Hubert StrauE

Demand and Supply of Aggregate Exports of Goods and Services

Multivariate Cointegration Analyses for the United States, Canada, and Germany

Springer

Contents

1	The Estimation of Aggregate Exports: New Questions in a			1		
	1 1		explored Field	1		
	1.1	Comp	etitiveness?	2		
	1.2	A Lar	ge Empirical Literature Based on the "Standard Model"	3		
	1.3	Conce	ptual Problems of Previous Studies	4		
	1.4	Advar	aces in Time Series Econometrics	5		
	1.5	Reliat	ble Answers to a Variety of Questions	7		
	1.6	Struct	ure of the Study	8		
2	Theoretical Foundations for the Supply of and Demand for					
	Aggregate Exports					
	2.1	Purpo	se and Scope of the Chapter	10		
	2.2	The S	upply of Exports	11		
		2.2.1	Dornbusch's "Dixit-Stiglitz Model"	12		
		2.2.2	Dornbusch's "Extended Dixit-Stiglitz Model"	16		
		2.2.3	An Upward-Sloping Export Supply Curve?	19		
	2.3	The Demand for Exports		20		
		2.3.1	Choice of the Production Function and Preconditions for	20		
		222	Aggregation	20		
		2.3.2	Optimization and the Derived Export Demand Function	22		
	.	2.3.3	Theoretical Parameters versus Empirical Coefficients	25		
	2.4	Equili	Ibrium Export Prices and Quantities	26		
		2.4.1	equilibrium when Export Prices Are a Simple Markup over Costs	26		
		2.4.2	Equilibrium with Pricing to Market	28		
	2.5	The F	Role of Globalization	29		
	2.6	Sumr	narizing the Testable Hypotheses Resulting from the			
		Analy	vsis	31		

VIII Contents

3	Ove	rview o	of the Empirical Literature on Aggregate Exports	33	
	3.1	Single	e-Equation Studies Based on Demand Considerations	33	
	3.2	Taking	g the Supply Side into Account: Simultaneity between	20	
		Expor	Prices and Quantities	38	
4	Time Series Used and Their Properties				
	4.1	Data S Series	Sources, Methods of Calculation, and Shape of the Time	41	
	4.2	Unit R Integra	Root and Stationarity Tests for Detecting the Order of ation	52	
		4.2.1	The Augmented Dickey-Fuller Test	53	
		4.2.2	The KPSS test for trend-stationarity	61	
		4.2.3	Synopsis of Results from ADF and KPSS Tests	68	
5	The Long-Run Structure of the Aggregate Export System				
	5.1	The V	ECM as a Suitable Type of Empirical Model	71	
	5.2	Deteri the VI	ministic Elements, Lag Length, and Dummy Variables of ECM	74	
		5.2.1	Deterministic Elements	74	
		5.2.2	The Appropriate Lag Length of the VECM and Neces- sary Impulse Dummy Variables	76	
	5.3	The N	Sumpting and Daming Calculationships in the System	83	
	0.0	5.3.1	Johansen's Trace and X_{max} -Tests	84	
		5.3.2	Results from Johansen's Rank Tests	87	
		5.3.3	The Roots of the Companion Matrix	89	
		5.3.4	Conclusions for the Number of Cointegration Relation-		
			ships	89	
	5.4	Identi	fying the Long-Run Relationships: Problem and Strategy	91	
		5.4.1	The Identification Problem Applied to the Example of		
			Aggregate Exports	91	
		5.4.2	The Identifying Restriction for the Demand Vector	96	
		5.4.3	The Identifying Restriction for the Supply Vector	97	
	5.5	Findii	ng the Structural Long-Run Relationships	97	
	5.6	5.6 Testing for Overidentifying Restrictions in the Cointegrating			
		5 6 1	Presentation of the Test Results	100	
		5.0.1	resonation of the rest results	100	

		5.6.2	The Just-Identified Cointegrating Vectors	105
		5.6.3	Overidentifying Restrictions on Cointegrating Vectors	106
		5.6.4	The Loading Coefficients as an Indication of How	
			Disequilibria Are Corrected	110
		5.6.5	Testing for Weak Exogeneity in the Aggregate Export	
			System	113
	5.7	Alterr	native Specifications and Summary	115
		5.7.1	United States	115
		5.7.2	Canada	116
		5.7.3	Summing Up the Final Specifications	118
	5.8	Appendices to Chapter 5		119
		5.8.1	Detailed Estimation and Test Results for the United	
			States, Canada, and Germany	119
		5.8.2	The Concept of Weak Exogeneity	131
6	The	Partia	l Models: Estimation, Stability Analysis, and Dynamic	
	Adj	ustmen	ıt	133
	6.1	Estim	ation of the PVECMs	134
	6.2	Stabil	ity of Rank Restrictions, Long-Run Elasticities, and	
		Loadi	ng Coefficients	140
	6.3	3 Elimination of Insignificant Parameters and SUR Estimation of Parsimonious Model		
				158
	6.4 The Dynamic		Dynamic Adjustment after Various Changes in Variables	165
		6.4.1	Weak versus Strong Exogeneity	167
		6.4.2	Dealing with Interactions between the Short and the Long	
			Run	170
		6.4.3	Reactions to Permanent Changes in Exogenous Variables	172
		6.4.4	Reactions to Transitory Changes in Exogenous Variables	185
		6.4.5	Reactions to Transitory Changes in Endogenous	100
			Variables	189
7	Мо	deling	Germany's Exports in a Single-Equation Error	
	Cor	Correction Model		
	7.1	Motiv	vation	195
	7.2	Anal	yzing the Multivariate System with the Johansen Procedure	196
		7.2.1	Rank Test	196
		7.2.2	Misspecification Tests and Test for Weak Exogeneity	197

X Contents

	7.3	Estimation Results of the SEECM		199
		7.3.1	Estimation Procedure	199
		7.3.2	Results	200
		7.3.3	Reactions to Permanent Changes in Weakly Exogenous Variables	203
		7.3.4	Reactions to Temporary Changes in Exogenous Variables and to a Shock on Exports	207
	7.4	Conclu	ision: The SEECM Is Not a Pure Demand Model	209
8	Sum	mary,	Conclusions, and Policy Implications	211
	8.1	Summ	ary of Results and Possible Extensions	212
		8.1.1	Deriving Testable Hypotheses from the Theoretical Model	212
		8.1.2	Overview of the Overidentified Final Long-Run Relation- ships	214
		8.1.3	Widespread International Differences in the Short-Run	
			Behavior of the Models	217
		8.1.4	Extensions for Further Research	219
	8.2	Policy	Implications	220
		8.2.1	Supply Conditions Matter	221
		8.2.2	Policies to Enhance Demand for a Country's Exports	223
		8.2.3	Reaping the Benefits from More Intensive Competition and Division of Labor	225
R	References			228