AN EMPIRICAL TEST OF INCOME DISTRIBUTION AND MIGRATION RELATIONSHIP: A CASE OF TURKEY[1]

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ABSTRACT

The relationship between migration and income distribution is an important phenomena. There are two types of migration: internal (in migration) and external (out migration). Both of them are because of politic, economic and social reasons. Here both of them are considered inside Turkey. Data is chosen from 2008-2012 periods for the 12 statistically divided regions in Turkey. Following the Panel unit root test, panel least square methods is used for the empirical part. As to result, it is concluded that for the 2008-2012 periods, migration has an adjusting role for 12 statistical regions in Turkey.

1. INTRODUCTION

The concept of migration is defined as geographically change of abode for the purpose of settle down (Çelik, 2007). There are two types of migration: internal (in migration) and external (out migration). Both of them are because of politic, economic and social reasons. Especially income and employment are the key elements that affect the migration (Filiztekin and Gökhan, 2008).

In literature, there are many studies which emphasize that the migration head towards low income regions to high income regions, particularly arise from the income distribution and employment gap (Sjaastad Larry, 1962; Harris and Todaro Michael, 1970; Greenwood Michael, 1971). On the other hand there are a great number of studies which include that rural to urban

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migration disturb the economic and social equilibrium, cause socio-cultural adaptation problems and increase the per capita income inequality (Özmucur and Silber, 2002; Özdemir, 2012). On the contrary, some studies point out that migration increases the per capita income (Felbermayr *et al.*, 2008). Also there are a lot of studies which search for the impacts of migration on the country's economic growth (Drinkwater *et al.*, 2003; Golgher André *et al.*, 2011).

The importance of this paper is it is the first paper that investigates the effects of migration to determined 12 statistical regions in Turkey. Since Turkey is a candidate country, further these results may be used to compare with the European countries.

This paper presents an empirical study on the relationship between migration and income distribution in Turkey for the period 2008-2012. Herein after, firstly we mention the facts that affect migration in Turkey; secondly we examine the empirical evidence.

2. INTERNAL MIGRATION IN TURKEY

The period when internal migration in Turkey occurred is after 1950's. In this country, there are income inequalities between east and west regions and these inequalities are against to east so over migration has occurred to west after 1950s. (Karaca, 2004). This situation has become the general reason of internal migration from 1950s to nowadays. Migration which is from rural to urban or from eastern regions to western regions has caused increasing population in the certain places in Turkey (Tutar *et al.*, 2012).

In literature some studies which examine the reasons of migration in Turkey have results like that: according to Özdemir (2012), between 1950 and 1960 using of machines in agricultural activities increased unemployment in rural areas so the migration from east to west accelerated. Gedik (1997) indicated that, in the period between 1965 and 1985, the reasons of migration from rural to urban were not only low income and inadequate infrastructure but also educational levels of people, social reasons and the relatives who migrated at first. At the same time she emphasized that migration could be urban to urban or urban to rural. Doh (1984) defined concept of migration which occurred between 1970 and 1975 as migration of population who could not get enough income from agriculture and the push factors in rural areas channeled them to attractiveness of urban. Yamak and Yamak (1999) emphasized that for the period between 1980 and 1990, income inequalities between rural and urban had important effects on migration and the main reason of these inequalities is high incomes of urban instead of low incomes of rural. Filiztekin and Gökhan (2008) stated the main reasons of migration between 1990 and 2000 as income inequalities and educated young people who want to obtain more income. They also pointed that unemployment rates, gender, educational level and social environment has important effects on the migration. Ercilasun *et al.* (2011), in their modeling studies about factors of internal migration, emphasized that the family members and friends who migrated before were important reasons of internal migration in Turkey in 2010. Besides, it is stated that the desire of university education is one of the main reasons of migration in Turkey.

In our study, we will analyze the existence of relationship between migration and income distribution in Turkey in period 2008-2012. From this point of view, it is expected the contribution of our study to the literature of the reasons of migration, chronologically stated above.

