



Macroeconomic Impacts of Privatization: The Case of Turkey

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KEYWORDS

Privatization, economic growth, Turkey, cointegration.

ABSTRACT

State owned enterprises and privatization have long been a major economic concern for Turkey. The main philosophy of privatization is to confine the role of the state in the economy in the areas like health, basic education, social security, national defense, large scale infrastructure investments; provide legal and structural environment for free enterprise to operate and thus to increase the productivity and the value added to the economy. Originally the privatization ideology was based on economic efficiency of the private sector whereas inherently corrupt structure of the public sector. Over the course of time, main objective of privatization had shifted towards mainly revenue generation and financing of the public debt. The literature on privatization has emphasized the microeconomic aspects of privatization and especially concentrates on the efficiency gains. However, there is less empirical work about fiscal and macroeconomic impact of privatization. In this paper, we tried to investigate the relationship between the privatization revenue, capital stock, foreign direct investment, human capital, external debt, and economic growth. Although Turkey is a developing country with high growth rates in recent years, in the empirical analysis, no evidence of long run relationship between privatization revenue and economic growth has been detected.

1. INTRODUCTION

Privatization is defined as an economic process of transferring property from public ownership to private ownership. The key theoretical element under the argument of change in ownership was the lack of economic welfare maximization in the public ownership. Also inefficient use of resources in the public sector was another reason for an increased demand for a change in ownership structure. In theory, privatization helps to establish a free market as well as foster competition. Privatization gained momentum in the late 1980s and spread to a wide range of developing economies. It has been a crucial ingredient in structural reforms in developing countries during the 1980s. In determining a developing country's growth, privatization is one of the important variables that should be included to the model.

Governments undertaking privatization have pursued a variety of objectives: achieving gains in economic efficiency, increasing the growth rate, reducing the budget deficit, attracting investment, improving the fiscal position are some of them. This is more common where the governments have been unwilling or unable to continue to finance deficits in the public enterprise sector with poor economic performance. Commonly accepted reason for privatizing the public enterprises is a more efficient use of assets, which is believed to be achieved in private property. However if the privatization revenue is used to finance the current expenditures of the government, then the

efficiency gains can lose its place as a prior objective. Then privatization will become necessary to finance the operations of the government. Moreover if the privatization revenue is used for closing the gap in operating balance, not only that an opportunity is forgone for capital investment to be made but a more important problem arises. The problem is that the government will not be able to sustain the increased level of expenditures without further privatization. In that case privatizations will not be made for efficiency gains but used as a tool for deficit financing.

Privatization may affect several macroeconomic variables both in the short run and long run, particularly output, employment, investment, costs, prices and total factor productivity. In this paper we focus on the effect of privatization on output growth measured by real GNI growth. The plan of the rest of the paper will be as follows: The next section provides an overview of privatization in Turkey. The second section summarizes the literature about the macroeconomic effects of privatization in developed and developing countries and focus on the studies about the effect of privatization on economic growth. The third section discusses the methods adapted to explore the relation between privatization and economic growth and introduces the model used in the empirical analysis. In the next section the data and their sources, empirical results of unit root tests, cointegration tests and the error correction model are explained. The last section provides a summary and draws some broad conclusions.

2. LITERATURE REVIEW

While there are many studies that test microeconomic effects of privatization, there are not many of them that are focused on macroeconomic effects. Barnett (2000) has checked for evidence on the fiscal and macroeconomic impact of privatization by using data for a collection of 18 countries. His major finding is that the privatization process is strongly correlated with an improvement in macroeconomic performance as manifested in higher real GDP growth and lower unemployment rates. The point estimates suggest that a one percent of GDP privatization corresponds to a 0.5 percentage point increase in contemporaneous real GDP growth and a further 0.4 percentage point increase in the following year.

Lavoro (2004) developed a model to perform a simple test of the long run impact of privatization on output in the UK. The test focuses on real GDP and its determinants as control for the role of privatization. The main objective was to see whether privatization has positive effects on the macroeconomic improvement in Britain. Following the cointegration techniques they have found a weak relationship privatization proceeds and the GDP. The hypothesis that there exists a positive correlation between privatization and GDP growth seem to hold for some countries. But privatization alone is not suggested to be the only source of increase in growth rates. It is more likely that privatization serves as a proxy for a couple of structural measures being part of a larger change in economic regime.

Mackenzie (1998) shows that privatization has short term and long term effects on boosting the level and growth rate of output on one condition: if proceeds of privatized companies are not used for additional government spending.

Dolenc (2009) tests macroeconomic effect of privatization in Slovenia in the period from 1992 until 2005. They found that privatization in Slovenia had no significant macroeconomic effect. However in Slovenia privatization influenced only on lowering public debt, while other influences could not be proven. Sala-i-Martin (1997) finds that growth tends to be more rapid in economies with higher share of private sector in GDP. According to the empirical findings of Davis et al. (2000) there is a strong positive relationship between privatization and growth rates, which seems to be more pronounced in non-transition countries.

Katsoulakos and Likoyanni (2002) made an econometric analysis using country level panel data of 23 OECD countries for the period 1990 – 2000. Their results show that privatization receipts are not significantly correlated with budget deficit for the whole OECD sample. They also find that there exists a statistically significant and negative relation between privatization receipts and public debt.

