

What has been the Role of Investment in Turkey's Growth Performance?

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"In addition to better roads and the possibility of selling goods in Tiflis, [the report] stated that duties on the Russian route were fixed and known, whereas on the Turkish side he is never sure of what the amount of Duties will be -- as every Pasha's charges are almost entirely regulated by the state of Politics, at the Moment."

Charles Issawi (1970), "The Tabriz-Trabzon Trade, 1830-1900: Rise and Decline of a Route," *International Journal of Middle East Studies*, 1, p. 23.

1. Introduction

Investment decisions occupy a central role among the determinants of growth. As empirical studies such as Levine and Renelt (1992) have revealed, fixed investment as a share of gross domestic product is the most robust explanatory variable of a country's growth. DeLong and Summers (1991) also provide evidence emphasizing the correlation of investment in equipment and machinery with growth. New growth theories have been developed that assign a growth-sustaining role to investment. Barro (1990) considers a simple endogenous growth model with infrastructure investment. Rebelo (1991) shows that differences in growth rates across countries may be explained by differences in government policy in an endogenous growth model. In Rebelo's model, changes in certain policy variables such as an increase in the income tax rate decrease the rate of return to investment activities in the private sector and lead to a permanent decline in the rate of capital accumulation and in the rate of growth. Easterly and Rebelo (1993) study the implications of models that link fiscal policy to growth, and find a positive impact of infrastructure investment on growth. Investment is also the most variable component of GDP, and therefore an understanding of its determinants may shed light on the source of cyclical fluctuations. Policymakers are typically concerned about the ultimate impact of alternative policy measures on investment. In this chapter, we will examine the record of investment and growth for the Turkish economy over the period 1950-2007 in the light of both the neoclassical growth framework and also new growth theories that assign a growth-sustaining role to investment.

Until recently, Turkey's growth performance has been examined in terms of alternative economic policy regimes such as state-led growth, import-substituting industrialization, and economic liberalization including trade and financial liberalization.¹ More recently, attention has turned towards understanding the fundamental determinants underlying this performance.² This analysis has revealed that total factor productivity (TFP) growth has been typically low in Turkey, and that Turkey's growth has been driven primarily by capital accumulation. Yet a detailed study understanding the factors determining investment performance in Turkey is not readily available. This is an important deficiency because most if not all of

¹ As an example, Krueger (1974, 1995) describes the impact of the foreign trade regime on productivity and growth in Turkey. For a discussion of the process of financial liberalization in Turkey, see Atiyas and Ersel (1992) or Rodrik (1990).

² See Altug and Filiztekin 2006, Altug Filiztekin and Pamuk 2008 and Saygılı, Cihan, and Yurtoğlu (2001).

the policy proposals regarding the future of the Turkish economy – be they proposals regarding macro-economic stability or those aimed at ensuring greater competitiveness – have to do with improving the investment environment in Turkey.

Various factors affect investment including macroeconomic instability, corruption, the existence of the informal economy, regulatory and tax policy, to name just a few. In an early paper, Mauro (1995) examines the relationship between corruption and growth for a cross-section of countries (including Turkey). He takes into account the endogeneity of various corruption indicators, and finds that corruption and lack of bureaucratic efficiency lower investment, thereby also lowering growth. Farrell (2003) argues that the existence of a large informal sector tends to create an uneven playing field for firms, thereby deterring investment.

Tax policy can also affect the level and composition of investment expenditures. New studies for the U.S. show that tax changes have a much stronger impact on real GDP than previously found, and they trace the source of this effect to the strong (negative) impact of the tax change on investment. (Romer and Romer 2007). The investment tax credit (ITC) has been a popular fiscal tool to influence the level of investment for reasons of macro-stabilization or to stimulate specific sectors. In Turkey, incentives of various forms have been implemented to spur exports, to promote a more equal distribution of investment, and to aid regional development. As we describe below, the record of such incentive schemes is decidedly mixed. Furthermore, high tax and regulatory burdens on the formal economy co-exist side-by-side with a large informal economy, creating a negative incentive structure and impeding efforts at creating a more efficient tax and regulatory system.

In this chapter, we will study the record of Turkey's past investment performance over the period 1950-2007. We will also study the sectoral decomposition of investment. We will examine in depth the factors that are thought to be important for determining investment behavior in Turkey. Given the central role that investment plays in growth, the results of our study will have implications for Turkey's future economic performance for its ability to converge to per capita income levels of developed countries, and for the viability of its current bid for European Union membership.

2. Some Observations

In this section, we provide some observations on the behavior of productivity, output growth, and investment for Turkey. Following the conventions in Altug, Filiztekin, and Pamuk (2008), we initially consider two broadly defined periods, 1950-1980, the so-called “Golden Age” and 1980-2005, the era of globalization. This periodization also allows for changes in the policy regime that occurred in 1980 as Turkey moved from a regime of import-substituting industrialization to export-led growth accompanied by trade and financial liberalization.

Table 1 provides summary statistics on real output, number of workers, the capital stock, and land.³ This table shows that output grew at annual rate of nearly 5 percent during 1950-1980, and 4 percent during 1980-2005. The equivalent growth rate of per capita GDP is around 3 percent during 1950-1980 and somewhat over 2 percent during 1980-2005.⁴ These per capita rates are above averages for the developing countries as a whole. For example, Turkey's average performance is better than that of the Latin American countries.⁵

³ Real output and capital stock in 1990 prices: State Institute of Statistics (SIS) and Saygılı, Cihan and Yurtoğlu (2005). Employment: Bulutay (1995) and SIS. Land: SIS. For a further description of the variables, see Altug, Filiztekin, and Pamuk (2008).

⁴ See Altug, Filiztekin and Pamuk (2008), Table 2.

⁵ See Altug, Filiztekin, and Pamuk (2008).

