Essays on the Economics of Higher Education: determinants of success, dropout and degree completion

Thèse de Doctorat présentée en vue de l’obtention du titre de Docteur en Sciences Economiques et de Gestion
Par Elena Arias Ortiz

Année académique 2010-2011

Directeur:
Membres du jury :
Professeur Catherine Dehon – Université libre de Bruxelles
Professeur Françoise Thys-Clement – Université libre de Bruxelles
Professeur Reinhilde Veugelers – Katholieke Universiteit Leuven
Professeur Vincenzo Verardi – FUNDP Namur
Professeur Mathias Dewatripont – Université libre de Bruxelles
## Contents

I My Thesis in the Context of the Human Capital Literature 1
1 Analyzing higher education in the Belgian French community 6
2 The role of expected returns in Latin America 17
3 Conclusions and further research 19

II Which Factors Influence Success at University? A Case Study in Belgium 29
1 Introduction 30
2 Review of the literature 32
3 Data and methodology 35
3.1 The database ................................................................. 35
3.2 The variables and some descriptive statistics ......................... 36
3.3 Methodology and the sample selection bias .......................... 39
4 Empirical results 43
5 Conclusion 55

III High School Curriculum and Success at University: Analyzing the Effect of Student Choices 65
1 Introduction 66
2 The educational system in the Belgian French community 68
3 Analyzing the faculty of applied sciences: a natural experiment 74
4 The sensitivity analysis 77
5 IV estimation 80
5.1 The instrumental variable: distance to the nearest traditionnel school .......................... 80
5.2 Estimating the bivariate probit model ................................. 83
6 Conclusion 86

IV The Roads to Success: Drop out and Degree Completion at University 95
1 Introduction 96
2 Analyzing student.s path at university 98
2.1 The data ................................................................. 98
2.2 Why should we study outcomes after the rst year at university? .... 100
3 How to analyze educational data using survival analysis? 102
3.1 Methodological approach and previous research ..................... 102
3.2 Hazard probabilities ..................................................... 105
3.3 Cumulative function ...................................................... 110
4 Competing risks: a multivariate analysis 115
4.1 Deriving a multiple-outcome discrete time model .................. 115
4.2 Understanding the effect of time and the covariates ................. 117
4.3 Estimating the full model .............................................. 121
5 Conclusion 124

V Perceived Social Mobility and Human Capital Investment in Latin America 131
1 Introduction 132
2 Investment in human capital, expected returns and aspirations 134
3 The educational context 138
4 Human capital investment: an empirical model 142
5 A simultaneous equation model 146
6 Perceived mobility and aggregate measures 152
7 Conclusion 157