In a study conducted by Cook and Uchida (2003) on 63 developing countries between 1988 and 1997, they found a negative relation between privatization and economic growth. They showed that a strong negative relation between privatization and economic growth would be achieved if Malaysia and Singapore were set aside.

Filipovice (2005) reported a negative but insignificant relation between privatization and economic growth. Plane (1997) used 35 developing countries covering the period 1984-1992 to measure the impact of privatization on economic growth. He found that privatization positively affected GDP growth and that the effect on growth was more significant for activities of a public goods type than for other sectors.

3. PRIVATIZATION IN TURKEY

The striking economic shifts of the 80's ushered a new era for the world economy, where privatization became one of the most essential and indispensable financial reforms on the economic agendas of many nations. Privatization gained momentum in the late 1980s and spread to a wide range of developing economies. As being one of the fundamental tools of the free market economy, privatization has been on Turkey's agenda since 1984. It was an attempt to loosen the state's grip on the economy and move towards more free market principles.

Privatization in Turkey, not only aims to minimize state involvement in economic activities and to relieve the financial burden of State Economic Enterprises (SEE) on the national budget, but also contemplates the development of capital markets and the re-channeling of resources towards new investments.

The fundamental transformation in Turkish economy has moved the country from an inward-focused import substitution model towards an export led growth and industrial one. All these changes have started with the structural adjustment program in 1980. The program was designed to accomplish the transition to export oriented growth and to overcome the limits on growth imposed by the import substitution strategy. Also the investment opportunities in Turkey are particularly attractive in the framework of country's ongoing ambitious privatization agenda. The involvement and participation of international investors is highly encouraged in the massive privatization program.

The objectives for the privatization program were identified as follows:

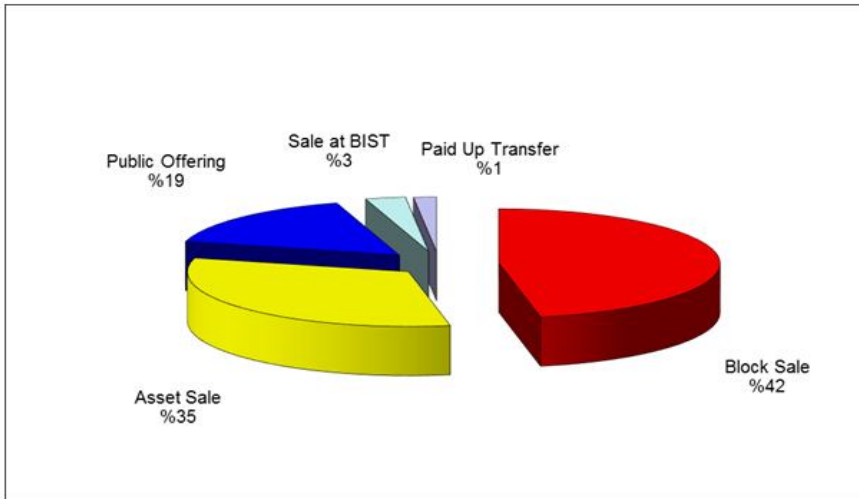
- To transfer the decision making process of large corporations and national assets from the public to the private sector to ensure a more effective play of free market forces. (This objective is in line with Turkey's encounter with the logic of Washington Consensus and neo-liberal reforms date back to January 1980.)
- To promote competition, improve efficiency and increase the productivity of public enterprises. (This objective is coming from the belief that the public enterprises are inefficient and can perform better with private ownership under good management and pursuit of maximum profit).

- To enable a wider distribution of share ownership. (This is for the development of Capital Markets)
- To reduce the financial burden of the state economic enterprises on the general operating budget. (Because some SEE's were making huge losses and were subsidized from the treasury to continue their operations).
- To raise revenue for the Treasury. (Privatization was seen as a remedy to decrease the domestic and foreign debt).

So the government was interested in privatization not only as a means of improving enterprise efficiency but also as an effective instrument for promoting the development of the capital market and for financing the budget deficits.

Companies within the privatization portfolio are privatized through the use of one or more of the methods mentioned below;

- Sale: Transfer of the ownership of companies in full or partially, or transfer of shares of these companies through domestic or international public offerings, block sales to real and/or legal entities, block sales including deferred public offerings, sales to employees, sales on the stock exchanges by standard or special orders, sales to investment funds and/or securities investment partnerships by taking into consideration the prevailing conditions of the companies.
- Lease: Grant of the right of use of all or some of the assets of the companies for a defined period of time.
- Grant of Operational Rights
- Establishment of Property Rights other than Ownership
- Profit Sharing Model and other Legal Dispositions Depending on the Nature of the Business.

