AN ANALYSIS OF THE DYNAMICS OF INVESTMENT SAVING AND ECONOMIC GROWTH IN TURKEY: 1950-2004

Ercan SARIDOĞAN*
Sefer ŞENER**
Deniz ŞÜKRÜOĞLU***

Abstract

Main aim of this study is to investigate the interaction among the saving, investment and growth in order to find out which variable is the key in terms of the causality, impulse-response from one to another. If we find out this relationship among the saving, investment and growth then we can design efficient economic policies in order to achieve an economy in which saving, investment and growth affect one to another positively. We mainly focused on Turkey which has been erratic growth performance for years. The macro economic policies of Turkey have been directed by internal and external dynamics. In this context, it becomes necessary to reassess the growth performance. Explaining the underlying sources of the economic growth of Turkey is very important not only for testing different theoretical growth models but also to design economic policies and reforms for these countries. The methodology we applied depends on the time series econometric techniques which include analyzing the stationarity of the variables, cointegration, vector error correction mechanism, and Granger causality and vector auto regressive models with impulse-response and variance decomposition techniques. We analyze the period of 1950-2004.

Keywords: History of Economics, Investment Saving, Economic Growth, Granger Causality, Cointegration, VAR Models

Introduction

There is on the other hand, an interaction and multidirectional relationships among the saving, investment and growth. In the economic theory, the interaction among these variables varies in different schools of thought or in different macroeconomic models. At the same time, depending on the macroeconomic models what kind of economic policy should be

* Dr., Marmara University, Department of Economics
** Prof.Dr., Çanakkale Onsekiz Mart University, Department of Economics
*** Dr., Marmara University, Department of Economics

applied or which variables are the key ones in order to catch sustainable growth is not so clear. Palley (1996: 1) stated that *the theory of the natural rate of unemployment has been the central theoretical question for the monetary policy, the issue of saving-investment causation is the decisive question for fiscal policy.*

The design of the fiscal policy greatly depends on the causality of these variables. If saving causes the investment and growth, then tight fiscal policies which includes constraints on public sector expenditures, decreasing tax rates, decreasing the size and role of the government in the economy are implemented, on the other hand if the investments cause the savings and growth, then the tight fiscal policies are not needed, furthermore these policies create difficulties on the economy, on the contrary the policies which increase the investment are implemented. However there are not always clear answers in the economic theory for these questions.

1. Literature

There is a vast literature[1] on the combinations of saving, investment and growth. Palley (1996) used a VAR analysis that examines the saving-investment relationship. The main findings of Palley is that Iinvestment causes saving. Investment spending is increasing both personal and government saving. Moreover, increases in personal saving actually had a negative effect on investment and government saving. Increases in government saving had no effect on investment spending. Palley suggested that saving-based policies move to increase private and public saving are unlikely to increase investment, and may result in deflationary aggregate demand conditions that lower income.

Rodrik (1998) investigated to understand the causes and consequences of saving transitions by using cross-section analysis. Rodrik mainly emphasised that focusing on saving performance does not seem to be a profitable strategy for understanding what makes for successful economic performance. Increases in saving appear to be the outcome of economic growth, not a fundamental determinant of it. The evidence indicates that countries that undergo saving transitions do not necessarily experience sustained increases in their growth rates. In fact, the typical pattern in their sample is that growth rates return to their pretransition levels within a decade. Very few of these countries have experienced increases in their

[1] see, Schmidt (2001),Fry (1980), Carrol et al (2000), Carrol (2000),Carrol et al. (1994a), Carrol et al. (1994b), Schmidt-Hebbel et al. (1991),Schmidt-Hebbel et al. (2000c),Schmidt-Hebbel et al. (1992),Schmidt-Hebbel et al. (1996),Schmidt-Hebbel et al. (2000a) ,Schmidt-Hebbel et al. (2000b), DeLong-Summers (1992).

long-run growth rates. By contrast, countries that undergo growth transitions —due to improved terms of trade, increased domestic investment, and other reasons—do end up with permanently higher saving rates. Rodrik (1998) argued that the policy implication is clear: policies geared towards rising domestic saving do not deserve priority when designing economic programs.

Achy (2003) investigated impact of financial development on private saving, on private investment and economic growth. Their results on the relationship between financial development and private investment on the one hand and financial development and economic growth on the other hand are rather disappointing with regard initial expectations. The coefficients on financial development indicators as well as on financial liberalization index indicate a negative impact of financial depth on private investment in the five MENA countries investigated. By distorting private credit allocation in favor of households at the extent of lending to firms, financial liberalization may not only have reduced private savings but tended also to reduce available loans for business sector.

Attanasio et al (2000), provided an exhaustive and careful descriptive analysis of the correlations among saving, investment and growth rates. They found that three results are extremely robust across data sets and estimation methods. Lagged saving rates are positively related to investment rates. Investment rates Granger-cause growth rates with a negative sign and growth rates Granger-cause investment rates with a positive sign. Also, lagged investment positively Granger causes saving in all cases. Growth and saving seem to be mutually and positively related. Attanasio et al (2000) found the negative Granger causation running from investment to growth rates. They argued that this result is extremely robust to changes in the sample, econometric technique, model specification and inclusion of controls.

Yenturk et al (2006) investigated[2] the interaction among the saving investment and growth by constructing quarterly saving data for Turkey for the period from 1989 up to the second quarter of 2003 by using a VAR model. They found that in the short-run, a change in the GNP growth rate Granger causes investments. They did not find other causalities among the variables. They argued that there are no short-run relationships either between investments and savings or between savings and the GNP growth rate. They also claimed that economic growth has a significant impact on the

[2] See also, Yentürk (1996, 2005)

determination of both savings and investments. Savings are also found to be reacting to changes in savings itself. The impact of economic growth on investments is evident both in the

2. Turkish Economy 1950-2004

During World War I, the Turkish economy was underdeveloped: agriculture depended on outmoded techniques and poor-quality livestock, and the few factories producing basic products such as sugar and flour were under foreign control. At the birth of the republic, Turkey's industrial base was weak because Ottoman industries had been undermined by the capitulations. World War I and the War of Independence also had extensively disrupted the Turkish economy. Agricultural output had dropped sharply as peasants went to war. In addition, because of the war, it became a shortage of skilled laborers and entrepreneurs.In spite of these impossibilities, in large part, as a result of government policies, the young republic transformed from backward economy into a complex economic system producing a wide range of agricultural, industrial, and service products for both domestic and export markets.The origins of modern industrialization in Turkey can be traced back to the "etatist" era of the 1930s. Although the beginnings of analyze industrialization drive were evident in the immediate aftermath of the formation of the Republic in 1923, the real breakthrough occurred in the context of the 1930s (Öniş, 1999: 457). Because the starting point of etatism was accepted the five-year industrialization plan, therefore, it can be argued that the etatist approach was to attach importance to industrialization (Yentürk and Kepenek, 2000: 68)

Turkey's economy was recovered remarkably after hostilities ceased. Industrial and agricultural output increased, however, their share of the economy remained quite low at the end of the decade. By 1930, as a result of the world depression, external markets for Turkish agricultural exports had collapsed, causing a sharp decline in national income. The government stepped in during the early 1930s to promote economic recovery, following a doctrine known as etatism. During the 1940s, the economy stagnated; in large part because maintaining armed neutrality during World War II increased the country's military expenditures while almost entirely curtailing foreign trade.