Average Annual Growth Rates (in percent)

Aggregate Economy				
	Output	Labor	Capital	
1950-1980	5.13	1.96	6.36	
1980-2005	4.07	1.35	4.21	
Non-agricultural Sector				
	Output	Labor	Capital	
1950-1980	6.39	5.65	6.67	
1980-2005	4.74	2.98	4.35	
Agricultural Sector				
	Output	Labor	Capital	Land
1950-1980	2.95	0.43	3.84	1.95
1980-2005	1.13	-0.96	1.83	-0.34

In 1990 prices. Source: Altug, Filiztekin, and Pamuk (2008).

Table 1: Annual Growth Rates of Main Sectors and Factors of Production

Second, we observe that the rate of growth of output is considerably higher during 1950-1980. This finding holds regardless of whether we consider the agricultural or non-agricultural sector. Rates of capital accumulation are also highest during 1950-1980. For the overall economy, the capital accumulation rate is 6.36 percent, with the non-agricultural sector displaying a comparable capital accumulation rate of 6.67 percent for this period.

Third, we observe that resources are transferred out of agricultural into non-agricultural sectors such as manufacturing and services after 1980 as the process of structural transformation in Turkey continues. This process is evident from Table 1 which shows the negative growth rates of labor in the agricultural sector for 1980-2005. A similar decline is observed for land under cultivation, as arable lands are taken up for tourism and residential uses.

The post-1980 period witnessed a change in the orientation of the Turkish economy from import-substituting industrialization (ISI) to export-led growth. The ISI regime was characterized by State Economic Enterprises (SEE's) investing in large-scale intermediate goods production while the large private sector firms concentrated their activities in consumer goods industries. The Turkish economy under an ISI regime began to experience various internal and external imbalances in the period following the oil shocks of the mid-1970's. A severe economic and political crisis ensued in 1979 which led to a sweeping set of measures to liberalize the Turkish economy. The period following the 1980 military takeover was witness to a major set of reforms and to the resumption of favorable rates of growth amid widespread suppression of trade union activity and of real wages. In the early 1980's, the Özal government also embarked on an ambitious program of infrastructure investment, financed by domestic and external borrowing. As Krueger (1995) demonstrates, the share of government expenditures in current GDP increased from a low of 18

percent in 1982 to 24 percent by 1990.⁶ The ensuing monetization of debt accompanied by volatile “hot money” flows under an overvalued exchange rate and rising current account deficits led to the the crisis of 1994 and the macroeconomic instability of the 1990’s (see Özatay, 1996, 2000).

One of the key findings from Table 1 is the apparent decline in the rate of capital accumulation after 1980. This can be partly attributed to the experience of macroeconomic instability of the 1990's in Turkey. Özatay (1996, 2000) argues that the fundamental factors leading to the 1994 crisis were compounded by policy mistakes. The crisis of 2000-2001, which arose from financial and banking sector fragility, erupted in the midst of an IMF-sponsored and exchange-rate based stabilization program (Özatay and Sak 2002.). Both of these crises are among the major causes for the reduction in the rate of output growth and capital accumulation for the Turkish economy in the post-1980’s period

Turning to a more detailed examination of investment expenditures for Turkey we note that it has been highly volatile. In Table 2, we present the growth rates of private investment in selected sectors, including manufacturing, tourism, and residential construction for the period 1950-2003.⁷ In periods that have witnessed growth slowdowns or contractions in the Turkish economy, there have also been declines in the rates of growth of investment across the different sectors. In the periods 1975-1979 and 1980-1984 leading up to and immediately following the 1980 military takeover, we observe a slowdown and subsequent sharp decline in the rate of growth of investment in the manufacturing sector. The growth rate of residential investment also falls and becomes negative during the period 1980-1984. The impact of the crises that Turkey experienced since the mid-1990's is further manifested in the behavior of investment in manufacturing industries and residential construction. Table 2 shows that the rate of growth of investment in manufacturing industries is essentially zero during the period 1995-2003 while that for residential construction remains negative over the same period.

Average Annual Growth Rates (in percent)

Period	Manufacturing	Tourism	Residential
1950-1954	21.0	-	19.1
1955-1959	5.6	-	-5.5
1960-1964	14.7	-	1.9
1965-1969	15.4	22.3	16.3
1970-1974	9.3	2.7	3.7
1975-1979	2.0	3.7	11.4
1980-1984	-6.5	12.3	-8.2
1985-1989	-3.1	43.0	22.9
1990-1994	12.9	-6.1	7.4
1995-1999	0.9	15.8	-8.5
2000-2003	0.0	7.3	-21.2
Mean	6.56	9.18	3.57
Standard Deviation	8.73	13.90	13.55

In 1990 prices. Source: Saygılı, Cihan, and Yurtoğlu (2005)

Table 2: Investment Growth Rates in Selected Industries

⁶ The increasing government deficits were due to the costs of these expenditures together with the cost of their financing. Transfers were made during this period prior to elections as the ruling party began to lose popularity at the polls.

⁷ We examine the behavior of investment in the post-2002 period in more detail in the next subsection.

A second observation regarding the behavior of investment expenditures for Turkey is the change in the composition of investment in the post-1980's period. Various authors have argued that investment expenditures shifted to residential uses after 1980 (Voyvoda and Yeldan 2001; Saygılı, Cihan, and Yurtoğlu 2005). Voyvoda and Yeldan (2001) note that the orientation of the economy to export-led growth was achieved at the expense of cost savings on wage labor which were then directed to export markets by means of a generous export subsidy program. They argue that the subsequent shortfall in investment rates in manufacturing circumscribed to a large extent the policy of export-led growth deriving from this sector. From Table 2, we observe that investment in manufacturing fell by 3.1 percent but investment for tourism and residential uses increased by 43 and 23 percent, respectively, during the period 1984-1989. The reason for this phenomenon can be traced to the system of incentives implemented during this period. Saygılı, Cihan, and Yurtoğlu (2005) have argued that this practice has led to excessive resources being devoted to non-productive uses, with subsequent deleterious effects on long-term growth. These authors have also argued that efforts to overcome the negative effects of the 1994 crisis through a system of investment incentives has led to overcapacity in certain sectors such as textiles, which have subsequently had difficulty competing internationally. By contrast, the high positive growth in investment expenditures in the manufacturing sector during the period 1990-1994 can be attributed to the anticipatory response to the Customs Union Agreement with the European Union that was concluded in 1996. Capital deepening also occurs during the early 1990's as capital is substituted for labor in response to higher real wages.

