CURRENCY AND EQUIVALENTS UNITS

Currency Unit = TL (Turkish Lira) - until December 31, 2004
Currency Unit = YTL (Yeni Turkish Lira) - from January 1, 2005

1 YTL = 1,000,000 TL
1 US Dollar ($) = 1.2900 YTL, as of April 9, 2008

FISCAL YEAR
July 1 – June 30

ABBREVIATIONS AND ACRONYMS

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<tr>
<td>BEEPS</td>
<td>Business Environment and Enterprise Performance Survey</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>BIPs</td>
<td>Border Inspection Posts</td>
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<tr>
<td>IPPC</td>
<td>Integrated Pollution Prevention and Control</td>
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<tr>
<td>BRSA</td>
<td>Banking Regulation and Supervision Agency</td>
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<td>LITS</td>
<td>Life in Transition Survey</td>
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<tr>
<td>CAD</td>
<td>Current Account Deficit</td>
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<td>MEF</td>
<td>Ministry of Environment and Forestry</td>
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<tr>
<td>CAP</td>
<td>Common Agricultural Policy</td>
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<tr>
<td>MASAK</td>
<td>Financial Crimes Inspection Board</td>
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<tr>
<td>CCMS</td>
<td>The Committee on the Challenges to Modern Society</td>
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<tr>
<td>NAMARA</td>
<td>Ministry of Agriculture and Rural Affairs</td>
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<tr>
<td>DAP</td>
<td>East Anatolia Project</td>
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<tr>
<td>NUTS</td>
<td>Nomenclature of Territorial Units for Statistics</td>
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<tr>
<td>DAs</td>
<td>Development Agencies</td>
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<td>OBA</td>
<td>Output Based Aid</td>
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<td>DOKAP</td>
<td>East Black Sea Regional Development Plan</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
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<tr>
<td>DSI</td>
<td>General Directorate of State Hydraulic Works</td>
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<tr>
<td>PER</td>
<td>Public Expenditure Review</td>
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<tr>
<td>EBRD</td>
<td>European Bank of Reconstruction and Development</td>
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<td>PSAs</td>
<td>Program for International Student Assessment</td>
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<td>EU</td>
<td>European Union</td>
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<td>PPP</td>
<td>Public/Private Partnership</td>
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<tr>
<td>EUROSTAT</td>
<td>Statistical Office of the European Communities</td>
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<td>SMEs</td>
<td>Small and Medium Scale Enterprises</td>
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<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>SOEs</td>
<td>State Owned Enterprises</td>
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<td>FSAP</td>
<td>Financial Sector Assessment Program</td>
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<td>SPO</td>
<td>State Planning Organization</td>
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<td>CAP</td>
<td>South East Anatolia Project</td>
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<td>SSK</td>
<td>Social Security Institution</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>TCA</td>
<td>Turkish Court of Accounts</td>
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<tr>
<td>GNP</td>
<td>Gross National Product</td>
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<tr>
<td>TEPAV</td>
<td>The Economic Policy Research Foundation of Turkey</td>
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<tr>
<td>HACCP</td>
<td>Hazard Analysis and Critical Control Points</td>
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<tr>
<td>TFP</td>
<td>Total Factor Productivity</td>
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<tr>
<td>HRM</td>
<td>Human Resources Management</td>
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<td>TURKSTAT</td>
<td>Turkish Statistical Institute</td>
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<td>IBs</td>
<td>Inspection Boards</td>
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<tr>
<td>UCES</td>
<td>EU Integrated Environmental Approximation Strategy</td>
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<tr>
<td>ICA</td>
<td>Investment Climate Assessment</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technologies</td>
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<tr>
<td>USD</td>
<td>US Dollar</td>
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<td>ILO</td>
<td>International Labor Organization</td>
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CHAPTER 1.
ENSURING SUSTAINABILITY OF FAST GROWTH

A. Overview

1.1 While economic growth has been fast in recent years and macroeconomic stability has been restored, achieving income convergence with advanced countries will require a sustained period of fast economic growth. The outlook for growth depends on the ability to increase the level of investment—as well as its efficiency—above the historical averages and on achieving stronger employment generation combined with higher labor productivity. However, for the sustainability of fast growth, Turkey is likely to face specific challenges in maintaining the external balance, anchoring low inflation, and managing large capital inflows that may be expected as the convergence process continues. Sound economic policies, further deepening of structural reforms and FDI-friendly policies to enhance competitiveness would help Turkey mitigate risks and sustain fast growth.

1.2 After reviewing recent macroeconomic developments and growth prospects in section B, the chapter provides an analysis of the driving forces behind the evolution of the current account in section C. The chapter then moves on to consider potential challenges going forward by providing an analysis of the sustainability of the current account in section D. The challenge of inflation targeting and the policy implications of large capital flows are discussed in section E and F respectively. Finally, key risks and mitigating factors are presented in section G.

1.3 Following the completion of this report, TURKSTAT released the long-awaited revision to GDP data on March 8, 2008. The recent revision updates the base year to 1998 from 1987, and includes both changes in methodology and coverage, while harmonizing Turkey's GDP estimates with the European System of Accounts (ESA 95). With this revision, historical GDP series as well as key macroeconomic ratios of Turkey have changed significantly. Nevertheless, these changes have not been reflected in this report since the revision was announced after the report had been completed. In addition, key findings and policy recommendations presented in this report are unlikely to have changed as a result of the revision. Annex 1.1 provides an overview of the GDP revision.

B. Macroeconomic Developments and Growth Prospects

Recent Macroeconomic Developments

14 Turkey has succeeded in restoring macroeconomic stability. Since 2001, the Turkish economy has bounced back from a sharp crisis and entered a period of high growth and significant structural transformation. Annual growth averaged 7.5 percent and output increased by more than 40 percent during 2002-2006. This positive performance is due in great part to the government's sustained commitment to sound economic policies as well as a benign international economy. Strong fiscal discipline and tight monetary policies helped lower inflation and inflationary expectations and improve debt sustainability. Substantial progress has also
been achieved in restructuring the financial sector, improving the business environment, and reforming the public sector. Sound policies, a favorable international environment and the prospects of EU accession have helped Turkey expand its export capacity and attract large capital inflows.

1.5 The economy grew at a robust pace in 2006 but a slowdown took place in the first half of 2007. GNP growth at 6 percent was stronger than expectations in 2006. The economy continued to grow at a fast pace (6.8 percent) in the first quarter of 2007 on the back of strong exports performance but slowed down to 4.1 percent in the second quarter mainly due to deceleration of private consumption (-0.7 percent, y-o-y) – reflecting the lagged impact of the monetary policy tightening after the financial market volatility in May-June 2006. In the third quarter, economic growth further slowed down to 2 percent, in part due to a sharp decline in agricultural output. On the expenditures side, net exports of goods and services made a negative contribution to the third quarter growth, with real imports increasing faster than exports. Consequently, annual growth was recorded at 4 percent in the first nine months of 2007, compared to 6.4 percent in the corresponding period of 2006. Annual growth for the whole year is expected at 5 percent in 2007.

