

Study of Agricultural Trade Openness Impact on Export and Import Shares of Agriculture and Services in Iran

S. Gholipour¹ – R. Mohammadzadeh^{2*} - M. Bakhshoodeh³ - Y. Azarinfar⁴ - M. Rafati⁵

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Abstract

The objective of this study is to investigate the long run and short run interactions between agricultural trade liberalization and shares of the two sectors of agriculture and services in the total export and import products and services of Iran during the years 1961-2008. To figure out interactions, the vector correction model was used. The ratio of the sum of imports and exports to the GDP were considered as an index of trade openness. The Johansen test revealed that there are three long term relations among the variables of this study. Based on the findings, the higher the level of agricultural trade openness goes, the more the import shares of agriculture and service sectors in the long run are. Furthermore, agricultural trade liberalization has caused the exports of both agricultural products and services to decline in the short term.

Keywords: Agricultural trade liberalization, Export, Import, Agriculture, Services, Iran

1- Researcher in Institute of Trade Studies and Research

2,3- Former MSc Student and Professor, Department of Agriculture Economic, Faculty of Agriculture, Shiraz University

(*- Corresponding Author Email: royamohammadzadeh@gmail.com)

4 MS in ARDPERI

5- Faculty Member of ARDPERI

Determining Optimal Location for Processing Industries in Fars Province: Case of Tomato Processing Industries

H. Mohammadi^{1*} - M. Sabuhi² - A.A. Kheikha³ - Z. Farajzadeh⁴

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Abstract

Fars province with a share of more than 16 percent holds the highest rank in producing tomato in Iran. This study aims at determining priorities for tomato processing centers in Fars province's townships. To achieve the study objective a distance minimizing pattern was used for transportation network between producing and processing centers as well as processing and consumption centers. A part of the study data was collected using questionnaires completed by processing centers in 2009. The other part of the study data was obtained from the Iranian Agriculture Ministry website. Using the marginal distance measured by the optimal solution model, an average distance was calculated for paths ending in each township. The study findings revealed that paths ending in townships of Marvdasht, Shiraz, Pasargad, Eqlid and Khorrambid lead to the lowest increase in total transferring. It was also found that the distance from consumption centers is important in determining the priority of townships, and hence the northern townships of Fars province have more suitable position to establish new processing centers.

Keywords: Tomato juice, Transition network, Processing nodes, Localization, Fars province
JEL classification: C61, L91, Q13, R32

1,2,3- Assistant Professor, Associate Professor and Assistant Professor, Department of Agricultural Economics, University of Zabol

(* - Corresponding Author Email: Hamidmohammadi1378@gmail.com)

4- PhD Student of Agricultural Economics Department, Faculty of Agriculture, University of Shiraz

Factors Influencing the Adoption of Rapeseed Cultivation (Case Study of Khorasan Razavi Province)

M. Mazhari^{1*} - K. Parsapoor²

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Abstract

According to official statistics, domestic production of edible oils provides only less than 10 percent of the country's consumption needs, and therefore every year a significant amount of crude and prepared edible oils and fats is imported to the country spending a considerable amount of foreign exchange. Over the past years rapeseed, as a new product, has been implemented by a limited number of farmers in Khorasan Razavi province. Since the authorities seek to achieve self-sufficiency in edible oils, more attention should be paid to developing oilseeds cultivation, especially rapeseed due to its high percentage of oil and its high quality. In this study, factors that influence the adoption of rapeseed cultivation were determined using Logit model. The study conducted in Khorasan Razavi province in 2008. Using two-stage random sampling, 300 farmers were selected for this study. It is concluded that the variables including area of irrigated cultivation, the extent at which farmers implement advisors' recommendations, communication with farmers who cultivate rapeseed, influence of cultivating rapeseed on Grain yield and agricultural income have a significant contribution to rapeseed cultivation.