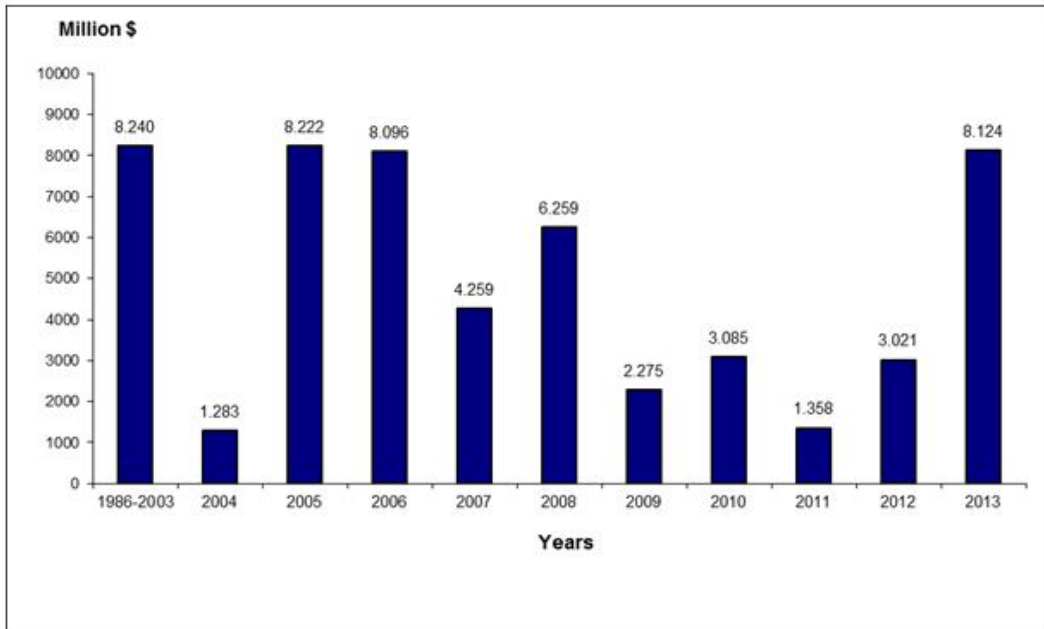
Figure 1: Privatization Methods

Source: Privatization Administration

As it can be observed from figure 1, privatizing SOE's using "Block Sale" method has been predominant method. The main reasons are much practical, faster and logical method for low profit and loss making companies. But from the point of view of economic competition and efficiency it is the least desirable method as it may lead to creation of private monopolies. Moreover using this method dominantly led to widespread allegations of fraud and corruption as well as undervaluation of privatized assets (Palmer 2010).

However for blue chip companies operating in telecommunications, petroleum refining, petrochemical, airlines, banking sectors, successful public offerings have been observed constituting of 22 percent (public offering and sale through Borsa Istanbul). Privatization implementations have started in 1984 with the transfer of incomplete plants of the SEE's to the private sector for completion. In this juncture, six plants were sold to different investors and nine plants were transferred to municipalities or to state enterprises on book value. In 1986, privatization implementations have gained momentum and since then, 200 companies have been privatized where no more government shares exist in 189 of these.

As mentioned by the Privatization Administration since 1985 until today, total proceed from the privatization implementations is recorded as USD 43.1 billion. Total revenue generated from entities within the privatization program between 1985-December 2011, together with USD 4.4 billion dividend income and USD 10.6 billion other income, has amounted to USD 47.4 billion. In the same period, total privatization expenses were USD 46.2 billion. The largest item in privatization expenditures (with about 99 percent) is the transfer to Treasury and financing of the companies in the privatization portfolio in the form of capital increases and loans.

Figure 2: Privatization Revenues

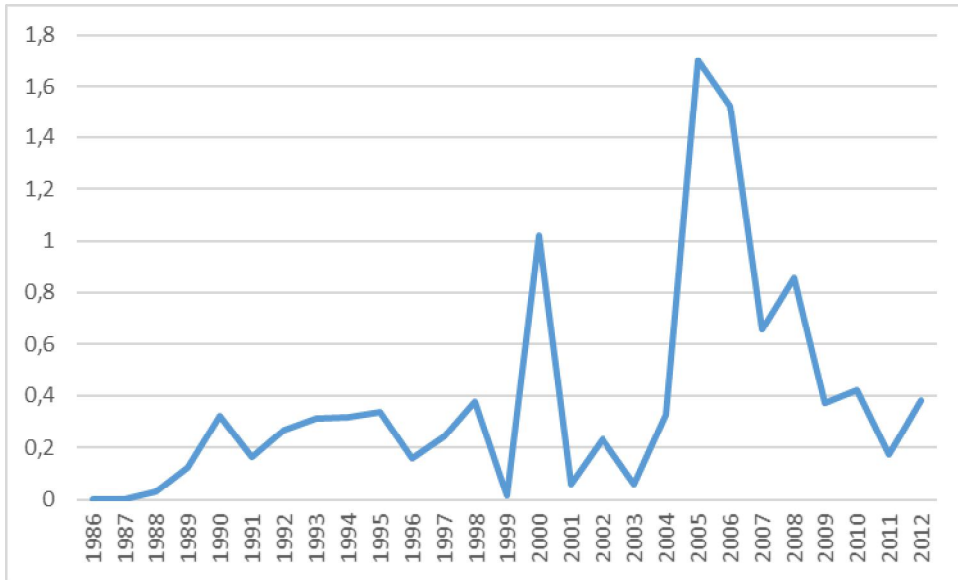
Source: Privatization Administration

Considering the privatization implementations for the last 27 years, one will observe that; State completely withdrew from cement, animal feed production, milk-dairy products, forest products, civil handling and catering services and petroleum distribution sectors. More than 50 percent of the state shares were privatized in tourism, iron and steel, textile, sea freight and meat processing sectors. State has withdrawn from most of the ports and petroleum refinery sector.