1.6 Fiscal performance has remained strong since 2002; however meeting the 2007 fiscal targets seems challenging. Public sector primary surplus averaged a remarkable 6.7 of GNP in 2003-2006 and the 2007 budget as approved by the parliament was in line with the 6.5 percent of GNP primary surplus target. Nevertheless, the central government budget—which was planned to generate a primary surplus of 5.2 percent—underperformed in 2007, reaching only 70 percent of the year-end target (about 3.4 percent of estimated GNP). This underperformance was partly a result of expenditure overruns in the first half of the year. In addition, slowing economic activity and declining domestic sales put significant pressure on tax revenues. To make up for the weak performance, the Ministry of Finance announced measures which include investment budget cuts and a blockage of the unreleased appropriations of goods and services purchases for the last three months of 2007. In October 2007, the government revised its year-end primary surplus estimate of the overall public sector to 4.1 percent of GNP from 6.7 percent. At the same time, the government set a headline primary surplus target of 5.5 percent of GNP for 2008. While this is a strong sign of the government’s commitment to continued strong fiscal performance, an increased attention to the quality of fiscal performance would ensure longer term sustainability of fiscal adjustment. Improvements in the quality of fiscal adjustment would require structural fiscal reforms that create fiscal space for growth-promoting expenditures and lower taxes – a key for sustaining fast growth over the medium term (Box 1.1).

1 The 2007 target was revised to 6.7 percent of GNP from 6.5 percent during the Sixth Review of the IMF Stand-by Arrangement.
Ensuring Sustainability of Fast Growth

Box 1.1: Sustainability of Fiscal Adjustment and Growth

Turkey achieved remarkable fiscal consolidation since 2002; however, its sustainability requires continued efforts to implement structural reforms. Turkey maintained an average public sector primary surplus of 6.7 percent of GNP in 2003-2006, despite a growing social security deficit. Fiscal adjustment, however, has primarily relied on revenue-side measures and reductions in investment expenditures and in the personnel expenditures of State-Owned Enterprises (SOEs)—with negligible expenditure rationalization.

Factors behind continued and impressive fiscal adjustment were a) implementation of structural reforms, b) strong growth performance c) sizeable reduction in inflation through tight monetary policy d) appreciated TL with the help of favorable international market conditions and e) higher actual primary surplus than the structural one due to positive cyclicity component.

The structural primary surplus—a good measure of policy-induced changes in the fiscal stance—declined by about 1.2 percent of potential GDP since 2002. The decline in structural primary surplus raises concerns for the sustainability of fiscal consolidation. Cyclical revenues due to robust growth boosted fiscal surpluses significantly since 2002. However, if revenues were to decline or rise less rapidly due to slower growth, this could jeopardize fiscal sustainability. A declining structural primary surplus adds stimulus to domestic demand and indicates that the fiscal stance has turned pro-cyclical—an unwelcome development at a time of external imbalances and sticky inflation. In this environment, continued fiscal discipline will help keep disinflation on track, maintain market confidence, and achieve further reduction in the public debt ratios—thereby improving the resilience of the economy to external shocks.

Turkey’s primary expenditures are much higher than in other fast-growing emerging economies—indicating scope for expenditure rationalization. At 33 percent of GDP in 2005, primary expenditures of the general government were lower than in the European Union (EU) member countries (e.g., Bulgaria, Greece, Hungary, Poland), but substantially higher than in comparable emerging market economies (e.g., Chile, Korea, Malaysia, Thailand). The difference mainly reflects a larger general government wage bill and large expenditures for current transfers, mainly comprising social benefits.

Turkey faces two simultaneous fiscal challenges; maintaining fiscal discipline, while creating the fiscal space needed to meet pressing development challenges, and sustaining high growth. As strong fiscal discipline needs to be maintained in the years ahead, there is little room for Turkey to further increase total expenditures in order to meet pressing development challenges. Structural fiscal reforms, aimed at improving the quality of fiscal consolidation, are the only viable means of sustaining the adjustment, while making appropriate fiscal space for growth-enhancing expenditures and lower taxes in the future. Fiscal space to meet expenditure pressures would best be created by a combination of structural public expenditure reforms, expenditure reallocations, and continuing tax reform efforts. The following options would help creating the required fiscal space.

- Sector-specific reforms to improve the efficiency of expenditure programs
- Trade-offs in expenditure allocations with the aim of shifting resources to priority programs for growth and social development.
- Sector-specific expenditure reforms underpinned by horizontal reforms that improve the efficiency of expenditure programs across sectors;
- Initiatives to further rationalize the tax system—including the tax expenditures.

1.7 **However, despite the impressive record of reforms, vulnerabilities remain**, as demonstrated by the impact on Turkey of the May-June 2006 turmoil in international markets. The change in risk appetite by international investors affected many emerging markets but its effect was magnified in Turkey due, inter alia, to a large and widening current account deficit. The YTL depreciated by 20 percent versus the USD and the main stock market index lost about 20 percent in May-June 2006. Sharp depreciation of the YTL led to higher inflation, and market interest rates rose significantly. Since then, the YTL has bounced back and appreciated to above its pre-volatility level. However, interest rates have remained elevated due to a strong monetary policy reaction, which has reduced the brisk pace of economic activity. Nevertheless, this episode also demonstrated the economy’s resilience to economic shocks. Turkish markets have recently been affected by the ongoing global market volatility originated in the US sub-prime mortgage market. In August 2007, the first wave of market volatility caused almost 11 percent loss in Turkish stocks and 8.5 percent depreciation of the YTL versus the USD. As of end-2007, Turkish assets bounced back and recovered most of the losses they suffered in this episode. Nevertheless, uncertainties have continued as global markets entered a renewed period of volatility in early 2008, triggered by fears of a recession in the US economy.

1.8 **Three key challenges remain:**

- Growing fast is critical for Turkey to achieve income convergence with advanced countries but sustaining the fast growth is not easy. Continued macroeconomic stability is necessary but not sufficient condition for sustainable growth. The 7.5 percent annual average growth rate achieved during the last five years of recovery does not show the sustainable growth level of actual and potential output once the output gap has been closed.

- After reaching 6.3 percent of GNP in 2005, the CAD-to-GNP ratio further increased to 8.1 percent in 2006 and remained high at an estimated 7.8 percent in 2007. Turkey’s large CAD poses a risk to the sustainability of high growth—although the quality of its financing has improved, with an increase in the share of foreign direct investment and other non-debt creating sources to above 50 percent.

- Inflation reversed trend in 2006, jumping to a level of about 10 percent by the end of the year, which was significantly higher than the official target of 5 percent. Annual inflation at 8.4 percent in 2007 was more than double the 4 percent target. Bringing inflation close enough to the targeted level of 4 percent in 2008 seems challenging.

- Turkey has been one of the main beneficiaries of the ample capital flows directed to emerging markets over the past few years. Large capital flows will support growth but may also generate macroeconomic imbalances.

1.9 **On the external front, the current account remains a source of concern.** Alongside with the strong recovery, the current account deficit started to widen in 2003. It continued deteriorating due to rising oil prices and a growing trade imbalance associated with an appreciating currency caused by reverse currency substitution and large capital inflows. A strong recovery of private investment and buoyancy of domestic demand also significantly contributed to this worsening. In addition to a higher imported energy bill, lower tourism revenues also played a significant role in the deterioration in 2006 (the drivers of current account dynamics are further
ENSURING SUSTAINABILITY OF FAST GROWTH

examined in section II). After reaching a record high of 8.2 percent in 2006, the current account deficit to GNP ratio is estimated to have narrowed down to 7.8 percent in 2007 due to slowing domestic demand, strong exports performance and a moderate recovery in tourism revenues. On the financing side, share of non-debt creating inflows (net FDI plus net errors and omissions), increased to 54 percent in 2006 from 33 percent in 2004 – reflecting the improvement in quality of financing. In particular, net FDI inflows reached a record high of USD 19.8 billion in 2007, corresponding to 4 percent of the estimated GNP and covering more than 50 percent of the current account deficit.