A third observation concerns the changing composition of private versus public investment during the post-1980's period. Ismihan, Metin-Özcan, and Tansel (2002) study Turkey's investment performance and its relation to growth and macroeconomic instability over the period 1963-1999. They distinguish between the behavior of private and public investment and demonstrate that there are significant differences in investment rates during the pre- and post-1980's.⁸ Notwithstanding the change in the orientation of the Turkish economy that took place after 1980, they argue that one of the important effects of macroeconomic instability in the Turkish economy has been to reduce public investment, especially its infrastructure component, and to reverse the complementarity between private and public investment in the long run. Examining the dynamic response of the variables, they find that both private investment and output respond positively to increases in public investment but that the response of private investment is significant and large.

The international evidence indicates that developing countries such as Turkey often display capital-intensive growth. Collins and Bosworth (1996) argue that it was the ability of East Asian countries to achieve high rates of saving and investment that led to high growth in output. Kumar and Russell (2002) and Maudos, Pastor, and Serrano (2000) construct world production frontiers using output and inputs of labor and capital under the assumption of constant returns to scale. Their results indicate that technical change is non-neutral, leading to productivity growth at higher capital-labor ratios, and that capital deepening is the primary cause of convergence in the distribution of labor productivity for the period 1960-1990.

The puzzle for Turkey is the low rate of capital accumulation itself – not why growth is primarily due to capital accumulation. The growth in the capital-output ratios for a variety of East Asian countries ranged around 3-3.5 percent during the period 1966-1990. By contrast, Turkey's capital-output ratio grew

⁸ They show that public fixed core and non-core infra-structural investment grew at average annual rates of 10.8% and 9%, respectively, during the period 1963-1979. However, these rates fell to 2.7% and 0.8% during 1980-1999, and the growth of real public fixed investment declined from 9.7% to 1.6%. Over the same periods, the growth in real private fixed investment declined from 7% to 6.1%.

at a rate of 1.2 percent during 1960-2005. For the period 1960-1980, this growth rate is 3.14 percent, which is comparable to some of the East Asian countries. However, the growth rate is only 0.4 percent over the period 1980-2005.⁹ The observations regarding the changing composition of investment, be it towards non-productive uses by the private sector or the shift from public to private investment, appears as an added factor that contributes to the mixed investment performance of the Turkish economy over the past fifty years.

2.1 Regional issues

Some recent papers have examined the pattern of regional development and the convergence of per-capita income across regions or provinces in Turkey. Regional convergence is typically analyzed from the viewpoint of the neoclassical growth model. Regions that have lower per capita income ought to grow faster, yielding the standard predictions exploited by growth regressions in the macroeconomics literature. Filiztekin (1998) uses per-capita provincial value-added data to test for convergence across Turkish provinces. He finds evidence only for *conditional convergence*, that is, convergence conditional on an initial set of characteristics such as differences in population growth rates, differences in government policy, societal preferences, and technology. Similar findings have been obtained by Doğruel ve Doğruel (2003), ve Karaca (2004).

Temel, Tansel, and Albersen (1999) find evidence for a bipolar distribution characterizing the long-run behavior of labor productivity across regions. Their results indicate that the majority of the provinces move to a low productivity level while a few move towards a high productivity level.¹⁰ Kırdar and Saraçoğlu (2007) examine the record of convergence across Turkish provinces after accounting for the role of internal migration. They find a negative relationship between provincial output growth rates and migration. They also show that migration tends to expedite convergence of income growth across provinces. The reason is that those choosing to migrate are precisely those who have low levels of human capital and market skills. Despite providing important insights into the record of regional growth and convergence, none of these studies have considered the relationship between investment behavior and regional growth.

Altug and Küçük (2006) employ the device of *investment maps* to examine the temporal evolution of per-capita investment and value-added across regions in Turkey for the period 1980-2000. They consider the behavior of both public and private investment and value-added in manufacturing industries. They find that private investments in manufacturing increase along an axis that stretches from southeastern Turkey to northwestern Turkey over the period in question. This makes the Marmara region the hub of industrial activity in Turkey. Nevertheless, there is evidence of increasing economic activity in such provinces as Gaziantep, Kayseri, Adana that reflects the establishment of free-trade zones and other investment incentive schemes in the post-1980's. A similar southeast-northwest axis also characterizes the behavior of public investment. However, public investment in manufacturing tends to display a less uneven distribution across provinces. Examining value-added maps for public and private industries, the authors find that the public sector investments have gone some way in ameliorating the pattern of regional income inequality. However, it is difficult to conclude the same for private sector investments.

