



UNIVERSITÀ
CATTOLICA
del Sacro Cuore

Dottorato di ricerca in Istituzioni e Politiche

Ciclo XXVIII

S.S.D: SECS-P/02 – POLITICA ECONOMICA

**FDI AND TRADE: COMPLEMENTS OR SUBSTITUTES?
EMPIRICAL EVIDENCE FROM 2001 TO 2012**

Coordinatore: Chiari.mo Prof. Paolo Colombo

Tutor: Chiar.ma Prof.ssa Teodora Erika Uberti

Tesi di dottorato di: Adelaide Baronchelli

Matricola: 4109992

Anno Accademico 2015/2016

FDI AND TRADE: COMPLEMENTS OR SUBSTITUTES?

EMPIRICAL EVIDENCE FROM 2001 TO 2012

Introduction.....	7
Chapter 1- FDI: concepts, facts and theories.....	11
1 Introduction.....	11
2 Concepts.....	12
2.1 Definition and measures.....	12
2.1.1 Definition	12
2.1.2 Foreign Direct Investment and Foreign Portfolio Investment	15
2.1.3 Measures of FDI.....	16
2.2 Types of FDI.....	17
2.3 Multinational Enterprises (MNEs)	19
2.4 Alternative entry modes into a foreign market.....	22
3 The extent and the patterns of FDI.....	24
3.1 Global trends.....	25
3.2 Inward FDI: the world top destinations	26
3.3 Outward FDI: the world top investors	31
4 Literature about FDI determinants	35
4.1 Neoclassical trade theory	37
4.2 Hymer and the industrial organisation approach	40
4.3 Vernon and the product life cycle theory.....	43
4.4 Internalisation theory	47
4.5 OLI Framework.....	48
4.6 The New Trade theory: vertical and horizontal models of FDI.....	51
4.6.1 Horizontal FDI.....	54
4.6.2 Vertical FDI	55
4.7 The Knowledge- Capital model	58
4.8 Policy variables.....	60
5 Literature about complementarity versus substitutability between FDI and exports	61
6 Conclusions.....	71
Appendix A.....	74

Chapter 2 – Social Networks Analysis: methodology and applications	77
1 Introduction.....	77
2 The history of Social Network Analysis.....	78
3 Basic elements of social networks.....	84
3.1 Graphs.....	85
3.2 Matrices.....	88
3.2.1 From valued to binary data.....	91
4 Network, node and groups indexes for the analysis of networks.....	92
4.1 Degree and Density.....	93
4.2 Centrality and Centralization.....	95
4.3 Groups and sub- networks.....	101
4.3.1 Social cohesion and cohesive groups.....	102
4.3.2 Position, role and equivalence classes.....	111
5 Software.....	117
6 The application of Social Network Analysis on Trade.....	118
7 Conclusions.....	122
Chapter 3 - Networks of FDI and exports: structures and evolution	124
1 Introduction.....	124
2 Data.....	126
2.1 The sample.....	126
2.2 FDI Data.....	128
2.3 Exports Data.....	135
3 Methodological considerations.....	137
3.1 Methodological considerations: dichotomisation procedures.....	137
3.2 Methodological considerations: nodes and networks indexes.....	140
3.3 Methodological considerations: sub-groups.....	141
3.4 Methodological considerations: comparing networks.....	143
4 Results.....	144
4.1 Dichotomization procedure 1: Absolute Mean (AM).....	144
4.1.1 Exports (AM).....	144
4.1.2 Positive outstocks (AM).....	151
4.1.3 Positive outflows (AM).....	158
4.2 Dichotomization procedure 2: relative Column Mean (CM).....	165

4.2.1 Exports (CM)	165
4.2.2 Positive outstocks (CM).....	171
4.2.3 Positive outflows (CM).....	177
4.3 Dichotomization procedure 3: relative Row Mean (RM).....	183
4.3.1 Exports (RM).....	183
4.3.2 Positive outstocks (RM)	187
4.3.3 Positive outflows (RM)	192
4.4 Negative outstocks and outflows	197
5 Comparison between networks of exports and FDI	200
6 Conclusions.....	203
Appendix B	206
2.1 Dichotomization procedure 1: Absolute Mean (AM).....	211
2.1.1 Exports (AM).....	211
2.1.2 Positive outstocks (AM)	223
2.1.3 Positive outflows (AM)	235
2.2 Dichotomization procedure 2: relative Column Mean (CM).....	247
2.2.1 Exports (CM).....	247
2.2.2 Positive outstocks (CM).....	258
2.2.3 Positive outflows (CM)	269
2.3 Dichotomization procedure 3: relative Row Mean.....	280
2.3.1 Exports (RM).....	280
2.3.2 Positive outstocks (RM)	291
2.3.3 Positive outflows (RM)	303
2.4 Negative outstocks	315
2.5 Negative outflows.....	317
CHAPTER 4 – Testing a gravity model on FDI and exports.....	318
1 Introduction.....	318
2 Testing the determinants of FDI.....	320
2.1 Model specification	320
2.2 Data.....	326
2.3 Estimation procedure.....	328
3 Results about the determinants of FDI and exports	330
4 Testing the complementarity and substitutability between exports and FDI.....	333

5 Results about the complementarity and substitutability between outward FDI and exports.....	335
6 Limitations	336
7 Conclusions.....	337
Appendix C.....	340
Conclusions	349
References	353