1.10 Inflation exceeded targets by far in 2006 and 2007. The Central Bank adopted a formal (explicit) inflation targeting regime in January 2006. After reaching the historically low level of 7.7 percent end-year rate in 2005, downward inflation trend halted and inflation started to pick up in April 2006 due to strong domestic demand and persistence in services inflation (inflation dynamics are analyzed in section IV). Furthermore, global market volatility in May-June, 2006 and its impact on domestic markets also adversely affected the pace of inflation. Annual inflation increased to 9.7 percent in 2006, well above the target of 5 percent. The CB chose to maintain its target of 4 percent for 2007. Annual inflation reached 8.4 percent in 2007, mainly driven by drought-related increases in unprocessed food prices, which became more visible in the second half of the year. In 2008, achieving the 4 percent inflation target will be challenging, given the announced increases in electricity and natural gas prices, and tax adjustments on some goods and services. Nevertheless, the CB cut its policy rate by a total of 200 basis points between September 2007 and January 2008 in view of expected deceleration of prices in coming months owing to the lagged impact of monetary tightening and the recent developments in global financial markets, which are likely to restrain both domestic and external demand growth.

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<tr>
<th>Table 1.1: Employment Figures (2002-2006)</th>
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<tr>
<td>Labor Force</td>
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<td>- Unemployed</td>
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<td>Unemployment Ratio (percent)</td>
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<tr>
<td>Participation Ratio</td>
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<td>Source: TURKSTAT</td>
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1.11 Despite the recent rate cut by the Central Bank, monetary policy has remained tight since the mid-2006. The Central Bank took a firm stance in order to contain the impact of market volatility and increased its policy rates in three steps by 425 bps between June and July 2006. This action was seen as a reaffirmation of the independence of the Central Bank and a signal of its continuing commitment to the disinflation process. The policy rates had stayed unchanged until the recent MPC meeting in September 2007, where the Central Bank cut its policy rate by 25 basis points. The Central Bank cut its policy rate by a total of 175 basis points between October 2007 and January 2008. According to the Central Bank reports, future policy rate decisions will depend
particularly on external developments and public finance. On the other hand, tight monetary policy has slowed down domestic credit growth considerably, including housing and consumer credit (Figure 1.2). This development should also rein in domestic demand growth and stem pressures on the current account.

1.12 Although economic growth has been strong since 2002, it has not generated sufficient increase in employment. Employment grew by an annual average of about 0.7 percent in 2002-2006, considerably lower than the required level to keep pace with the rapidly growing working age population. Nonetheless, unemployment rate declined to 9.9 percent in 2006 from 10.3 percent in 2002. This has been mainly due to the steady decline in labor force participation rate, which fell to 48 percent in 2006 from 49.6 percent in 2002. The increase in non-agricultural labor force was not enough to compensate for the fall in agricultural labor force in this period. Unemployment rate would have risen to 12.2 percent in 2006 had participation rate remained at 2002 level. On the other hand, there has been a significant shift in the characteristics of unemployment in terms of duration. Specifically, the share of long-term unemployment (more than or equal to 1 year) in total unemployment increased to 39 percent in 2005 from 28 percent in 2002, before declining to 35 percent in 2006. There have also been significant changes in the sectoral distribution of employment. The share of agricultural employment decreased to 27 percent in 2006 from 35 percent in 2002, while employment in services and industry sectors increased. Unemployment rate in the non-agricultural sector fell to 12.6 percent in 2006 from 14.5 percent in 2002. Labor market issues are further analyzed in Chapter 4.

Sources of growth and medium- to long-term prospects

1.13 Contrary to other emerging countries, Turkey experienced little income convergence over the past decades. As explored in detail in the previous Country Economic Memorandum (World Bank, February 2006), Turkey’s growth over the last decades has been volatile and below that observed in other emerging countries. Slow labor productivity growth and declining labor utilization prevented Turkey from realizing its
growth potential. Over the long-run (1973-2003) total factor productivity (TFP) growth has averaged 0.6 percent per year, well below the 1 percent per year reached in South Asian or East Asian countries (excluding China). Low employment generation combined with a rising population have also led to a decline in the employment ratio, which decreased by 1.4 percent per year during the period 1980-2003. This decrease in labor utilization contrasts with the experience of comparator countries (see CEM-1). During the 1980s the negative contribution of employment to output growth was more than offset by rapid growth in labor productivity (3.1 per cent per year). However, during the 1990s growth in labor productivity slowed down to around 1.9 per cent per year.

Table 1.2: Required Investment to GDP Ratio for a Given Growth Rate (Annual averages for 2007-2014, percent)

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<thead>
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<th>Output elasticity of employment is 0.35</th>
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<tr>
<td><strong>Growth Rate of TFP</strong></td>
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<tr>
<td><strong>Investment / GDP Ratio</strong></td>
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<th>Output elasticity of employment is 0.40</th>
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<td>1.0</td>
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<tr>
<td><strong>Investment / GDP Ratio</strong></td>
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<th>Output elasticity of employment is 0.45</th>
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<td><strong>Growth Rate of TFP</strong></td>
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<td>1.5</td>
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<td>2.0</td>
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<tr>
<td>2.5</td>
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<tr>
<td><strong>Investment / GDP Ratio</strong></td>
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Estimations are based on a Cobb-Douglas production function with constant returns to scale; $Y=AK^{\alpha}L^{(1-\alpha)}$ where $A=$ Total Factor Productivity (TFP), $K =$ capital stock, and $L=$ employment.

Note: Each block shows, for a specific output elasticity of employment, the required investment to GDP ratio in order to achieve annual growth rates of 5, 6 and 7 percents with four different TFP growth rates.
1.14 **Turkey is now in a better position to achieve convergence.** The consolidation of the fiscal balances, the reduction in inflation, the improvements in macroeconomic stability, and the wide range of structural reforms put Turkey in a better position to accelerate growth on a sustained basis. Favorable demographic trends will increase the share of working-age population in total population, which has the potential to expand output if unutilized labor can be absorbed. Increasing trade openness, and in particular exports of services, could further boost growth in the years ahead. Rising FDI inflows and deepening financial development are also factors that can be expected to contribute to an increase in investment and growth.

1.15 **Investment has increased recently, particularly in the tradable sector, but remains low compared to fast growing countries.** Investment in non-tradable sectors has historically been significantly larger than investment in tradable sectors in Turkey. The trend however is changing following the economic crisis in 2001 as the share of investment in tradable sectors has recently increased above pre-crisis level (Figure 1.3). Still despite this increase the overall investment rate remains far below the levels of 35 percent of GDP that fast growing Asian countries have recorded, and it is also below the levels seen in many of the new EU members.

1.16 **Increasing the efficiency of investment in physical capital and improving the utilization of human capital will also be crucial for sustaining high growth rates.** Calculations on the basis of a Cobb-Douglas production function suggest that substantial increases in Turkey’s investment to GDP ratio would be required in order to sustain high growth rates. For example, in order to sustain a GDP growth rate of 7 percent, investment to GDP ratios have to go up above 30 percent even under the assumption of rather fast TFP growth rate of 2 percent per year. At the same time, in the case of slower TFP growth rates, investment to GDP ratios have to go up by more than 10 percentage points compared to the current levels of 25 percent (Table 1.2).