In a related study, Ögüt and Barbaros (2003) present indices of human development (HDI) and human poverty (HPI) for Turkish provinces. Their findings illustrate the well-known disparity in income and human welfare levels between eastern versus western parts of Turkey, and mirror the results of Altug and Küçük (2006) in an alternative fashion. Ögüt and Barbaros (2003) also examine the system of investment incentives in Turkey. Surprisingly they find that Marmara region was the primary recipient of

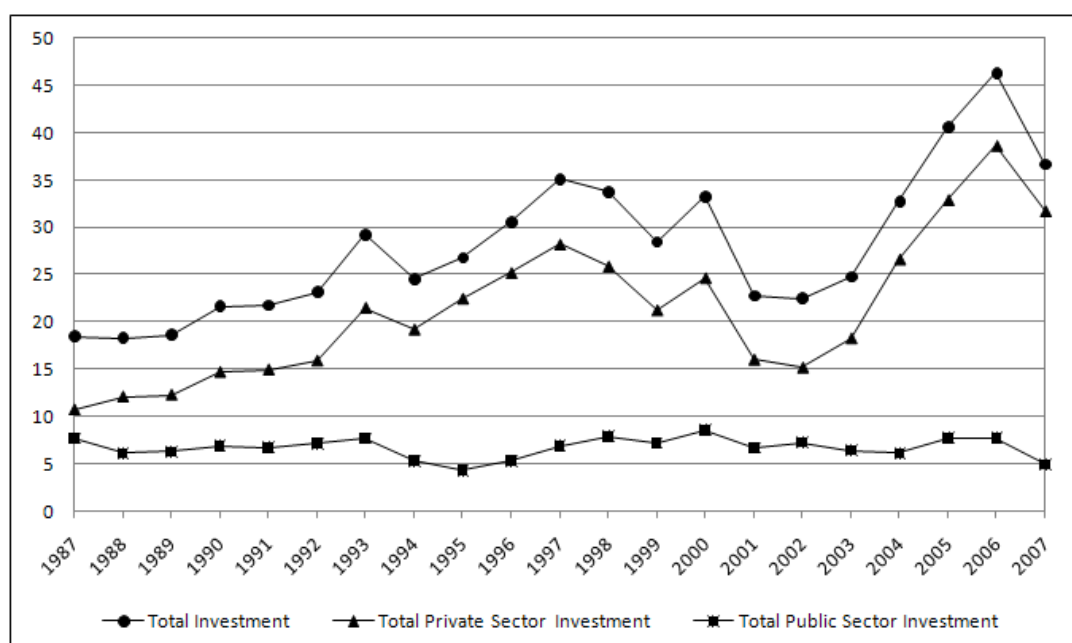
⁹ See, for example, Altug and Filiztekin (2006) or Altug, Filiztekin, and Pamuk (2008).

¹⁰ This is consistent with the notion of *convergence clubs* emphasized by Quah (1994).

the majority of tax incentives estimated as a function of total investment expenditures or per capita employment. They also argue that regional incentive schemes have been put in place without a clear-cut set of regional priorities. More importantly, they argue that the system has often degenerated into “investing for tax breaks” as opposed to “tax breaks for investing,” with only 15 percent of tax incentives going to the less developed regions that actually need them.

2.2 Has the pattern changed since 2002?

One of the widely contested issues regarding the Turkish economic performance is that the period since 2002 constitutes a “break” with the past. The period since 2002 corresponds to the single-party rule of the Justice and Welfare Party (AKP), during which adherence to fiscal discipline and a variety of macroeconomic reforms including banking sector reforms that had been put into effect after the crisis of 2000-2001 have led to a regime of macroeconomic stability and to low and declining inflation and interest rates. Figure 1 shows the behavior of total investment as well as its breakdown between private and public investment over the period 1987-2007, measured in 1987 prices. We observe the large decline in investment during the crisis of 2000-2001 and the subsequent rebound. Indeed both private and public investment exhibit the *J*-curve phenomenon, rising steeply after the large decline during the crisis of 2000-2001. Figure 2 provides a further breakdown of private investment into machinery and equipment (M&E) investment and construction. Investment in M&E in particular shows robust growth from 2002 onwards. Saygılı, Cihan, and Yurtoğlu (2005) have argued that one important factor in the recent investment performance is the increase in newer vintage capital in the total capital stock. This has occurred as firms have taken advantage of favorable developments in global credit markets and an overvalued exchange rate to upgrade the quality of their capital stocks. Figure 2 shows that private sector construction also displays a modified *J*-shape. However, the lags in investment due to the “time-to-build” feature imply that investment in construction bottoms out later than M&E investment.¹¹ However, consistent with the growth rates in Table 2, we observe that investment in the residential sector or private construction industries contracts during the entire 1995-2003 period.



¹¹ For a discussion of time-to-build and investment, see Altug (1993).

Figure 1: Total Investment Expenditures, 1987-2007. In billions of New TL.

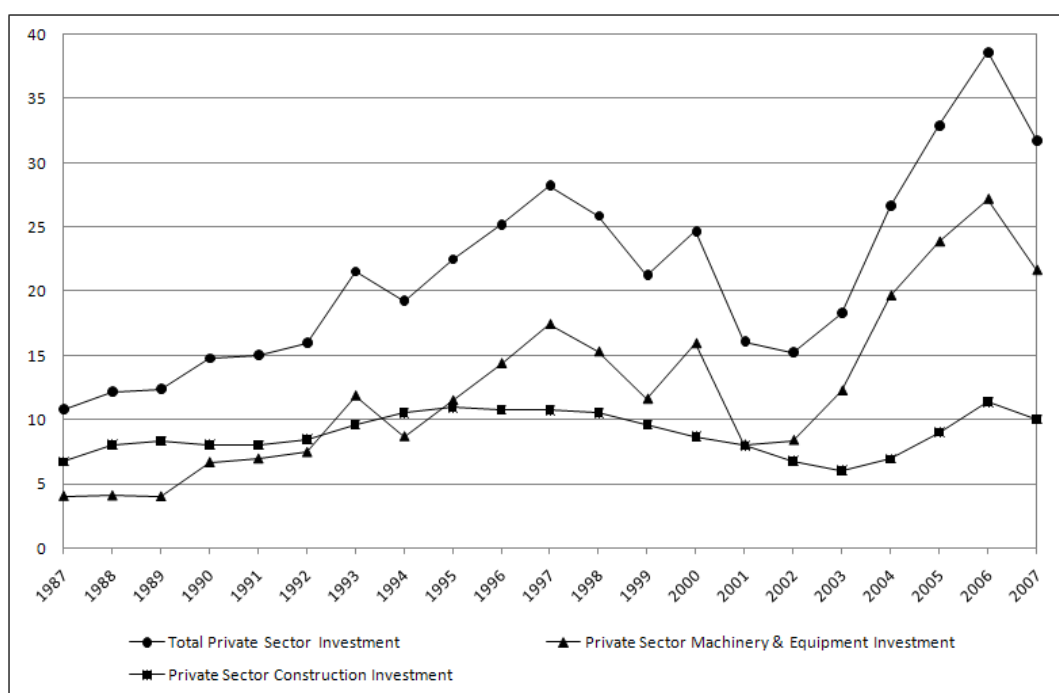


Figure 2: Private Investment Expenditures. In billions of New TL.

