

THE RELATIONSHIP BETWEEN INFLATION AND GROWTH: A GENERAL EVALUATION

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Abstract:

In the economic literature, the relationship between the growth and inflation has been discussed in different ways with respect to the development stages of the world economy. According to the current view, there is a negative relationship between growth and inflation. This seems to be compatible with the fact that the investments and the economic growth has been negatively affected by the high and chronic inflation rates in Turkey in the last 20 years. Thus, improvement of the long-run growth potential depends on the elimination of the uncertainties that stems from high inflation rates.

1. Introduction

Developments in commodity, service and financial markets necessitate that the countries perceive the world as a global market by the countries. The countries that appraise this process of globalization could improve their living standards economically and socially. Rapid changes in science and technology, easy access to information and efforts to increase the productivity of capital mainly form the basis of globalization. These developments affect the countries in economic, social and cultural areas and offer new opportunities for increasing welfare of the society. However these developments carry some dangers with them. One of the most important dangers in question is the worsening of international and national distribution of income with the increasing uncertainty in financial markets. Along with the acceleration in the globalization process, the lags in adoption of international norms (legal and institutional) and macroeconomic imbalances result in the increase in the fragility against the global crises. In order to benefit from the opportunities revealed with globalization and to eliminate the negative effects of globalization, factors of macroeconomic instability should be removed and structural adjustments that lead efficient utilization of resources should be realized. In addition to those measures, social policies towards to low-income individuals would remove the imbalances in the society and strengthen the social peace and development.

After 1980, Turkey has applied and improved the conditions for becoming an open market economy. During this period, foreign trade was liberalized, export oriented industrialization policy was adopted and crucial steps were taken for the restructuring and improving the financial markets. In 1989, the liberalization of international capital movements was the complementary side of the globalization process. Within the framework of restructuring of public sector, privatization efforts accelerated. However, unstable political environment delayed the process of change and caused various macroeconomic and structural problems. The most important problems in question are; chronic high inflation, lack of investment in manufacturing industry, slow improvement of productivity level due to nonmaterialization of changes that would enhance competitive environment, the pressure on financial markets due to the imbalances in the public finance and increasing real interest rates.

Starting from 1989 while the economic growth was based on consumption that was supported by short-term capital inflow, the public sector imbalances made difficult the sustainability of growth. The financing of public deficits through domestic debt in recent years incited the instability in financial markets that were not deep enough and had resource problems and increased the real interest rates. High real interest rates, by increasing the interest rate spending of public sector crucially, constituted a burden on public finance and became a factor that causes macroeconomic imbalances. In this period, it can be argued that high chronic inflation impeded the process of economic growth. In today's economies, while the information is becoming the most important factor of production, the uncertainty due to the lack of information appears to be a constraint for the production process. Therefore, my aim in this paper is to emphasize the negative effects of uncertain environment created by high chronic inflation on Turkey's growth potential.

2. The relation of growth and inflation in the economic literature

Understanding the interaction between growth and inflation is one of the macroeconomic problems. The problem of whether the inflation has an effect on growth or not have been discussed frequently in the economic literature. The content of these discussions has changed with respect to the development stage of the world economy. After the Second World War, in both developed and developing countries, Keynesian policies were on the agenda, and as a result of these policies the increase aggregate demand caused both the inflation and production to rise. During this period the inflation was not considered as a problem, besides, the thesis about inflation's positive effect on growth was on the agenda. During 1970's while high inflation was continuing in most countries, the thesis of high inflation with high growth was disputed with the falling growth rates. In 1980's hyperinflation problems, especially in Latin American countries increased the instability in those economies and affected the development of those countries in a negative way. Those developments strengthen the thesis about the negative effects of inflation on growth.