Keywords: Rapeseed, Logit Model, Khorasan Razavi

1 -Assistant Professor of Research Agricultural and Natural Resource Centre of Khorasan Razavi
(* - Corresponding Author Email: momazhari@ gmail.com)

2 -Instructor Economic Department of Iranian Academic Centre for Education, Culture and Research, Mashhad

Application of Stochastic Goal Programming in Water Resources Use Management: A Case Study of Firozabad Plain

F. Pourzand^{1*} - M. Zibaei²

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Abstract

One of the important economic problems in arid and semi-arid regions is insufficient water for agricultural purposes as it is evident for other purposes. Accordingly, sustainable management of water resources becomes an important challenge for policymakers. This study investigated water use planning based on the fluctuation of rainfall and the random nature of water resources in Firozabad plain of Fars province. A decision support system was developed to allocate surface water and groundwater among farmers in dry, wet and normal years. To conduct the study, the stochastic goal programming approach with two goals of farm management and environmental impact was applied. The data was collected from Fars Regional Water Authority in 1985-2007. To make a decision, the model yields three reduction coefficients of surface water, standard groundwater and complementary groundwater for the three periods of dry, wet and normal months. The results show that, in drought periods, the model recommends using more groundwater than in wet periods in order to save surface water.

Keywords: Decision Support System (DSS), Stochastic Goal Programming, Uncertainty, Environmental Impacts, Firozabad Plain

1,2- Former MSc Student and Associate Professor, Department of Agricultural Economics, Agricultural College, Shiraz University

(* - Corresponding Author Email: f_pourzand@yahoo.com)

Strategies Formulation for Dairy Cattle Complexes, Using Fuzzy AHP Group

H.R. Mirzaei^{1*}- M. Rojouei²- A.H. Okhravi³

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Abstract

The objectives of this study were to identify the strengths (S), weaknesses (W), opportunities (O) and threats (T) in producing milk in the province of Sistan and Baluchestan . Furthermore, the study attempted at developing strategies towards effective management of in the milk production. Under the current situation, the study data was collected using questionnaires responded by three groups including officials with 20 respondents, dairymen with 40 respondents and graduate students with 40 respondents. Analyzing the collected data, 10 strengths, 18 weaknesses, 10 opportunities and 13 threats in the context of 12 dimensions, including policy and management, financial performance, investment /Inventory, productivity, land and pastures, Animal Health, family and lifestyle, and climate, was evaluated. For each of the strengths, weaknesses, opportunities and threats, total weight, the average of their relative weights and the ranks were calculated. The SWOT matrix was established to determine the SO, WO, ST and WT strategies. Furthermore, in order to finalize the priorities, the important coefficients were considered between zero to one for the three groups of officials (0.5), livestock (0.3) and graduate students (0.2). Components of the low mortality rates presented the most strength, while the livestock investment rates had less priority. In addition, components of milk demand among households and intermittent droughts presented major opportunities and threats, respectively. Furthermore, the fuzzy AHP model was used for strategic prioritization. It was concluded that, in the study region, SO strategies for improving farm management had the highest priority.

Keywords: SWOT model, Fuzzy AHP, Strategic planning, Milk production plants, The sistan, Baloochestan province

1- Assistant Professor, Department of Animal Science, Faculty of Agriculture, Zabol University
(*-Corresponding Author Email: h.mirzaei9@gmail.com)

2- Lecture, Department of Management and Accounting, Imamreza University, Mashhad

3- Former MSc Student, Department of Economic, Faculty of Economic and Administrative Sciences, Ferdowsi University of Mashhad



Investigating Producer Support Estimate Index and Sensitivity Analysis of this ratio Exchange Rates (Case Study: Beef Meat)

S. Iravani^{1*}- S.S. Hosseini²

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Abstract

Main objective of this paper is to evaluate supportive policies of beef producers during the first, second, third and fourth terms of Economic, Social, and Cultural Development Plans (1989 - 2008). To evaluate the policies, the Producers Support Estimate (PSE) index and other indicators (PSE %, NPC & NAC) were used. Furthermore, percentages of PSE were calculated in different scenarios of exchange rate (such as black market exchange rate, purchase power parity (PPP) exchange rate, 5 percent increase in purchase power parity (PPP) exchange rate and 5 percent decrease in purchase power parity (PPP) exchange rate). The results presented that market price support (MPS) of beef producers had increasing trend during development plans, especially in the first and the second plans. The government's budgetary payments (BP), on the other hand, presented decreasing trend from 4 billion Rls (local current) in the first development plan to 2 billion Rls in the fourth development plan. Furthermore, total support estimate (PSE) of beef producers increased during the fourth terms of development plans. It is concluded that share of MPS in total producers support estimate (PSE) is more than BP. The study results presented that, in all terms of the development plan (except for the first plan), percentages of PSE calculated by purchase power parity (PPP) exchange rate were higher than amounts calculated by black market exchange rate. PSE% was found sensitive to changes in the exchange rate.