After the end of the Second World War, domestic and national forces combined to bring about major political and economic changes in Turkey. International pressures also played an important role in the shaping of new policies. The emergence of the United States, as the dominant world power after the Second World War had shifted the balance toward a more open political system and more liberal and open economic model. At this time, Soviet territorial demands pushed the Turkish government towards closer cooperation with the United States. As the country began to be drawn increasingly into the American sphere of influence, Marshall Plan aid was extended to Turkey for military and economic purposes, beginning in 1948 (Pamuk and Owen, 1999: 105).

Although DP targeted to dominate private sector in the economy, the share of public sector in the economy become dominant again (Ülgener, 1971: 4). The main ideology defended by the DP was that the economic role of the state should be confined to the provision of infrastructure services for private capital and that it was essential to provide opportunities to the private sector in order to expand its share in the national economy (Pamuk and Owen, 1999: 105).

When we analyzed the investment policy of government, private investment performance was the central feature of the government. Governments beginning with the DP regime have cited the importance of the private investment, but have in fact until 1980s relied upon government productive investment for added economic stimulus. This reliance flowed from the doctrine of Etatism, with its vision of productive public sector of the economy complementing private sector (Conway, 1990: 78).

Due to the combined effects of the restoration of Europe, the Korean War, and US technical and financial aid, significant developments were achieved in Turkey's agricultural, industrial and mining sectors along with Turkey's physical infrastructure in this period. These golden years did not last very long, however. The favorable conjuncture quickly disappeared after 1953. With the end of the Korean War, international demand slackened and the prices of export commodities began to decline (Pamuk and Owen, 1999: 106). It was also unfavorable conditions took place for the agricultural sector. On the other hand, the DP period has been criticized for increasing inequality in income distribution and public services.

With the balance of payments crisis of the of the mid-1950s caused by the expanding of domestic demand under the liberalized import regime and over-valuation of the currency, the experimental move towards a more open economy came to an end (Alkin,1971: 268; Pamuk and Owen, 1999: 107).

The government negotiated with the IMF and OECD between 1956 and 1958, but in this period the crisis deepened, at the end, a stabilization program was introduced, which led to economy severe recession. The worsening economic disproportions caused the societal tensions to increase, and on May 27, 1960, Turkey experienced its first military coup. The following year, new elections were held and a new era started in the Turkish Republic's history. The newly founded State Planning Organization (SPO) was given the responsibility of preparing a new 5 year-development plan within the context of a 15 year-perspective plan in addition to annual programs. The economic policies of the 1960s and 1970s aimed at the protection of the domestic market and at industrialization through import substitution. Within this framework, the five-year plans constituted attempts to coordinate investment decisions (Ülgener, 1971: 4; Pamuk and Owen, 1999: 111).

Turkish people were used to live with economic and political crises over time. Major macroeconomic crises have been an endemic feature of Turkey's political economy during the post-War era. National developmentalism of the 1960s and the 1970s came to a dramatic end with the crisis of the late 1970s that effectively marked the collapse of the inward-oriented, import-substituting model of industrialization. The post-1980 neo-liberal era has been immune to crises during its initial decade. Yet, the apparent success of the first phase was more than compensated by three crises that have occurred over a time-span of less than a decade in 1994, 2000 and 2001 respectively. In retrospect, crises have been costly for the Turkish economy having typically been accompanied by a collapse of output and employment as well as striking declines in real wages. Moreover, the wave of economic crises had costly political ramifications leading to breakdown of democratic regimes. The military coups of 1960 and 1980 have occurred in the immediate aftermath of major financial crises. Looking back, the military interludes have been of short duration by Latin American standards, but they have been costly in terms of placing severe restrictions over democratic reforms (Öniş, 2006: 1).

During the planning period of 1961 - 1984, the Turkish industrialization followed the import-substitution model[3] (ISI) with high import protection rates. In this period, the public sector accounted for more than half of the fixed capital formation. Government intervened either directly or indirectly in the operation of the economy by using tools such as tariffs, quantitative controls, fixed exchange rate, price ceilings, and price support schemes. Although the first decade of the planning periods resulted in brilliant GDP growth, the second decade failed to achieve economic success. The relatively lower growth rates in the second decade of the planning period were mainly due to the OPEC oil shocks. In addition to these adverse external factors, Turkey was experiencing domestic instability throughout the 1970s. Although Turkey was following a planned economic strategy with active government interventions in the economy in the period of 1961-1980, the share of public investment in industry fell from 80 percent in 1963 to 50 percent by the end of the 1970s. This trend was due not only to increasingly dynamic private sector, but also to the limitations of the public resources, such as increasing defense expenditures, budget deficits, and inefficient and non-profitable state economic enterprise (SEEs).

By the late 1970s, Turkey's economy had reached its worst crisis. Turkish authorities had failed to take sufficient measures to adjust to the effects of the sharp increase in world oil prices in 1973-74 and had financed the resulting deficits with short-term loans from foreign lenders. The government affords to ignore oil price hikes without major short term consequences. *Instead, the weak coalitions chose to continue with expansionist policies at a time when many of the industrialized economies were taking painful steps to adjust their economies. With the support of foreign exchange reserves and accommodating monetary policy, the Turkish public sector embarked on an investment binge, eventually pulling along private sector investment as well. As the share of investment the GDP rose from 18.1 percent in 1973 to 25.0 percent in 1977, the growth rate of economy reached its peak at 8.9 percent in 1975 and 1976* (Pamuk and

---

[3] Import substitution industrialization (also called ISI) is a trade and economic policy based on the premise that a developing country should attempt to substitute products, which it imports, mostly finished goods, with locally produced substitutes. Import substitution policies were adopted by most nations in Latin America in the 1930s and 1940s because of the Great Depression of the 1930s. In the 1950s the Argentine economist Prebisch was a visible proponent of the idea. Prebisch believed that developing countries needed to create forward linkages domestically, and could only succeed by creating the industries that used the primary products already being produced by these countries. The tariffs were designed to allow domestic infant industries to prosper.

Owen, 1999: 114). In this term, because of abundance of the petrodollars, foreign banks were ready to lend for the countries needing credit in the favorable conditions. However, many developing countries soon faced to face debt crisis.

The import substitutionist development strategy was observed to reach its limits beginning 1976 when financing of the balance of payments and industrial investments became increasingly difficult. The foreign exchange crisis of 1977-80 brought together the cessation of the civilian democracy and imposition of a new constitution and labor codes regulating the industrial relations under a military regime (Yeldan and Voyvoda, 1999: 4).

By 1979 inflation had reached triple-digit levels, unemployment had risen to about 15 percent, industry was using only half its capacity, and the government was unable to pay even the interest on foreign loans. It seemed that Turkey would be able to sustain crisis-free development only if major changes were made in the government's import-substitution approach to development. Many observers doubted the ability of Turkish politicians to carry out the needed reforms. The political and economic conditions almost led the country to civil war.

Fry (1980) estimated a two equation model of inflation and growth in Turkey over the period 1950–1977. Fry (1980) argued that Inflation *is determined by the difference between the rates of change in nominal money supply and real money demand. The short-run growth function consists of an expectations augmented Phillips curve, to which a credit availability effect is added. Under Turkey's disequilibrium institutional interest rate and exchange control systems, the real supply of domestic credit is determined, in large part, by real money demand which is, in turn, influenced by the real deposit rate of interest. The central bank can use both the nominal money supply and the nominal deposit rate of interest as policy instruments for stabilisation purposes.*

Keyder (1987) stated that Import substitution industrialization depends on a benefit relationship among the social classes. As long as this relationship continues, the structure reproduces itself. By the late 1970, working class was able to raise wages that squeeze the profits. On the other hand, it was not good internal and external economic and political conditions for the economy. Foreign currency shortages created great difficulties for Import substitution industrialization. The measures introduce by the government to improve conditions were no longer satisfied the capitalists. Furthermore, state interventions were thought wrong and unnecessary anymore. Industrialist

bourgeois no more wanted to collaborate with state bureaucracy. Therefore, economic and political structure had to transform by a crisis.