The most important approach that claims the existence of a positive relationship between inflation and the growth is the Phillips Curve approach. This approach assumes that the high inflation causes low rates of unemployment therefore effects growth positively (Grimes, 1991). The empirical studies made afterwards showed that the relationship between inflation and the unemployment rate is valid in the short-term in case of unanticipated inflation. According to another approach, rising inflation results in contraction of the individuals' wealth. In this context, individuals increase their savings to reach their pre-inflation wealth level and therefore interest rates fall with rising investments (Mundell 1991). On the other hand, in the countries with insufficient financial system, the government obtains income through inflation tax with using central bank's resources. It is argued that, if the government uses these revenues for financing investment spending; the process of inflation would increase growth. Besides, the slow adaptation of nominal wages to sudden changes in inflation, time lags in wage bargaining or the governments' willingness to improve the real wages result in the fall of real income of the people whose propensity to save is low and the rise in the real income of the parties whose propensity to save is high. It is argued that such a condition would contribute to the growth. In general, views that claim the existence of positive effects of inflation on growth are based on the assumption that inflation increases compulsory savings (Bruno and Easterly, 1995). However, this result is based on empirical analysis using the data for the period in which the growth rates are high and the inflation rate is relatively low.

There are several empirical studies claiming that inflation affect economic growth negatively. These studies originated from the analyses that have micro and macroeconomic foundations. One of the most important elements that makes the market mechanism efficient is that economic agents use informative aspects of market prices to determine their investment and production decisions. Unhealthy structure of the markets in which the prices are formed and non-market factors in price formation lead to the distortions in the signals that are extracted from prices by the economic agents. This situation affects resource allocation negatively and causes changes in relative prices through preventing the efficient market. Moreover, this decreases the productivity of the economy. The decisions about future are directly related to price expectations. High and volatile inflation rates would create uncertainties about the formation of economic agents' future spending and income decisions.

It is certain that in an economy that has high and volatile inflation rates, real return of each investment whose real return is not fixed would be uncertain. This uncertainty would make it difficult for individuals and firms to realize long-term contracts and causes the investment expenditures to decline. In an environment where the investments are financed by debt, the risk premium revealed from volatility of inflation rates would increase the cost of investment. When firms that decide to invest by considering 'Net Present Value' encounter interest rate volatility originating from inflation volatility, they would postpone their investment decisions (Pyndick and Solimano, 1993).

Another channel, through which the inflation impedes efficient resource allocation and investments, is the relative price changes. In an economy with the imperfect information and price rigidities, it is difficult to designate whether the increase in general price level stems from nominal or real factors (Fischer, 1981). In this situation, the impossibility of the determination of the source of any price movement and the lack of suitable reaction for it would cause serious price volatility and distortion of resource allocation in the economy. Besides, according to Andres and Hernando's (1997), as a result of the high inflation that impede the prices to be informative, the cost of firms increases due to gathering information to protect themselves from price volatility. As a result, resource allocation would be affected negatively.

In an environment where the inflation rate is high and volatile, the disappearance of the information-transmitting feature of relative prices would decrease the economic efficiency and thus growth rate (Friedman, 1977). In an economy where the general level of prices is stable, any change in price level of group of commodities give important signal about the scarcity of those goods. However, in the environment of chronic and high inflation, the signals of rising prices of certain commodities would disappear. In such an environment, an increase in the price of certain group of commodities would not be perceived as the scarcity of those commodities but an increase in general price level, and inflationary expectations.

Another fact that indicates the negative effect of inflation on growth comes from the higher return of financial services relative to other sectors' return in an inflationary environment. In an economy where the return of financial services is higher, it is possible that there can be shifts of significant amount of resources and labor power from the R&D and the industrial sectors to financial sector. This situation would limit the long-term growth potential (Frenkel and Mehrez, 1998).

The claim that the high and unstable inflation would affect growth negatively is supported by empirical studies using both time series and cross-section data (De Gregorio, Fisher, 1993;

Barro, 1995; Barro 1996). Barro (1996) concluded that the unexpected inflation would affect growth negatively through decreasing the performance of households and firms. This study follows the exogenous growth approach and empirical tests have been made with sample of 100 countries for 1960-1990 period. In this study besides inflation rate, variables like schooling rate, life expectancy, legal structure, birth rate, school attendance rates and the ratio of public spending to national income have been used to explain growth.