1.17 **Ultimately, the speed of convergence will depend on the scope and pace of structural reform.** To capture the different outcomes under different policy scenarios, the previous Country Economic Memorandum (2006) undertook a detailed analysis of convergence scenarios. A synthesis of the results is captured in Figure 1.4. In this regard, it is important to note that the estimated convergence speeds for Turkey under the two high-case scenarios shown in the chart are in line with the experience of EU countries (the high-case scenarios reflect, for example, annual growth rates for output and TFP of 6.7 percent and 2.6 percent respectively).
C. Driving Forces Behind the Rising Current Account Deficit

Maintaining the fast growth is critical for Turkey to achieve convergence to the productivity levels and standards of living of the rich nations. However, the challenge for Turkey is to sustain large current account deficits associated with fast growth. Looking forward, this challenge becomes even more important since Turkey would need to increase its investment to GDP ratio to above 30 percent in order to sustain growth rates of 6-7 percent as the scope for easy growth that comes with economic recovery exhausted. It is doubtful that a continuation of the average investment rate of the past years will support a growth rate of 6 to 7 percent. China, by comparison, invests more than 40 percent of GDP. Raising Turkey’s investment rate to above 30 percent range will require not only a significant increase in the national saving rate but also sustaining sizeable current account deficits for prolonged periods. This section analyzes the driving forces behind the large current account deficits over the recent years in order to shed light on sustainability of such levels in the future.

Current Account Trends in Turkey in International Comparison

Turkey’s external deficit in 2006 was at par with the average deficit in the new EU members. To some extent, the widening of the current account deficit in recent years can be seen as a natural phenomenon for a catching up economy, following the current account reversal that occurred as a result of the financial crisis of 2001. Still, such levels leave the country exposed to global market turbulences.
1.20 The good news is that while growth has gone hand in hand with a growing overall trade imbalance, overall exports have displayed substantial increases over the last five years. The amount of total exports in 2007 was almost four times the total exports in 2000 in dollar terms. The increase in exports was faster during initial period of the recovery after the crisis with 32.4 percent average annual increase in 2003-2004. The average annual rate of increase of exports slowed down to 19.3 percent in 2005-2007. However, the increase in exports has accelerated after the May-June 2006 market turmoil as the decline in domestic demand shifted firms towards external markets. In 2006, exports posted 12 percent increase in real terms. The composition of exports have also continuously changed towards more capital intensive products, such as automobile, electrical and electronic equipment and machinery since 2001, boding well for the sustainability of future export growth.

1.21 Turkey’s export growth has been faster than in most comparator countries in recent years. The average annual growth rate of exports in volume terms has been consistently in the double-digit range over the last decade. This growth is slightly higher than that observed in the new Member States or other emerging markets, and much higher than the one recorded in the so-called ‘cohesion countries’ within the EU (Greece, Ireland, Portugal, and Spain). Among the comparator countries analyzed only China has observed much higher export growth rates than those observed in Turkey.

1.22 However, similar to previous cycles in Turkey, rapid economic growth has tended to rely on a rapidly growing flow of imports. Much of this growth has been reflected in imports of capital goods, as well as in raw materials. Annual imports increased by 27 percent on average after 2001. Similar to exports, the annual average increase in imports was faster, 38 percent, in 2003-2004 before slowing down significantly after 2004.

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<th>Table 1.3: Summary Balance of Payments (Billion US$)</th>
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<td>Current Account</td>
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<tr>
<td>A. Trade Balance</td>
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<td>A.1. Exports f.o.b.</td>
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<tr>
<td>A.1.1. Textile and Clothing</td>
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<tr>
<td>A.1.1.1. Machinery, Electric-Electronic and Vehicles</td>
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<tr>
<td>A.1.1.1.1. Machinery and Equipment</td>
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<td>A.1.1.1.2. Electric-Electronic</td>
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<td>A.1.1.1.2.2. Vehicles</td>
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<td>A.1.1.2.3. Other</td>
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<td>A.1.1.3. Other shuttle trade and adjustment</td>
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<td>A.1.2. Freight &amp; Insurance and adjustment</td>
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<td>A.2.1. Imports c.i.f.</td>
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<td>A.2.1.1. Capital Goods</td>
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<td>A.2.1.2. Intermediate Goods</td>
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<td>A.2.1.3. Consumption Goods</td>
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<td>A.2.1.4. Others</td>
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<td>Memo: Energy Imports</td>
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<td>A.2.2. Freight &amp; Insurance and adjustment</td>
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<td>A.3. Non-monetary gold (net)</td>
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<td>B. Services</td>
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<td>B.1. Net Tourism Revenues</td>
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<td>C. Income</td>
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<tr>
<td>D. Current Transfers</td>
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</table>

Memo: Current Account (% of GNP) | -0.8 | -3.4 | -5.2 | -6.4 | -8.1 | -7.8 |
Trade Balance (% of GDP) | -4.0 | -5.9 | -8.0 | -9.1 | -10.3 | -9.7 |
Services & Income Balance and Current Transfers (% of GNP) | 3.2 | 2.5 | 2.8 | 2.7 | 2.3 | 1.9 |

Source: CBRT, TURKSTAT
Note: 2007 figures are annualized as of June
In 2006 and 2007, Turkey’s heavy dependence on energy imports and rising oil prices led to a strong increase in the overall import bill. Higher oil prices are reflected in energy imports (oil and natural gas) increasing from 8 billion dollars in 2001 to 29 billion dollars in 2006 and about 34 billion dollars in 2007. Figure 1.7 shows the importance of surging energy imports in the recent deterioration of external accounts. After surging to 6.7 percent of GNP in 2004, the non-oil merchandise trade deficit remained stable in 2005-2007. By contrast, the total trade deficit had showed a steady deterioration in the period 2001-2006 before it slightly improved in 2007. Indeed, the recent evolution of the current account deficit in Turkey has been largely influenced by oil price developments. Excluding oil Turkey’s current account deficit did not widen from 2004 and 2005 (Figure 1.7). In particular, Turkey exhibits a relatively greater dependency on oil than most of the countries in the sample studied, as shown by a higher share of fuel imports relative to merchandise imports (Figure 1.8). The prospect of lastingly elevated oil prices underscores the importance of improving energy efficiency (Box 1.2). In fact, this point could also explain Turkey’s higher sensitivity to fundamental determinants of current account balance relative to some other comparators (see Annex 1.1).

Continued deterioration in the services, income and transfer balance also played a significant role in the recent widening of the current account deficit. In 2006 alone, the poor performance of tourism revenues and the decline of the services, income and transfer balance in absolute terms by 2.5 billion dollars is estimated to have contributed to the current account deterioration by about 0.6 percent of GNP in 2006. On average, the services, income and transfer balance to GNP ratio declined by 2.6 percentage points during the period of 2002-2006 compared to 1990s. This fall can partly be explained by the move by the Central Bank to IMF Manual 5th in the calculation of BOP statistics after 2000 and the high level of dollarization in the economy during
the 1990s which made it difficult for the authorities to identify whether any currency transaction is between residents or between residents and the rest of the world.

