

FRONTIERS OF ECONOMICS AND GLOBALIZATION  
VOLUME 12

**NONTARIFF MEASURES WITH  
MARKET IMPERFECTIONS:  
TRADE AND WELFARE  
IMPLICATIONS**

*Edited by*

**John C. Beghin**

*Department of Economics, Iowa State University,  
Ames, IA, USA*



United Kingdom – North America – Japan  
India – Malaysia – China

## CONTENTS

<b>ABOUT THE SERIES: FRONTIERS OF ECONOMICS AND GLOBALIZATION</b>	v
---	---

<b>ABOUT THE EDITOR</b>	vii
-------------------------	-----

<b>LIST OF CONTRIBUTORS</b>	ix
-----------------------------	----

### **PART I: INTRODUCTION AND MAIN FINDINGS**

<b>INTRODUCTION AND MAIN FINDINGS</b>	3
---------------------------------------	---

*John C. Beghin*

1 Introduction	3
2 Summary and key findings	5
References	10

### **PART II: CONCEPTUAL AND METHODOLOGICAL DEVELOPMENTS**

<b>1 A COST-BENEFIT APPROACH FOR THE ASSESSMENT OF NONTARIFF MEASURES IN INTERNATIONAL TRADE</b>	15
--	----

*John C. Beghin, Anne-Celia Disdier,  
Stéphan Marette and Frank van Tongeren*

1 Introduction	15
2 Market failures and imperfections	17
2.1 Market failures affecting consumers	17
2.2 Market failures affecting producers	18
3 Cost-benefit framework: a modular approach	18
3.1 Prohibitive standard	22
3.2 Free Trade	23
3.3 Free trade with a mandatory label	24
4 Recent advances in measuring valuation of consumption market failures	28

5	Toward implementation of the framework	31
5.1	Parameterization and data sources	31
5.2	An illustration: labeling of fish products	33
6	Concluding discussion	37
	Acknowledgments	37
	References	37
<b>2</b>	<b>THE ECONOMICS AND POTENTIAL PROTECTIONISM OF FOOD SAFETY STANDARDS AND INSPECTIONS: AN APPLICATION TO THE U.S. SHRIMP MARKET</b>	<b>43</b>
	<i>John C. Beghin, Anne-Celia Disdier and Stéphan Marette</i>	
1	Introduction	44
2	Related literature	45
3	Background on seafood inspections by the FDA	47
4	Externality and health cost	49
5	Cost of HACCP implementation for foreign and domestic producers	50
6	A simple conceptual model	52
7	The shrimp application	58
8	How to finance inspections?	64
9	Conclusion	67
	Acknowledgments	68
	References	68
<b>3</b>	<b>HOW TO PROMOTE QUALITY PERCEPTION: BRAND ADVERTISING OR GEOGRAPHICAL INDICATION?</b>	<b>73</b>
	<i>Chengyan Yue, Stéphan Marette and John C. Beghin</i>	
1	The model	77
2	The producers' choices	79
3	Extensions	84
4	Conclusions	86
	Acknowledgements	87
	Appendix A: The frontiers determination and proof of propositions	87
	Appendix B	94
	References	97
<b>4</b>	<b>TRANSPARENCY IN NONTARIFF MEASURES: EFFECTS ON AGRICULTURAL TRADE</b>	<b>99</b>
	<i>Iza Lejárraga, Ben Shepherd and Frank van Tongeren</i>	
1	Introduction	99
2	Literature review	101
2.1	Transparency and institutions	101
2.2	Transparency and search costs	102

2.3	Transparency and trade relations	103
3	Taxonomy of transparency in trade	103
3.1	Publication of information: availability, accessibility and inferability	107
3.2	Participation in decision-making: openness, inclusiveness and influence	108
3.3	Predictability: review and appeal, enforcement of rules and cooperation	109
3.4	Fighting corruption and bribery	110
4	Regional agreements vehicles for promoting transparency in NTMs	110
4.1	Preferential or MFN? Antispaghetti bowl effects of transparency disciplines	112
4.2	More than lip service: enforceability of WTO-plus transparency commitments in RTAs	113
5	Empirical impact of transparency commitments in RTAs	114
5.1	Description of data	115
5.2	Specification and estimation	116
5.3	Results and discussion	119
6	Concluding remarks and future research	122
	Acknowledgments	123
	References	123

**5 CHOOSING THE BEST MODEL IN THE  
PRESENCE OF ZERO TRADE: A FISH  
PRODUCT ANALYSIS** 127

*Nhuong Tran, Norbert Wilson and Diane Hite*

1	Introduction	128
2	Conventional OLS and zero-accounting models of the gravity equation	130
2.1	Anderson and van Wincoop's gravity model	130
2.2	The Heckman specification	132
2.3	Poisson family regressions	133
3	Empirical model specification and data sources	135
4	Estimated results and discussions	137
5	Conclusion	145
	References	146