Figure 1 shows that the largest decline in public investment occurred during the 1994 financial crisis. Furthermore, consistent with the findings of Ismihan, Metin-Özcan, and Tansel (2002) for the period up to 1999, public and private investment expenditures show no long-run relationship in the post-2002 period. This is especially true after the crisis of 2000-2001, implying that any complementariness that existed between them is further weakened during this period. Finally we observe that all components of investment start to decline after 2006, as uncertainty about future political developments once again becomes an important consideration in economic agents' decisions..

In summary, we observe a significant improvement in investment performance during the first term of the Justice and Welfare Party (AKP) rule which started late in 2002. However, part of this improvement can be attributed to a *J*-curve type effect as well as favorable global liquidity conditions. Nevertheless, we observe that investment performance starts to deteriorate after 2006 in Turkey. Viewing investment performance in Turkey on the broader time line, the developments since 2002 do not provide sufficient evidence of a break with its past investment performance.

3. Determinants of Investment in Turkey

The factors underlying Turkey's investment performance are many and varied. Yet, as the quote from the economic historian Charles Issawi illustrates, problems that were important in determining trade and economic activity in Turkey more than a hundred years ago still continue to have relevance today. In this section we examine in more detail some of the factors behind Turkey's investment and growth performance. These include taxation and regulatory policy, the existence of a large informal sector, and corruption.

3.1 Taxation and other regulations

The overall tax burden in Turkey, standing at 24.5 percent of GDP in 2006, is relatively low compared with an average of 34.5 percent for the OECD countries and 39.8 percent for the EU19 countries (see Table 3 below). However, Table 3 also reveals that the tax burden in Turkey has increased in an unprecedented manner by about 10 percentage points since 1990, after having fluctuated around 10 percent during the period 1965-1990.

	1965	1970	1975	1980	1985	1990	1995	2000	2005	2006
Turkey	10.6	9.3	11.9	13.3	11.5	14.9	16.8	24.2	24.3	24.5
OECD	25.6	27.5	29.4	31.0	32.7	33.8	34.8	36.1	35.8	35.9
EU19	27.7	29.7	32.2	34.9	37.6	38.2	39.0	40.6	39.7	39.8

Source: OECD Revenue Statistics 1965-2007

Table 3: Total Tax Revenues as Percentage of GDP, 1965-2006

The role of tax policy in stimulating investment has been the topic of much analysis. Much of the earlier literature was conducted for the case of tax changes under certainty.¹² Altug, Demers, and Demers (2008) have shown that in an environment under *uncertainty* temporary tax incentives (or lower policy persistence) generally increase the variability of investment both in the short and the long run. Temporary incentives such as a temporary investment tax credit (ITC) lower investment in the short run and raise it in the long run. Policy-makers may thus face a long-run trade-off between the level and the volatility of investment. Tax policy often suffers from problems of commitment and time-inconsistency as well.

In a recent review of the Turkish tax system in terms of its impact on investments and growth, Zenginobuz (2005) notes that the tax system in Turkey has now become the primary source of public governance risk for both domestic and foreign companies considering investments in Turkey. The Turkish tax system suffers from a number of major problems including the lack of transparency and predictability. In its current form, it is a patchwork of fragmented legislation and regulations that were enacted over time to solve one pressing issue or the other without a coherent strategy. Its sheer complexity, together with the frequency with which it has been subjected to piecemeal changes in rules and regulations, creates major uncertainties for the business community and investors. During 2000-2005 there were 46 amendments to major tax laws (an average of 9.2 amendments per year) and tax rates were adjusted 157 times by the Council of Ministers (an average of 31.4 per year and 2.6 adjustments per month). Moreover, the Ministry of Finance has issued 253 tax communiqués over the same period to explain and clarify the implementation of amended tax laws and rates.¹³ In addition, as noted by Zenginobuz (2005), there are taxes that create considerable red tape for businesses without raising significant revenue (the foremost example being the stamp duty on all contractual agreements transacted, which raises only about 2 per cent of overall tax revenue).

Uncertainty thus created renders investment planning extremely difficult. Zenginobuz (2005) reports the results of a survey of major foreign companies operating in Turkey, where tax and regulatory policy uncertainty is among the top three issues that are considered to pose major/severe problem for the operation and growth of their businesses. The Global Competition Survey of the World Economic Forum, a widely used indicator of business environment in a country by foreign firms doing business there as well as domestic firms, also has listed tax regulations among the most problematic factors for doing business in

¹² For a review and discussion, see Demers, Demers, and Altug (2003).

¹³ See TÜRMOB (2005).

Turkey consistently over the years. In the Global Competition Survey 2008-2009 (World Economic Forum, 2008), “tax regulations” is listed as the second most problematic factor for doing business in Turkey (the first being “inefficient government bureaucracy”), and Turkey is ranked 123rd among 134 countries covered in terms of extent and effect of taxation.

