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The Relationship Between Ratio of Investment And Ratio of Export Share in Sector of Agriculture: The Case of Turkey

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Abstract

Agriculture sector is one of the most important sector in Turkish economy, for last ninety years, and the sector is the most important subsuctor of industry. İn the 1930's sector of agriculture is the engine of economic growth in the Turkey. After, import substitution industrialization policies that have been applied in Turkey since 1963 started to be inadequate, export-oriented industrialization policy was adopted with the decision taken within the framework of the Stabilization Program on January 24th 1980. Public enterprises in agricultural sector have been established primarily to support and complete the private sector in Turkey. As the years went by, these public enterprises in agriculture sector have grown fast and they had made considerable impacts on the country's productivity, employment, finance, investments and especially export outcomes. The purpose of this paper is investigates the relationship between ratio of investment and ratio of export share, fort the period 1980-2014 with the least squares method. Results of the paper support the views that there is a positive and close relationship between ratio of investment and ratio of export share in Turkish agricultural sector.

Keywords: *Agriculture, Import, Export, Turkey*

1. INTRODUCTION

As the Turkish economy accommodated an economy of industrial production policy, the main aim was to prioritize import substitute industrialisation strategy to reduce the amount of imported goods. However, in the coming years, this strategy brought in some setback in the economy. For example, the cost of goods produced domestically had increased in a level that

the economy could not compete with foreign goods. This situation ultimately forced the policy makers to change import substitute industrialisation strategy with a new economic way to sustain the growth of Turkish economy. Hence, Turkish authorities implemented a new liberalisation programme in 1980 to adopt a new way of enhancing exporting capabilities of the economy.

Incentives were reduced for agricultural export goods after pursuing export based industrialisation programme. Because, agricultural goods were thought to be heavy in terms of weight and but less in value. Instead, economic incentives were increased to accelerate mass production of industrial goods and export. In this case, the employment in agriculture industry will be lowered in one hand, and will be increased in other industries on the other.

In the import substitute industrialisation strategy, the main purpose is to give firms, which produce goods that are subject to import substitute, protection measure and some economic incentive in order to raise their production capabilities. As a result of these measures, these firms can compete with foreign firms (Parasız 2005:117). As the firms that produce import substitute goods enter the market first, they were not able to produce goods in efficient way and did not have experienced managers to compete international firms. That is the main goal of the above mentioned measures.

2. THE RELATION OF INVESTMENT AND EXPORT

Saving is defined by Keynes (1936) as the amount of money left over from a person's disposable income less his or her consuming expenditure. Individuals do saving in order to continue the future of their life. Common and Stagl (2005:290) states that savings are not only done by the will of individuals itself, but also by the governments to increase the level of savings in the economy. In macro-economic analyses, savings are consist of securities such as stocks, bonds and the money in deposit account.

Doing investment means saving more. If an entrepreneur willing to do an investment, he or she can do this by his/her savings or, if this is not enough, by means of borrowing others' saving. When the savings exceed investment level, the consumption level will tend to fall in short term. There is a Golden Rule of Brown et. al. (2006:98). This rule explains the relation between saving and consumption. The Golden Rule was first mentioned by Solow when he set up a growth model. According to Solow, the saving level can be determined when the maximum level of consumption is aimed. The Golden Rule is the ratio of savings to consumption at the determined level. In Turkish context, we believe that there is effect of the Golden Rule after 1980 economic policies. Because, when these policies were implemented, the investments in agriculture industry started to fall. This is in line with view that investing heavily in agriculture reduces saving level.

Realisation of an investment is a capital for the economy. This capital is a function of durable capital assets, human capital, intellectual capital and social capital (Common and Stagl, 2005:290). While durable capitals are consist of machines, buildings and other physical assets, human capital involves the education and productivity of human resources, intellectual capital contains knowledge and business experience that provide firms competitive advantages

(Stewart and Ruckdeschel, 1998), and finally social capital consist of values that bring together organizations, institutions to develop high level of societies (Nahapiet and Ghoshal, 1998). The agricultural industry is considered to be relied heavily on physical capital due to intensive use of machines and equipments.

If a production increase is aimed, when the technological and productivity level remain constant, the link between production increase and investment demand is defined as accelerator mechanism by Snowdone and Wane (2002:373). This theory explains this relation through multiplier effect and can be calculated as the ratio of current investment demand to current production level. Hence, there is a positive relationship between investment demand and production increase. One of the reasons that why investment demand fell after 1980's decisions is the decrease in the level of multiplier effect factor.