Some part of the privatization revenue can be used for restructuring of some key state enterprises before or even instead of privatization. Among the uses of privatization revenue, the most dangerous one is the use of revenue for financing the current expenditures of the government because of the one-time nature of the proceeds. If the governments increase the expenditures relying on the privatization proceeds, it will not be sustainable when no public enterprise is available for privatization or the global economic condition is not suitable for making further privatizations.

Privatization revenues in Turkey have only short term effects on the public finance as the revenue transferred to the treasury is only used to finance the related year's deficit. Therefore this temporary extraordinary income provided by the treasury shows the budget deficit lower than it really is and cause budget performance look better than the real case.

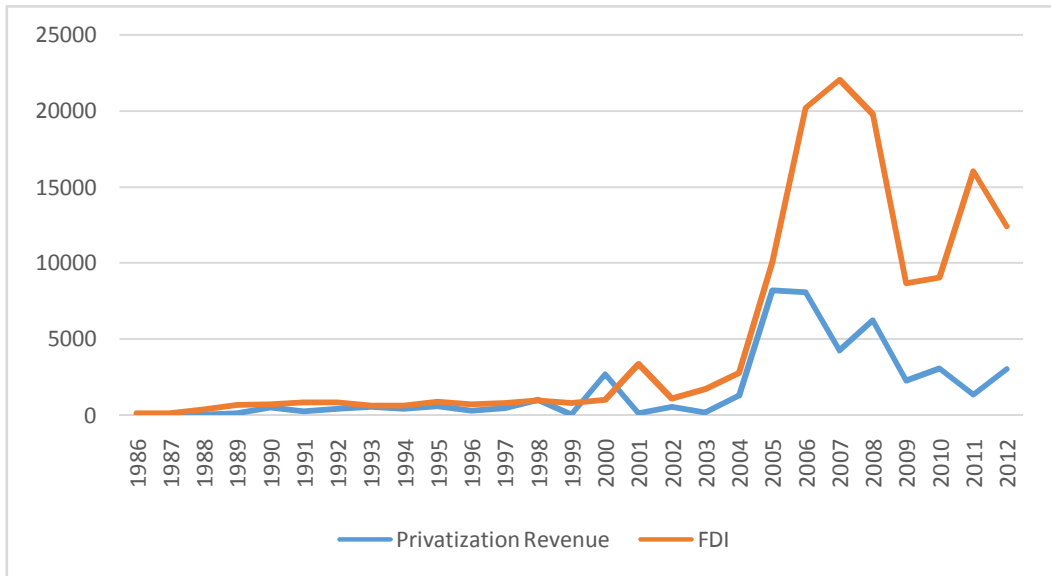
Figure 3: Privatization Revenue as a percentage of GDP



Source: Central Bank of the Republic of Turkey

Turkey was not successful in attracting foreign direct investment during the 1980s and the 1990s. But this situation has clearly changed after 2001. With the increase in the direct investment by foreign entities in Turkey, privatization revenue has also increased. Figure 4 shows the direct relationship between FDI and privatization revenue. From the figure we can also see that privatization revenue has not increased at the same rate as FDI. The reason can be the competition or rivalry between FDI and privatization. This might be due to the fact that FDI offers a simpler and more direct vehicle for investors as opposed to the highly regulated procedures associated with privatization. Also it is easier for a foreign investor to sell out an asset in the capital markets than selling a formerly privatized public enterprise. So if the high liquidity phase ends up in the financial markets, flowing out of foreign capital from Turkey like the other emerging markets will be a danger for financing the budget. Without the help of FDI and privatization revenue it is really difficult to overcome the problems of current account, internal and external debt.

Figure 4: Privatization Revenues and FDI Inflows (Million \$)



Source: Central Bank of the Republic of Turkey

4. METHODOLOGY AND DATA

It is assumed that the countries with low levels of physical and human capital will follow the neoclassical growth model. Because at the beginning growth is provided by only physical capital and when the foreign direct investments are considered as the accumulation of physical capital they will affect the short-term economic growth. But for sustained growth besides physical capital, human capital which is provided with education is also necessary. The shift from neoclassical growth model to sustained growth model is related with the saving behavior of the economy. There are two different approaches that we can follow to investigate the effects of foreign direct investment on economic growth. In the countries with low levels of human capital neoclassical growth models is used whereas in countries with high levels of human capital endogenous growth model is used. In many empirical studies different proxies for measuring human capital is used (Barro 2000, Borensztein, De Gregorio and Lee 1998; Li and Liu 2005). One of the most popular ones is the secondary school attainment of the population above 25 years old. In this study, secondary school enrollment rate, which is reported as percentage of total will be used as a proxy for human capital. Total is the total enrollment in secondary education, regardless of age, expressed as a percentage of the population of official secondary education age. As the privatization applications in Turkey started in 1984, data about privatization revenue is available only after 1986. As Turkey is a developing country with low levels of human capital and the data which can be used for the analysis has considerably short span the neoclassical growth model will be used to investigate the effects of privatization on economic growth.

There are two different methodologies in the literature for modeling economic growth. In the first one which is called growth accounting, foreign direct investments and privatization revenues are added to the augmented neoclassical production function. Other than this, different factors such as

openness of the economy, export structure and external debt may affect the economic growth. The neoclassical growth model which takes all those factors into consideration will be as follows:

$$Y = Af(K,L,HC,FDI,EXP,Priv)$$

Here Y is the output level measured by GDP, A is a constant that represents technology, K is Capital, L is labor, HC is Human Capital, FDI is foreign direct investment, EXP is export, Priv is the privatization revenue. Shortly growth accounting methodology is considering the supply side of the economy.

