

Contents

1	Introduction	1
1.1	Motivation	1
1.2	Outline	4
2	Systems Cointegration Tests	7
2.1	Introduction	7
2.2	Cointegration Rank Tests: The Framework	9
2.2.1	Data Generating Process	9
2.2.2	Hypotheses and Testing Procedure	11
2.3	Likelihood Ratio Tests	12
2.3.1	DGPs and Test Statistics	13
2.3.1.1	Arbitrary Mean and Trend Term	13
2.3.1.2	Trending Variables and No Trend in the Cointegration Relations	17
2.3.1.3	Arbitrary Mean and No Trend Term	19
2.3.2	Summary of Models and Test Statistics	22
2.3.3	Previous Simulation Studies	22
2.4	Other Tests	27
2.4.1	Tests Based on Canonical Correlations of Levels	27
2.4.1.1	DGPs and Test Statistics	27
2.4.1.2	Previous Simulation Results	30
2.4.2	Stock–Watson Tests	30
2.4.2.1	DGPs and Test Statistics	30
2.4.2.2	Previous Simulation Results	32
2.4.3	Bierens’ Nonparametric Tests	33
2.4.3.1	DGPs and Test Statistics	33
2.4.3.2	Previous Simulation Results	34
2.5	New Small Sample Simulations	35
2.5.1	Previous Simulation Studies	35
2.5.2	Simulation Details	40
2.5.3	The Toda DGP	41

2.5.4	Two-dimensional VAR(1): Simulation Results . .	45
2.5.4.1	Sizes of the Tests	45
2.5.4.2	Power Performance: DGP without Linear Trend	49
2.5.5	Three-dimensional VAR(1): Simulation Results .	52
2.5.5.1	Size of the Tests	53
2.5.5.2	Power Performance: DGP with Linear Trend	58
2.5.6	Three-dimensional VAR(2): DGP and Simulation Results	70
2.5.7	Conclusions from Simulations	73
2.6	Further Deterministic Terms: Dummy Variables	76
2.7	Recommendations for Applied Research	81
3	A Cointegrated Monetary System for Germany	83
3.1	Introduction	83
3.2	Monetary Policy Strategies and the ECB	84
3.2.1	Inflation Targeting versus Monetary Targeting . .	84
3.2.2	'Discretion versus Rule' or 'Flexibility versus Transparency'	87
3.2.3	German Monetary Policy: Monetary Targeting and the Stability of the Demand for Money . . .	89
3.3	Long-Run Monetary Relations	92
3.3.1	The Demand for Money	93
3.3.1.1	Theories on Money Demand	93
3.3.1.2	Recent Empirical Literature of the Demand for the Monetary Aggregate M3 in Germany	98
3.3.1.3	Estimation of Money Demand Systems for other Countries	101
3.3.2	The Term Structure of Interest Rates	101
3.3.2.1	The Expectations Theory of the Term Structure	102
3.3.2.2	Cointegration Analysis of the Term Structure of Interest Rates	103
3.3.3	The Fisher Effect	105
3.3.3.1	Is the Real Interest Rate Stationary? . .	105
3.3.3.2	Recent Empirical Evidence for the Fisher Effect	106
3.4	Empirical Analysis	108
3.4.1	The initial VAR	109

3.4.1.1	Data	109
3.4.1.2	Univariate Tests for Unit Roots	112
3.4.1.3	Model Specification	115
3.4.2	Tests for the Cointegration Rank	120
3.4.2.1	The Johansen Rank Test	122
3.4.2.2	Trend-adjusted LR Tests	123
3.4.2.3	Rank Test for a Model without a linear Trend	124
3.4.3	Testing Restrictions on the Cointegration Space .	127
3.4.3.1	Weak Exogeneity and Stationarity . . .	127
3.4.3.2	Long-run Restrictions	129
3.4.3.3	The Cointegration Vectors: Economic In- terpretation	139
3.4.4	Conclusion	140
4	Concluding Remarks and Outlook	143
4.1	Systems Cointegration Tests	143
4.2	Empirical Analysis of a German Monetary System	144
4.3	Further Research	145
4.4	Outlook: Lessons for the ECB	147
A	Trend-adjusted LR Tests: Dummy Variables	149
B	Data	153
	List of Figures	155
	List of Tables	157
	Bibliography	159