One of the most crucial investment areas are research and development (R&D) activities and marketing activities. Social media tools are used most common marketing activity (Cinnioğlu and Boz 2015: 250). The majority of investments in social activities are composed of private investments. Both, governments and private institutions invest in R&D activities. When looking at worldwide researches, the majority of R&D investments are pursued by the governments around the world. On the private firms' side, R&D investments are usually made by large firms (Just et.al 2004:593). If productivity level of R&D made by the governments higher than private firms, then the higher proportion of tax revenues should be delivered to R&D expenditures. R&D expenditures in agricultural industry are generally financed by the governments.

3. TRANSITION OF AGRICULTURE MARKET AFTER 1980 DECISIONS

We can divide policies of agriculture industry, the same as industrial production, into two periods before and after 1980. The economic policies of industrial production and agriculture before 1980 were based on against importing goods. The name of this strategy is generally called import substitute industrialisation. Following 1980 economic decisions, instead of import substitute policy, the Turkish government pursued an export led industrialisation strategy (Seyidoglu, 2003:593). Accordingly, some sectors were determined for economic incentives to be given.

When it was believed that it is necessary to change the economic structure of Turkey, the policy makers started to work on what kind of structural changes would be made in 1978. Following these challenges, an economic crisis had occurred in 1978. The Turkish government had taken some serious economic policy changes for about two years and took the following economic decisions on how to apply the decisions taken on agriculture industry on 24 January 1980 (Karluk, 2002: 451):

- There were some restrictions of government support for agricultural goods which are purchased by the Public Economic Enterprises.
- The government cut base price for agricultural goods.
- All the subsidies for agricultural goods were removed with the exception of fertilisers, energy and transportation.

Import policies were started to be liberalised gradually.

- Tax-back was activated for exporting goods.
- The level of agricultural goods trade was lowered.

Upon applying 1980 decisions, all given incentives and support for agricultural industry had declined dramatically. As a result, the funds that government did not used for agriculture were used for industrial production (Bicerli, 2003: 136). In line with the desired policies, the employment level in industrial production had increased since then.

Further, Turkey also motivated private sector to apply free and open economy rules after 1980. The main objective of this policy is to spread free market mechanism domestically and enhance trade with foreign countries. For this reason, the government decided to implement flexible exchange rate mechanism. On 4 February 1988, the Turkish government decided to replace tax-back incentive of exporting goods with policies to devalue domestic currency, i.e. Turkish Lira. Consequently, the level of export and import which was backed by consumption rose significantly (Eren, 2011:208). Irrespective of current account deficit, the policy makers intended to pull in hot money from international capital markets after 1992. In these dates, as the economy mostly rely on these international portfolio flows, the importance of agricultural industry decreased due to the lower profitability and inefficiency of capital funds.

Oycan (1998:7) argues the following policies were adopted to increase the trade capacity of Turkey. These policies are lower wages, lower prices for agricultural goods, devalued Turkish Lira, flexible and free interest rate policies and lower taxes. The author, also believe that due to these economic policies, the investment and employment level in agricultural sector fell significantly as the most incentives were motivated for the industrial production. As the economy experienced these economic developments, the ratio of industrial production increased in contrast to agricultural industry. Additionally, the level of agricultural goods in export trade had fallen considerably. However, on the other hand, there was another challenge that came in to question, importing agricultural goods? Because, as the investment were decreased in agricultural industry by government and private sector, the level of production fell sharply. Consequently, Turkey, for the first time started to import agricultural goods.

There was lower ratio of capital investment and saving and an increase of sovereign debt in between 1990-1994. The domestic debt was at 40 Billion Turkish Lira in 1989 and this debt had risen to 320 Billion Turkish Lira in 1993. To sustain the level debt payment, the government applied new taxing measures to deal with grey economy, however, this strategy was enough to be effective (Kafaoglu, 2008:143). Due to these problems, the Lira had devalued from 2.9 to 14.4 against U.S Dollar. Subsequently, Turkish economy had experienced an economic crisis in 1994. The growth rate of Turkish economy remained at 2% and inflation increased over 60% and public deficit also took the toll (Kazgan, 2006:148). After 1994 economic crisis, the government had introduced new measures on 5 April 1994.

Karluk (2007:428) believes that these measures had left heavy effects on the economy. These effects are:

- Turkey became in need of International Monetary Funds (IMF) policies.
- Foreign currencies flow out of the country and the demand for foreign currency couldn't be stopped.
- The banking industry had a difficulty and as a result three banks were gone bankrupt.
- The highest interest rates paid for debt in Turkish Republic history.
- People rushed into banks to withdraw their deposits. This triggered the government to introduce government unlimited guarantee for deposits in the banks.

When having implemented the economic policy change, the previous import regime was differentiated by introducing Import Regime Resolution mechanism in 1996. This mechanism had been revised every year according to necessities (Tuncer, 2004: 405). One of the important decisions that were taken is to enter Custom Union of The European Union.