	Personal	Corporate	Social	Property	Goods
	Income	Income	Security		& Services
Turkey	15.6	6.0	22.4	3.6	48.7
OECD	24.8	10.7	25.3	5.7	31.5
EU19	22.6	8.8	30.2	4.8	31.3

Source: OECD, Revenue Statistics 1965-2007

Table 4: Tax Revenue of Main Headings as Percentage of Total Taxes, 2006

As for the structure of the Turkish tax system, Table 4 above reveals that it heavily relies on revenue collected through taxes on consumption. The taxes on goods and services stood at 48.7 percent of total tax revenue in 2006. This is about 17 percentage points higher than the corresponding figure for OECD and EU19 countries. With such heavy reliance on indirect taxes, the current tax system is very far from being an optimal tax structure where the tax burden is distributed more evenly between different tax instruments for the sake of economic efficiency as well as fairness.¹⁴ Moreover, given the size of the informal sector in Turkey (see below), the relatively low overall tax revenue burden is misleading about the very high tax burden faced by the formal sector. Specifically, the high social security contribution rates, together with other tax distortions in product markets, act as a major impediment to employment growth and further formalization of the economy. Until very recently, the tax wedge (the difference between the gross wage – what employers have to pay in wages and social security contributions – and the net amount employees receive after tax and social security deductions) has been one of the highest among the OECD countries and stands at 42.76 percent for a single earner in a family composed of a married couple with two children (calculated at the average wage level of a production worker).¹⁵

Table 4 also reveals that the share of personal income taxes in total tax revenues is strikingly low in Turkey, standing at about 15 percent in 2006 compared to a EU19 average of over 22.6 percent and an OECD average of 24.8 percent for the same year. This is despite a relatively high average personal income tax rate (of about 30 percent) compared to OECD countries and is likely to be a reflection of the large size of the informal sector in the Turkish economy. The share of corporate income tax in total tax revenues is also low compared to those for OECD countries and EU19 countries.

As a partial response to the apparent inefficiencies and anti-growth aspects of the tax system summarized above, several measures were taken during 2006-2008 with a view to reducing the tax burden on formal businesses and their customers. The corporate income tax rate was reduced from 30 to 20 percent, bringing the rate to the low side when compared to the rates currently prevailing in OECD countries. The value-added tax rates on textile and clothing and on hotels and restaurants were reduced from 18 to 8 percent in both cases. In addition, a personal income tax allowance was reintroduced into the personal income tax structure, which led to as much as 5 percentage points reduction in the tax wedge of

¹⁴ For an assessment of the distributional impacts of the very high taxes on consumption in Turkey, see Gökşen, Özertan, Sağlam and Zenginobuz(2008).

¹⁵ See Figure A6, page 58, of Zenginobuz (2005), which displays this particular tax wedge for Turkey and selected OECD countries over the period 2000-2003.

low income wage earners. Finally, as of October 2008 the social security contributions of employers were reduced by 5 percentage points, bringing the tax wedge to the 36-39 percent range for most workers.¹⁶ The government has also announced its intention to further reduce the social contribution rates, but further cuts are unlikely before a major reform of the social security system which currently imposes a heavy burden on public spending.

As noted above, among investors and the business community “inefficient government bureaucracy” is listed as the most problematic factor in doing business in Turkey. This is in part due to lack of coherence in the formal rules and regulations related to doing business, which altogether works as an impediment for increasing productivity and growth in employment, but relates more generally to overall institutional quality. The Global Competitiveness Survey cited above classifies Turkey as competitively disadvantageous in all subcategories of its institutional quality indicator.¹⁷ All of this renders access to capital, labor, and technology in the formal sector costly, leading the less productive firms to escape to the informal sector. An “informality trap”¹⁸ ensues, as it becomes extremely difficult for less productive informal or semi-formal enterprises operating in grey zones without the requisite transparency to access financial resources that could allow them to modernize and increase their productivity.

There exists a set of incentives to promote business activity and investments. Among them are:¹⁹

- tax benefits exempting machinery and equipment related to business investments from custom duties and value added tax;
- subsidies on interest rates provided on the basis of location, scale, and scope of investment projects;
- regional incentives in the form of personal income tax relief and social security contribution subsidies for investments in provinces with a GDP per capita level equal to or less than USD 1,500 as of the end-2001;
- incentives granted to Small and Medium Sized Enterprises in the form of subsidized credits, incubator facilities etc.;
- incentives to support Research and Development (R&D) in the form of refunds for qualifying R&D expenses, corporate tax breaks, reductions in social security contribution rates for R&D personnel etc.;
- direct subsidies and tax breaks for Technology Development Zones that have been created around major universities; and
- incentives to promote exports in the form of subsidies in order to cover expenditures related to international brand development, international market research etc.

In theory, incentives, such as investment incentives, may be used to rectify various market distortions – including those caused by taxes. However, they also get in the way of markets performing their essential function of providing correct signals to investors and consumers. Moreover, incentives cost in terms of tax revenue and their impact, if any, is limited to the short run. When coupled with inefficient government

¹⁶ See Table 4.2, page 149, in OECD (2008).

¹⁷ Some of the subindicators include property rights; intellectual property protection; diversion of public funds; public trust of politicians; judicial independence; favoritism in decisions of government officials; wastefulness of government spending; burden of government regulation; efficiency of legal framework; and transparency of government policymaking. See, *Country Profile: Turkey*, Global Competitiveness Survey, World Economic Forum, 2008. Available at <http://www.weforum.org/documents/GCR0809/index.html>.

¹⁸ See, for example, Maşatlıoğlu and Rigolini (2008).

¹⁹ For an up to date account of investment incentives in Turkey, see the document at the tax portal of Pricewaterhouse Coopers Turkey, available at <http://www.pwc.com/tr/eng/ins-sol/publ/investmentincentives.pdf>.

bureaucracy, investment incentives may serve as fertile ground for bureaucratic hurdles that delay investments and effectively block foreign firms from entering the domestic market. Ögüt and Barbaros (2003) note that a given tax or incentive scheme has required coordination among thirteen different regulatory bodies for its implementation. They also criticize the system of tax rebates put into use during the period 1983-1989 as failing to promote innovation and high-technology-investments. Instead, tax rebates for export-promoting industries have led to corrupt practices such as “fictitious exports”. In the long run, investments, in particular foreign direct investment (FDI), respond only to improved business environments where good governance structures are in place.