The second method used for modeling economic growth is intertemporal utility maximization framework which considers the demand side of the economy.

The aim of this study is to investigate the effect of privatization on economic growth which is measured by growth in per capita income. In the empirical studies that follow neoclassical growth model, growth accounting methodology is preferred. Therefore growth accounting methodology will be used and supply side of the economy will be considered in our analysis.

Data for privatization revenue are collected from the Republic of Turkey Prime Ministry Privatization Administration and calculated in US dollars.

Capital Stock data is obtained from the report prepared by Turkish Industry and Business Association and Central Bank of The Republic of Turkey. (Saygılı Ş. and Cihan C. (2008). It is in 1998 prices reported as 1000 Turkish Lira. The data is updated with the method they recommended in the report by using gross fixed capital formation.

GNI per capita, PPP is calculated in current international USD and it is derived from World Bank world development indicators 2013.

FDI stock is measured in US Dollars at current prices and current exchange rates per capita. The data is obtained from United Nations Conference on Trade and Development (UNCTAD) database.

Export data is obtained from the Central Bank of the Republic of Turkey. It is measured in current USD and per capita export for each year is calculated manually by dividing the value to the population of the corresponding year.

Secondary school enrolment rate is a gross enrolment ratio and is reported as percentage of total. Total is the total enrollment in secondary education, regardless of age, expressed as a percentage of the population of official secondary education age. This data is obtained from World Bank World Development Indicators 2013.

External debt ratio is also obtained from the World Bank World Development Indicators 2013. It is the ratio of total external debt stocks to gross national income. Total external debt is debt owed to nonresidents repayable in foreign currency, goods, or services. Total external debt is the sum of public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt. Short-term debt includes all debt having an original maturity of one year or less and interest in arrears on long-term debt. GNI (formerly GNP) is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.

5. EMPIRICAL RESULTS

The assumptions of the classical regression model necessitate that the time series that are used in the model must be stationary and the errors have a zero mean and a finite variance. In the presence of non-stationary variables, there might be what Granger and Newbold (1974) call a spurious regression. A spurious regression has a high R^2 and t statistics that appear to be significant, but the results are without any economic meaning (Enders, 2010). A stochastic process is said to be stationary if its mean and variance are constant over time and the value of the covariance between the two periods depends only on the distance or gap or lag between the two time periods and not the actual time at which the covariance is computed (Gujarati, 2003). Such a time series will tend to return to its mean and fluctuations around this mean will have broadly constant amplitude. But most of the macroeconomic time series have positive trends and they do not have a tendency to return to their mean values. In such cases the time series is called non-stationary and any sudden shock will not fade over time. So before starting any analysis we have to test for unit root to decide if the series are stationary or not. If the series are not stationary at their levels we have to calculate the appropriate differences to make the series stationary. In general, if a non-stationary time series has to be differenced d times to make it stationary, that time series is said to be integrated of order d . Most macroeconomic time series are $I(1)$ which means they become stationary after taking the first differences.

To test for unit root we apply Augmented Dickey Fuller (ADF) and Phillips Perron (PP) tests on each variable. The ADF test consists of estimating the following regression:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \alpha_i \sum_{i=1}^m \Delta Y_{t-i} + \varepsilon_t \quad (1)$$

Where ε_t is a pure white noise error term. Phillips and Perron (1988) developed a generalization of the ADF test procedure that allows for mild assumptions concerning the distribution of errors. The PP test estimates the following AR(1) model:

$$\Delta y_{t-1} = \alpha_0 + \delta y_{t-1} + \varepsilon_t \quad (2)$$

The null hypothesis of the ADF and PP tests is $\delta = 0$ which means that the series has a unit root and is non-stationary. The alternative hypothesis is $\delta < 0$ which means that the series is stationary. One of the limitations of unit root tests is their weakness in small samples. Another limitation is the dependency of the test on the number of lags used. The lag length is either determined by the Akaike Information Criterion (AIC) or Schwartz Bayesian Criterion (SBC) or more usefully by the lag length necessary to whiten the residuals. Like the ADF test the PP test can be performed with the inclusion of a constant, a constant and linear trend or neither in the test regression. For the final decision, without an intercept or trend, we should use τ statistic; with only the intercept, we should use τ^μ statistic; and with both intercept and trend we should use the τ_τ statistic. We reject the null hypothesis of a unit root against the one sided alternative if the ADF statistic is greater than the critical value and we conclude that the series is stationary. The

table in Appendix 1 reports the results of the ADF and PP tests with only intercept (τ_μ) , and with both intercept and trend (τ_τ) . The appropriate lag length is chosen by the Akaike Information Criterion (AIC) for the ADF test and reported in brackets. Similarly the bandwidth for the PP test is chosen by the Newey-West using Barlett kernel and reported in brackets.

The results of the unit root tests reported in Appendix 1 indicate that all variables are non-stationary in levels but they all become stationary when we take the first differences. Shortly all variables are integrated of order one $I(1)$.

