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Volume Title: NBER International Seminar on Macroeconomics 2005

Volume Author/Editor: Jeffrey Frankel and Christopher Pissarides, editors

Volume Publisher: MIT Press

Volume ISBN: 0-262-06265-8, 978-0-262-06265-7

Volume URL: <http://www.nber.org/books/fran07-1>

Conference Date: June 17-18, 2005

Publication Date: May 2007

Chapter Title: Comment on "Shadow Sorting"

Chapter Author: Robert E. Hall

Chapter URL: <http://www.nber.org/chapters/c0340>

Chapter pages in book: (164 - 166)

Comment

Robert E. Hall, Stanford University and NBER

Boeri and Garibaldi's paper combines two of my main current research interests: unemployment and the financing of social benefits, health in particular. Although the United States is not the main focus of discussions of the shadow economy, the issues raised in this interesting paper will become highly relevant if the expected high levels of health spending in future decades are financed by taxes.

Edward Prescott (2004) has attracted a good deal of attention for his claim that rising tax rates and corresponding benefits in Europe in comparison to the United States explain the decline in European work effort relative to the United States. As in his earlier work, Prescott considers a two-activity model, work and leisure (any activity out of the labor market, including work at home). Unemployment is not an explicit feature of the model or Prescott's analysis of variations in work effort across countries.

Mortensen and Pissarides (1994) launched the other main active branch of macroeconomic analysis of labor markets. Their model also has two activities, work and unemployment. Variations in participation or in hours of work are not part of their model, although they are not hard to add. Boeri and Garibaldi build a four-activity model in the tradition of Mortensen and Pissarides. Work and search occur in the legal sector and the shadow sector. Workers make a decision about where to search and thus where to work. This decision adds an important new dimension to the analysis.

The model has two important wedges. First, the legal sector pays taxes, which drive the usual wedge between the incentive to work and the reward to work. Second, the shadow sector faces law-enforcement monitoring. A key assumption of the model is that the authorities will shut down a shadow firm if detected. If, on the other hand, the authorities just start taxing shadow firms when they are found,

all firms will launch in the shadow sector and then switch to the legal sector if detected (possibly shutting down at that point). Shut-down is inefficient within the economic theory of law enforcement, because it dissipates the search capital in a shadow firm. Theory would favor a monetary penalty in place of shut-down.

Another important assumption is that the value of search rises faster with skill in the legal sector. This assumption implies a cutoff level of skill, above which workers choose to search for jobs in the legal sector. This assumption seems realistic and the implication in line with the fact—firms employing high-wage workers are likely to be legitimate and workers in the shadow sector earn relatively little.

Table 1 summarizes how the various influences affect employment and unemployment in the two sectors.

The most important surprise is that raising unemployment benefits in the legal sector raises employment in that sector—the effect of attracting workers to search in the sector outweighs the shift toward more unemployment in the sector.

The model explains the rise in European unemployment in terms of higher taxes and higher unemployment benefits. Because it does not consider the participation margin, it cannot explain the entire decline in employment, and does not claim to.

The central issue for future policy in all countries, including emphatically the United States, is the effect of the growth of taxes on the division of activity between legal and shadow sectors. Hall and Jones (2005) project that socially optimal health spending in the United States will rise to half of GDP sometime late in the century. Though Europe trails

Table 1

	Legal sector		Shadow sector	
	Employment	Unemployment	Employment	Unemployment
Aggregate productivity	+	-	-	-
Taxation of legal sector	-	-	+	+
Monitoring of shadow sector	+	+	-	-
Unemployment benefits in legal sector	+	+	-	-

the United States in the level of health spending, growth is inevitable in Europe as well. Retirement benefits will also grow on both sides of the Atlantic, though not nearly as much as health spending. It's close to a certainty that health spending will be channeled through the government in Europe and highly likely that the government will have a growing role in financing health spending in the United States.

It is hard to see how the future holds anything other than dramatic increases in tax rates or government-mandated contributions to government-supervised health plans. The shrinkage of the legal sector, which will bear the burden of all of these taxes and contributions, and the corresponding rise in the shadow sector, will be substantial. Boeri and Garibaldi's analysis will be a central topic of public finance in coming decades. European governments will need to start taking law enforcement seriously—the paper suggests that benign neglect of the shadow sector has been the primary principle in Europe. The U.S. federal government enforces wage taxes quite effectively at present. But marginal rates in the U.S. counting income taxes and social-insurance contributions are only at about half the European level. As U.S. rates rise, the law enforcement efforts needed to control the social sector and prevent the complete collapse of the legal sector will be enormous.

The primary source of the potential collapse of the legal sector in all advanced countries is that people in the shadow sector will receive benefits even if they do not contribute to health and retirement programs. No civilized country will exclude older people from these benefits. Hence all of the effort needs to go into squeezing the shadow sector. Tensions in this area will be huge.

Boeri and Garibaldi have advanced the study of the shadow sector in an important way in this paper. I suspect that their work will be seen as pioneering in an area of economic analysis that will become absolutely central in social debates in coming decades.

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