Table 1. Data for GDP, Saving and Investment Variables for the Period 1950-1979

Year	GDPC Per capita $	SAVEPC Per capita $	INVESTPC Per capita $	INVGDP %	SAVGDP %
1950	263.2610	16.82171	16.84922	6.400196	6.389748
1951	342.9458	15.73506	18.86847	5.501881	4.588207
1952	367.8917	18.14880	25.74266	6.997348	4.933191
1953	409.7059	23.18646	28.74203	7.015284	5.659294
1954	362.5742	24.78258	30.34090	8.368191	6.835175
1955	389.1209	26.84000	32.53603	8.361419	6.897599
1956	394.5264	32.51218	34.91157	8.848981	8.240810
1957	490.3255	42.80544	43.45561	8.862605	8.730004
1958	525.7122	55.17865	56.53377	10.75375	10.49598
1959	502.6246	41.83773	50.08262	9.964221	8.323854
1960	496.6469	46.98259	48.83506	9.832955	9.459959
1961	501.7050	42.89738	50.59887	10.08538	8.550319
1962	528.9256	40.25267	51.71215	9.776829	7.610271
1963	568.7747	41.84178	57.23668	10.06316	7.356478
1964	576.0932	52.65800	56.58321	9.821885	9.140535
1965	585.8258	53.19130	55.60326	9.491433	9.079714
1966	656.5697	68.36290	74.74309	11.38388	10.41213
1967	684.7758	74.21065	76.32970	11.14667	10.83722
1968	741.4126	76.71593	84.41386	11.38554	10.34726
1969	793.6119	82.05160	88.56114	11.15925	10.33901
1970	841.5495	90.05164	102.0017	12.12070	10.70069
1971	896.8026	62.32892	86.44254	9.638971	6.950127
1972	978.3720	76.14643	104.4206	10.67289	7.782973
1973	1050.909	103.8850	127.9959	12.17955	9.885255
1974	**1161.568**	**207.5676**	**268.7268**	**23.13483**	**17.86960**
1975	**1335.752**	**214.5464**	**295.9436**	**22.15558**	**16.06184**
1976	**1529.759**	**253.6694**	**333.8311**	**21.82247**	**16.58231**
1977	1664.461	112.2225	217.7831	13.08430	6.742274
1978	1739.883	103.0707	155.2118	8.920819	5.924004
1979	1826.460	119.5962	175.4918	9.608301	6.547977

If we summarize the main transformation periods[4] of Turkish Economy determined in Table-2.:

Table 2. Main Structural Periods and Industrialization Strategies for Economic Growth in Turkey

Industrialization Period	**Strategy**	
1) 1924-1938	Foundation and the Beginning of the Industrialization	
2) 1939-1946	WorldWarII Period	
3) 1947-1960	After WWII and Liberalization Tendency	**Import Substitution Industrialization**
4) 1961-1977	Planned Period	
5) 1978-1980	Crisis in Economy	**Export Oriented Industrialization**
6) 1981-1999	Liberalization - Openness in Economy	
7) 2000-	Crisis in Economy and?	

Source: Doğruel and Doğruel, 2006: 123

First period shows the foundation of the republic and efforts for industrialization. In second period, WWII affected the economy. Third period shows the years after war and liberalization tendencies in the country. Fourth period shows the planned period and shifting economy policy to import substitution industrialization strategy, period five shows the crisis the economy and the country.

Sixth Period points out a new era that is export-oriented industrialization and openness and liberalization[5] movements in the economy. Finally, the period seven shows the process of economy after the year 2000.

[4] For a different classification for the periods see, Boratav (1997: 265)

[5] For the timing, effects on main macroeconomic indicators and fundamentals of financial liberalization and short term capital flows in Turkey and Developing Countries, see, (Rodrik, 1991), (Rodrik and Velasco, 1999), (), (), (Boratav,1997), (Celasun,1990), (Boratav and Yeldan 2001), (Yentürk and Ulengin, 2001), Yenturk (1995, 1996, 1999).

Table 3. Data for GDP, Saving and Investment Variables for the Period 1980-2004

Year	GDPC Per capita $	SAVEPC Per capita $	INVESTPC Per capita $	INV/GDP %	SAV/GDP %
1980	**1945.527**	**54.46916**	**175.4301**	**9.017098**	**2.799713**
1981	2225.144	224.8758	314.7716	14.14612	10.10613
1982	2352.427	205.0729	263.8579	11.21641	8.717506
1983	2517.727	164.3073	243.7937	9.683086	6.526015
1984	2703.812	154.8008	236.0036	8.728551	5.725280
1985	2853.064	242.3052	301.7121	10.57502	8.492807
1986	3067.249	280.9132	341.9642	11.14889	9.158473
1987	3369.394	516.0723	589.6834	17.50117	15.31647
1988	3501.406	579.9049	541.3039	15.45961	16.56206
1989	3512.641	560.1515	613.0713	17.45329	15.94674
1990	3987.129	575.8845	740.9881	18.58450	14.44359
1991	4107.223	524.3170	636.8265	15.50504	12.76573
1992	4343.263	644.4220	771.5370	17.76399	14.83728
1993	4776.557	745.3121	1007.708	21.09696	15.60354
1994	**4521.091**	**701.9742**	**657.0385**	**14.53274**	**15.52665**
1995	4750.193	723.2506	930.6640	19.59213	15.22571
1996	5016.453	638.5155	963.1357	19.19954	12.72843
1997	5435.896	743.2748	1060.184	19.50340	13.67345
1998	5561.541	821.3794	1014.640	18.24387	14.76892
1999	5419.999	726.6076	911.5172	16.81766	13.40604
2000	5714.591	689.3410	1106.192	19.35732	12.06282
2001	**5376.458**	**770.8569**	**648.2857**	**12.05786**	**14.33763**
2002	**5554.214**	**802.0414**	**883.8572**	**15.91327**	**14.44023**
2003	5901.770	873.6615	1068.437	18.10366	14.80338
2004	6486.753	1046.479	1425.384	21.97377	16.13255

Doğruel and Doğruel et al. (1990) stated that speculation-based gains in 1940s was able to used to finance private sector investment expenditures, but speculation-based gains in 1980-90s was restricted only in financial sector. Turkish economy faced to face an instable and highly volatile a structure in

the post-1980 era, such that the IMF programs could not be successful to solve the problems of the economy. Furthermore, the recipes of the IMF and one of the fundamental policy tools that are trade and financial liberalization are getting worse the structure of the economy, and increased the fragility and volatility. One of the most important assumptions of orthodox stabilization policies whose ancestor is originated neo-classical[6] transmission mechanism is that increasing saving reduces interest rates, which stimulates investment and economic growth in long turn[7]. In order to increase saving, domestic demand by increasing interest rates and public deficit are decreased so that it expected to increase saving, decrease interest rate and increase investment and economic growth in the long term (Doğruel and Doğruel, 2006: 64). However, this link may not be always operating under some conditions, such as the insensitivity of real sector investments to saving or other factors/conditions that does not stimulate investment, negative expectations for profit etc. furthermore the IMF programs focused on the short term imbalances in the economy and neglect long term imbalances. These structural imbalances and problems in the economy is getting bigger in the long term (Özmucur, 1991: 84).