**Box 1.2: Energy Efficiency in Turkey**

Turkey’s total primary energy supply (TPES) of about 90 MTOE (2004) comes from three sources – (a) oil, which constitutes around 38 percent, a share which has been declining, but still very high, considering that Turkey imports 90 percent of its oil requirements, (b) natural gas, which is increasing rapidly, making up around 23 percent of TPES, and (c) coal, which makes up about 22 percent. Oil consumption is primarily in the form of diesel and gasoline (though gasoline usage is being replaced slowly by LPG) for transportation, accounting for about 45 percent of total oil requirements, and this is set to increase further. With increasing investments in greenfield gas distribution systems in cities across the country, natural gas consumption is expected to double over the next 5 years. Overall, Turkey’s TPES is expected to rise rapidly over the medium term, because of increasing oil requirements (even though the share of oil in TPES may decline) but also because of increasing electricity and gas demand.

Turkey has focused on the supply side thus far, endeavoring to maintain energy security, with comparatively less emphasis on the demand side. The energy intensity of Turkey’s economy therefore is high, when compared to other European countries. In 2003, Turkey’s energy intensity stood at 0.19 TOE/per ‘000€GDP, compared to an average of 0.176 TOE/per ‘000€GDP for EU25 countries. Given that Turkey is on a high growth path (as opposed to European countries which are already more developed and witnessing stable growth), with industrialization and urbanization increasing rapidly, the high energy intensity is perhaps reasonable. Comparing with other South East European countries such as Bulgaria (0.389 TOE/per ‘000€GDP) and Romania (0.294 TOE/per ‘000€GDP), Turkey’s energy intensity appears better.

What is however of concern is the rapid increase in carbon emissions as an unintended outcome of this growth path. Turkey’s carbon emissions have increased from 170 million tons in 1990 to 294 million tons in 2004 (excluding emissions from land use change and forestry), with the energy sector contributing the largest share in this increase (77 percent). Over the same period the EU reduced carbon emissions marginally. Policies to improve industrial pollution control are further examined in chapter 7.

In recent years, electricity demand in Turkey has been increasing at around 7-8 percent on an annual basis. According to official figures, demand is expected to grow by about 8 percent under a high demand scenario and 6 percent under a low demand scenario in the medium-term. At the same time the Government is aware that measures to reduce the economy’s energy intensity as well as overall greenhouse gas emissions will be important for sustainability over the long term. Turkey is looking towards improving the energy efficiency of the economy on the demand side, in order to reduce the pressure to import oil and gas and to invest in new capacity. An Energy Efficiency Strategy was announced in 2004, followed by the passage of the Energy Efficiency law in early 2007. This law envisages financial and other incentives for energy efficiency, particularly in industry, transport and urban infrastructure. The law will have an impact on energy consumption over the long term, but in the more immediate term, further measures will be required to bring greater attention to energy efficiency.

Adjusting user prices to cover cost of producing and supplying electricity, would play an important role in sending the right signals in terms of energy efficiency, especially to energy-intensive industries such as iron and steel, ceramics, cement, etc. In Turkey, electricity tariffs were not raised from November 2002 until early 2008, while in the same period oil and natural gas prices have more than doubled. However, in January 2008, the government adjusted electricity prices and a cost-based pricing mechanism will be in effect in July 2008.

\[\text{Energy intensity is the ratio of the energy consumption and the GDP (measured at purchasing power parity in this case above). A higher ratio thus reflects a higher energy use per unit of GDP. TOE = Tons of Oil Equivalent.}\]
The growing trade imbalance is likely related to the strong appreciation of the Turkish Lira since 2001. In 2007, the trade weighted real exchange rate had appreciated by 56 percent on a cumulative basis compared to 2001 and by 28 percent compared to pre-crisis level in 2000. Although part of the appreciation in this period might be due to an excess correction in the exchange rate during the 2001 crisis and another part may reflect strong labor productivity growth in the tradable goods sector; large capital inflows as well as reverse currency substitution have also played a significant role. The appreciation of Turkey’s real effective exchange rate was until May-June 2006 at the high end of the range observed in the new EU Member States (Figure 1.9). Exchange rate appreciation has certainly wiped out a portion of the external competitiveness gained with the large depreciation during the crisis. However, the potential loss of competitiveness as a result of the sizeable appreciation of the real exchange rate has been tamed by the strong productivity gains during 2002-06, as further documented in Chapter 2.

Figure 1.9: Real Effective Exchange Rate Index

Source: CBRT, IFS, Eurostat
Note: Based on consumer price index, January 2002 = 100; Upward movement represents an appreciation
Sustained deviations of the exchange rate from its equilibrium level often lead to an abrupt collapse of the currency, frequently triggering also a financial crisis. The costs associated with such twin crises are typically large, making the case for vigilance about exchange rate misalignments. However, assessing the degree of misalignment is not straightforward. As a starting point, most analyses rely on the theory of relative purchasing power parity (PPP). This implies that changes in the nominal exchange rate must compensate for the inflation differential between the country and its trading partners. Yet, several factors may produce long-run deviations between the exchange rate and its PPP equilibrium.

The well-known Balassa-Samuelson hypothesis suggests that prices of non-tradables will be higher in countries with higher productivity and wages, implying a departure of the real exchange rate from PPP. According to this “internal equilibrium” view of exchange rate formation, the real exchange rate would be in equilibrium when it reflects productivity differentials in the tradable sectors.

But, in addition, the exchange rate is also an asset price and will reflect changes in agents’ desire to build up portfolios in different currencies. The desire of residents of the home country to accumulate foreign assets will be reflected in a capital account deficit. If the current level of net foreign assets as a percentage of GDP differs from the level that agents desire (driven by factors such as differences in the propensities to save and invest in different countries) agents will buy or sell foreign assets and therefore affect the exchange rate. According to this “external equilibrium” view of exchange rate formation, the real exchange rate would be in equilibrium when the net foreign assets held by residents of the home country are equal to their desired level.

To capture these different views of the equilibrium real exchange rate, Alberola et al. (1999) propose to include determinants of both views of exchange rate formation when estimating the equilibrium exchange rate. On one hand, the stock of foreign assets is considered to affect the equilibrium exchange rate, in line with the “external equilibrium” view. On the other hand, productivity differentials are also included, in line with the “internal equilibrium” view of exchange rate formation.

The empirical model of the real exchange rate \( q \) therefore becomes a weighted average of its two determinants: the level of net foreign assets \( f \) and relative sectoral productivity shocks \( n \) so that when fundamentals are at their steady state levels, the real exchange rate is in equilibrium. However, since the equilibrium level of the fundamentals is not observed, we need an econometric strategy that allows us to estimate the equilibrium real exchange rate. One way to do so is to exploit the (possibly) existing co-integration relationship between \( q \), \( f \) and \( n \). If we find co-integration among those three variables it implies that deviations of the actual real exchange rate from the long-run co-integration relationship will not be permanent. We take that permanent component to be the (time-varying) equilibrium real exchange rate and the transitory component is the measure of misalignment. The issue then is to decompose the permanent and transitory components in the real exchange rate series, using the method proposed by Gonzalo and Granger (1995).
Using data for 1970-2005, there is evidence of co-integration among the variables of interest for Turkey. On this basis, a decomposition of the permanent and transitory components of the real exchange rate suggests that the Turkish lira was overvalued in 2005 by between 15 and 40 percent (depending on the method used to establish the co-integrating relationship – results using the Johansen technique in Model 1 and the Engle and Granger technique in Model 2). As with any such analysis, these estimates must be interpreted with great care, not least because of the relatively short span of the data available. At the same time, these tentative estimates can help to put the recent evolution of the exchange rate of the Turkish lira into context.

\* Based on H. Lopez, "Empirical estimates of the real exchange rate misalignment in Turkey," background paper.

