

Berliner Schriften zur Agrar- und Umweltökonomik

herausgegeben von
Dieter Kirschke, Martin Odening, Harald von Witzke
Humboldt-Universität zu Berlin

Band 11

Piret Hein

**Competitiveness and Comparative Advantage
in the Estonian Milk Sector**

A PAM analysis for different farm types and
processing enterprises

Shaker Verlag
Aachen 2006

Table of contents

Summary	xiii
Zusammenfassung	xv
1 Introduction	1
1.1 Problem assessment	1
1.2 Objectives and scope of the analysis	2
1.3 Structure of the study	4
2 Theoretical concepts, measurement of competitiveness, and comparative advantage in transition countries	5
2.1 Overview of concepts and measures	5
2.1.1 Defining competitiveness and comparative advantage	5
2.1.2 Measures of competitiveness	7
2.2 Overview of selected studies on competitiveness of the agro-food chain in transition economies	9
2.3 Overview of studies about competitiveness of the Estonian milk sector	15
2.4 Selection of the method	17
3 Methodological aspects of the Policy Analysis Matrix	19
3.1 Theoretical foundations of PAM	19
3.2 Composition and interpretation of PAM	21
3.3 Indicators of competitiveness, comparative advantage, and policy impact	24
3.4 Calculation of opportunity costs	27
3.5 About assumptions and limitations	29
3.6 Application of PAM in policy analysis	32
3.7 Review of extensions of the standard PAM	35

4	Developments in the agri-food chain in Estonia	39
4.1	Economic policies during transition	39
4.1.1	Economic reforms	40
4.1.2	Economic developments	42
4.2	Policy environment for the agro-food industry	44
4.2.1	Agricultural policy	44
4.2.2	Policy environment for the food-processing industry	48
4.2.3	Changes in agricultural policy after the accession to the EU	49
4.3	Developments in the milk sector	50
4.3.1	Milk production	51
4.3.2	Milk processing industry	55
4.4	Interrelationships between farm and processing level	58
4.4.1	Price margins	59
4.4.2	Price transmission from processing to the farm level	60
5	Assumptions, data and social valuation of PAM for the Estonian milk sector	65
5.1	Formulation of PAM for farms and processing enterprises	65
5.2	Data sources and assumptions	71
5.3	Social valuation of domestic production factors	76
5.3.1	Opportunity cost of land	77
5.3.2	Opportunity cost of labour	79
5.3.3	Opportunity cost of capital	84
5.4	Estimation of the social cost of raw milk	85
5.5	Equilibrium exchange rate	87
6	Results of the PAM before and after the EU accession	89
6.1	Competitiveness before the EU accession	89
6.1.1	Results for milk farms	89
6.1.2	Results for milk processing enterprises	101
6.1.3	Relationships between the results at farm and processing level	106

6.2	Competitiveness after the EU accession	108
6.2.1	Scenarios	108
6.2.2	Results for milk farms	109
6.2.3	Results for milk processing enterprises	112
7	Sensitivity analysis of PAM	113
7.1	Alternative assumptions of the opportunity cost of land	113
7.2	Alternative assumptions of the opportunity cost of labour	115
7.3	Alternative assumptions of the opportunity cost of capital	118
7.4	Alternative assumptions of the social price of raw milk	119
8	Conclusions	123
8.1	Methodological implications	123
8.2	Main findings and conclusions from PAM analysis	124
8.3	Policy implications	126
8.4	Future research	127
	Bibliography	129
	APPENDIXES	141
A.	Review of selected studies with PAM in developing countries	142
B.	Agricultural support in Estonia 1993-2004	146
C.	Main statistics of the milk production and processing sector	148
D.	Results of the PAM in 2000-2003	155
E.	Results of the PAM for the EU scenarios	161
F.	Results of the sensitivity analysis	165