Levine and Zervos (1993) concluded that the moderate inflation would not affect the growth negatively. In this study, it is argued that if the inflation rate is above 80 percent, the growth rate is affected negatively. On the other hand, Ghosh and Phillips (1998) put forward that even the moderate rates of inflation would affect growth negatively. Furthermore, for the sample that is consisted of the OECD countries other than Turkey, similar results have been reached by Andres and Hernando(1997). In another way, De Grogorio (1992) argued that high inflation has negative effects on growth through decreasing total factor productivity. In another words, in that study it is claimed that inflation causes the behavior of rent seeking

3. The Inflation and growth in Turkey

3.1. Historical background

Until 1980s when Turkey exhibited the main characteristics of a closed economy, the main factor behind the growth and industrialization was the import-substitution strategy. This strategy can be considered to be successful in general throughout the 1970s with the low rates of inflation. However, between the years of 1970-1977, the inflation rate increased from the single digit number to the double-digit number. The increase in the price level during this period can not be attributed to the buoyant domestic demand and the high growth pattern. Because the factors that led to increase in the domestic demand such as real wages, interest rates or agricultural terms of trade, showed no significant change compared to 1960s- i.e. the period in which the low rate of inflation and the high rate of growth co-existed. The devaluation of Turkish lira in 1970 and the continuous rise in the oil prices throughout 1970s increased the cost of imported capital goods and formed a base for the higher inflation rate. Therefore, the inflation in 1970s can be described as an imported inflation from abroad (Kunter and Ulasan, 1999). At the same time, the total credit volume in the economy expanded substantially. However, the fact that the sectors other than the industrial sectors benefited from the higher volume of credits strengthened the inflationist pressures. The main reason for this development was that the profitability of the industrial sectors decreased with the increase of inflation rate. Without any doubt, this situation affected the technical improvement and capital accumulation which are very crucial factors of the persistent growth- negatively. During the last years of the Third Development Plan when high rates of growth was reached, the inflation rate was kept lower by intervention in the domestic prices at the expense of a higher fiscal and current account deficits. In short, during 1970s, the inflation rate was appeared as a factor that slowed down the economic growth.

The current account deficit that increased as a result of the growth in the economy and thus imports reached an unsustainable level in the late Third Development Plan period. As a result, Turkey faced a deep crisis in 1978. With the sharp decline in the imports, the industrial sector experienced with a bottleneck in the production, which in turn led to a sharp increase in the inflation rate. In a situation where the cost of production increased after the sharp devaluations, the growth rate of the Turkish economy declined and the inflation rates

increased substantially. The crises period between 1978 and 1980 can be said to be a turning point for the Turkish economy. The decisions taken on January 24th in 1980 for the sake of ending the economic crisis brought about significant policy changes that have affected the industrialization and the growth process thereafter. The most important component of this set of decisions is that the pricing process in the economy was left to the market mechanism and the need for the openness of the Turkish economy in the long run was emphasized. In addition, the reduction in the inflation rate was another target of this program for the Turkish economy that was experiencing triple-digit inflation rates during that time.

The inflation rate has decreased significantly during the first three years of the program based on so-called 24 January Decisions. The main reason of decreasing the inflation rate was the decline of the real wages and the agricultural terms of trade with the implementation of the program. In addition, the high interest rates helped in restraining the domestic demand (Kunter and Ula?an, 1999). With the help of the decrease in the domestic demand and the subsequent high devaluations, the competitiveness of the Turkish economy increased significantly and the economy entered in an export-oriented growth path (Boratav, 1987). However, the high rate of growth in the first half of 1980s was a result of the high capacity utilization rates that were inherited from 1970s. On the other hand, the dependence of Turkish economy to the external resources continued in this period and the increase in the interest and the exchange rates affected the investments negatively. In addition, the complement role of public investments for the private investments was replaced with the construction and the commercial sectors since the profitability in the latter sectors increased significantly whereas that in the former recorded a substantial decline. In a situation where the labor was the cheap factor of production relative to capital stemmed from high interest rates, the new investments were concentrated in the labor-intensive industries. Without any question, the public investments in the infrastructure and the energy sectors created a positive externality for the industrial sectors. However, this does not change the fact that the allocation of the resources to these sectors increased the resource need of the industrial sectors. The inflation rate that was kept under control between 1981 and 1983 started to increase again after 1984. The monetization of the high budget deficits and the increase in the cost of factors of production other than the labor were the important factors behind the higher inflation rate. The contraction in the domestic demand that stemmed from the fall in the real wages and the agricultural terms of trade was mainly compensated by the high public expenditures after 1983. Especially in 1986 and 1987, it has been observed that the public investments increased substantially. In addition, the agricultural support policies and the services provided by the municipalities gained importance again in those years (Boratav, 1987). On the other hand, the increase in the inflation and the interest rates necessitated subsequent devaluations. In other words, after this period the high inflation and the interest rates became a chronic event. Both the uncertainties stemmed from high and volatile inflation rates and the increase in the cost of investments due to the higher interest rates and the devaluations decreased the incentives for the new investments (Kunter and Ulasan, 1999). Another factor that led to decrease in the incentives for investments was the increase in the credits given to the sectors other than the industrial sector and high public borrowings to finance the deficits (Boratav and Turkcan, 1993).