5.1 COINTEGRATION

The concept of cointegration was first introduced by Granger (1981) and elaborated further by Phillips (1986, 1987), Engle and Granger (1987) and many others. Engle and Granger (1987) make a formal definition of cointegration between two variables as follows: Time series Y_t and X_t are said to be cointegrated of order d, b where $d \geq b \geq 0$, written as $Y_t, X_t \sim CI(d, b)$ if a) both series are integrated of order d and b) there exists a linear combination of these variables say $\beta_1 Y_t + \beta_2 X_t$ which is integrated of order $d - b$. The vector $\{\beta_1, \beta_2\}$ is called the cointegrating vector. A generalization of this definition to cover n variables is also possible. So a set of variables is defined as cointegrated if a linear combination of them is stationary. Or if we put it in economic terms, two variables will be cointegrated if they have a long-term or equilibrium relationship between them

The unit root tests show that all the variables in the model are integrated of order one $I(1)$. So to avoid spurious regression, we have to check if the variables are cointegrated or not. As Granger (1986) notes, "A test for cointegration can be thought of as a pre-test to avoid spurious regression situations." A number of methods for testing cointegration have been proposed in the literature. In this analysis we will apply Johansen's test for cointegration. The purpose of this research is to determine the effects of privatization on economic growth. So the cointegration test is applied on the variables of the neo-classical growth model such as gross national income per capita, capital stock per labor, secondary school enrollment rate, FDI stock per capita and privatization revenue per capita. Table 1 reports the results of Johansen's Test. For applying the Johansen Test of cointegration the variables must be non-stationary or has a unit root at level and they should be integrated of the same order. As both of these requirements are met we can use this test without any restriction.

Table 1: Johansen’s Cointegration Test for GNIPC, CAPSTOCKPL, SSENROL, FDISTOCKPC, REVPC

Trace Test

Null	Alternative	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 Percent Critical Value
$r = 0$	$r \geq 1$	0.980367	167.9570*	68.52	76.07
$r \leq 1$	$r \geq 2$	0.778084	73.62449*	47.21	54.46
$r \leq 2$	$r \geq 3$	0.698030	37.49349*	29.68	35.65
$r \leq 3$	$r \geq 4$	0.303059	8.755243	15.41	20.04
$r \leq 4$	$r = 5$	0.003741	0.089945	3.76	6.65

(*) indicates statistical significance at %1.

Max-Eigenvalue Test

Null	Alternative	Eigenvalue	Max-Eigen Statistic	5 Percent Critical Value	1 Percent Critical Value
$r = 0$	$r = 1$	0.980367	94.33255*	33.46	38.77
$r \leq 1$	$r = 2$	0.778084	36.13100*	27.07	32.24
$r \leq 2$	$r = 3$	0.698030	28.73825*	20.97	25.52
$r \leq 3$	$r = 4$	0.303059	8.665299	14.07	18.63
$r \leq 4$	$r = 5$	0.003741	0.089945	3.76	6.65

(*) indicates statistical significance at %1.

The results of both trace and maximum eigenvalue tests indicates that there are 3 cointegrating equations at both %5 and %1 significance level. There is a long run relationship among growth in gross national income per capita (GNIPC), Capital Stock per Labor (CAPSTOCKPL), Secondary School Enrollment Rate (SSENROL), Foreign Direct Investment Stock Per Capita (FDISTOCKPC) and Privatization Revenue Per Capita (REVPC). Table 2 reports the normalized coefficients of the first cointegrating vector which is normalized on GNIPC. The standard errors are represented in parenthesis.

Table 2: Normalized Cointegrating Vector: Coefficients normalized on GNIPC

GNIPC	CAPSTOCKPL	SSENROL	FDISTOCKPC	REVPC
-1.000	0.007778 (0.11459)	169.9750* (10.4786)	2.834185* (0.19127)	-15.05621* (1.88571)

(*) denotes statistical significance at %1

The normalized cointegrating vector reveals that education, FDI stock and privatization have significant effects on growth rate in the long run. Although the effect of accumulation of capital is positive it is not significant. The coefficient of privatization revenue is significant but has a negative sign. This implies that privatization has a negative effect on growth in the long run.

5.2 ERROR CORRECTION MODEL

One drawback of the differencing is that it results in a loss of valuable long run information in the data. Therefore the concept of cointegrated series has been suggested as a solution to this problem. If variables are cointegrated then there is a long term or equilibrium relationship between them. The fact that the two variables are cointegrated implies that there is some adjustment process preventing the errors in the long run relationship from becoming larger and larger. Therefore one can treat the error term in the model as the “equilibrium error” (Gujarati, 2004, 824). We can use this error term to tie the short run behavior of the variable to its long run value. The error correction mechanism was first used by Sargan (1984) and later popularized by Engle and Granger. If the two variables like Y_t and X_t are cointegrated, then we can express the relationship between Y_t and X_t with an Error Correction Mechanism as follows:

$$\Delta Y_t = a_0 + b_1 \Delta X_t - \pi u_{t-1} + e_t$$

This model has both short run and long run information. b_1 is the short run or impact multiplier which measures the immediate impact on Y_t after a change in X_t . π is the feedback effect, or the adjustment effect and shows how much of the disequilibrium is being corrected (Asteriou & Hall, 2011,359). Of course an error correction model can be estimated for more than two variables. The error correction model with our seven variables becomes:¹

$$\Delta LGNIPC_t = \alpha + \beta \Delta LCAPSTOCKPL_{t-i} + \delta \Delta LFDISTOCKPC_{t-i} + \lambda \Delta LEXPPC_{t-i} + \Delta \gamma \Delta LREVPC_{t-i} + \theta \Delta LSSENROL_{t-i} + \psi \Delta LEXTDEBTRAT_{t-i} + \mu EC_{t-1} + \varepsilon_t$$