While the new measures had been implemented, the reel economy showed a slightly better performance. However, due to flow of hot money capital into the Turkey, Turkey financially looked vulnerable against outside shocks. For this and other economic problems, Turkey again faced a double crisis in 2000 and 2001. To get out of this problems, Turkey introduced a new policy that was once before removed is the subsidies for agricultural goods. The new programme allowed the government the institutionalised and gives more incentives to agricultural sector.

Apaydin and Tunali (2011: 172) point out that following 2001 crisis, the banking system was rehabilitated and sound measures were taken to direct foreign direct investment back into Turkey. During rehabilitation programme, the debt of private firms structured and encouraged firms to back up their equities. Further mechanisms were put in place to make a sound financial system. The new policies gave a perfect condition for reel and financial system that the economy had started to grow significantly. Beside these developments, the macro-economic appearance of the monetary side of Turkish economy was stabilising. Hence, in the following years, with applying these policies, Turkish economy grew with a rate 7% on average for a couple years. In fact, what Arthur Lewis believes is that the countries cannot grow enough without a robust agricultural industry. Parasiz (2003:176) considers a certain level of agricultural industry growth that should boost the reel economy to a certain level. The author claims that a 3% increase in growth in agricultural industry would increase the economy by 7% as a whole. There are three conditions for sustainable economic growth to be realised. Arthur Lewis classifies these conditions in below:

- Boosting arable land in terms of increasing the productivity in agriculture. (Such as irrigating corps).
- An integrated growth between industrial production and agricultural industry.
- The mining industry should be developed.

4. EMPIRICAL ANAYSIS

Though there are lots of researches have been done about agricultural industry around the world, there is no study related to the causality between investment and export side of agricultural industry in Turkish context.

In this study, the data of agricultural exports and investment of agricultural industry were collected for the analysis purpose. The data are in terms of ratios, i.e. the ratio of export of agricultural goods export to the whole economic export and the ratio of investment in agricultural industry to the whole investment in the economy.

When the variables have been determined, a test of Augmented Dickey- Fuller test was conducted to see the stationarity of variables. However, it was seen that as there were structural changes in agricultural industry in between 1980 and 1994, the variables could not be stationary at any level (No stationarity at level, at first difference and at second difference). For this reason, the period between 1994 and 2014 was chosen for the analysis.

After running Augmented Dickey- Fuller test for the period stated above, the variables found to be stationarity at 95% confidence level (See table below).

Table 1: Augmented Dickey Fuller Test (Unit Root Test) for Investment

	t- Statistic	Probability
ADF test statistic	-5,15999	0,0007
Test critical values	-3,040391	

Table 2: Augmented Dickey Fuller Test (Unit Root Test) for Export

	t- Statistic	Probability
ADF test statistic	-3,704639	0,0136
Test critical values	-3,040391	

Having stationary variables after testing Augmented Dickey- Fuller, the VAR (Vector Auto Regressive) econometric model is used to test the causality of the investment and export of agricultural industry. The VAR model suggested a 2 lag of variables. The Granger Causality Test results are shown in Table 3

Table 3: VAR Granger Causality/ Block Exogeneity Wald Test for Invetment and Export

Dependent Variable: Export			
Excluded	Chi-sq	Df	Probablity
Export	2,888733	2	0,2359
Dependent Variable: Investment			
Excluded	Chi-sq	Df	Probablity
Investment	1,974423	2	0,3726

The hypotheses are shown below:

H_0= There is no causality between the variables.

H_1= There is causality between the variables.

Testing the variables by using Granger Causality model shows that there is no causality between the variables.

5. CONCLUSION

One of the characteristics of the develop economies is economic growth is negatively related with the number of people employed in agriculture industry (Guney, 2009:140). The decrease in employment in agriculture industry also means an increase in bot industrial production and service industry. However, Guney (2009:140) states that this case is little bit different in Turkey. After leaving their jobs, a person previously employed in agriculture industry first goes to service industry to be employed and if that could not happen then goes to industrial production industry to be employed.

In the developed countries where investment in work force is positively related with export output increase. Nevertheless, this progress did not appear in Turkey between 1994 and 2014.

It is believed that the reason why this disparity appears to have been in Turkey during the dates of the analysis is the economic structure of Turkish economy prior to 1980 when the economy heavily based on agriculture. As the policy decisions taken after 24 January 1980, the share of agricultural industry had fallen significantly among the whole economy and as a result the share of industrial production and service industry increased. Naturally, the investment in agricultural industry alone cannot determine the level of export and causality between investment in agricultural industry and exporting agricultural goods disappear.

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