In 1989, a turning point came into scene in terms of the economic policies of Turkey. The introduction of the law that removed the restrictions on the capital flows and made the Turkish lira convertible implicitly, can be said to be a component that was consistent with the □24 January Decisions□ (Law Number: 32; Official Gazette, August 11, 1989). However in same year, the substantial increases in the real wages and the agricultural subsidies ended the

income policy component of the structural adjustment policies of 1980s. These developments resulted in significant increase in the domestic demand and the higher budget deficits. On the other hand, the liberalization of the capital flows eased the finance of the both budget and the trade deficits. Introducing the capital account liberalization policy in an economy with high inflation rate caused the interest and the exchange rates to lose their role as policy tools to reach the targets (Boratav and Turkcan, 1993). In addition, the capital inflows led to the increase in the reserves and the monetary expansion that in turn increased the inflationary pressures. On the other hand, in order to avoid the monetary expansion as a result of capital inflows, the Central Bank chose to sterilize the capital inflows through the open market operations and this resulted in further increase in the interest rates. The rise in the interest rates has become an important factor behind the increase in the inflationary expectations (Kunter and Ulasan, 1999). Keeping the exchange rates low resulted in the decrease in the cost of imported raw materials and the capital goods. However, as a result of high inflation and the interest rates, this development has limited new investments and the technical improvements. Furthermore, it can be said that the increase in the real wages cushioned the advantage of lower cost of imported inputs for the industrial sector. With the abolishment of the income policy, the measures to keep the exchange rate low resulted in the increase in the import of consumption goods and the loss of international competitiveness. As a result of this, the trade and the current account deficits increased substantially. The high real interest and inflation rates reduced the capacity of investment and increased the gains of the financial and trade sectors. The most important risk stemmed from the utilization of the external resources instead of domestic savings in the economy was the short-term capital outflows. In 1993, the trade deficit that was the highest for the whole history of Turkey led to substantial increase in the current account deficit. The decline in the foreign exchange reserves as a result of the high current account deficit led to the increase in the devaluation expectations. The economic crisis started with the sharp increase in the demand for the foreign exchange stemmed from the policies to decrease the interest rates artificially and led to sudden capital outflows. The financial crisis affected the real sector negatively and as a result the growth rate declined substantially. Following these developments, the inflation and the interest rates increased again and the real wages started to come down significantly.

In short, the developments in the Turkish economy between 1970 and 1998 indicate that high inflation have affected economic growth negatively. Especially after 1983, the negative relationship between the inflation and the growth is more obvious. The inflation rate in the last fifteen years was more volatile. After the financial liberalization in 1989, the inflation rate reached a higher plateau and this situation has become the most important factor behind the uncertainties in the economy. The high inflation rate led to a decline in the real wages as well as the increase in the cost of credits. These developments discouraged the incentives for additional investments to increase the production capacity in the economy and affected the long-run growth dynamics in a negative way. In short, after 1980s, the high and volatile inflation rates have shortened the foreseeing power of the economic agents relative to pre-1980 period.

