



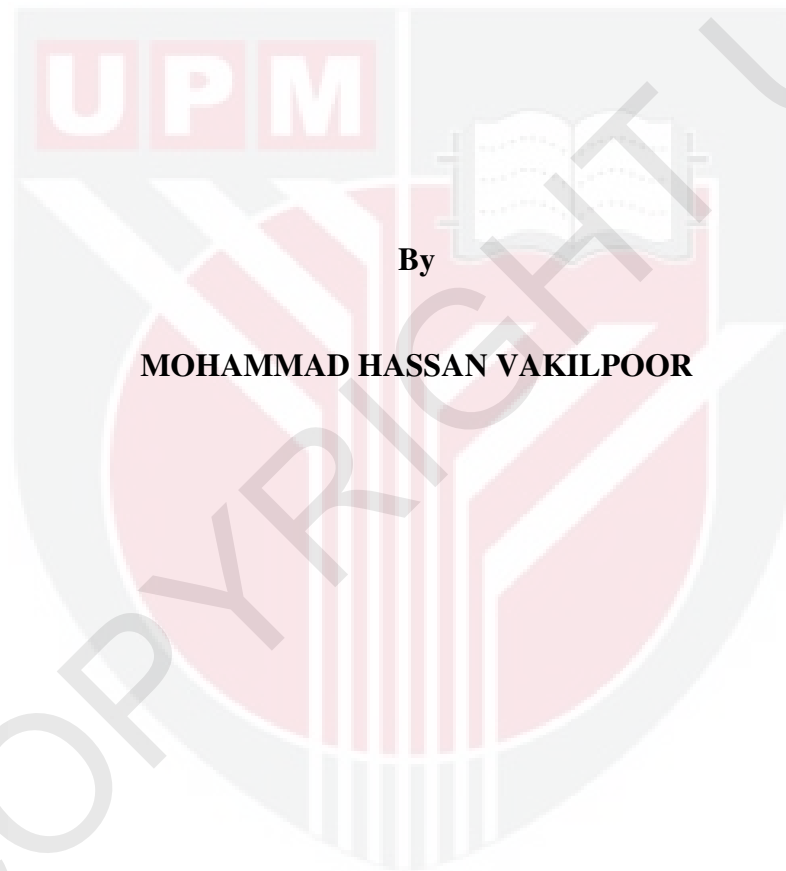
UNIVERSITI PUTRA MALAYSIA

**COMPARATIVE ADVANTAGE AND POLICY MEASUREMENT
OF PRODUCTION OF SELECTED FOOD CROPS IN IRAN**

MOHAMMAD HASSAN VAKILPOOR

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By

MOHAMMAD HASSAN VAKILPOOR

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirement for the Degree of Doctor of Philosophy**

July 2012

This dissertation is dedicated to all members of my family. A special dedication to my beloved wife, Fatemeh, and to my loving daughters Tahereh and Motahareh, who have been a constant source of encouragement and support to me during this study.

My dear father Ghorban, my late mother Amaneh, and my wife's parents dear Moharram Ali, dear Adeleh and also respected brothers and sisters of my wife and me and their related family. Also I dedicate this thesis to late grandmother and grandfather Ismaeil and Saleh that I remember them ever time. Finally, I dedicate this thesis to the Martyrs of Tehran's "Nuo Mosque (Chahardah Masoom) and Qushchi of East Azarbaijan.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment
of the requirement for the degree of Doctor of Philosophy

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Chairman: Professor Mad Nasir Shamsudin, PhD

Faculty: Agriculture

The food crop sector in Iran plays an important role in the economy. In 2000 – 2008, it contributed about 11 percent to the country's GDP, and approximately 23 percent of non-oil exports. In order to reduce the dependency on oil export and to enhance the level of food self-sufficiency, food production has been emphasized by the government as mentioned in the policies of guaranteed purchase for crops and subsidizing inputs.

This study aims to investigate the comparative advantage of selected food crop production, namely, wheat, barley, potato, rice, and corn, and recommend policy instruments for improvement of the selected food crop. The Domestic Resource Cost (DRC) was employed to measure the comparative advantage of the selected food crops in five regions: Northern, Southern, Central, Eastern, and Western. The Nominal and Effective Protection Coefficients were used to measure the magnitude of the

government interventions. The DRC was computed through the Policy Analysis Matrix (PAM) method. Shadow prices of domestic resources were calculated through estimation of Cobb-Douglas production function by using panel data models.