3.2 The informal economy

Schneider and Enste (2000) define the informal economy as involving unreported income from the production and exchange of goods and services that would be taxable were it reported to the tax authorities. Informal economic activity is widespread and it is a nontrivial part of the overall economy across countries. According to the recent estimates by Schneider (2007), the size of the informal economy in 2004/2005 was 7.9 percent of the official GDP in the United States, 15.3 percent in Germany, 23.2 percent in Italy, 14.8 percent on average in 21 rich OECD countries, 29.8 percent on average in 28 Asian countries, 38.8 percent on average in 25 East and Central European and Former Soviet Union countries, and 42.2 percent on average in 21 South American countries. Schneider (2007) estimates the size of the informal sector in the Turkish economy for 2004/2005 as 33.2 percent of the official GDP. His estimates for the informal sector in the Turkish economy remain almost constant around this value since 1999/2000, pointing at a structural persistence.²⁰

The estimates by Schneider (2007) are in line with those in a report by Tax Inspectors Board of the Turkish Finance Ministry (Tax Inspectors Board, 2005). Based on an estimate of tax loss due to informality, the report provides an estimate of 30.04 percent of the official GDP as the size of the informal sector in 2004. The estimates for informal sector in the Turkish economy by Çetintaş and Vergil (2003) for the longer period of 1971-2000 vary between 16-31 percent of the official economy and are broadly consistent with the estimates cited just above.

In early studies of the issue the main determinants of the size of the informal economy were identified as tax and social security burdens (Frey and Pommerehne 1984; Tanzi 1999; Schneider 1994, 1997). Taxes affect labor-leisure choices in the formal economy and also increase labor supply in the informal economy, leading to possibly extensive distortions. The greater the difference between the total cost of labor in the official economy and after-tax earnings from work, the greater is the incentive to work in the informal economy.

More recently, attention has been focused on the impact of political and social institutions that govern the economy, where bureaucracy, corruption, and a weak legal system are viewed as the main culprits. Djankov, La Porta, Lopez de Silanes, and Schleifer (2002) emphasize that start up costs generate large informal sectors. Friedman, Johnson, Kaufman and Zoido-Lobation. (2000) suggest that it is not the tax rate *per se* that push businesses into informality, but bureaucracy and weak legal system.²¹ More recently, Antunes and Cavalcanti (2007) identify start-up costs due to government regulations and corruption as the main determinants of the informal economy using a dynamic general equilibrium model. They also find that enforcement and regulation costs are equally important determinants of the size of the informal economy.

²⁰ See Table 3.2.2, page 17, of Schneider (2007).

²¹ They use 1990s data for 69 countries, covering all continents and income ranges. Turkey is not included in their data set.

Finally, there is also a mutual relationship between the quality of public services and the size of informal economy. An increase in the size of the informal economy can lead to reduced tax revenues, which in turn reduces the quality and quantity of publicly provided goods and services. This can lead to an increase in tax rates for firms and individuals in the official sector, a deterioration in the quality of public goods (such as infrastructure) and of administration, leading to even stronger incentives to move to or remain in the informal sector. Johnson, Kaufman, and Zoido-Lobaton. (1998, 1999) present a simple model of this relationship. Their findings show that smaller informal sectors appear in countries that collect higher tax revenues with reasonable tax rates, fewer laws and regulations, and less bribery facing enterprises. Countries with better rule of law, which is itself related to the ability to collect tax revenues, also have smaller informal sectors. Wealthier countries of the OECD, as well as some Eastern European countries find themselves in the good equilibrium of relatively low tax and regulatory burden, sizeable revenue mobilization, good rule of law and corruption control and relatively small informal sector. By contrast, a number of countries in Latin America and the former Soviet Union exhibit characteristics consistent with a bad equilibrium: tax and regulatory discretion and burden on the firms are high, the rule of law is weak, and there is a high incidence of bribery and a relatively high share of activities in the informal economy.

Regarding the effects of informal sector on growth, Easterly (1993) and Loayza (1996) show that growth is negatively related to informal production. Using data for 110 countries (including Turkey), Schneider (2005) provides estimates of the impact of informal sector on the growth of the official economy. If the informal sector of the economy (in percent of official GDP) increases by one percentage point, the growth rate of the official GDP in developing countries declines between 4.5 percent and 5.7 percent. In contrast, for industrialized countries one percentage point increase in the size of the informal sector leads to 7.7 percent increase in the growth rate of the official economy. Former result reveals that the impact of the informal sector on the growth of the official economy is a complex phenomenon that depends on the income level of the country. For Turkey, the results obtained by Çetinbaş and Vergil (2004) using time series data are in line with the results of Schneider (2005) for the developing economies, namely that the extent of the informal sector has a negative impact on the growth of the official economy. The causality tests they provide suggest that the size of the informal economy is an important predictor of the growth in the official economy but not the opposite. Typically, the negative effects of the existence of a large informal sector on growth derives from the fact that it creates an uneven playing field, especially for foreign investors, and thereby deters investment (Farrell, 2004).

3.3 Corruption

As briefly alluded to above in the discussion on informal sector, the existence of corruption and bribery and the extent of the informal sector are related with each other. Johnson, Kaufman, and Zoido-Lobaton (1998) find a statistically significant relationship between the various measures of bribery and corruption and the informal economy. Friedman, Johnson, Kaufman, and Zoido-Lobaton (2000) also find that corruption is associated with more informal economic activity across 69 countries. They argue that entrepreneurs move to the informal sector not to avoid taxes but to reduce the burden of bureaucracy and corruption. To the extent that the informal sector leads to less investment and growth in an economy, the existence of corruption will exacerbate these negative impacts in proportion to the extent that it increases the size of the informal sector.