3.2. Empirical results

The most important issue that has distorted macroeconomic balances in the last 30 years has been the high and chronic inflation rate in Turkey. The high and chronic inflation rate not only promoted the macroeconomic imbalances but also led to the changes in relative prices, which led to a deterioration of income distribution. The uncertainties following the high and volatile inflation rates decreased the investments and potential output. The high public sector

deficits put pressure on financial markets as well as on the monetary policy especially in 1990s and this resulted in the rise in the inflationary expectations. As a result, the average inflation rate in the last ten years was realized around 70 percent. The rapidly changing environment (such as, high urbanization and population growth rates etc.), the inefficiency in resource allocation and market structure are the other factors that led to high and chronic inflation in Turkey besides the demand-pull and cost-push inflationary factors. The uncertainties resulted from the high inflation rate prevented the economic agents to anticipate the market signals appropriately. This especially increased the risk premium in the financial markets and thus the real interest rates affecting the industrial investment and resource allocation adversely. The survey study held by the Istanbul Chamber of Industry, including the largest 500 firms, calculated the non-operational pre-tax profits of private firms as 87.7 percent of total profits for the year 1998. This factor indicates the distorting impact of high inflation and real interest rates on production and investment. The high inflation rate, budget deficits and other uncertainties prevented the formulation of the investment and production policies having medium and long-term perspectives.

While the Turkish economy had a rapid growth path after the World War Two, the growth rate had a declining pattern after the beginnings of 1970s. The inflation rate had an increasing trend with the decline in growth rate and the economy had witnessed with a stagflation. The growth rate started to decline in the periods when the inflation had an increasing pattern (Figure). This outcome can be observed more clearly in the sub-periods. In the period of 1975-80, the average inflation rate increased rapidly and the growth rate decreased substantially. On the contrary, in the 1980s, some structural reforms took place in the context of an export-led growth strategy and the growth rate increased considerably while the inflation rate stayed below the previous period average. The capital account liberalization led to an important expansion in capital inflows after 1989 and the economy had become more vulnerable to external developments. In this period, increase in the inflationary expectations, the uncertainties stemming from this and consumption based growth resulted in a slowing down in private manufacturing investments. As a result, the average growth rate declined while the inflation rate increased considerably (Table).

These developments indicate that there is an inverse relationship between the growth and the high inflation rates in Turkey after the mid-1970s. The same conclusion is verified by the correlation coefficients of the growth rate and the inflation rate. While the correlation coefficient for the period 1950-1974 is calculated as minus 0.28, it is minus 0.55 for the period of 1975-99. The correlation coefficient for the whole period is calculated as minus 0.43.

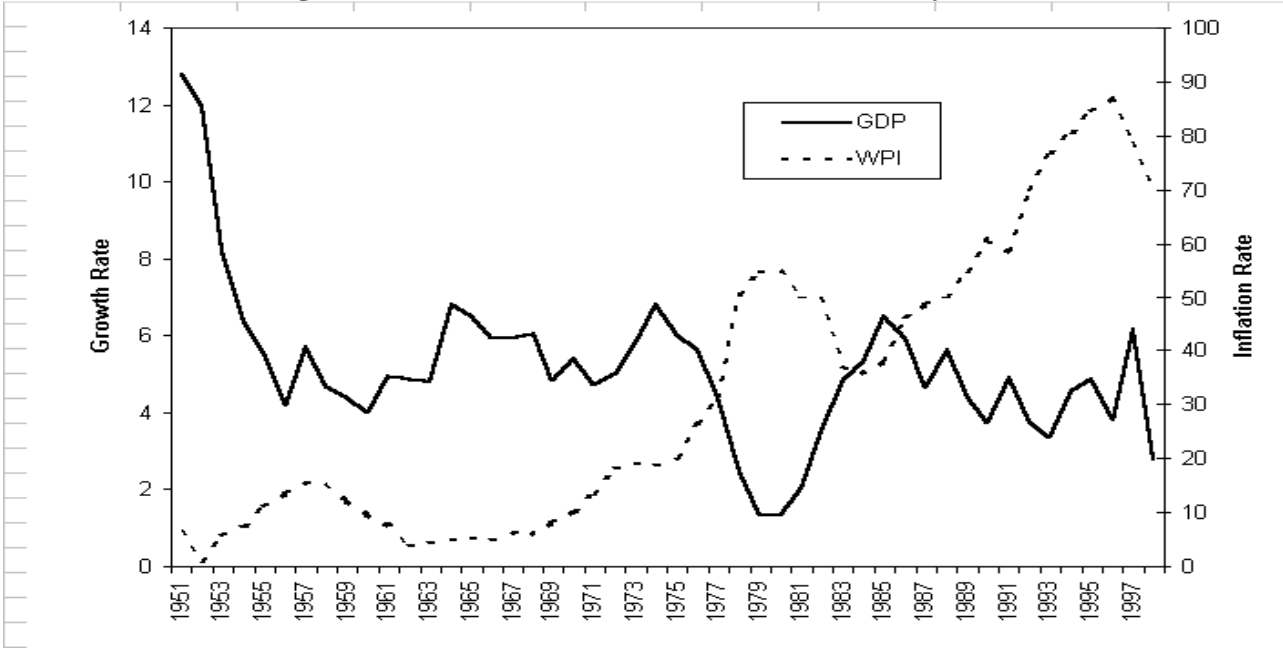
Table 3.1: Average Growth and Inflation Rates by Sub-periods (Percent)

