustrating how policy can lead to a substitution between disability and unemployment.

The actual measurement of disability could use more discussion. Some of the data on Europe come from the European Community Household Panel (ECHP), but some come from national surveys after the ECHP was discontinued in some countries. It would be useful to have some information about the comparability of measurement of disability across Europe. But even in the ECHP the measurement is far from ideal. It is based on the following:

158. Do you have any chronic physical or mental health problem, illness or disability?

**Table 3C.2** Average transition rates, disabled

	Age $t$	Age $t + 1$	
		Not disabled	Disabled
Europe	Not disabled	90.8	9.1
	Disabled	31.4	68.6
United States	Not disabled	95.0	5.0
	Disabled	27.5	72.5

Source: Author's calculations based on tables 3A.5 and 3A.6, Chapter 3 in this volume.

159. Are you hampered in your daily activities by this physical or mental health problem, illness or disability?

I have taken the previous material from the 1997 ECHP wave 4 individual questionnaire.<sup>3</sup> I presume someone is coded with a work disability if he or she affirms both questions. The Panel Study of Income Dynamics (PSID) question is

H2. Do you have any physical or nervous condition that limits the type of work or the amount of work you can do?

I have taken this question from the 1997 PSID questionnaire.<sup>4</sup> Because work activities are a subset of daily activities, we would expect to find higher prevalence levels in response to the ECHP question than in response to the PSID question. This difference could explain the higher levels of disability between Europe and the United States. A second issue is that the ECHP question does not directly mention work. Someone who does not work may not be hampered in his or her daily activities but would be should he or she work. Thus, it is unclear how the ECHP question relates to work disability, and makes comparability with the PSID tenuous.

To summarize the actual transitions into and out of disability, I have taken the simple average of the European rates in table 3A.5. Table 3C.2 shows those rates along with similar rates from the United States. With respect to disabled status, the main difference between Europe and the United States is a considerably higher transition rate from not disabled to disabled in Europe, about 4 percentage points, or 80 percent, higher. Among those disabled, the transition rates from disabled to not disabled are a little higher in Europe. The structure of the ECHP questions could also explain some of the disability dynamics: in Europe people who work and are disabled with respect to their jobs could retire and not have any disability with respect to their activi-

3. See [http://circa.europa.eu/Public/irc/dsis/echpanel/library?l=/doc\\_pan/1\\_survey\\_design/1\\_1\\_questionnaires/pan080\\_97questw4/\\_EN\\_1.0\\_&a=d](http://circa.europa.eu/Public/irc/dsis/echpanel/library?l=/doc_pan/1_survey_design/1_1_questionnaires/pan080_97questw4/_EN_1.0_&a=d).

4. See [http://psidonline.isr.umich.edu/Data/Documentation/cai\\_doc/1997\\_Interview\\_Year/Section\\_B\\_C\\_D\\_E\\_Employment.htm](http://psidonline.isr.umich.edu/Data/Documentation/cai_doc/1997_Interview_Year/Section_B_C_D_E_Employment.htm).

ties in their retired state. Such people would have recovered from a disability. In the PSID I take the question to cover the hypothetical state of working even among nonworkers, so that such people would not have recovered from a disability. These differences in transition rates imply substantially different rates of disability in steady-state: 15 percent of the population would be disabled in the United States, compared with 23 percent in Europe.

### **Conclusion**

International comparisons of disability and work have considerable promise for increasing our understanding of the effect of public policy on individual and firm behavior. Although cross-section analyses are useful, they have inherent limitations that can be substantially reduced in panel. Kapteyn, Smith, van Soest, and Banks have embarked on a research program whose aim is to relate transition rates to the details of public programs. This chapter represents a useful first step.

### **Reference**

Börsch-Supan, A., A. Brugiavani, H. Jurges, J. Mackenbach, J. Siegrist, and G. Weber. 2005. *Health, aging, and retirement in Europe: First results from SHARE*. Mannheim: Mannheim Institute for the Economics of Aging.