

# Contents

<b>1</b>	<b>Introduction</b>	1
<b>2</b>	<b>Promotions and Collaboration in Retailing</b>	5
2.1	The German Market Situation	5
2.2	Promotions	6
2.2.1	Definition and Impact of Promotions	7
2.2.2	Retail Price Formats	8
2.3	Collaboration	10
2.3.1	Collaborative Planning Forecasting and Replenishment	10
2.3.2	Pros and Cons of CPFR	12
2.3.3	The Competition Index	13
2.4	Research Questions and Methods	15
<b>3</b>	<b>Literature Review</b>	17
3.1	Customer Demand in Promotions	17
3.1.1	Stockpiling	18
3.1.2	Brand and Package Size Switching	20
3.1.3	Store-Switching	21
3.1.4	Decomposition of Customer Demand in Promotions	22
3.2	Retailer Decisions	23
3.2.1	Promotion Pricing	24
3.2.2	Retailer Inventory	29
3.3	Supply Chain Collaboration	31
3.3.1	The Value of Information Sharing	32
3.3.2	Information Sharing in a Competitive Environment	38
<b>4</b>	<b>Retailer Competition</b>	41
4.1	Setup of the Retailer Game	41
4.1.1	Sequence of Events	42
4.1.2	Retailer Promotion Strategies	43
4.1.3	Customer Demand	45
4.2	Optimizing the Retailer's Decisions	47
4.2.1	Newsvendor Problem: The Optimal Order Quantity	47
4.2.2	Nash Equilibrium: The Optimal Promotion Frequency	50

- 4.3 Information Scenarios ..... 59
  - 4.3.1 Information from the Competition Index ..... 59
  - 4.3.2 No Information Sharing Scenario ..... 61
  - 4.3.3 Information Sharing Scenario ..... 68
- 4.4 The Value of Upstream Information Sharing..... 76
  - 4.4.1 Inventory Effect ..... 77
  - 4.4.2 Frequency Effect ..... 80
  - 4.4.3 Profit Effect..... 84
  - 4.4.4 Customer Welfare ..... 86
  - 4.4.5 Manufacturer Benefits ..... 90
- 4.5 Extension: Asymmetric Retailers..... 90
  - 4.5.1 Asymmetric Mixed Strategy Equilibrium..... 90
  - 4.5.2 The Value of Information Sharing ..... 96
- 4.6 Summary ..... 96
  
- 5 Empirical Analysis ..... 99**
  - 5.1 The Data Set ..... 99
    - 5.1.1 Description of the Data Set .....100
    - 5.1.2 Competitive Landscape .....101
  - 5.2 Retailer Strategies .....103
    - 5.2.1 Price Ranges.....104
    - 5.2.2 Price Levels.....105
    - 5.2.3 Retail Price Format.....108
    - 5.2.4 Promotion Frequency .....109
    - 5.2.5 Strategies of Analyzed Retail Chains .....111
  - 5.3 Customer Demand.....112
    - 5.3.1 Price Sensitivity of Customer Demand .....112
    - 5.3.2 Decomposition of Customer Demand.....114
    - 5.3.3 Segmentation-Based Retailer Strategies .....116
  - 5.4 Competition Index .....118
    - 5.4.1 Order Quantity .....119
    - 5.4.2 Competitive Pressure and the Competition Index .....119
  - 5.5 The Value of Information Sharing .....121
    - 5.5.1 Retailer Benefit.....121
    - 5.5.2 Customer Welfare .....123
    - 5.5.3 Win–Win–Win Situation .....124
  
- 6 Conclusion and Managerial Insights .....127**
  - 6.1 Impact of Customer Demand .....127
  - 6.2 Strategic Options for Retailers .....128
  - 6.3 Improving Supply Chain Efficiency by Collaborative Promotions ....129

**Appendix A Proofs and Calculations** .....131

    A.1 Best Response for the Scenario No Information Sharing.....131

    A.2 Best Response for the Scenario Information Sharing.....144

**References**.....149