	1951-59	1960-74	1975-80	1981-88	1989-99	1951-80	1981-99	1951-99
GDP	6.8	5.3	3.2	5.4	3.7	5.3	4.4	5.0
WPI	10.9	9.4	43.9	39.9	71.6	16.8	58.2	32.8

Source: State Institute of Statistics

The hypothesis of the adverse impact of the high inflation on the growth rate that is explained broadly above is also supported by the econometric studies. Most of these studies analyzing the impact of the inflation on growth rate have included the variables such as, private and public investments, foreign exchange rates, the current account deficit and the public deficit into empirical models. The uncertainties led by the high inflation rate reduce investments and growth has become the most commonly tested hypothesis in the empirical studies. (Barro, 1996; Fischer, 1993a and 1993b; Levine and Zervos, 1993; De Gregorio, 1992; Pyndick and Solimano, 1989).

Figure 3.1: Inflation and Growth Rates in Turkey



(Five-Year Moving Averages)

It can be expected that the investment, which is the main determinant of the growth in Turkey, is sensitive to inflation rates. A study from the Research Department of Central Bank of Turkey verifies this conclusion for the period of 1982-1998 by using quarterly data (Kalkan,1999). This study suggests that the foreign exchange rate via the inflation rate has an adverse impact on the growth rate. Therefore foreign exchange rates had been included as the explanatory variable. The money supply is also added to the regression in addition to other explanatory variables. The study concludes that the increase in the depreciation rate and the inflation rate decrease the growth rate while the expansion in money supply and the private investment promote growth. These remarks are in line with the results of other studies, which are carried out for other country cases. On the other hand, another study from the Research Department of the Central Bank of Turkey, which uses a panel data for the period 1983-1994, concludes that the sectoral inflation have negative impacts on sectoral growth rate (Yalçın, 1999).

4. Conclusion

A general view about the relationship between inflation rate and growth did not appear both in the empirical and theoretical studies in the economic literature. The most well known view on the relationship between growth and inflation in today’s literature is that the high inflation affect economic growth positively in the short-run while it led to reduction in the potential

economic activities in the long-run. High inflation rate has affected growth rate negatively during the last three decades in the Turkish case. A high inflation rate that is persistent since 1970s has played an important role in the emergence of social and economic problems, which led to lower economic growth. Both the inflation and growth rate figures and empirical studies confirm this result.

Parallel to the globalization process in the world, the international capital flows became more important and this caused the countries to perceive the whole world as unique market. The success of Turkey in such a world depends on the economic policies that form a stable macroeconomic environment and improve the competitiveness of the country. In this context, in addition to a stable macroeconomic environment, it is necessary to develop the policies that include long-term perspectives. In other words, in order to improve the productive potential of the country, the economic agents should formulate long-term strategies in addition to short-term policies. To do this, first of all, it is necessary to eliminate uncertainties caused by high and chronic inflation rate, to construct an efficient public sector and to remove other macroeconomic imbalances.

The social problems stemmed from persistent macroeconomic imbalances have prevented to close welfare gap between Turkey and industrialized countries. An efficient public sector and moderate inflation rate can be beneficial in removing uncertainties and pessimism in the business sector and promoting productive dynamics of the society.

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