Keywords: Support policies, Beef, PSE index, exchange rate

1,2- MSc Graduate and Professor of Agricultural Economics Department, Collage of Agriculture Economics and Development, Tehran University

(*-Corresponding Author Email: samairavani@alumni.ac.ir)

The Impacts of Supply and Demand Shocks On Agriculture Growth

Z. Abdollahi¹- M. Hoshmand^{2*} - M. Daneshnia³- Z. Eskandaripour⁴

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Abstract

In the recent decades, the Iranian Economy has been highly depended on Oil revenues. Considering the fact that a great part of non-oil exports are agricultures product, studying factors influencing growth of agricultural sector plays an important role in the Iran's economy. Supply domestic shocks and domestic demand pressure along with deviation of exchange rates from its equilibrium, have significant effects on the growth of agricultural sector. In this study, we examine the impact of supply and demand shocks on the economic growth, using the model of Blanchard and Quah and the method of Vector Auto Regression. The study data was obtained from the annual statistics during the years 1972-2007. The results revealed that the growth of agricultural sector is more sensitive to supply shocks than to demand shocks.

Keywords: Demand shock, supply shock, Economic growth, Vector auto regression

1,3- MSc Student and Former MSc Student in Economic on Azad University of Shiraz

2- Associate Professor, Department of Economic, Faculty of Economic and Administrative Science, Ferdowsi University of Mashhad

(*-Corresponding Author Email: m_k16716@yahoo.com)

4- MSc Student in Economic on Payam e Noor University of Mashhad

Factors Effecting Sustainability of Agriculture Practices in Jiroft County (Case Study: Onion, Potato and Tomato)

M. Adeli Sardoie^{1*}- B. Hayati²- Sh. Zarifian³- S.D. Hosseini Nasab⁴

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Abstract

In recent decades, more consumption of agricultural inputs led to growth in agricultural products in the world. However, problems occurred due to the lack of attention to environmental issues and risks of excessive consumption of chemicals on human health become a concern for people and policy makers. To solve the problem, sustainable agriculture has been considering by authorities. This study aimed at assessing the level of sustainability in some agricultural products. Identification of factors that influence sustainability in the study products was another aim of this study. The study was conducted in 2008-2009. The township of Jiroft was selected for this study, due to economic importance of agriculture in this region. The study concentrated on three products of tomato, potato and onion that play important role in the food security of the region. The statistical population of the study included all onions, potatoes and tomatoes growers (N=1320). Using the Cochran's formula, sample size was measured at 197 persons. Using the stratified random sampling method, the study interviewees were selected. The reliability of the questionnaire was evaluated by Cronbach's alpha's coefficient at 0.75. Content validity was defined using a panel of expert. According to the results, levels of sustainability for 53.2 percent of the study samples were lower than their average level, while 47.2 percent had higher levels. Results of regression model presented that the variables of educational level, knowledge of sustainable agriculture, the number of family labor force, growers' participation in social activities, the system of private property and livestock- cultivation system have a significant positive impact on the sustainability. The only variable of the rate of cultivation presented a negative impact on the agricultural sustainability. The study recommends holding appropriate extension classes accordance to the level of growers' education.

Keywords: Sustainable indicator, Agricultural practices, Sustainable agriculture, Vegetables, Jiroft

1- MSc Graduated of Agriculture Management, University of Tabriz, and Lecture Department of Agricultural Extension and Education, Faculty of Agriculture, University of Jiroft

(*- Corresponding author: Email: mohsen.adelis@gmail.com)

2,3- Associated Professor and Assistant Professor, Department of Agricultural Economics, Faculty of Agriculture, University of Tabriz

4- Professor, Department of Humanities and Educational Sciences, Islamic Azad University Tabriz Branch

Analyzing Determinants of Consumers' Willingness to Pay a Premium for Pesticide-free Fruit and Vegetables in Marand City