### Estimated Real Exchange Rate Misalignment of the Turkish Lira

(Confidence Bounds Shown as Dotted Lines)

<table>
<thead>
<tr>
<th>Year</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1975</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1980</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1985</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1990</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The savings and investment pattern in Turkey is broadly similar to that observed in the new EU Member States but lower than in other fast-growing economies. Savings rate hovering around 20 percent of GDP, as in the case of Turkey, are common across the new EU Member States (Figure 1.10). Similarly, Turkey's investment rate is higher than its savings rate, resulting in large current account deficits. However, savings and investment rates in Turkey remain far below those seen in other fast-growing emerging economies, such as Korea and Thailand, where current account deficits have been kept at lower levels. Although Turkey's investment ratio somewhat exceeds that of Chile's, the savings ratio remains much lower.
Current account deterioration in Turkey can to a large extent be explained by the decline in saving rates compared to the 1990s and the recent surge in investment. Savings rates in Turkey have seen declining trend in recent years (Table 1.4). Gross national saving rate declined by 4.1 percentage points on average in 2002-2006 relative to the 1990s average of 22.9 percent of GNDI. In addition, gross investment rate had seen a rising trend in 2002-2005 before moderating in 2006. As a result, the saving-investment gap deteriorated by 4.4 percentage points in 2002-2006 compared to the 1990s. Therefore, both the fall in savings and the rise in investment rate have contributed to the recent widening of the current account deficit. However, while the increasing investment rate was dominant in the widening current account deficit in 2004-2005, the sharp decline in savings rate was the main factor behind the widening current account deficit in 2006.
1.28 **Turkey’s saving rate is very low given its demographics.** Turkey is still a very young nation with a large share of its population of working (and saving) age and a small share of retirees. The government is running only a small financial deficit, so it is the private sector saving rate that is remarkably low.

1.29 **On a positive note, rising investment rates can be expected to improve the sustainability of the current account deficit if they strengthen the tradable goods sector.** Current account deficits driven by increases in investment are seen as more sustainable to the extent higher investment expands production capacity and creates future growth opportunities (Zanghieri, 2004; Roubini and Wachtel, 1998). However, high level of investment does not necessarily imply higher growth rates in the future if it is concentrated in the non-traded goods sectors. Such investment boosts domestic demand—and temporarily also employment—but has little impact on productive capacity in exporting and import-competing sectors. It therefore leads eventually to even larger current account deficits and growing foreign debt. By contrast, private sector investment in productive capital in tradable goods sectors makes the current account deficit more sustainable as it can contribute to its reduction in the future.

1.30 **Turkey’s investment in machinery has increased after the 2001 crisis compared to the previous decade.** Investment in recent years has mostly been in machinery rather than in construction (Figure 1.12). Capital goods imports are also heavily concentrated on machinery. Boilers, machines and equipment and electrical machines and tools account for more than 70 percent of Turkey’s capital goods imports and inclusion of motor vehicles brings this ratio to above 80 percent (Figure 1.11). Access to technology embodied in imported capital goods is essential for higher productivity growth in the future. The restructuring after the 2001 crisis, as well as the decline in public investment, reduced the share of construction in total investment – despite a slight recovery in 2005.

1.31 **Industrial construction also increased in the recent years.** Residential construction lost momentum after mid-1990s, while the share of industrial and commercial construction in total increased. The share of industrial construction has somewhat increased after 2001. However, 2005 witnessed a significant increase in residential construction.
as the demand for houses was boosted by falling interest rates and strong growth of real estate credit. The demand for houses fell back again after the market turmoil in May 2006 and the deceleration in credit growth to private sector.

The Financing of the Current Account Deficit: Changing Composition of Capital Flows

1.32 Despite the recent deterioration in the external balances, an encouraging development is the improvement in the quality of its financing. The share of non-debt creating inflows (FDI plus net errors and omissions), increased to 52 percent in 2007 from 27 percent in 2004 – reflecting the improvement in quality of deficit financing (Figure 1.15). In particular, FDI inflows reached a record high of USD 19.8 billion in 2007, corresponding to 4 percent of the estimated GNP and covering more than 50 percent of the current account deficit. FDI inflows are expected to remain strong in 2008 – albeit lower than in recent years. This said privatization has slowed down since 2006, for example the recent postponement by the government of the privatization of electricity distribution. On the other hand, the 2008 Annual Program envisages that the privatization process for electricity generation and distribution will start by end-June 2008. Continuing efforts of privatization would help reduce public debt and, combined with greater greenfield FDI, would be particularly helpful in financing the widening current account deficit—especially in a context where short-term capital flows to emerging market economies may dry up with increasing interest rates in international capital markets.

1.33 Turkey is attracting increasing amounts of FDI but remains vulnerable to a sudden stop in capital inflows. Turkey has become an increasingly appealing destination for FDI, attracted by both increased privatization and acquisition in areas such as banking. On the back of these developments, the FDI coverage of Turkey’s current account deficit has become comparable to that observed in the new EU Member States. However, this is a recent phenomenon. Comparing Turkey with the new Member States over a longer-term
ENSURING SUSTAINABILITY OF FAST GROWTH

horizon shows that the net FDI that has flowed into Turkey was low compared to most of the new Member States (Figure 1.15). At the same time, the increase in FDI inflows is a relatively recent phenomenon in Turkey and the overall stock of FDI remains low. Moreover, the large stock of holdings of equities and government bonds by non-residents, at around 18 percent of the estimated GNP as of December, 2007, implies that Turkey remains vulnerable to shifts in market sentiment.

### Table 1.5: Breakdown of the Stock of FDI Inflows by Sector
(as of 2005, in percent of total FDI inflows)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Turkey</th>
<th>BG</th>
<th>CZ</th>
<th>EE</th>
<th>HU</th>
<th>LV</th>
<th>LT</th>
<th>PL</th>
<th>RO</th>
<th>SK</th>
<th>SI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>27</td>
<td>22</td>
<td>41</td>
<td>14</td>
<td>44</td>
<td>13</td>
<td>34</td>
<td>37</td>
<td>54</td>
<td>41</td>
<td>46</td>
</tr>
<tr>
<td>Services</td>
<td>71</td>
<td>71</td>
<td>50</td>
<td>80</td>
<td>49</td>
<td>69</td>
<td>52</td>
<td>57</td>
<td>44</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>7</td>
<td>18</td>
<td>14</td>
<td>6</td>
<td>2</td>
<td>11</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Turkish Treasury, Vienna Institute for World Economics (IWE) for EU countries. Data for Turkey refers to the breakdown of cumulated FDI inflows since 1995. Data for the Czech Republic, Hungary, Romania and Slovenia refers to stocks as of 2004. For EU countries the category ‘manufacturing’ includes manufacturing and mining and quarrying, ‘services’ refers to wholesale and retail trade, hotels and restaurants, transport, financial intermediation, real estate, education, health and social work, other social services; and ‘other’ includes agricultural, fishing, construction, and electricity supply.