Before empirical study, we are giving the Turkish Statistical Institute graphic of the regional migration distribution according to 2012 data, which helps us on the interpretation of empirical results. Following It is seen that 12 statistical region in Turkey and their migration distribution:
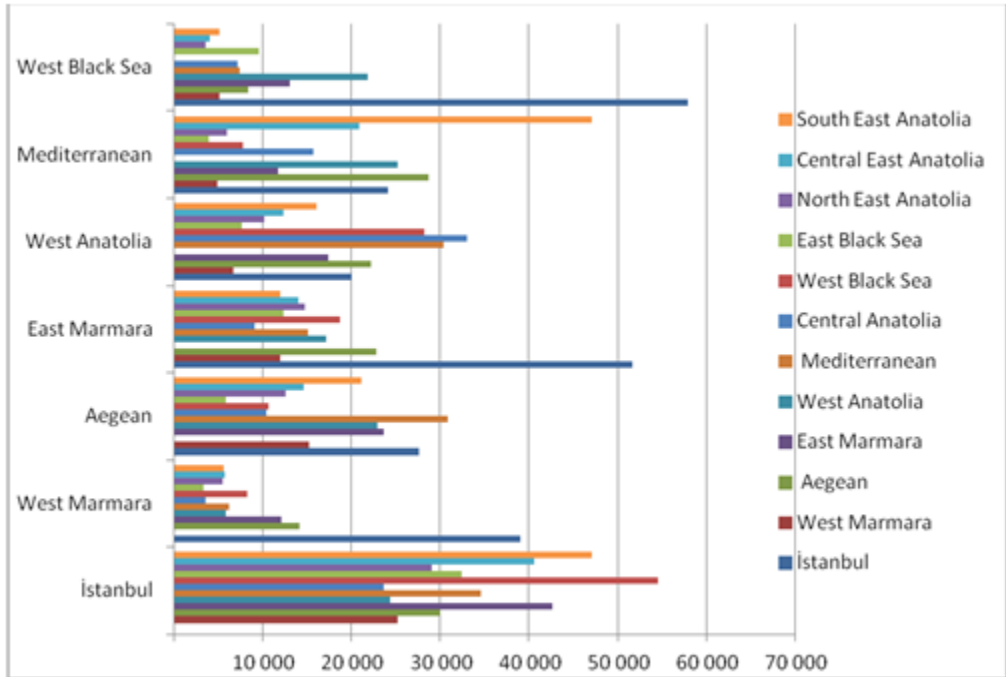
It is obvious that West Black Sea region has the highest percentage to migrate to Istanbul. Aegean has the highest percentage for West Marmara region. Mediterranean, Istanbul, North East Anatolia, South East Anatolia, Istanbul have the highest percentage for the Aegean, East Marmara, West Anatolia, Mediterranean and West Black Sea regions respectively.

3. DATA AND METHODOLOGY

The sample period covers quarterly data from 2008 to 2012. The raw data have been collected from Turkish Statistical Institute (TSI). Turkey has been divided into 12 statistical regions. They are İstanbul, Western Marmara, Aegean, Eastern Marmara, Western Anatolia, Mediterranean, Central Anatolia, Western Black Sea, Eastern Black Sea, Northeastern Anatolia, Centraleastern Anatolia and Southeastern Anatolia. Regional in migration (IM) and outmigration (OM) data are taken as raw.

In migration over total migration (IM_rate) and out migration over total migration (OM_rate) variablesused as explanatory variables. On the other hand distribution of annual equivalised

household disposable incomes by quintiles ordered by equivalised householdis used as 5 different dependent variables. These are first quintiles (1^{st}_20), second quintiles (2^{nd}_20), third quintiles (3^{rd}_20), forth quintiles (4^{th}_20) and fifth quintiles (5^{th}_20) .

When the individuals are listed from the least amount to the most amount by equivalised household disposable income and divided in 5 parts, the bottom income group is defined as "the first quintiles" and the top income group is defined as "the last quintiles". Panel Least Square (PLS) method is used to estimate the relationship between migration and income distribution via E-views 6 Beta.

