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Applying Multilevel Models to the Input-Output Analysis

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Abstract

In the present study, an application of multilevel modeling approach to the input- output analysis are presented First, the regional input-output table of all provinces in Iran was extracted based on the Adjusted Flegg Location Quotient Method (AFLQ). Second differentiation in the Leontief technical coefficients and the backward and forward linkages among various activities and sectors of all provinces were examined using the 3-level and 2-level models. The results of variance analysis among the different levels reveal that activities, sectors and provinces are heterogeneous in terms of the mentioned indexes. Therefore, activities aggregation and spatial aggregation of the regional input- output tables raise errors and reduce the accuracy.

Keywords: Multilevel model, Input-output, Backward and forward linkages
JEL Classification: C10, C67

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Determination of Economic Threshold of Deficit Irrigation on Cotton in Darab District

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Abstract

Drought is common across the south of Iran, especially in Darab district. Accordingly, studying the economic aspects of deficit irrigation technique – that is one of the basic strategies in water saving for reducing water use of cotton as one of the main agricultural products in Darab district is essential. In order to investigate the deficit irrigation technique and to determine its economic threshold in Darab district, in the Bakhtajerd Research Station a split plot experiment was conducted on cotton in a completely randomized block design with four replications in two years. The partial budgeting and English technique were used to analyze the collected data. The main study treatments were: 1) irrigation in all furrows, 2) irrigation in odd furrows, 3) periodic irrigation (one time irrigation in odd furrow and another time in pair furrows), 4) two irrigations in odd furrows and another full irrigation, 5) two full irrigations and another irrigation in odd furrows. Sub-treatments were plant growth regulators including Peaksofauxinsat the two levels of 0 and 1 liter per hectare .The results showed that the economic threshold of deficit irrigation of cottonis 8869 (Cm^3/Ha) of irrigation waterthat saves 30.96 percent (3977 Cm^3/Ha)of full irrigation.

Keywords: Deficit irrigation, Economic threshold, English method, Cotton, Darab
Classification JEL: O3, Q15, Q25

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Tariff Impact on the Domestic Price of Vegetable Oil in Iran and the Associated Issues

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Abstract

This study uses vector error correction model to examine the effects of oilseeds, crude oil and vegetable oil tariffs on vegetable oil consumer price. Monthly data sets for the years 2004-2013 and VAR and VECM models were applied for this study. Research findings indicates only a long term equilibrium relation between the study variables .The effect of vegetable oil tariffs on consumer and producer price index are 0.4 and 0.07, respectively. Furthermore, one percent increase in the oil seeds and crude oil tariff, will increase consumer prices by 2.35, 0.19percent. The huge gap between the impacts of the two tariffs –e.g. oilseeds and crude oil tariffs- on consumer price shows that oil industries work with low efficiency. This practically doubles the impact of tariff on consumers. Accordingly, structural reform in the oil industry can develop oil production and prevent additional burden upon the consumer price.

Keywords: Tariff policy, Price, Vegetable oil

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Effect of Energy Price Liberalization on Corn self-sufficiency in Iran

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Abstract

liberalization of energy price increases costs of agricultural inputs and costs of agricultural production. All these changes may affect the overall competitiveness of domestic products with similar foreign products. As a result of that, total cost of agricultural products are increased and profitability are decreased. In this paper, energy consumption for producing Corn were calculated using cost- production database from Jahad-Keshavarzi for the years 2001-2010. Then, the cost function, production function and demand function for this crop were estimated in the form of panel data structure. Furthermore, the import function of corn and the associated elasticity were calculated using time series data for the years 1981-2000. The results show that, for the corn production, the elasticity of energy input and price elasticity of energy demand are 2.47 and -0.005, respectively. Considering to the fact that the production elasticity in the import function is -0/83, every one percent increase in the price of fuel due to the energy price liberalization policy increases the import of corn by 0/01 percent. Accordingly, increasing energy price has a negative effect on the food self-sufficiency that is one of the main objectives of the fifth national development plan. Ultimately, it is proposed that policy makers provide corn producers with more supports in order to reduce the negative effect of energy price liberalization on the national corn products.