B. Hayati^{1*} - E. Pishbahar² - M. Haghjou³

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Abstract

The aim of this study is to investigate factors affecting consumers' willingness to pay premium prices for the pesticide-free fruit and vegetables in Marand city. A Contingent valuation survey of 394 respondents was conducted in 2010. An Ordered Logit regression model was applied to determine factors effecting consumers' willingness to pay for pesticide-free fruit and vegetables. The survey results present that only 3 percent of the respondents would not be willing to pay a premium; while about 64 percent would be willing to pay a premium between 5 and 20 percent and about 33 percent would be willing to pay more than 20 percent premium for pesticide-free fruit and vegetables. Results reveal that factors such as individual's income, environmental and health concerns, the level of safe shopping criteria, consumer's knowledge of pesticide-free fruit and vegetables' characteristics and consumer's knowledge of pesticide's side effects increase the willingness to pay a premium for pesticide-free fruit and vegetables, significantly. In addition, those who have seniors in their family would be willing to pay a significant high premium price for these products. More than 50 percent of the consumers mentioned "the nonexistence of certifications and labels", "lack of supply" as problems of purchasing pesticide-free fruit and vegetables. While 26 percent claimed high prices of these products as their most important problems in their purchasing process of pesticide-free fruit and vegetables. The study recommends encouraging farmers to produce these products, effective advertising and improving consumers' awareness.

Keywords: Contingent valuation method, Marand, Ordered logit model, Price premium

1,2,3- Associate Professor, Assistant Professor and Former MSc Student, Department of Agricultural Economics, Agricultural College, Tabriz University, Respectively

(* - Corresponding Author Email: b-hayati@tabriz.ac.ir)

Study of Relationships between Carbon Dioxide Emissions and GDP Per Capita Based on Panel Data

R. Moghaddasi^{1*} - Z. Golriz Ziaee²

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Abstract

This study investigates casual relationship between CO₂ emission and gross domestic product per capita in five different country groups, using cross- country data for the period 1960-2007. To achieve the purpose, the co- integration test and error correction models are applied. Results confirm casual relationships between the two variables. A unilateral relationship between GDP and CO₂ emission was founded for countries with low and upper middle income and a bilateral relationship for countries with lower middle income and OECDs nations. Using world data, the relationship between GDP and CO₂ emission was found bilateral. Furthermore, estimation of long term relationship between CO₂ and GDP indicates that all countries are placed at the point ASC of the Kuznets curve. This indicates that for all countries increase of income raise CO₂ emission in average. However, the slope of this curve was found increasing for high level income countries and decreasing for low level income countries.

Keywords: Panel data, Error correction model, Co-integration test, CO₂ emission, Per capita gross domestic product

JEL: C33; O40; Q25

1- Associate Professor and PhD Candidate, Agricultural Economics Department, Science and Research Branch, Islamic Azad University, Tehran

(* - Corresponding Author Email: r.moghaddasi@srbiau.ac.ir)

Determination Effective Factors on Aquatics Demand and its Extension Approach in Kerman Province

L. Shafiee¹

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Abstract

Increase in aquatics demand is one of the major goals for production policies. Hence analysis of demand structure and aquatics consumption patterns is very applicative and useful for policy makers. Using the Almost Ideal Demand System (A.I.D.S), the demand function for types of aquatics and chicken meat in urban and rural societies in Kerman city were estimated. Applying time series data during the years 1985-2009, price and non-price elasticities of Marshal and Hicks demand function were measured. Cross elasticity of chicken meat with respect to aquatics meat present that they are replacement to each other. Income elasticity indicates that aquatics meat is a staple commodity in urban population, while a luxury commodity in rural commodity. Measurement of the price elasticities for the urban and rural area indicated that the variable of price has been effective to modify consumption patterns during the period of the study. This indicates that the variable of price was effective to modify consumption pattern. However the price should be controlled by effective pricing policy.

