

Contents

Acknowledgements	ii
List of Figures	v
List of Tables	vi
1 Introduction	1
1.1 Motivation	1
1.2 The Application of Econometrics in Economics - A Critical Discussion . .	4
1.3 Outline of the Thesis	6
2 What Drives Natural Gas Prices? - A Structural VAR Approach	21
2.1 Introduction	21
2.2 Literature Review	24
2.3 Data	26
2.4 A Structural VAR for the German Natural Gas Market	31
2.5 Empirical Results	35
2.6 Event Studies of Supply Interruptions: Historical Decomposition	41
2.6.1 The Russian-Ukrainian Gas Conflict of 2009	43
2.6.2 The “Arab Spring” and the Civil War in Libya 2011	45
2.6.3 Supply Interruptions of Russian Gas Deliveries in February 2012 .	47
2.7 Conclusion	48
3 The Informational Efficiency of European Natural Gas Hubs: Empirical Evidence on Price Formation and Intertemporal Arbitrage	50
3.1 Introduction	50
3.2 Theoretical Considerations and Previous Research	52
3.3 The Role of Liquidity and Storage Capacity	54
3.4 Sample Description and Preliminary Data Analysis	57
3.5 Price Formation: Linear and Nonlinear Causality Testing	59
3.6 The Efficiency of Intertemporal Arbitrage: Linear and Threshold Error Correction	64
3.7 The Evolution of Intertemporal Arbitrage Efficiency: A Kalman Filter Approach	70
3.8 Conclusion	72

4	The Hidden Cost of Investment: The Impact of Adjustment Costs on Firm Performance Measurement and Regulation	74
4.1	Introduction	74
4.2	Theoretical Background	77
4.3	Previous Research	80
4.4	The Model	82
4.4.1	Dynamic Technical Inefficiency and the Dynamic Directional Distance Function	82
4.4.2	Dynamic Cost Inefficiency and the Intertemporal Cost Minimization Problem	86
4.5	Data for Empirical Application	90
4.6	Empirical Results	91
4.7	Conclusion	96
5	The Costs of Power Interruptions in Germany - a Regional and Sectoral Analysis	98
5.1	Introduction	98
5.2	Previous research	100
5.3	Methodological Approach	102
5.4	Empirical results	105
5.4.1	Value of Lost Load	105
5.4.2	Time-Varying Outage Costs	111
5.4.3	Regional Focus on Outage Costs	115
5.4.4	Sensitivity Analysis: Residential Sector	116
5.5	Conclusions	120
A	Supplementary Material for Chapter 2	123
B	Supplementary Material for Chapter 3	127
C	Supplementary Material for Chapter 4	132
C.1	Parametric Approximation of the Firm-Specific Shadow Values of Capital	132
C.2	Data Sources	133
D	Supplementary Material for Chapter 5	135
	Bibliography	143
	Curriculum Vitae	157