1.34 Furthermore, FDI inflows into Turkey have concentrated in the services sector. Since 1995 only around 27 percent of all FDI inflows into Turkey went into the manufacturing sector (Table 1.5). This has potential importance for the overall sustainability of the current account, as it is generally thought that FDI into the manufacturing sector is more likely to increase the exporting (or import-competing) capacity of the recipient country and hence help in curbing current account deficits in the future. In many of the new EU Member States, especially in the larger economies such as Poland, Hungary, the Czech Republic or Romania a larger share of FDI has been directed to manufacturing compared to other sectors. Moreover, while FDI inflows into Turkey have increased, the share that has gone into manufacturing has decreased so that only 10.3 percent of net FDI inflows into Turkey in 2006 went to the manufacturing sector.
Higher investment in Turkey has been too often limited by savings shortages that triggered an increase in the external current account deficit, leading eventually to balance of payments difficulties. In what follows, a current account deficit is deemed to be sustainable if its continuation in the indefinite future does not violate any solvency constraints. That is, if the country has the ability to generate sufficient trade surpluses in the future to repay existing debt after accounting for non-debt generating sources of financing such as foreign direct investment and grants. Therefore, this approach can be thought of as an inter-temporal budget constraint (see Box 1.4 for a formal discussion of the framework) While the literature has noted that solvency is not the only requirement to ensure sustainability, an issue to which we will return later, it is a useful starting point to consider the policy requirements for ensuring external sustainability.

**Box 1.4: The inter-temporal budget constraint for assessing current account sustainability**

Consider the balance of payments relation written as $TB^i_t - i^* D_{t-1} + FDI_t + D_t - D_{t-1} = 0$ where $TB^i_t$ denotes the non-interest current account, $i^*$ the foreign rate of interest, $D$ the stock of foreign debt, and FDI the foreign direct investment inflow. To make the approach more relevant from a policy perspective, we will also explicitly separate the energy imports and the EU grants. In year $t$, the foreign debt to GDP ratio, $d_t$, can therefore be expressed as:

$$d_t = -\text{netb}_t + \frac{(1+g_t)(1+\eta_t)}{(1+\gamma_t)} d_{t-1} + \text{energy}_t - \text{eugrant}_t - \text{fdi}_t,$$

where $\text{netb}_t$ is the non-interest non-energy current account balance to GDP; energy is the energy import bill to GDP ratio; eugrant is the EU grants to GDP ratio; fdi is the FDI to GDP ratio; $r^*$ denotes the foreign real rate of interest; $g_t$ is the growth rate of GDP, and $\eta_t$ the rate of depreciation of the real exchange rate. Equation (1) reflects the fact that the external debt will be reduced if the non-interest non-energy current account balance, FDI, EU grants or domestic growth increase. In contrast, external debt will accumulate as the real interest rate and the energy import bill rise, and as the real exchange rate depreciates.

To ensure a country’s external solvency over a time horizon, the expected discounted present value of the accumulated debt to GDP should be lower than expected discounted present value of the accumulated trade balances and capital inflows. In other words, the discounted present value of the future debt to GDP ratio should not exceed the current debt to GDP ratio. Formally, we can define the inter-temporal sustainability condition over a period of time $n^*$ as follows:

$$S(n^*) = d_t - \Gamma_t \left( \prod_{k=1}^n \frac{1+g_t}{(1+r^*_t)(1+\eta_t)} \right) d_{t+n} < 0$$

where $\Gamma_t x_{t+k}$ denotes the period $t$ expectation of the variable $x$ in period $t+k$, and $\Gamma_t = \frac{1}{(1+r^*_t)(1+\eta_t)}$ is the ‘$k$-periods ahead’ discount factor. As the formulae make clear, the assessment of sustainability will necessarily depend on a number of assumptions to be made not only about growth rates, interest rates and exchange rates, but also about the evolution of the non-interest non-energy current account balance, FDI inflows and outflows, the amount of EU grants that the country will receive, and the energy import bill. Based on S. Togan and H. Berument, “The Turkish Current Account, Real Exchange Rate and Sustainability – A methodological framework,” background paper.
Scenarios for Current Account Sustainability

1.36 Assuming the (non-interest non-oil) current account balance to GDP ratio remains at 2005 values, the ratio of external debt to GDP is likely to increase. In this narrow sense, the current account deficit is not sustainable. In 2005, the non-interest non-oil current account recorded a surplus of around 0.3 percent of GDP. Estimates on the evolution of the net external debt to GDP ratio are made assuming that the non-interest non-oil current account balance remains at its 2005 ratio and using two sets of assumptions about Turkey’s growth and the external environment. 1 Significantly, in either the base case or the low case scenario, external debt to GDP is projected to increase (Figure 1.16 and Table 1.6 for the underlying assumptions). This result is all the more relevant given that the base case scenario portrays a benign external environment of oil prices falling to USD 59 per barrel and real interest rates at a low 4 percent, while Turkey’s growth is assumed to further accelerate to 7 percent p.a. If, in addition, net FDI inflows are assumed to remain at an elevated 3 percent of GDP over the years 2008-2015, the present level of the current account deficit will be sustainable.

Table 1.6: Assumptions Underlying The Scenarios for the Evolution of External Debt

<table>
<thead>
<tr>
<th>Annual EU grants (EUR Million)</th>
<th>FDI Inflow (USD billion)</th>
<th>Oil Price (USD/barrel)</th>
<th>GDP Growth Rate</th>
<th>Foreign Real Interest Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low &amp; Base</td>
<td>High FDI</td>
<td>Low Case</td>
<td>Base Case</td>
</tr>
<tr>
<td>2006</td>
<td>500</td>
<td>19.0</td>
<td>19.0</td>
<td>64.3</td>
</tr>
<tr>
<td>2007</td>
<td>550</td>
<td>14.2</td>
<td>14.2</td>
<td>58.5</td>
</tr>
<tr>
<td>2008</td>
<td>550</td>
<td>8.5</td>
<td>12.9</td>
<td>76.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.2</td>
<td>13.5</td>
<td>76.5</td>
</tr>
<tr>
<td>2010</td>
<td>700</td>
<td>8.0</td>
<td>14.2</td>
<td>76.5</td>
</tr>
<tr>
<td>2011</td>
<td>700</td>
<td>8.0</td>
<td>14.9</td>
<td>76.5</td>
</tr>
<tr>
<td>2012</td>
<td>700</td>
<td>8.0</td>
<td>15.7</td>
<td>76.5</td>
</tr>
<tr>
<td>2013</td>
<td>700</td>
<td>8.0</td>
<td>16.5</td>
<td>76.5</td>
</tr>
<tr>
<td>2014</td>
<td>2,000</td>
<td>8.0</td>
<td>17.3</td>
<td>76.5</td>
</tr>
<tr>
<td>2015</td>
<td>2,000</td>
<td>8.0</td>
<td>18.1</td>
<td>76.5</td>
</tr>
</tbody>
</table>

3 External debt is defined here in net terms, taking into account portfolio, FDI, debt assets and reserves minus gold.
1.37 **In the low case scenario, the current account deficit would need to decline by about 5 percentage points of GDP to ensure a stable external debt ratio.** In the base case scenario, the needed adjustment to the current account is 2.6 percentage point of GDP. Such an adjustment of the current account is likely to require sustained progress in structural reforms of the Turkish economy to enhance its competitiveness. The role to be played by the real exchange rate and structural policies in bringing about such an adjustment is discussed further in the next section.

1.38 **Moreover, external debt could rise further should market sentiment falter.** A negative shift in market sentiment towards emerging markets could affect the external environment, leading to higher real interest rates, and FDI inflows could be affected. In addition, an important aspect of any scenario analysis in the context of Turkey’s external sustainability refers to the evolution of oil prices. Given that even under the base case scenario the external debt is on a growing path, keeping a stable macroeconomic policy environment will remain crucial to maintain foreign investor confidence.