During the 1980s, The rate of growth of private manufacturing investments has been on the order of only 2.1% per annum, and could not reach its pre-1980 levels in real terms until the end of 1989. This resulted in a significant anomaly as far as the official stance towards industrialization was concerned: in a period where outward orientation was supposedly directed to increased manufacturing exports through significant price and subsidy incentives, distribution of investments revealed a declining trend for the sector. The implications of this non-conformity between the stated foreign trade objectives towards manufacturing exports and the realized patterns of accumulation away from manufacturing constituted one of the main structural deficiencies of the export oriented growth strategy of the 1980's, had played a crucial role in the failure of maintaining the export promotion programme as a sustainable strategy of development. (Yeldan and Voyvoda, 1999: 5).

---

[6] The monetarist approach advocates this approach in the long term. On the other hand, Kaldor (1992) criticized monetarizm.

[7] This approach is also called McKinnon-Shaw Hypothesis, see for detail in McKinnon (1973) and Shaw (1973)

Boratav (1997: 197) and (Yeldan, 2001: 157) stated that the role of banks in financial sector shifted from as financial intermediaries for funding real sector by collecting saving to institutional rentier who gains from government financing and are interested in speculative-based short-term gains not long-term productive gains.

Doğruel and Doğruel et al. (1990: 137) stated that Risk-averse behaviour is widespread in developing countries, on the other hand because trade capital directly transformed into industrial capital, the habits[8] of economic agents in trade had been affecting the decision processes in industry in Turkey. In connection with this trade habits, short termed-speculative gains perspective had had a priority for a long time by avoiding investing and tending speculative gains. They stated that it is very important to have healthy-operating a market mechanism providing true signals for economic agents to make healthy decisions by applying true economic policies.

Yenturk (2005: 54) stated that investment and economic growth in Turkish economy depends on the foreign capital inflows which have unreliable characteristics, which leads to the fundamental macroeconomic indicators into unstable and erratic path. As a result in the long run, the stable and determined economic growth and investment strategy should be developed.

Boratav (2000: 154) stated that Financial liberalization did not affect positively neither saving nor investment but also affected negatively both saving and investment. The foreign saving mostly financed final consumption expenditures.

Kazgan (2000: 189) stated that while short term speculative capital movement affect negatively the economy of the developing countries, why does the governments of developing countries not introduce restricting policies for these flows? She argued that middle-income periphery countries could not obtain enough financing from international financial institutions as much as they did once. It seems easier for the governments to borrow from international financial markets instead of collecting tax. Furthermore, as long as the credibility of the country exists to borrow, economic agents in the country feels good

---

[8] Buğra (1995: 358) stated that the character of the relationship between businessman and bureaucrats were in a harmony with the traditional structure of the relationship. The economy policy atmosphere was going to affect the attitude and behaviour of entrepreneurship traditionally. In these conditions, rentier activities increased. Turkish businessman, who specialized on lobbying under Import substitution industrialization period, continued their behaviour. On the one hand the characteristics of businessman and bureaucrats, on the other hand the characteristic of Turkish economy and policy provide the mutual causality for the benefit all the interest groups.

in short term, like a drug addiction. Whenever the credibility decreases, and a financial crisis take place, then temporary measures are taken.

İsmihan et al. (2005) investigated the empirical relationship between macroeconomic instability, public and private capital accumulation and growth in Turkey over the period 1963–1999 .They suggested that the chronic and increasing macroeconomic instability of the Turkish economy has seriously affected her capital formation and growth. Furthermore, the Turkish experience indicates that chronic macroeconomic instability seems to be a serious impediment to public investment, especially to its infrastructural component, and shatters, or even reverses, the complementarity between public and private investment in the long run.

Attar and Temel (2002) investigated the short run and long run effects of government investment on private manufacturing sector investment in Turkey based on a neoclassical model of investment that allows for costly adjustment of capital. They modelled private investment as a function of real income, government investment and costs of capital. They found that in the long run, private manufacturing investment responds positively to an increase in the manufacturing sector's real income and negatively to an increase in public investment or cost of capital. The short run dynamics of private investment captured through the ECM suggest that the current period's public investment has a negative impact on private capital formation, while a positive effect is observed with a lag of one year.They claimed that results provide evidence of a crowding out effect of government policy in Turkey, although our findings do not necessarily imply that public and private investments are substitutes.

İsmihan and Metin-Özcan (2006) stated that overall, both TFP and capital accumulation were important sources of growth over the 1960-2004 period. Nevertheless, since the mid-1970s, macroeconomic instability has steadily increased and instability became an endemic problem for the Turkish economy during the late 1980s and the 1990s. In line with these developments, the political environment was also polarized and unstable, especially under the ruling of coalition governments. Turkey also experienced major structural transformations, such as trade liberalizations, over the same period. As a result of all these factors, the TFP growth exhibited significant variability over time. In contrast, human capital accumulation, have played a relatively more stable (but minor) role in the growth process.

3. Empirical Analysis On Investment Saving and Growth

3.1. Unit Root Analysis of the Investment Saving and Growth Series

In this section, we analyze first we analyze the stationarity of the variables. The variables we analyze are the saving, investment and GDP variables, but the form of the variable we analyze are saving/GDP (savgdp) ratio, investment/GDP (invgdp) ratio and the growth rate of the GDP per capita (gdpc). When we use the logarithmic difference of any variable, it is symbolized dlgdp, dlinvgdp and dlsavgdp. Data set is obtained Penn World Table Version 6.2 (PWT 6.2) and covers the period 1950-2004.

In order to analyze the variable in terms of time series econometric techniques, first of all, we observe the graphs of the variables to determine the characteristics of the series and then we analyze the stationarity process of the variables by using ADF unit roots tests. Then we analyze whether there is a cointegration among the variables or not by using Johansen cointegration procedure, after that we analyze the Granger causality among the variables and finally VAR models are analyzed by considering impulse response functions and variance decomposition. When we observe the figures of the variables in level, there is an upward trend effect on the series.

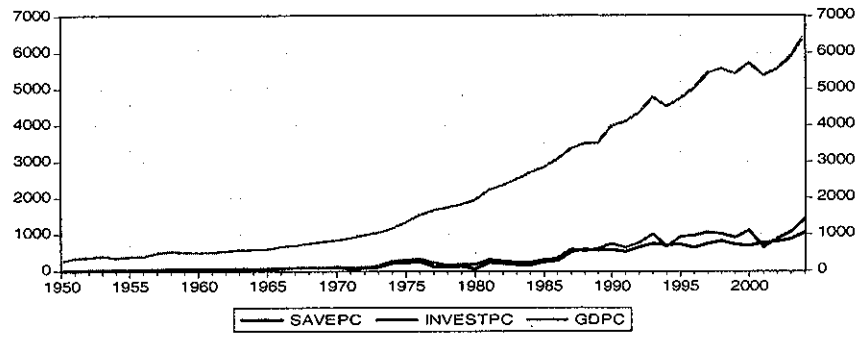

Figure 1. The Per Capita GDP, SAVING and INVESTMENT graphs for Turkey the period 1950-2004

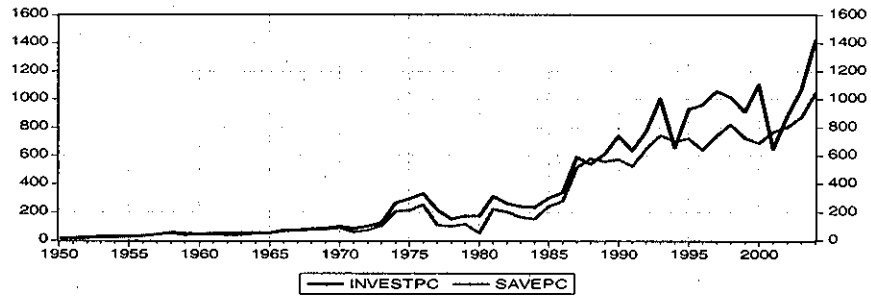

Figure 2. Saving and Investment Per Capita graphs for Turkey the period 1950-2004

Figure-1 and 2 show the time series graph of the investment and saving variables, and time series graph of the investment/GDP ratio and saving/ investment ratio graphs. As seen, after oil price shock 1974/79, 1978 foreign debt crisis, 1980s trade liberalization and export-oriented industrialization process and 1990s financial liberalization process and afterwards following financial oriented crisis affect the dynamics of the investment, saving and economic growth, see also figure 5.1.4.