EC_{t-1} is the lagged residual of the cointegrated relationship and is calculated with the normalized long run coefficients from the cointegrating vector. Its coefficient μ is called the error correction term and reflects the speed of adjustment from a deviation of economic growth from its long run relationship with the explanatory variables. As all the variables are represented in natural logarithms the parameters $\beta, \delta, \lambda, \gamma, \theta, \psi$ gives short run elasticities for growth in Gross National Income per capita with respect to changes in the explanatory variables. During estimation general to specific approach to econometric modeling is used. This is a very important advantage of Error Correction Model. By this way we can search for the most parsimonious model that best fits the given data set. After estimating the general model we apply F tests for jointly significance and drop the insignificant variables. The Error Correction Model, which is estimated with the Turkish annual data between 1986 and 2012 is reported in Appendix 2.

¹A model with similar variables is used by Naguib (2012) in the study of the effects of privatization on economic growth in Argentina.

The results show that capital stock per labor, FDI stock per capita and export per capita do not have a significant effect on growth rate of gross national income per capita. On the other hand, privatization revenue has a negative significant effect on growth. Although this effect changes into positive in the long run, it is not significant. Excess cash in Privatization Fund is transferred to Treasury accounts for the purpose of payment of internal and external debts of the Treasury. No transfers may be made from the Privatization Fund to any other funds. So the privatization revenue is used to finance the debts but not used for infrastructure investments, which will bring high growth rates in the following years.

Secondary school enrollment, which is used as a proxy for human capital has a significant positive effect on growth. This is explaining the importance of the quality of human capital for growth. However in the long run the coefficient of secondary school enrollment is not significant. Empirical studies report conflicting results about the effects of human capital on economic growth. Engelbrecht (2003) observes countries in OECD and claims that human capital has a positive effect on economic growth. Pritchett (2001) observes a positive relation between schooling rate and economic growth rate. On the other hand, Benhabib and Spiegel (2000), Nunnenkamp and Spatz (2003), Zhang (2001) find insignificant effects of human capital on economic growth. These differences can be attributed to the different use of proxies for representing human capital in different studies.

Additionally the external debt ratio has a positive significant effect on growth. This can be explained by the dependency of the Turkish economy to foreign capital for achieving high growth rates. External debt as of the end of April 2013 neared \$340 billion. This is almost 43 percent of the national income. During 2003-2012, which is a high growth period for the economy, \$210 billion of new foreign loans have been taken and foreign debt has increased by 162 percent. With the help of indirect taxes and privatization revenues, Turkey's public debt burden is better than EU countries. Public debt stock, including domestic debts, is 40 percent of the national income. The main problem is in the external debt of private sector. As of the end of 2012, the private sector owed \$226 billion, which is two-thirds of the total foreign debt. With the help of pressed exchange rate and abundance of resources in the financial markets, private sector has no doubt to borrow from foreign creditors. Even the privatized Public Economic Enterprises were bought with foreign credits.

Similar to external debt there are some problems with the foreign capital inflows to Turkey after the announcement of FED to end up the high liquidity period. High amounts of foreign capital are flowing out from emerging markets and Turkey is not an exception.

6.CONCLUSION

In this study we tried to investigate the influence of privatization on economic growth. The results of the previous studies were not consistent about the significant effects of privatization on economic growth. In our analysis of the Turkish economy between 1986-2012, we found that privatization revenue has a negative significant effect on growth. In Turkey Excess cash in Privatization Fund is transferred to Treasury accounts for the purpose of payment of internal and external debts of the Treasury. If the privatization funds could be used for infrastructure investments instead of financing the budget deficits privatization could have positive effect on growth. Secondary school enrollment, which is used as a proxy for human capital has a significant positive effect on growth. This is explaining the importance of the quality of human capital for growth. The external debt ratio has a positive significant effect on growth. This can be explained by the dependency of the Turkish economy to foreign capital for achieving high growth

rates. On the other hand, the results show that capital stock per labor, FDI stock per capita and export per capita do not have a significant effect on growth rate of gross national income per capita.

Privatization is not the only tool for achieving high growth rates. Privatization accompanied by appropriate structural reforms, creates incentives to improve economic efficiency and boost growth. If the government wants to increase output in the long run should not focus only on privatization but should promote other industrial policy such as competition or infrastructure investments and other regulations. The history of privatization in Turkey is not very long. The mass privatizations have started only after 2001. So this was only a preliminary study with short time series. Further analysis on longer time series would be necessary to confirm or reject our findings.

If we look at the Turkey's recent experience with privatization we saw that a favorable legal and institutional framework is essential to the implementation of a large scale privatization program. We also learnt that the development of a regulatory framework to prevent anti-competitive abuses is important. And lastly we saw that the primary objective of privatization has shifted from long term productivity increase to revenue generation, which is not favorable. So for successful applications, privatization should be informed by the lessons of previous privatization cases.

