The Economic Determinants of Food Security in the MENA Region

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ABSTRACT

This paper aims to analyse the determinants of the food insecurity examining the relationship of important economic, social and natural factors with an overall food insecurity index that derived by dividing the food imports value to the sum of total exports and the net remittance inflows. Overall analysis is made by employing panel-data methods using a dataset that covers 18MENA countries and Turkey for the period of 1990-2014. Empirical results support the evidence of the harmful effect of price increases on food security. Furthermore, significance of education related variables and fresh water withdrawals indicate that the region has had benefit from nearly 30 years investment on education and intensive water exploitation, although poor water management and great waste of irrigation will most likely have negative effects on food security in the near future.

KEYWORDS

Determinants of Food Security in MENA, Empirical Analysis of Macro Level Food Security, Food Security in MENA, MENA

INTRODUCTION

Middle East and North Africa (MENA) Region is a large geography that mainly consists of 18 countries. Although these countries are different from each other regarding their economic development levels, they suffer from common environmental problems such as less amount of per capita arable land, improved water resources and their inappropriate usage which exacerbated food insecurity. In addition to these problems, the global food price shock occurred in 2007-2008, was the main reason of worldwide attention to the food security phenomenon, especially for the MENA Countries where food insecurity has always been very serious concern.

Food security, as defined by FAO, is the condition that exists when all people, at all times have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Food security can be discussed in twofolds: a) Macro-Level Food Security and b) Micro-Level Food Security. The first one refers to a national phenomenon which exists when a nation has enough food supply to feed its population via domestic production, food imports or some combination of both. The second one is individual food security which can be defined as accession of all individuals to the adequate amount of food. These paper aims to analyse the determinants of macro-level food security taking into account various factors at

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country level for 19 countries (MENA plus Turkey). Evolved from the definition, food insecurity can exist when one of those following conditions occurs; a) when access to food is not possible as food is not physically available where and when needed, b) when economic access to food is not available as people lack money to afford it even food is physically available, c) when people have physical and economical access to food that are not safe or dietary balanced, d) when none of the above conditions holds. In other words, food insecurity problem can be caused by both demand and supply side factors. Sen (1981) emphasizes on not only the role of supply side factors of food, but also demand side factors such as individuals incomes and assets that are also crucial for ensuring food security. In light of this view, FAO had clarified four pillars of food security which are availability, access, utilization and stability to guide addressing the problem with its supply and demand side and form appropriate policy solutions. Table 1 shows the detailed explanations on four pillars presenting the variables that are main components of these pillars.

According to the latest data, in terms of five components of availability dimension Israel is the most food secure country in the region. In terms of access dimension, oil exporting countries rank at the top as food secure while Yemen is in the most food insecure position. Oil exporter countries such as Israel, UAE, Oman, Saudi Arabia and Kuwait are the most cereal import dependent countries.

This study aims to investigate the relationship between some components presented in Table 1 and macro level food insecurity index that is derived by dividing the food imports value to the sum of total exports and the net remittance inflows. In IFPRI’s definition, the index captures the ability of a country to finance food imports through exports of goods and services and the net remittances received (International Food Policy Research Institute IFPRI, 2010). The data on share of food imports in merchandise imports and the share of merchandise imports in GDP is obtained from the latest dataset of World Development Indicators Databank and used for finding the value of food imports value. The same procedure is followed to find the total exports value. Net remittance inflows are calculated as the difference between remittances received and remittances paid which is also available in the World Development Indicators Databank.

This macro-level food insecurity index will be the dependent variable, namely the outcome of the interest of our research. Some of the components of the aforementioned four pillars of food security, that are taken as independent variables, are chosen based on the data availability. The data limitation on this issue, especially for the MENA Countries, is a common problem and not all data on the components of the pillars is available. Due to the limitation of the data availability, the variables included into analysis are; population growth, per capita GDP (PPP), per capita arable land, access to an improved water source, unemployment ratios, female literacy rate, improved sanitation access, government expenditures on education, inflation and exchange rates. The missing observation problem for those variables is solved using the “ice imputation technique” in STATA.

**AN OVERVIEW: FOOD SECURITY IN MENA REGION AND RELEVANT DETERMINANTS**

The report published by FAO in 2015 indicates that 805 million people in the world (about one in nine of the world’s total population) are chronically undernourished with insufficient food for an active and healthy life. The statistics for MENA region is about 33 million people. The report of IFPRI classifies the MENA countries and Turkey into five risk groups in which Bahrain, Kuwait, Qatar, Oman, Saudi Arabia and United Arab Emirates (UAE) are in low risk group while Turkey, Tunisia, Libya and Iran are in medium risk group. All the countries except the ones listed above are considered as suffering from serious food security challenges. According to an economic brief of African Development Bank (2012), once macro level indictors (such as dependence on food imports and fiscal position) are taken into consideration, all of the MENA countries seem to be harmed by food insecurity problems.
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