

CHAPTER 1

WHAT HAVE WE LEARNED FROM MARKET DESIGN?

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INTRODUCTION

In the centennial issue of the *Economic Journal*, I wrote (about game theory) that

the real test of our success will be not merely how well we understand the general principles that govern economic interactions, but how well we can bring this knowledge to bear on practical questions of microeconomic engineering. (Roth, 1991a)

Since then, economists have gained significant experience in practical market design. One thing we learn from this experience is that transactions and institutions matter at a level of detail that economists have not often had to deal with, and, in this respect, all markets are different. But there are also general lessons. The present chapter considers some ways in which markets succeed and fail, by looking at some common patterns we see of market failures, and how they have been fixed.

This is a big subject, and I will only scratch the surface, by concentrating on markets my colleagues and I helped design in the last few years. My focus will be different than in Roth (2002), where I discussed some lessons learned in the 1990s. The relevant parts of

¹ The first part of this chapter was prepared to accompany the Hahn Lecture I delivered at the Royal Economic Society meetings, on April 11, 2007, and was published as Roth (2008a). The present chapter extends the 2008 paper with a Postscript to bring it up to date, and to include some details appropriate to this *Handbook*. I have also updated references and added some footnotes to the first part of the chapter, but otherwise it remains essentially as published in 2008. One reason for keeping this format, with a distinct Postscript to bring it up to date is that it will become clear that some of the developments anticipated in the 2008 paper have been realized in the intervening years. The work I report here is a joint effort of many colleagues and coauthors. I pay particular attention here to work with Atila Abdulkadiroğlu, Muriel Niederle, Parag Pathak, Tayfun Sönmez, and Utku Ünver. I've also benefited from many conversations on this topic with Paul Milgrom (including two years teaching together a course on market design). In the Postscript I also report on work done with Itai Ashlagi. This work has been supported by grants from the NSF to the NBER.