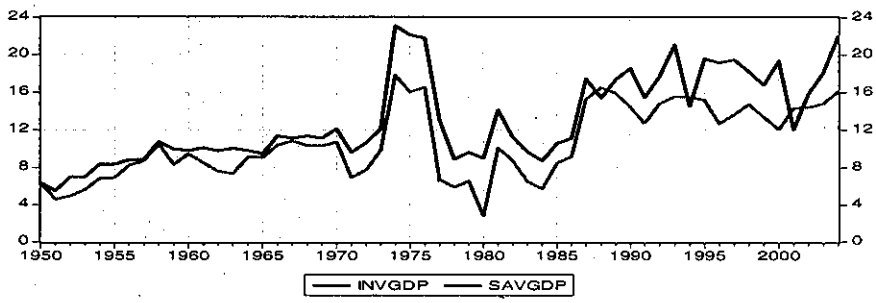

Figure 3. Saving/GDP and Investment/GDP graphs for Turkey the period 1950-2004

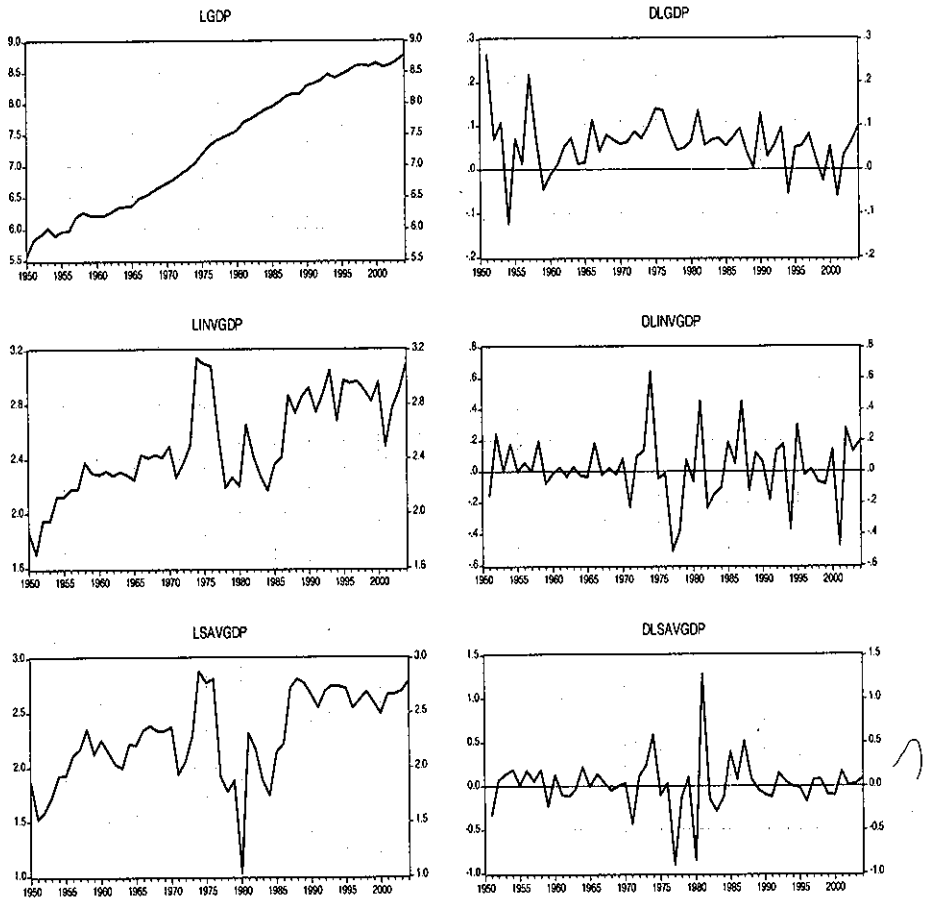

Figure 4. Logarithmic and Log-Difference Graphs of GDP, INVGDP and SAVGDP variables in per capita for Turkey the period 1950-2004

ADF Unit Root Test statistics Results[9] for the variables in Table-4 as follows

Table 4. Unit Root Tests Results For The Variables For Turkey

		LSAVGDP	LINVGDP	LGDP
ADF	Level	-3.83	-3.69	-1.27
	Difference	-9.2	-8.36	-7.83
Critical values for ADF test is -4.13 at the 1% significance level				

[9] See for detail theoretical analysis, Hamilton (1994)

ADF test results in Table 5.1.4 shows that all the variables are stationary in first difference, I (1) . Estimated ADF regression is estimated by considering the optimal combinations of time series modeling, which means that we run the ADF regressions with constant term, trend and other components of time series.

3.2. Cointegration Analysis for the Investment Saving and Growth Series

In order to analyze the long run relationship among the variables, we analyze the Johansen[10] maximum likelihood estimation method.

Table 5. Johansen Cointegration Test Results

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE (s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.347093	34.03960	29.79707	0.0153
At most 1	0.189645	11.44462	15.49471	0.1856
At most 2	0.005637	0.299608	3.841466	0.5841
Trace test indicates 1 cointegrating eqn (s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE (s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.347093	22.59498	21.13162	0.0309
At most 1	0.189645	11.14502	14.26460	0.1471
At most 2	0.005637	0.299608	3.841466	0.5841
Max-eigenvalue test indicates 1 cointegrating eqn (s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				

Johansen's log-likelihood ratio tests based on both trace test and max-eigenvalue indicate that there is one cointegrating vector for variables in

Table-5 that means the variables are cointegrated in the long run. Estimated Cointegration vector is,

[10] See for detail theoretical analysis, , Johansen (1988)

Table 6. Estimated Cointegration Vector for the Variables

LINVGDP = -0.264259+ 0.632418LSAVGDP + 0.109542LGDP		
Standart Errors	(0.07530)	(0.02842)
t-statistics	[-8.39840]	[-3.85499]

The results in Table-6 show that, the Lgdp and Lsavgdp variables affect positively to the linvgdp variable.

The vector error correction model (VECM) incorporates both the short run and long run effects among the variables, see the results in Table 7

Table 7. Adjustment Coeeficients for the Estimated Cointegration Vector and Error Correction Mechnism

Error Correction:	**D (LINVGDP)**	**D (LGDP)**	**D (LSAVGDP)**
CointEq1	**-0.740798**	**0.033484**	**-0.073703**
	(0.24680)	(0.07078)	(0.37693)
	[-3.00157]	[0.47308]	[-0.19554]

The adjustment coefficients shows that error correction mechanism runs and depends on the the value of coefficient, adjustment speed can be changed but ultimately it is possible to reach the equilibrium level.