**PART III: CASE STUDIES**

**6 INVESTIGATING THE IMPACT OF MRL STANDARDS'  
SIMILARITY ON TRADE** 151

*Lan Liu and Chengyan Yue*

1	Introduction	151
2	The Similarity Index	153

3	Analytical Framework	155
4	Empirical Analysis	158
4.1	Parameter Estimation	158
4.2	Welfare Analysis	159
5	Conclusion	161
	Acknowledgments	162
	References	162
<b>7</b>	<b>THE ROLE OF EU HARMONIZATION IN EXPLAINING THE EXPORT-PRODUCTIVITY PREMIUM OF FOOD PROCESSING FIRMS</b>	<b>165</b>
	<i>Mark Vancauterem</i>	
1	Introduction	166
2	Related literature	168
3	Data	170
3.1	Summary statistics	172
4	Empirical implementation	173
4.1	EU harmonization and the export decision	174
4.2	EU harmonization and the export-productivity premium	175
5	Results	177
5.1	Decision to export	177
5.2	Export premium	179
5.3	Sensitivity other forms of export and productivity	181
6	Conclusion	182
	References	183
<b>8</b>	<b>PRIVATE FOOD STANDARDS AND FIRM-LEVEL TRADE EFFECTS: A DYNAMIC ANALYSIS OF THE PERUVIAN ASPARAGUS EXPORT SECTOR</b>	<b>187</b>
	<i>Monica Schuster and Miet Maertens</i>	
1	Introduction	188
2	Data	190
3	The Peruvian asparagus export sector	191
3.1	Increasing exports	191
3.2	Increasing private standards	193
3.3	Company heterogeneity	195
4	Econometric analysis of trade effects	199
4.1	Model specification	199
4.2	Estimation technique	200
5	Results and discussion	203
5.1	Robustness check	207
6	Conclusion	209
	Acknowledgments	210
	References	210

<b>9 TRADE EFFECTS OF PRIVATE AND PUBLIC EUROPEAN FOOD SAFETY STANDARDS ON HORTICULTURAL IMPORTS FROM KENYA</b>	<b>215</b>
<i>Bruno Henry de Frahan and Nicodème Nimenya</i>	
1 Introduction	215
2 Tariff equivalence of NTMs and the gravity model	218
2.1 Measurement of NTMs	218
2.2 The general specification of the gravity model	220
2.3 The econometric specification of the gravity model	222
3 Data description	225
4 Empirical results and discussion	227
5 Concluding remarks	232
Acknowledgments	233
Appendix	234
A.1 Variable description	234
A.2 Preliminary data analysis	235
A.3 Specification of the fixed- and random-effect models	237
References	238
<b>10 STRINGENT MAXIMUM RESIDUE LIMITS, PROTECTIONISM, AND COMPETITIVENESS: THE CASES OF THE US AND CANADA</b>	<b>245</b>
<i>Bo Xiong and John C. Beghin</i>	
1 Introduction	246
2 Data and methodology	249
2.1 Data and the scores of excessive MRLs	249
2.2 Empirical strategy	251
3 Results and discussions	253
3.1 Diagnostic analysis and robustness checks	256
4 Conclusions	257
Acknowledgements	258
References	258
<b>11 THE PARTICIPATION OF SMALLHOLDER FARMERS IN HIGH-VALUE EXPORT MARKETS GOVERNED BY STANDARDS: THE ROLE OF EXPORTER PROCUREMENT PRACTICES</b>	<b>261</b>
<i>Spencer Henson, Steven Jaffee and Oliver Masakure</i>	
1 Introduction	262
2 Conceptual framework	264
3 Econometric model of smallholder sourcing	266
4 Data and variables	268
5 Empirical results	278

5.1	Determinants of the incidence of smallholder procurement	278
5.2	Determinants of the intensity of smallholder procurement	281
6	Conclusions	285
	References	287
<b>12</b>	<b>MUTUAL RECOGNITION OF ACCREDITATION: DOES IT MATTER TO TRADE? EVIDENCE FROM THE FOOD, BEVERAGE, AND TOBACCO INDUSTRY</b>	<b>291</b>
	<i>Knut Blind, Axel Mangelsdorf and John S. Wilson</i>	
1	Introduction	292
2	Standardization, certification, and accreditation in the food processing industry	293
2.1	Standardization, certification, and accreditation	293
2.2	ISO 9000 certifications in the food processing industry	295
3	Econometric model	296
3.1	Summary statistics	296
3.2	Econometric strategy	297
4	Results	300
5	Conclusion	305
	Appendix	307
	References	308