The general results of the study indicated comparative advantage for all selected food crop production, except rice, in the study period (2001-2008). Besides, government has paid subsidy on inputs in production of all selected crops, but in contrast, it has imposed direct and indirect taxes on crops in related market more than inputs subsidies. The resultant of these policies in selected crops production (except rice) have been not in favor of farmers that indicated total protection policy in crops production has been neutralized. The specific results of the comparative advantage and supports of products and inputs in crop - region level, revealed that the barley production had a comparative advantage except in the Eastern and Southern regions. The DRC for the entire country is obtained to be less than one (0.90), suggesting a comparative advantage in the production of barley in country level. While corn has a comparative advantage only in production of Western region and also average of this indicator for country is equal to 0.99 that showed the country has a brittle comparative advantage. The lowest DRC in this study belongs to the rice with a quantity equal to 2.01, that showed the north region and also in country level while this crop has a disadvantage. Potato has a strong comparative advantage among the studied crops. The DRC of this crop in all regions and country is less than one, which indicated that Iran has a notable value of comparative advantage in production of potato. The results of DRC for wheat illustrated that all regions (except Southern) have a comparative advantage. A DRC equal to 0.94 for the whole country suggest a comparative advantage in production of this crop. Finally, investigation of the government

intervention showed that NPCO for all products in all regions (except in rice) were computed to be less than one. This implies that the government imposed a tax on the production of these crops. While NPCI for all commodities, all regions and also the whole country were computed less than one which suggests the producers received subsidies for all tradable inputs. The results of the EPC were computed to be less than one for four products. This indicates that government received implicit tax from producers of barley, potato, corn, and wheat which implies the resultant of this intervention was detriment to producers of mentioned crops.

Some of the important implications of this study are as follows: (1) the products include wheat, barley, corn, and potatoes have mainly comparative advantages. Therefore, the expansion of these crops in all regions is recommended. Rice production is recommended in order to improve the production methods and to choose the high yielding varieties; (2) the results show that the government have subsidies inputs in production of all crops in whole regions. Supporting the products that have comparative advantage in production is reasonable. In contrast, protection of the products that had comparative disadvantage is considered waste of resources; (3) the intervention of government in crops markets (exception of rice) was detriment to the farmers, so it is recommended to the government to avoid intervention in the crops market and also to allocate guaranteed purchase to the regions that have the highest comparative advantage;(4) the resultant of government intervention in inputs and outputs markets including wheat, corn, barley and potatoes was detriment to the farmers, so it is recommended to the government to adopt policies that will be a positive resultant of interventions.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**KELEBIHAN KOMPARATIF DAN PENGUKURAN DASAR
PENGELUARAN TANAMAN MAKANAN TERPILIH DI IRAN**

Oleh

MOHAMMAD HASSAN VAKILPOOR

Julai 2012

Pengerusi: Prof Mad Nasir Shamsudin, PhD

Fakulti: Pertanian

Sektor penanaman makanan di Iran memainkan peranan yang penting dalam ekonomi. Dalam tahun 2000 - 2008, ia menyumbang 11 peratus kepada GDP negara, dan lebih kurang 23 peratus eksport bukan minyak. Bagi mengurangkan ketergantungan eksport minyak dan mempertingkatkan paras makanan sara-diri, pengeluaran makanan telah ditekankan oleh kerajaan seperti yang termaktub dalam dasar-dasar pembelian terjamin tanaman dan input subsidi.

Kajian ini bertujuan menyelidik kelebihan komparatif pengeluaran tanaman makanan terpilih, iaitu gandum, barli, kentang, beras dan jagung, dan menyarankan instrumen dasar untuk penambahbaikan tanaman makanan terpilih. Kos Sumber Domestik (DRC) telah digunakan untuk mengukur perbandingan kelebihan tanaman makanan terpilih dalam 5 kawasan: Utara, Selatan, Tengah, Timur, dan Barat. Koefisien Perlindungan Nominal dan Efektif digunakan untuk mengukur magnitud campurtangan kerajaan. Koefisien DRC dan Perlindungan dikira melalui kaedah

Matriks Analisis Dasar (PAM). Harga bayangan sumber domestik dikira melalui penganggaran fungsi pengeluaran Cobb-Douglas dengan menggunakan model panel.

Keputusan-keputusan kajian perbandingan kelebihan untuk pengeluaran semua tanaman makanan terpilih kecuali beras yang dikumpul dalam jangkamasa kajian (2001-2008). Di samping itu, kerajaan telah membayar subsidi ke atas input pengeluaran semua tanaman terpilih. Walaubagaimanapun, ia telah mengenakan cukai langsung dan tidak langsung ke atas tanaman dalam pasaran berkaitan lebih daripada input subsidi. Hasil dasar-dasar dalam pengeluaran tanaman terpilih (melainkan beras) tidak memihak kepada para petani, sekaligus menunjukkan polisi perlindungan dalam pengeluaran tanaman telah dineutralkan.