4. EMPIRICAL RESULTS

First of all following income distribution and migration regression is created in equation (1).

$$Y_i = \alpha_0 + \alpha_1 IM\_Rate + \alpha_1 OM\_Rate + \varepsilon_t \qquad \text{i=1,2,3,4,5} \qquad (1)$$

Y_1 is the first quintiles(bottom income group) and Y_5 is the last quintiles(top income group).

First of all, the Im Kyung *et al.* (2003) test is used for panel unit root. Table (1) summarizes the test results.

Table-1. Im Kyung *et al.* (2003) Unit Root Results

Variables	Model	W Statistics (Probabilities)	Result
IM_Rate	Individual effects	-2.488 (0.0064)	I(0)
OM_Rate	Individual effects	-3.718 (0.0001)	I(0)
1^{st}_20	Individual effects	-2.814 (0.0024)	I(0)
2^{nd}_20	Individual effects	-4.098 (0.0000)	I(0)
3^{rd}_20	Individual effects	-3.485 (0.0002)	I(0)
4^{th}_20	Individual effects	-4.514 (0.0000)	I(0)
5^{th}_20	Individual effects	-7.196 (0.0000)	I(0)

As to Table (1) all variables are I(0) at %5 significance level . It is okay to go on with Panel Least Square method. PLS results are given in Table (2).

Table- 2. Panel Least Square Results

Model 1
$1^{st}\_20 = 0.067 + 0.09 IM\_Rate - 0.08 OM\_Rate$
(0.000)   (0.0144)   (0.1035)
F-Stat: 4.57   Prob(F-Statistics):0.014

Model 2

$$2^{nd}\_20 = 0.115 + 0.14 IM\_Rate - 0.17 OM\_Rate$$

(0.000) (0.0125)   (0.0220)

F-Stat: 3.32   Prob(F-Statistics):0.043

Model 3

$$3^{rd}\_20 = 0.159 + 0.12 IM\_Rate - 0.18 OM\_Rate$$

(0.000) (0.0316)   (0.0167)

F-Stat: 3.054   Prob(F-Statistics):0.047

Model 4

$$4^{th}\_20 = 0.225 + 0.07 IM\_Rate - 0.20 OM\_Rate$$

(0.000) (0.1505)   (0.0061)

F-Stat: 8.334   Prob(F-Statistics):0.000

Model 5

$$5^{th}\_20 = 0.431 - 0.444 IM\_Rate + 0.65 OM\_Rate$$

(0.000) (0.0133)   (0.0069)

F-Stat: 3.933   Prob(F-Statistics):0.0251

Note: Probabilities for t-values are in parenthesis ().

According to the PLS results, we exclude the Model 1 and Model 4 since probabilities of t-values are 0.103 and 0.150 for OM_rate in Model 1 and IM_Rate in Model 4 respectively. These variables are statistically insignificant.

On the other hand, all variables in Model (2), Model (3) and Model (5) are statistically significant.

As to Model 2, 1% rise in in migration leads to 0.14 % increase in 2nd quintiles. In addition 1% rise in out migration causes 0.17 % fall in 2nd quintile. In Model 3, 1% rise in in migration leads to 0.12 % increase in 3rd quintile and 1% rise in out migration causes 0.18 % fall in 3rd quintile. On the contrary, in Model 5, 1% rise in in migration leads to 0.444 % decrease in 5th quintile. Moreover 1% rise in out migration reduces 5th quintile as 0.65 %.

5. CONCLUSION

In this paper Turkey is divided into 12 statistical regions and it is inquired that whether there is a relationship between immigration and income distribution or not. If there is, is it corrosive or corrective? Like the literature, we find that in migration gives rise the percentage of lower quintiles. Add to that, in migration reduces the percentage of top quintile. As a result we may conclude that for the 2008-2012 periods, migration has an adjusting role for 12 statistical regions in Turkey. The importance of this paper is it is the first paper that investigates the effects of migration to determined 12 statistical regions in Turkey. Since Turkey is a candidate country, further these results may be used to compare with the European countries.

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