Corruption also has a direct impact on the investment behavior of firms. It deters investment by raising operational costs and thereby creating additional uncertainty in net revenues. In addition, if capital investments are partially irreversible, then greater uncertainty about future returns on investment increases the option of waiting to undertake an irreversible investment (Dixit and Pindyck 1994). However, the existence of corruption may also allow certain firms to bribe corrupt officials to win lucrative government

contracts, to obtain credit at below market interest rates, and to collude with tax collectors to reduce tax payments. Thus, everything else being equal, firms that benefit from corruption may invest more than they would have done otherwise (Hellman, Jones and Kaufman 2002). Hence, in theory the impact of corruption on firm-level investment is ambiguous.

However, almost all of the empirical findings of macro- and micro-level studies point at a negative relation between corruption and investment. Studies that employ country-level data on investment and country-level data on corruption find that corruption deters aggregate investments (Mauro 1995; Wei 2000; Rock and Bonnet 2004; Pellegrini and Gerlagh 2004). Using firm-level data on investment and country-level data on corruption, Smarzynska and Wei (2000) focus on foreign owned firms in transition countries and find that corruption has an adverse effect on investment. Batra, Kaufman and Stone (2003) pool firm level data on both investment and corruption for 3,100 firms in 81 developing and developed countries and find that corruption has a negative and significant impact on investment growth.²²

Corruption is perceived to be a major problem in Turkey by private enterprise and the public at large, particularly in government procurement. Based on a country wide survey of the public at large (administered in 2000) and private enterprises (administered in 2001), Adaman, Çarkoğlu, and Şenatarlar (2003) report very high level of perceived corruption in the provision of public services at the customs offices, by the traffic police, at the property title deed offices, at the municipalities, by the police, and at tax offices.²³ For private enterprises the tax offices are perceived to be the most corrupt, followed by the customs offices. In addition to perceptions of corruption, Adaman, Çarkoğlu, and Şenatarlar (2003) also enquired about the actual experience of bribery by private enterprises and the public at large. Of the 1,200 private enterprises surveyed, 46 percent reported having paid a bribe within the two years before the survey, while out of 3,000 people surveyed 18 percent answered the same question affirmatively.

The Corruption Perception Index (CPI) of Transparency International, an index widely used both by international investors and academic researchers for international comparisons, also corroborates the perception of high level of corruption in Turkey. The CPI score relates to perceptions of the degree of corruption as seen by business people and country analysts and ranges between 10 (highly clean) and 0 (highly corrupt). Turkey's CPI score was 3.1 in 2003, placing Turkey at 77th in the transparency ranking of 133 countries. It has exhibited a modest but consistent improvement every year since 2003 and was reported as 4.6 in 2008, moving Turkey to 58th in the transparency ranking of 180 countries.²⁴ A similar improvement in the perception of corruption by the public at large has also been observed by Adaman, Çarkoğlu, and Şenatarlar (2009) in the recent update of their 2000 survey.²⁵ Together with macroeconomic stability, greater transparency and an improvement in the perception of corruption may be reasons behind the greater observed flows of foreign direct investment to Turkey since 2003.

4. Conclusion

In this chapter, we have considered the record of investment and growth for the Turkish economy. Our analysis indicates that Turkey's investment record is characterized by three main facts. First, capital

²² Gaviria (2002), using firm level data for both investment and corruption for 2,612 firms in 29 countries in Latin America and the Caribbean, is the only study that finds no significant relationship between corruption and firm level investment growth.

²³ The institutions are listed in decreasing order of perceived corruption. See Adaman, Çarkoğlu, and Şenatarlar(2003), page 51, for details.

²⁴ CPI scores of Transparency International are available at http://www.transparency.org/policy/_research/surveys/_indices/cpi.

²⁵ Their 2001 survey of private enterprises has not been updated yet.

accumulation is the main factor behind Turkey's growth performance; yet investment has been peripatetic in Turkey. Second, changes in the composition of investment expenditures away from manufacturing and towards residential uses and other non-productive sectors in the post-1980's period have meant a misallocation of resources that have also contributed negatively to overall growth. Third, the loss of complementariness between public and private investment in the post-1980's as a result of the decline in public investment has also weakened the impact of private investment expenditures. As the discussion in Section 3 revealed, underlying these facts is the existence of an inefficient tax and regulatory system and a large informal economy, both of which go hand-in-hand with corrupt practices in different aspects of economic life.

Turkey's ability to attain high and sustainable growth rates of output depend on its ability to promote productivity-enhancing investment, whether of the domestic sort or through foreign direct investment. A system of tax incentives that help to reduce the size of the informal sector, recognize regional priorities, and enhance Turkey's technological capabilities appears as an important goal of macroeconomic policy in the near and medium term. Some progress has been made in this regard by the recent changes in the corporate income tax as well as by modest reforms that have brought down the tax wedge, but a comprehensive tax reform is needed to further encourage investment, risk-taking and entrepreneurship. Rather than making gradual small improvements to the existing structure, substantial simplification of the overall structure and major across-the-board reductions in tax rates appear to be essential also for attracting foreign direct investment.

The discussion in Section 3 also revealed the adverse effects of uncertainty introduced by constantly changing tax laws as well as other regulations on business practices. Tax reform should be implemented along with strategies that implies a credible commitment to not changing the new tax regime over an extended period of time. A simple tax regime with low rates, if accompanied by reduced tax expenditures and fewer tax breaks, will not only facilitate tax enforcement and compliance but also broaden the tax base and reduce the risk of extreme revenue loss. At the same time, a campaign to reduce the size of the informal sector will have to be initiated. Among other things, this means commitment to a zero amnesty policy and strict enforcement of it. Ongoing improvements in tax administration, especially in its use of electronic information processing systems, are essential for reducing tax evasion and fighting informal economic activity.

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