Keputusan-keputusan kelebihan komparatif dan sokongan-sokongan produk dan input pada tahap tanaman-kawasan menunjukkan bahawa pengeluaran barli mempunyai kelebihan kecuali di kawasan timur dan selatan. Nilai DRC di seluruh negara diperolehi adalah kurang dari 1 (0.90). Ini bermakna terdapat kelebihan dalam pengeluaran barli di peringkat nasional. Sementara itu, jagung mempunyai kelebihan pengeluaran hanya di kawasan barat dan purata petunjuk untuk negara adalah bersamaan dengan 0.99 yang menunjukkan bahawa negara ini mempunyai kelebihan komparatif yang rendah. Padi menunjukkan nilai DRC terendah dalam kajian ini dengan kuantiti bersamaan dengan 2.01. Ini menunjukkan kekurangan tanaman ini di kawasan utara dan pada peringkat negara. Kentang mempunyai kelebihan komparatif yang kukuh di kalangan tanaman yang dikaji. Nilai DRC tanaman ini di semua kawasan dalam negara kurang dari satu, dan ini menunjukkan bahawa Iran

mempunyai nilai kelebihan komparatif yang ketara dalam pengeluaran kentangnya. Keputusan DRC untuk gandum menunjukkan bahawa semua kawasan (kecuali bahagian Selatan) mempunyai kelebihan komparatif. Nilai DRC bersamaan 0.94 untuk seluruh negara membuktikan terdapat kelebihan komparatif dalam pengeluaran tanaman ini. Akhir sekali, campurtangan kerajaan menunjukkan bahawa NPCO untuk kesemua produk di semua kawasan (kecuali padi) dikira sebagai kurang dari satu. Ini menunjukkan bahawa kerajaan telah mengenakan cukai ke atas pengeluaran tanaman ini. Sementara itu, NPCI untuk semua komoditi untuk semua kawasan dalam negara dikira kurang dari satu. Ini bermakna pengeluar menerima subsidi untuk semua input yang didagangkan. Keputusan EPC dikira bernilai kurang dari satu untuk kesemua empat produk. Ini menunjukkan bahawa kerajaan menerima cukai tersirat dari para pengeluar barli, kentang, jagung, dan gandum yang menandakan campurtangan kerajaan menjejaskan para pengeluar tanaman yang disebut di atas.

Beberapa implikasi penting kajian ini adalah seperti berikut: (1) produk-produk termasuk gandum, barli, jagung dan kentang, kebanyakannya mempunyai kelebihan komparatif. Oleh itu, pemeluasan tanaman tersebut di semua kawasan adalah digalakkan. Pengeluaran Beras adalah disarankan untuk menambahbaik kaedah pengeluaran dan pemilihan variasi yang boleh mengeluarkan hasil yang banyak; (2) Hasil keputusan menunjukkan bahawa kerajaan mempunyai input subsidi dalam pengeluaran semua tanaman di seluruh negara. Produk-produk yang mempunyai kelebihan komparatif dalam pengeluaran adalah wajar diberi sokongan. Sebaliknya, perlindungan ke atas produk-produk yang tidak mempunyai kelebihan komparatif dianggap sebagai pembaziran sumber; (3) campurtangan kerajaan dalam pasaran tanaman (dengan pengecualian beras) boleh menjejaskan petani. Oleh itu, adalah

disarankan agar kerajaan cuba mengelak dari sebarang campurtangan dalam aspek pasaran tanaman dan juga menempatkan pembelian terjamin kepada kawasan-kawasan yang mempunyai kelebihan komparatif tertinggi;(4) hasil campurtangan kerajaan dalam input dan output pasaran termasuk gandum, jagung, barli dan kentang boleh memberi kesan negatif kepada para petani. Maka, kerajaan disarankan menerapkan polisi yang memberi kesan positif kepada mereka yang terlibat dalam penanaman dan pengeluaran tanaman makanan terpilih ini.



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I certify that a Thesis Examination Committee has met on 17 July 2012 to conduct the final examination of Mohammad Hassan Vakilpoor on his thesis entitled “comparative advantage and Policy Measurement of Selected Food Crops Production in Iran” in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institutions.

MOHAMMAD HASSAN VAKILPOOR

Date: 17 July 2012

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