Keywords: Liberalization, Self-Sufficiency, Import, Production, Corn, Iran
JEL Classification: Q18 ،Q48 ،O24

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The Effect of Macroeconomic Variables on Tobin's Q Indicator in the Agro-based Companies (Case Study: Sugar Industry)

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Abstract

Developing countries, including Iran, have a high degree of volatility of macroeconomic variables. Fluctuations inex change rate, bank interest rate and inflation rate can create insecure environment for in vestorsin Iran. Hence, this study examined the impact of macroeconomic variables on the Tobin's Q index for the Sugar companies of Tehran Stock Exchange (TSE) during the period between1380-1390. A panel data model in the form of random-effects analysis was performed. The results indicate that the exchange rate, inflation rate and therate of return onassetshavean insignificant negative impact on the Tobin's Q index. Bank interest rateshave a significant negative impact, while Market value has a significant positive impact on the Tobin's Q index.

Keywords: Tobin's Q index, Panel data, Bank interest rate, Exchange rate, Rate of return on assets, Sugar in dustry

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Investigation of Welfare Impacts of Targeting Subsidies on Fishery Households in Fars Province

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Abstract

Pisciculture, especially in countries which are unable to develop their marine resources, is a desired to provide part of their food and protein needs. This study aims at investigating welfare impacts of energy subsidy removal on fish producers in Fars province. To achieve the objective, cross-sectional data obtained from fish producers of Fars Province in 2010 was used. Cost, input demand and production functions were estimated using the collected data. The findings showed that in Fars Province removing fuel subsidies is led to decreased demand for fuel and production as well as a reduction in producers' revenue. As a result of that, in Fars Province benefits from fish are reduced by0.16 percent .The results also showed that food is the most important input in the fish production.a10 percent increases in food consumption is expected to raise the fish production by 4.8 percent. On the other hand, a 50 percent increase in the energy price will reduce the energy consumption by 9.5 percent, and as a result of that, the production and the benefit will be reduced by 0.057% (0.036 tons) and 0.06%, respectively. Regarding the importance of food in production, it is suggested to focus on improving the food productivity.

Keywords: Welfare effects, Energy subsidy, Salmon, Production function, Translogcost function

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Economics of Cotton Production: Studying Cost and Profit Efficiency of Cotton Farmers in Boshrouyeh

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Abstract

Cotton as a strategic product plays an important role inthe economy of Boshrouyehwhere is known as the major cotton producing center of Khorasan-e-Jonoubi. In this paper, efficiency of Boshroyeh cotton farms in 2007 have been calculated using Data Envelopment Analysis (DEA) and determinants of efficiency were identified using Tobit regression analysis. The data was collected from questionnaires filled in by 65 Cotton farmers in Boshrouyeh who were distributed in three groups. According to the DEA results, averages of technical, allocative, cost and profit efficiency scores were measured by0.86, 0.80, 0.70 and 0.43, respectively. Tobit regression estimates indicate that incoming water flow to farms and farm size has positive and significant impact on the economic efficiency, while numbers of spraying significantly reduces the economic efficiency. Education does not havea significant impact on the economic efficiency.Ultimately, the study suggests land consolidation, training and technology transfer to provide appropriate conditions to produce cotton, efficiently.

Keywords: Cotton, Boshrouyeh, Economic Efficiency, Data Envelopment Analysis, Tobit

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Application of Two-Stagesmulti-Objective Fuzzy linear Programming Model to develop Optimal Cropping pattern (Case study: Central District of Mashhad)

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Abstract

Optimal allocation of water resources is an essential service in agriculture that must be considered by farmers. One of the most significant factors in optimal allocation of water resources in agriculture is to define optimal farm cropping pattern. In this study, in order to determine optimal cropping pattern and water resources allocation in central district of Mashhad city (Toos village), the two-stages multi-objective fuzzy linear programming was used. The required data was collected through interviews with farmers of the study area and filling in 116 questionnaire using simple random sampling during the years 2012-2013.The results indicated that, optimal values in the two-stage multi-objective fuzzy linear programming model for maximizing gross margin is 239420100 Rials, for utilizing organic fertilizers is 3867.19 Kg, and for minimizing the consumption of irrigation water is 53645.62 square meters, which were modified in the second phase. The objective amount of chemical fertilizer was 817.80 kg., having no change in the second phase. The cropping pattern will be optimized, if the most area under cultivation being allocated to potato, then to barley, wheat, t, onion and sugar beet, while tomato and corn cultivation being removed. Results illustrate that, two-stage multi-objective fuzzy linear programming model in comparison with multi-objective fuzzy linear model yield better results in defining optimal cropping pattern and allocation of irrigation water to the study area.

Keywords: Cropping pattern, Water resources, Two- stage smulti-objective fuzzy linear programming

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