



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

IMPACT OF LIBERALIZING PRODUCTION AND TRADE ON
THE FUTURE OF THE DAIRY INDUSTRY IN ISRAEL

EFFEKTE DER LIBERALISIERUNG VON HANDEL UND
PRODUKTION AUF DEN ISRAELISCHEN MILCHSEKTOR

Dorothee Flaig, Ofir Rubin, Khalid Siddig

d.flraig@uni-hohenheim.de

Agricultural and Food Policy Group, Universität Hohenheim, 70593
Stuttgart



*Vortrag anlässlich der 52. Jahrestagung der GEWISOLA
„Herausforderungen des globalen Wandels für
Agrarentwicklung und Welternährung“
Universität Hohenheim, 26. bis 28. September 2012*

Copyright 2012 by authors. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

IMPACT OF LIBERALIZING PRODUCTION AND TRADE ON THE FUTURE OF THE DAIRY INDUSTRY IN ISRAEL

Dorothee Flaig¹, Ofir Rubin², Khalid Siddig

1 Introduction

Recent increases in prices of dairy products in Israel led to consumer unrest and boycotts against dairy producers during the summer of 2011. The Israeli dairy industry is highly regulated: First, Israel maintains a closed system of production quotas and administered prices for raw milk. Second, the phase of dairy processing is concentrated in the hands of three large firms and finally, tariff rate quotas protect domestic production. The social cost of holding up this structure is currently being reassessed by policy makers. Since the issue of self-sufficiency and food security are at the top of Israel's national priorities, the future of the dairy industry is generating heated debate.

2 The model and database

This study uses an augmented version of the single country Computable General Equilibrium (CGE) model STAGE, which was developed by McDONALD (2009)³. STAGE is a standard model based on a Social Accounting Matrix (SAM) and with a mix of non-linear and linear relationships governing the behavior of the model's agents. The model is adapted to incorporate an Israeli SAM of the year 2004 (SIDDIG ET AL. 2011).

Tariff rate quotas are introduced following the Mixed-Complementary-Problem (MCP) modelling approach of VAN DER MENSBRUGGHE ET AL. (2003). In such a case, the government distributes licenses for in-quota imports via auction. Typically, the quota premium is specified as government income, a situation that does not reflect reality in Israel, since the Israeli government allocates import licences for in-quota imports according to a first-come first-served system, which is usually free of charge. Accordingly, we adjusted the standard approach of VAN DER MENSBRUGGHE ET AL. (2003) to account for this special feature.

Imperfect competition is modelled to depict the reality of the Israeli market for dairy processed goods in which three large firms dominate the industry. The introduction of imperfect competition follows the approach applied in GLOBE-IC (MCDONALD, 2007), an extension of the GLOBE model (MCDONALD, THIERFELDER AND ROBINSON, 2007). An oligopolistic mark-up is introduced which implements a price gap-between the consumer price and marginal costs. The mark-up income is added to the income of the owners of the dairy firms, which belong to the group of the richest Jewish households in our model.

The mark-up parameter is set to an arbitrarily known value to represent the degree of effective market power. The recent cottage cheese boycott has provided a rare opportunity to approximate the size of this mark-up in the Israeli dairy industry. The price of cottage cheese fell by more than 20% due to the consumer boycott in the summer of 2011 (ICBS, 2008 and 2009, and ISRAELI DAIRY BOARD, 2011), while the price of raw milk stabilized at that time and assuming that dairy processing firms do not make negative profits, it was possible to extract a mark-up of more than 20% on non-regulated dairy products in Israel. This

¹ **Contact Author:** Dorothee Flaig; e-mail: d.flraig@uni-hohenheim.de. Agricultural and Food Policy Group (420a), Universität Hohenheim, 70593 Stuttgart

² Department of Public Policy and Administration, Guilford Glazer School of Business and Management, Ben-Gurion University of the Negev, P.O. Box 653, Beer-Sheva 84105, Israel

³ Please refer to McDonald (2009) for a detailed description of the model.

assumption is conservative, since cottage cheese is considered to be a basic product, whereas for luxury dairy products the mark-up is probably substantially higher.

3 Scenarios and results

Three scenarios are simulated that deviate from the actual situation in the Israeli milk and dairy markets: The first simulates the abolishment of the milk production quota and the breaking up of the dairy oligopoly, while maintaining border protection. The second scenario simulates the opening of the border for milk and dairy while maintaining the production quota and the related administered price for milk. Finally, in the third scenario, we simulate the abolition of both – domestic milk production quota and border protection. The abolition of the TRQ creates competition with foreign dairy producers and therefore breaks up the dairy oligopoly in the second and third scenarios.

In the case of liberalizing the domestic dairy farming sector, potential benefits in Israel are substantially lower than the possible welfare gains when liberalizing international trade. The liberalization of the domestic dairy and milk markets leads to a drop in the dairy consumer price. This price drop increases demand, thereby stimulating dairy production, which, in turn, increases milk demand. It is important to note that price drops occur mainly on the consumer side due to the elimination of the oligopoly's mark-up, while the producer price remains nearly constant. Thus, the welfare loss associated with market power in the processing phase is shown to be significant for the Israeli economy. Simultaneous abolition of the oligopoly and a fall in the milk production quota provides the means for satisfying the increased milk demand with increasing milk production.

The picture looks different when international trade in dairy and milk produce is liberalized; here, we should take into account the fact that dairy can be imported into Israel up to 30% of total consumption, while milk is hardly importable. Domestic dairy producers cannot compete with world markets (NPC for dairy is 1.6), and dairy imports therefore increase markedly. Thus, the liberalization of trade policies results in a reduction of the size of the domestic dairy industry (12.5% and 13.3% for milk and dairy products, respectively). In this case, Israel will be exposed to world price volatility and the risk of losing self-sufficiency, which is a serious political concern in Israel.

Literatur

- ICBS (2008): Statistical Abstract of Israel 2008, No 59. The Israeli Central Bureau of Statistics (ICBS), Jerusalem.
- ICBS (2009): Agriculture in Israel: The Industry Account Price Index of Output and Input 2008-2009. The Israeli Central Bureau of Statistics (ICBS), Jerusalem.
- ISRAELI DAIRY BOARD (2011): Annual reports 2006 – 2011. Yehud, Israel. Available online at <http://www.milk.org.il/>
- MCDONALD, S. (2009): STAGE Version 1: July 2007. Course documentation.
- MCDONALD, S. (2007): GLOBE-IC: The GLOBE Model with Imperfect Competition. Course documentation.
- MCDONALD, S., THIERFELDER, K. AND ROBINSON, S. (2007): Globe: A SAM based global CGE model using GTAP data, Ed., United States Naval Academy.
- SIDDIG, K., FLAIG, ., LUCKMANN, J. AND GRETHE, H. (2011): A 2004 Social Accounting Matrix for Israel, Documentation of an Economy-Wide Database with a Focus on Agriculture, the Labour Market and Income Distribution. Universität Hohenheim, Stuttgart.
- VAN DER MENSBRUGGHE, D., BEGHIN, J. AND MITCHELL, D. (2003): Implementing Tariff Rate Quotas in CGE Models: An Application to Sugar Trade Policies in OECD Countries. Paper presented at the American Agricultural Economics Association Annual Meeting, Montreal, Canada, July 27-30, 2003.