3.3. Causality Analysis for the Investment Saving and Growth Series

We analyze granger causality among the variables by using Pairwise Granger[11] Causality and VAR Granger Causality/Block Exogeneity Wald Tests. We run three different models which are:

- First model consists of variables in log-level: LGDP, LSAVGDP and LINVGDP
- Second model consists of variables LGDP in log-difference, and LSAVGDP and LINVGDP in log-level
- Third model consists of all variables in log-difference: DLGDP, DLSAVGDP and DLINVGDP

[11] See for detail theoretical analysis, Granger (1969, 1980, 1981, 1988)

And three different periods, First Period: 1950-2004, Second Period: 1950-1980, Third Period: 1980-2004

Because of we want to observe the continuity of the causality among the variables, we include the lags from 1 to 4 in the VAR models. The lag length criteria such as AIC, Schwarz Criteria shows the optimum lag interval from 1 to 4 for different VAR models.When analyzing causality, we consider country based specific conditions such as economic crises, structural transformations and include dummy variables relevant years or peridos.Var Granger Causality/Block exogeneity wald tests for different combinations of saving investment and gdp variables for Turkey are seen in Table-8 and 9. as seen, the main causality results among the variables in the VAR models from 1 to 15 is that the Granger Causality is from GDP to investment and from investment to saving. Except the VAR model 13 and 14 for the lag 4, saving is also Granger Causality of investment variable. Furthermore, there is a mutual causality between variables.

The Granger Causality results mainly imply that main causality relationship among the variables in Turkey for the periods analyzed is that GDP and Investment variables are Granger Causality of the saving. GDP is Granger Causality of Investment The Granger Causality from saving to investment is found restricted level only in VAR model 13 and 14.

We can conclude that economic growth and investment variable have more powerful Granger Causality relationship on saving than saving has. The answer of the main question of the thesis which is to investigate which variable is the key when designing design economy policies is economic growth and investment. It is also argued that (ceteris paribus), it is not enough to improve the climate/conditions/atmosphere of saving to trig investment by transmission mechanism argued Classical Economists in Turkish Economy. When economic policy designers want to stimulate the investment and economic growth, it is not enough stimulate saving, but economic policy designers have to stimulate/to improve the investment and economic growth conditions/climate.

Table 8. VAR Granger Causality/Block Exogeneity Wald Tests For Different Combinations Of Saving Investment And GDP Variables for TURKEY

VAR MODEL-1 1950-2004				VAR MODEL-2 1950-2004				VAR MODEL-3 1950-2004			
LAG	LGDP	LINVGDP	LSAVGDP	LAG	DLGDP	LINVGDP	LSAVGDP	LAG	DLGDP	DLINVGDP	DLSAVGDP
1	→			1				1			
2	→			2				2		→	
3	→	→	→	3		→		3		→	
4	→	→	→	4		→		4		→	
	VAR MODELS INCLUDING 1980 DUMMY										
VAR MODEL-4 1950-2004				VAR MODEL-5 1950-2004				VAR MODEL-6 1950-2004			
LAG	LGDP	LINVGDP	LSAVGDP	LAG	DLGDP	LINVGDP	LSAVGDP	LAG	DLGDP	DLINVGDP	DLSAVGDP
1	→			1				1			
2				2				2		→	
3		→	→	3		→		3		→	
4		→	→	4		→		4		→	
	VAR MODELS INCLUDING 1980 DUMMY and 1990 DUMMY										
VAR MODEL-7 1950-2004				VAR MODEL-8 1950-2004				VAR MODEL-9 1950-2004			
LAG	LGDP	LINVGDP	LSAVGDP	LAG	DLGDP	LINVGDP	LSAVGDP	LAG	DLGDP	DLINVGDP	DLSAVGDP
1	→			1				1			
2				2				2		→	
3		→	→	3		→		3		→	
4		→	→	4		→		4		→	

Table 9. VAR Granger Causality/Block Exogeneity Wald Tests For Different Combinations Of Saving Investment And GDP Variables for TURKEY 1950-1980

VAR MODEL-10 1950-1980				VAR MODEL-11 1950-1980				VAR MODEL-12 1950-1980			
LAG	LGDP	LINVGDP	LSAVGDP	LAG	DLGDP	LINVGDP	LSAVGDP	LAG	DLGDP	DLINVGDP	DLSAVGDP
1	→	→	→	1				1			
2	→	→	→	2				2		→	
3				3		→		3		→	
4				4				4			

Table VAR Granger Causality/Block Exogeneity Wald Tests For Different Combinations Of Saving Investment And GDP Variables for TURKEY 1980-2004

VAR MODEL-13 1980-2004				VAR MODEL-14 1980-2004				VAR MODEL-15 1980-2004			
LAG	LGDP	LINVGDP	LSAVGDP	LAG	DLGDP	LINVGDP	LSAVGDP	LAG	DLGDP	DLINVGDP	DLSAVGDP
1	→	→	→	1	→	→	→	1			
2				2				2		→	
3	→	→	→	3			→	3			
4	↔	↔	→	4	↔	↔	→	4	→	→	

3.4. VAR Analysis for the Series

In order to analyze the interaction among the variables used in the model, impulse response functions of each variable to a one standard deviation shock is presented in Figure-5.. The first column in the figure presents responses of the variables to a one standard deviation LINV/GDP shock. LSAV/GDP responds with slowly decline. GDP growth rate declines after 2 years later increases and finally decays. The other variables impulse-responses among the variables are not volatile and responses decay in a short period.