Keywords: Almost ideal demand system, Price, Income and cross elasticity, Meat aquatics consumers, Kerman province

1- Researcher of Agricultural Research Center Kerman Province
Email: lshafie1351 @ yahoo.com

Estimating Technical Efficiency of Semi-Mechanized Broiler Farms in Gorgan County: A Stochastic Frontier Approach

A. Darijani¹

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Abstract

Quantitative analysis of production through evaluating the level of factor usage is a major part in agricultural management, which aims at increasing production by optimum usage of resources. This study has estimated and analyzed stochastic frontier production function and calculated technical efficiency of semi-mechanized broiler farms located in Gorgan district. The survey data were gathered by completing questionnaires in spring 2009. Using Cobb-Douglas stochastic frontier production function, the technical efficiency and its determinants were derived. Based on the measurements, various management and scale groups were compared. The results present that the average technical efficiency is 57.66 percent in semi-mechanized. This indicates that farms have inefficiency in their technical performance, and they are potentially able to increase their products. Based on the findings, pathological conditions, creating institutions to use expert labor as well as holding educational and extensional sessions in order to improve knowledge of poultry holders is inevitably needed. In this regard, the priority should be given to issue operating permissions for specialists and trained labors. While, under the condition of implementing targeting subsidies program, the government needs to consider suitable price and trade policies to reduce and to control the irregular and unpredictable fluctuations in inputs and marketing products with coordinated and targeted policies.

Key words: Technical Efficiency, Production Function, Broiler, Semi-mechanized, Stochastic Frontier

1- Assistant Professor, Department of Agricultural Economics, Gorgan University of Agricultural Sciences and Natural Resources

Email: Ali.Darijani@gmail.com

Investigating The Effects of Protection Policy on Agriculture Sector TFP

S.S. Hosseini^{1*}- M.R. Pakravan²- O. Gilanpour³- M. Atghayi⁴

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Abstract

Protection policies in the agricultural sector is an inevitable necessity, its accomplish effects individuals welfare and economic sectors. Protection policies account for a major economic strategy in agricultural sectors of developing and developed countries. Applying ARDL, the study investigates effects of protection policy in agricultural sector on total factor productivity of this sector during 1979-2009. Results revealed that producer protection index of agriculture sector had negative effect on TFP in short run, while significantly direct effect in long run. Considering advantages of this policy in long run, policy planning in the field of policy selection needs to be designed based on long run view. Furthermore, effective management for implementing the defined policies in short run is vital. Accordingly some short run programs, such as support of agricultural insurances for managing risks associated with agricultural productions, determining suitable support price, creating exchange markets, and protecting excessive import of agricultural products by applying suitable tariff, are recommended by the study.

Keywords: Protection policy, Productivity, ARDL, Agriculture sector, Iran

1,2,4- Professor, PhD Student and Former MSc Student, Department of Agricultural Economics, Faculty of Agriculture, Tehran University, Respectively

(*-Corresponding Author Email: hosseini_safdar@yahoo.com)

3- Assistant Professor; Chair, Foreign Trade and Marketing Research Department, Agricultural Planning, Economics and Rural Development Research Institute

The Influence of Targeting Subsidies on Price Transmission Pattern in Iran's Egg Market

M. Daneshvar¹ - R. Heidari Kamalabadi^{2*}

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Abstract

This study is an attempt to investigate the influence of targeting subsidies on price transmission pattern in Iran's egg market. The targeting subsidies plan was imposed by 20 December 2010. Using of daily Price time series data, the study was conducted during December 2009 to October 2011. Using ECM model, price transmission models were estimated for the two periods (e.g. before and after imposing the targeting subsidies plan. Results present a decrease in the transmission speed of increasing and decreasing of the wholesale price after the targeting subsidies plan. Comparison between significant levels of negative and non-negative residuals variables indicated that negative deviations from long-run equilibrium relationship are not adjustable. Having compared the price transmission elasticities in long run with short run, the amount and value of transmission elasticities has been reducing after imposing the targeting subsidies plan. The comparison of symmetric price transmission tests show that the targeting subsidies plan lead to the asymmetric of price transmission Iran's egg market. It is concluded that improvement of infrastructure, reduction of government intervention and creating producers' cooperation is effective to improve the daily price transmission of Iran's egg market.

Keywords: Targeting of subsidies, Price transmission, ECM model, Egg, Iran

1,2- Associate Professor and MSc Student, Department of Agricultural Economics, Agricultural College, Ferdowsi University of Mashhad

(* - Corresponding Author Email: rezaheidari3631@gmail.com)