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This dissertation studies the behaviour of traders under different market designs. The setup of a market contains the information available to traders, the decisions traders have to make and the trading mechanism. We have extended models to consider the effect of the market design. In markets over networks we have introduced randomness and derived bounds on the maximal efficiency given the network structure. Moreover, under strategic behaviour of traders, we derived a non-monotonic effect of the information about the network structure that is available on expected efficiency. This effect depends also on the information about traders' valuations. We studied an alternative payoff function used in the Evolutionary Individual Learning algorithm under a Continuous Double Auction. Furthermore we extended this model by allowing traders to submit a two dimensional decision; their order and their preferred moment of trade, and studied the distribution of submission moments. We study whether it is optimal to allow traders this extra decision. A general conclusion of this dissertation is that market design has a large impact on efficiency. More information about the network structure, about trading history or allowing traders extra decision may have a negative effect on efficiency.

Michiel Chr. W. van de Leur (1986) holds a B.Sc. in Mathematics, a M.Sc. in Stochastics and Financial Mathematics and a M.Sc. in Econometrics from the University of Amsterdam. In 2011 he joined the European Doctorate in Economics - Erasmus Mundus, a joint PhD programme at the University of Amsterdam and the Università Ca' Foscari Venezia and included a research stay at Universität Bielefeld. His research interests cover financial networks, learning algorithms, bounded rationality, agent-based models and game theory.

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and learning in Continuous Double Auctions

This dissertation has been written within the European Doctorate in Economics-Erasmus Mundus (EDE-EM) programme in order to obtain a joint doctorate degree at the Faculty of Economics and Business at the University of Amsterdam and the Department of Economics at Università Ca' Foscari Venezia.

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ten overstaan van een door het college voor promoties
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in het openbaar te verdedigen in de Agnietenkapel
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Michiel van de Leur

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”Why are numbers beautiful?

It’s like asking why is Beethoven’s Ninth Symphony beautiful.

If you don’t see why, someone can’t tell you.

I *know* numbers are beautiful.

If they aren’t beautiful, nothing is.”

(Paul Erdős)

Contents

1	Introduction and Thesis Outline	1
1.1	Network theory	2
1.2	Learning algorithms	3
1.3	Dissertation outline	6
2	Efficiency in Large Markets over Random Erdős-Rényi Networks	11
2.1	Introduction	11
2.2	Model	12
2.2.1	Graph theory	13
2.3	Phase transitions bipartite graphs	14
2.4	Bounds on expected efficiency	16
2.4.1	Example	17
2.4.2	Infinitely many traders	18
2.5	Concluding remarks	22
	Appendix A: Theorems in section 3	24
	Appendix B: Theorems in section 4	33
3	Information and Efficiency in Thin Markets over Random Networks	39
3.1	Introduction	39
3.2	The model	41
3.2.1	Trading mechanism	43
3.2.2	Markup and markdown strategies	45

CONTENTS

- 3.2.3 The information sets 45
- 3.3 Complete information about valuations and costs 47
- 3.4 Incomplete information about valuations and costs 49
- 3.5 Concluding remarks 55
- Appendix A: Profit functions complete information 57
- Appendix B: Efficiency under incomplete information 59

- 4 On the role of Information under Individual Evolutionary Learning in a Continuous Double Auction 67**
- 4.1 Introduction 67
- 4.2 Market setup 71
 - 4.2.1 The environments 71
 - 4.2.2 Call Market 72
 - 4.2.3 Continuous Double Auction 73
- 4.3 Individual Evolutionary Learning algorithm 74
- 4.4 Methodology 81
- 4.5 Learning phase 82
 - 4.5.1 Gode Sunder-environment 83
 - 4.5.2 S5- and AL-environments 83
 - 4.5.3 Comparison between Open- and ClosedBook 86
 - 4.5.4 Comparison with the Call Market 88
- 4.6 Long-term behaviour 88
 - 4.6.1 GS-environment 89
 - 4.6.2 S5- and AL-environments 89
 - 4.6.3 Comparison between Closed- and OpenBook 93
 - 4.6.4 Comparison with the ClosedBook foregone payoff function in Anufriev et al. (2013). 93
- 4.7 Multi-unit Continuous Double Auction market 95
- 4.8 Size of the market 99
- 4.9 Concluding Remarks 99

Appendix A: Learning phase	103
Appendix B: Equilibrium phase	106
Appendix C: Multi-unit market	109
Appendix D: Size of the market	116
5 Timing under Individual Evolutionary Learning in a Continuous Double Auction	123
5.1 Introduction	123
5.2 Market setup	126
5.2.1 The environments	127
5.2.2 Continuous Double Auction	128
5.2.3 Nash equilibria	129
5.3 Individual Evolutionary Learning algorithm	130
5.3.1 Methodology	133
5.4 Benchmark environment	134
5.4.1 Knowledge of the submission moments	138
5.4.2 Allowing the choice of submission moment	138
5.5 Size of the market	140
5.6 Competition	143
5.6.1 Decreasing competition between buyers, increasing competition between sellers	143
5.6.2 Increasing competition to extramarginal traders	145
5.6.3 Extramarginal traders entering	145
5.6.4 Decreasing range of equilibrium prices	148
5.7 Gode-Sunder environments	148
5.8 Concluding Remarks	152
Bibliography	155
Summary	161
Samenvatting (Summary in Dutch)	165