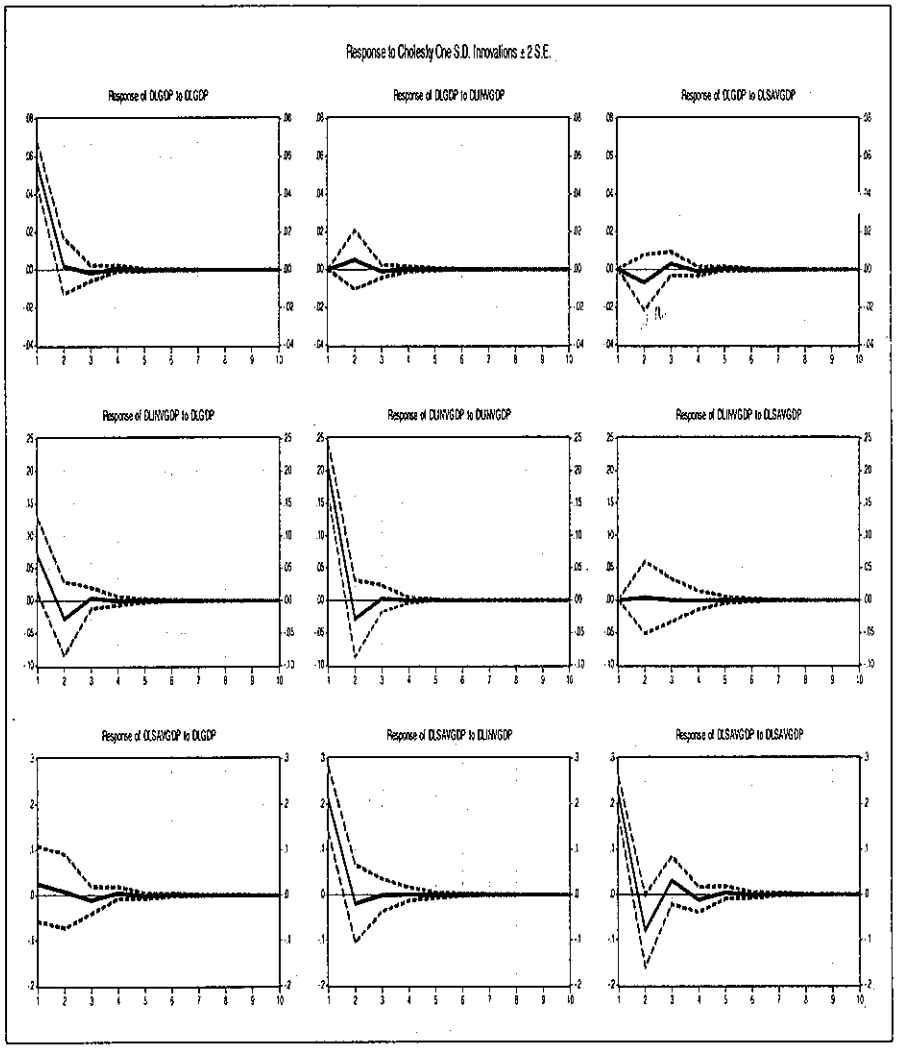

Figure 5. Impulse-Response Results of the VAR model consisting of DLGDP, DLINVGDP and DLSAVGDP for the period 1950-2004 including 1980 dummy variable

The Variance Decomposition shows the proportion of error variance in relevant variable due to one standard deviation shock of its own and other variables in the system. When we analyze the variance decomposition of the LINV/GDP variable, DLGDP variable have greater effect than LSAV/GDP variable on the LINVGDP, which means that saving has not greater effect on the investment as much as GDP has. On the other hand, investment has

important effect on the saving. When we analyze the variance decomposition of the DLGDP, investment and saving does not have an important effect on the DLGDP. It can be concluded that saving does not have important effect both investment and DLGDP but investment and DLGDP has great effect on the saving.

Table 10. Variance Decomposition of the VAR model consisting of DLGDP, DLINVGDP and DLSAVGDP for the period 1950-2004 including 1980 dummy variable

Variance Decomposition of DLGDP:				
Period	**S.E.**	**DLGDP**	**DLINVGDP**	**DLSAVGDP**
1	0.056783	100.0000	**0.000000**	**0.000000**
2	0.057465	97.74833	**0.749550**	**1.502122**
3	0.057588	97.44239	**0.783719**	**1.773892**
4	0.057602	97.40541	**0.784648**	**1.809941**
5	0.057604	97.40071	**0.784671**	**1.814618**
6	0.057604	97.40009	**0.784672**	**1.815235**
7	0.057605	97.40001	**0.784672**	**1.815318**
8	0.057605	97.40000	**0.784672**	**1.815329**
9	0.057605	97.40000	**0.784672**	**1.815330**
10	0.057605	97.40000	**0.784672**	**1.815331**

Variance Decomposition of DLINVGDP:				
Period	**S.E.**	**DLGDP**	**DLINVGDP**	**DLSAVGDP**
1	0.215975	**10.39625**	89.60375	**0.000000**
2	0.219602	**11.63884**	88.32260	**0.038563**
3	0.219654	**11.66632**	88.29507	**0.038606**
4	0.219654	**11.66645**	88.29481	**0.038744**
5	0.219654	**11.66645**	88.29477	**0.038782**
6	0.219654	**11.66645**	88.29476	**0.038788**
7	0.219654	**11.66645**	88.29476	**0.038789**
8	0.219654	**11.66645**	88.29476	**0.038789**
9	0.219654	**11.66645**	88.29476	**0.038789**
10	0.219654	**11.66645**	88.29476	**0.038789**

Variance Decomposition of DLSAVGDP:				
Period	S.E.	**DLGDP**	**DLINVGDP**	**DLSAVGDP**
1	0.302389	**0.662850**	**48.08477**	51.25238
2	0.313674	**0.690873**	**45.07293**	54.23620
3	0.315455	**0.808922**	**44.56649**	54.62459
4	0.315728	**0.836611**	**44.49089**	54.67250
5	0.315766	**0.840874**	**44.48037**	54.67876
6	0.315771	**0.841460**	**44.47895**	54.67959
7	0.315772	**0.841539**	**44.47876**	54.67971
8	0.315772	**0.841549**	**44.47873**	54.67972
9	0.315772	**0.841550**	**44.47873**	54.67972
10	0.315772	**0.841551**	**44.47873**	54.67972
Cholesky Ordering: DLGDP DLINVGDP DLSAVGDP				

Conclusion

Main aim of this paper is to investigate the interaction among the saving, investment and growth in order to find out which variable is the key We can conclude that investment and economic growth variables are relatively more effective on saving than saving does, so that, when designing an economic policy, it would be very important to focus investment and economic growth, which means to focus the economic-political factors that stimulate investment and growth. It is necessary but not enough to improve saving climate to stimulate investment and economic growth.

5. References

Achy, Lahcen. 2003. *"Financial Liberalization, Saving, Investment and Growth In MENA Countries"* INSEA (Morocco) forthcoming in Middle East Economics (vol. 6)

Alkin, Erdoğan. (1971) *"Türkiye'nin Dış Ticareti"*, Türkiye'nin İktisadi Gelişme Meseleleri, Cilt-I, İstanbul: İstanbul Ünv. Yay. No: 1682,

Attanasio, O., Picci, L. And Scorcu, A. 2000. *"Saving, Growth and Investment"*, Review Of Economics And Statistics, 82.2.. 182-211.

Attar, K..Temel, Pelin.Adil. 2002, *"Modelling Prıvate Manufacturing Investment in Turkey"*, METU Studies in Development, 29,1-2..109-122.

Boratav, K., Yeldan, E. 2001. *"Turkey, 1980-2000: Financial Liberalization, Macroeconomic Instability and Patterns of Distribution"*, CEPA, New School. December.

Boratav, Korkut, 1997. *"Türkiye Tarihi: Bugünkü Türkiye"*, in Bülent Tanör, Korkut Boratav, Şina Akşin; Ed. Cem Yayınevi, İstanbul. Oct. 1st. Ed. V.5.

Boratav, Korkut, 1997. *"Türkiye Tarihi: Çağdaş Türkiye"*, 1980-1995, in Ayla Ödekan, Cemil Koçak, Hikmet Özdemir, Korkut Boratav, Mete Tunçay, Murat Katoğlu, Selahattin Hilav; Yayın Sorumlusu: Şina Akşin, Cem Yayınevi, İstanbul, Oct. V.4.

Boratav, Korkut. 2000. *"Yeni Dünya Düzeni Nereye"*, İstanbul. İmge Kitabevi.

Buğra, Ayşe 1995. *"Devlet ve İşadamları"*, İstanbul. İletişim yay.

Carrol, C. And Weil, D.N., 1994. *"Saving And Growth: A Reinterpretetion"*, Carnegie-Rochester Series On Public Policy, V. 40. 133-192.

Carroll, Christopher D., Jody, R., Overland, David, N., Weil 2000. *"Saving and Growth with Habit Formation"*, American Economic Review, 90.3. 341-355,

Celasun, M. 1990. *"Fiscal Aspects Of Adjustment In The 1980s"*, In Arıcanlı T. And Rodrik, D., 1990. The Political Economy Of Turkey, Macmillan. Londra. 1990

Conway, P. 1990. *"The Record on Private Investment In Turkey"*, In The Political Economy Of Turkey: Debt, Adjustment, And Sustainability Eds. T. Aricanli And D. Rodrik, Macmillan. London.