Excess cash in Privatization Fund is transferred to Treasury accounts for the purpose of payment of internal and external debts of the Treasury. No transfers may be made from the Privatization Fund to any other funds. 825 Million US Dollars were transferred from the Fund to the Treasury in 2012. On the use of privatization revenue, the conventional wisdom is that it is better using it for retiring debt. Debt reduction lowers interest rates, reduces further borrowing and inflation and boosts overall growth. Privatization can be a useful tool to strengthen and stabilize the economy. But there is also a dangerous case here. It is about the shift of priorities in privatization. As mentioned before, there are many objectives for privatization of public enterprises. If the primary objective is to finance the external and internal debt rather than the efficiency gains, public enterprises may be sold at prices which fail to reflect their true value. This can be regarded as a loss for the whole society.

There are not strict rules that are suitable for all counties in all cases. A method for one country may not be suitable for the other one. So privatization should be tailored to local conditions. But there is one rule that should be applied in all cases: Transparency in sales process should be enforced. Otherwise allegation of fraud and corruption cannot be stopped in the society.

The results of the time series models used in this analysis cover only the Turkish economy. As the time series models do not allow for cross - country differences, the results may not be robust for other developing countries. In order to overcome this shortness panel data models can be an alternative.

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Appendix 1: Unit Root Tests

Variable	τ_{μ}		τ_{τ}		
	ADF Test	PP Test	ADF Test	PP Test	
LGNIPC	0.448626 [4]	-0.199919 [1]	-2.971909 [4]	-3.128996 [1]	I(1)
DLGNI PC	-4.702718* [4]	-6.115248* [1]	-4.868317* [4]	-6.002354* [1]	
LCAPSTOCKPL	-2.880617 [6]	-0.556887 [1]	-0.949333 [6]	-2.983816 [1]	I(1)
DLCAPSTOCKPL	-2.850454 [4]	-7.509180* [8]	-3.520348*** [4]	-8.204627* [9]	
LFDISTOCKPC	1.148522 [8]	0.426261 [1]	-2.334345 [7]	-1.810578 [1]	I(1)
DLFDISTOCKPC	-2.085631 [8]	-6.562125* [1]	-3.546132*** [8]	-6.765273* [1]	
LEXPPC	-0.451831 [0]	-0.451831 [0]	-3.026484 [1]	-2.383106 [1]	I(1)
DLEXPPC	-4.258542* [0]	-4.267182* [1]	-4.177248** [0]	-4.183700** [1]	
LREVPC	-1.275698 [4]	-2.546505 [2]	-2.094836 [4]	-3.132846 [2]	I(1)
DLREVPC	-8.174803* [0]	-7.780015* [2]	-8.784763* [0]	-8.354135* [2]	
LSSENROL	-1.687861 [0]	-1.624962 [1]	-0.747708 [0]	-0.941049 [1]	I(1)
DLSSENROL	-3.754966* [0]	-3.759928* [1]	-3.978947** [0]	-3.987047** [1]	
LEXTDEBTRAT	-2.649128 [0]	-2.649128 [0]	-1.560856 [4]	-2.606063 [0]	I(1)
DLEXTDEBTRAT	-5.720416* [3]	-4.623738* [1]	-5.630583* [3]	-4.530536* [1]	

* denotes the significance of the test statistics at %1 level ** denotes the significance of the test statistics at %5 level *** denotes the significance of the test statistics at %10 level

Critical values for τ_{μ} are: -3.75 (at %1 significance level) and -3.00 (at %5 significance level)

Critical values for τ_{τ} are: -4.38 (at %1 significance level) and -3.60 (at %5 significance level)

Source: Gujarati Basic Econometrics, 2004, Table D.7, P. 975.

L denotes the natural log of the related variable and D denotes the first difference of the related variable.

Appendix 2: Vector Error Correction Model

<i>Variable</i>	<i>Coefficient</i>	<i>Standart Errors</i>	<i>statistics</i>
Constant	0.099954	(0.02818)	[3.54704]**
Δ LCAPSTOCKPL _{t-1}	0.054656	(0.17798)	[0.30710]
Δ LCAPSTOCKPL _{t-2}	-0.417540	(0.62950)	[-0.66329]
Δ LFDISTOCKPC _{t-1}	-1.532699	(1.58917)	[-0.96446]
Δ LFDISTOCKPC _{t-2}	0.071284	(0.08408)	[0.84785]
Δ LEXPPC _{t-1}	0.438920	(0.51706)	[0.84887]
Δ LEXPPC _{t-2}	-0.370995	(0.22776)	[-1.62888]
Δ LREVPC _{t-1}	-9.294766	(3.80978)	[-2.43971]**
Δ LREVPC _{t-2}	0.021911	(0.01740)	[1.25903]
Δ LSENROL _{t-1}	0.375049	(0.13961)	[2.68641]**
Δ LSENROL _{t-2}	0.569250	(0.59974)	[0.94916]
Δ LEXTDEBTRAT _{t-1}	1.211513	(0.54349)	[2.22912]**
Δ LEXTDEBTRAT _{t-2}	0.138967	(0.19124)	[0.72666]
EC _{t-1}	-0.940241	(0.40515)	[-2.32070]**
R ²	0.557387		
\bar{R}^2	0.241235		

(**) indicates statistical significance at % 5