De Long, J.B., Summers, L.H. 1992. *"Equipment Investment And Economic Growth: How Strong Is The Nexus?"*, Brooking Papers On Economic Activity, 2. 157-211.

Doğruel, Suut A., Doğruel, F., Aydin Cecen, A. 1990. *"Turkiye'de Ekonomik Büyüme Yapısal Dönüşüm ve Kriz"*, Egemen Publication. İstanbul.

Doğruel, Suut. A., Fatma, D. 2006. *"Bıçak Sırtında Büyüme ve İstikrar"*, İstanbul. Bilgi University Publication. 2006.

Fry, Maxwell J. 1980. *"Money, interest, inflation and growth in Turkey"* Journal of Monetary Economics Volume 6, Issue 4, October 1980, Pages 535-545

Granger, C.W.J 1988. *"Some Recent Developments in A Concept Of Causality"*, Journal Of Econometrics, 39.1. 199.

Granger, C.W.J. 1969. *"Investigating Causal Relations by Econometric Models and Cross-Spectral Methods"*, Econometrica, 37. 424–438.

Granger, C.W.J. 1980. *"Testing For Causality. A Personal Viewpoint"*, Journal Of Economic Dynamic And Control,

Granger, C.W.J. 1981. *"Some Properties of Time Series Data and Their Use in Econometric Model Specification"*, Journal Of Econometrics, 16. 121–130.

Hamilton, J.D. 1994. *"Time Series Analysis"*, Princeton Univ Press.

Ismihan, M., Kıvılcım, Metin-Özcan. 2006. *"The Growth Performance of the Turkish Economy: 1960-2004"*, www.bilkent.edu.tr/~economics /papers/06-10, accessed. 05/02/2008

Ismihan, M., Kivilcim, Metin-Ozcan., Tansel, A.2005. *"The Role Of Macroeconomic Instability In Public And Private Capital Accumulation And Growth: The Case Of Turkey 1963–1999"*, Applied Economics, 37. 239–251

Johansen, S. 1988. *"Statistical Analysis Of Cointegration Vectors"*, Journal Of Economics Dynamic And Control, 12. 231–254.

Kaldor, N.1957. *"A Model of Economic Growth"*, Economic Journal, V.LXVII.

Kazgan, G. (2000). *Küreselleşme ve Ulus Devlet - Yeni Dünya Düzeni*, İstanbul Bilgi Ünv. Yay.

Keyder, Ç. 1987. *"İthal ikamce Sanayileşme StratEconomic Journalisi ve Çelişkiler"*, in Boratav, Korkut, A.Keyder, Ş. Pamuk, Kriz, Gelir Dağılımı ve Türkiye'nin alternatif Sorunu, İstanbul. Kaynak yay. 24.

McKinnon, Ronald I. 1973. *"Money and Capital in Economic Development"*, Washington. The Brookings Institution.

Öniş, Z. (2006) *"Beyond the 2001 Financial Crisis: The Political Economy of the New Phase of the Neo-liberal Restructuring in Turkey"*. International Studies Association, Annual Convention. San Diego, California, USA

Özmucur, S. 1991. *"İstikrar Politikaları"*, İstanbul. Avcıol Matb.

Palley, T. 1996. *"The Saving-Invesment Nexus: Why It Matters And How It Works"*, Cepa Working Papers, No 1.

Pamuk, Ş., Owen, R. 1999. *"A history of Middle East economies in the twentieth century"*, Harward university press,

Rodrik, D. Velasco, A. 1999. *"Short-Term Capital Flows"* National Bureau of Economic Research Working Paper, No. 7364. September. Cambridge. MA.

Rodrik, Dani. (1998) *"Saving Transitions"* http: //ksghome.harvard.edu /~drodrik/savpaper.pdf, accessed 10.7.2007.

Schimdt, M.B. 2001. *"Saving and Investment: Some International Perspectives"* Southern Economic Journal, 68.2. 446-456.

Schmidt-Hebbel K., Serven, L. 2000. *"Does Income Inequality raise Aggregate Saving?"*, Journal of Development Economics, 61 417-46,

Schmidt-Hebbel, K. Loayza, N., Serven, L. 2000. *"Saving in Developing Countries Overview"*, World Bank Economic Review, September

Schmidt-Hebbel, K., Corbo, V. 1991. *"Public Policies and Saving in Developing Countries"*, Journal of Development Economics, 36 89-115

Schmidt-Hebbel, K., Serven, L 1999. *"The Economics of Saving and Growth: Theory, Evidence and implications for policy"*, Cambridge Univ. Press

Schmidt-Hebbel, K., Serven, L. 1995. *"Saving And Income Distribution"*, Mimeo, The World Bank.

Schmidt-Hebbel, K., Serven, L. 1995. *"Saving In The World: Puzzles And Policies"*, Mimeo, The World Bank.

Schmidt-Hebbel, K., Serven, L. 1997. *"Saving Across The World"*, World Bank Discussion Papers, No. 354.

Schmidt-Hebbel, K., Serven, L., Solimano, A. 1996. *"Savings and Investment: Paradigms, Puzzles, Policies"*, World Bank Research Observer, 11. 87-117.

Schmidt-Hebbel, K.H. Lopez, Serven, L. 2000. *"How effective is Fiscal Policy in raising National Saving?"*, The Review of Economics and Statistics, LXXXII. 2.. 226-238,

Schmidt-Hebbel, Klaus. 2001. *"Chile's Growth: Resources, Reforms, Results"* Prepared for the Fifth Annual Conference of the Central Bank of Chile on "The Challenges of Economic Growth", Nov. 29-30, 2001, Santiago.

Shaw, E. 1973. *"Financial Deepening in Economic Development"*, New York. Oxford University Press.

Ülgener, Sabri. (1971) *"Türkiye'de Planlama ve Planlı Döneme Geçiş"*, in Türkiye'nin İktisadi Gelişme Meseleleri, Cilt-I, İstanbul: İstanbul Ünv. Yay. No: 1682,

Yeldan, E., 2001. *"Küreselleşme Sürecinde Türkiye Ekonomisi"*, İletişim Yayınları, İstanbul.

Yeldan, Erinc and Voyvoda, Ebru (1999), Patterns of Productivity Growth and the Wage Cycle in Turkish Manufacturing, http: //www.econturk.org /turkish99.html, accessed 10.7.2007

Yentürk, N. 1995. *"Short-Term Capital Flows and Their Impact on Macroeconomics Order: A Comparison Between Turkey and Mexico"*, Boğaziçi Journal vol. 9. no 2,

Yentürk, N. 1996. *"Impacts of Capital Inflows on Saving and Investment: A Comparison of Turkey and Latin American Countries"*, METU Studies in Development", vol. 23. no. 1

Yentürk, N. 1999. *"Short-Term Capital Inflows and Their Impact on Macroeconomic Order: Turkey in the 1990's"*, Developing Economies, vol. XXXVII. no 1.

Yentürk, N. 2005. *"Körlerin Yürüyüşü: Türkiye Ekonomisi ve 1990 Sonrası Krizler"*, İstanbul Bilgi Üniversitesi Yayınları, 2.Baskı. Istanbul.

Yentürk, N. And Kepenek, Y. (2000) *"Türkiye Ekonomisi"*, Remzi Kitabevi, İstanbul

Yentürk, N., Ulengin, B. 2001. *"Impacts of Capital Inflows on Aggregate Spending Categories: the Case of Turkey"* Applied Economics, no. 33. 1321-1328.