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**Box 1.5: Estimated Trade Elasticity**

Estimates of the demand for imports and supply of exports underpin any analysis of policies to ensure the sustainability of the current account deficit. Economic theory suggests that the current account balance depends positively on the real exchange rate and on foreign income, while it depends negatively on domestic income. Understanding how changes in income and relative prices effects the demand and supply of foreign trade is therefore a necessary building block before we move on to discuss the sustainability of the current account deficit and the influence of different policy options. For example, policy-makers are often interested in the question of what is the real exchange rate adjustment required to achieve a certain current account balance.

To estimate Turkey’s foreign trade elasticity the empirical analysis uses an error correction model so as to capture the fact that trade flows do not instantaneously adjust following changes to any of their determinants. This methodology, which relies on the variables of interest being co-integrated, allows the estimation of how trade flows respond in both the long- and short-run to changes in relative prices and in incomes. The parameters from the estimated co-integrating vector reflect the long-run elasticity, while the short-run equation identifies how much adjustment takes place within one quarter of a shock to one of the explanatory variables.

Results obtained for Turkey’s trade elasticity highlight the different sensitivity of certain types of imports to changes in relative prices and output conditions. Overall, the estimated trade elasticity is consistent with the expected signs. On the import side, demand for consumption goods is most sensitive to changes in Turkey’s domestic demand conditions and to changes in the real exchange rate. In contrast, imports of capital goods and of oil are least sensitive to changes in relative prices – with the demand of oil decreasing by only 0.1 percent as a result of a 1 percent increase in the oil price. On the export side, Turkey’s exports exhibit relatively low price elasticity, so real exchange rate depreciation would result in only a relatively modest increase in exports. In addition, the foreign income elasticity is below the income elasticity for imports of consumption and intermediate goods, adding to pressures towards a widening of the current account deficit.
The Role of the Real Exchange Rate and Structural Policies

1.39 **Exchange rate depreciation would help to narrow the current account deficit but its overall impact on external sustainability would be limited.** Taking into account the estimated foreign trade elasticity (Box 1.5), a 10 percent depreciation of the real effective exchange rate would result in an increase in the current account balance of only around half of one percentage point of GDP. This limited impact is largely due to the low price elasticity of imports of intermediate goods excluding oil, which have accounted for around 55 percent of all Turkish imports in the years 2001-2005. In addition, the exchange rate depreciation would have valuation effects on the stock of external debt. A one-off 10 percent depreciation in 2007 would result in a valuation effect equivalent to adding around 3 percentage points to the external debt to GDP ratio. Leaving aside any additional indirect effects, by 2015 the combined result of the price effect on the current account and of the valuation effect would lower the external debt to GDP ratio by less than one percentage point (42.2 percent of GDP with the one-off depreciation compared to 43.4 percent of GDP in the original base case).

1.40 **Structural reforms and FDI-friendly policies that improve competitiveness are key to ensuring external sustainability in the long-term.** As mentioned above, a stable macroeconomic policy environment remains essential to maintain foreign investor confidence and to continue to mobilize the domestic savings necessary to finance the country’s investment. In addition, greater FDI inflows would be of significant help in ensuring external sustainability. As shown in the high case scenario analyzed above, if Turkey manages to achieve annual FDI inflows of around 3 percent of GDP from 2008 to 2015, the external debt to GDP ratio would decrease by around 11 percentage points of GDP when compared to the base case analyzed. Continued improvement of the business climate environment and structural reforms would not only facilitate these FDI inflows but would also positively affect the competitiveness of the Turkish economy, hence reinforcing further its long-term external sustainability. Given the limited FDI inflows received so far into the manufacturing sector, policy measures aimed at increasing the attractiveness of this sector to foreign investors – such as tackling the high energy costs, poor transport infrastructure and limited labor market flexibility – would be particularly important.

### Table 1.7: Estimated Long-Term Foreign Trade Elasticity for Turkey

<table>
<thead>
<tr>
<th></th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Consumption Goods</td>
<td>Capital Goods</td>
</tr>
<tr>
<td>Consumption</td>
<td>2.9</td>
<td>-</td>
</tr>
<tr>
<td>Investment</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GDP</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Real effective exchange rate</td>
<td>1.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Oil price</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
E. Reducing Persistent Inflation

1.41 Turkey has gradually moved towards inflation targeting as a monetary policy framework after the crisis in 2001. There have been significant changes in the institutional structure and the policy framework for the conduct of monetary policy. The Central Bank gained independence in 2001 and price stability was declared as its primary objective. Exchange rate was set to float and an implicit inflation targeting regime was followed as monetary policy framework until 2006. The Central Bank announced yearly indicative inflation targets and used its policy rates to achieve these targets. Following the marked decline in inflation along with the targets, the Central Bank adopted a full-fledged inflation targeting framework in January 2006.

1.42 Exchange rate volatility, especially in the presence of sizeable current account deficits, presents a challenge for a successful inflation targeting due to “pass-through effects”. The advantages and disadvantages of inflation targeting in emerging markets is still an open question, though the country experiences have so far been encouraging. The pass-through from exchange rate to domestic prices has become a central topic for discussion in inflation targeting countries. Inflation targeting countries adopt floating exchange rate regimes and do not usually impose capital controls. However, the pass-through is a more serious concern in inflation targeting emerging market countries since these countries are more vulnerable to sudden stops of capital inflows and large fluctuations in exchange rates. Because of their inflation history and lower credibility in their ability to keep inflation under control, emerging market countries are more likely to find that depreciations lead to a rise in inflation as a result of the pass through from higher import prices and greater demand for exports (see Mishkin 2004). Therefore, the potential impact of currency depreciation on the financial system and inflation in emerging markets requires inflation targeting central banks to be vigilant about exchange rate movements, in addition to other sources of risk such as high current account deficit, large public debt and fiscal stance.

1.43 Inflation targeting is further complicated by volatile capital flows. Capital flow volatility may impart procyclicality to inflation targeting. Capital inflows typically lead to currency appreciation and some loss of competitiveness, while as the currency strengthens CPI inflation recedes and makes room for interest rate cuts. Although lower interest rates moderate real exchange appreciation, they may also add stimulus to domestic demand, thus exacerbating tensions on the current account. Conversely, capital flow reversals lead to exchange rate depreciation and higher inflation, thus prompting higher interest rates in order to keep inflation on track. Higher interest rates required to meet inflation targets may exacerbate the adverse impact of capital flow reversals on growth, while also adversely affecting the fiscal deficit and debt dynamics.4

1.44 The standard response of an inflation-targeting central bank to large swings in capital flows would be to let the exchange rate “take the heat” — but exchange rate volatility may threaten the credibility of an inflation targeting regime. Since capital inflows augment domestic liquidity and stimulate domestic demand, raising both growth and inflationary pressure [see Agenor, McDermott and Ucer (1997)], some currency appreciation, to damp down both inflation and activity, is typically desirable. This response would flow from the operation of market forces insofar as the central bank does not deviate significantly from its inflation target, and this is how advanced inflation targeting countries typically respond to capital flows, assuming the credibility of

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4 This procyclical pattern is also evident in Turkey. In 2005 and the first quarter of 2006, when capital inflows were abundant, the Central Bank of Turkey repeatedly cut policy rates. Then in June 2006, when there was a capital flow reversal as a result of what market commentators characterized as an increase in global risk aversion and the Turkish lira plummeted on the foreign exchange market, the CBT was forced to raise its policy rate.
the inflation-targeting regime. In practice, in most emerging markets even a transitory increase in inflation due to sharp but temporary weakening of the exchange rate may be interpreted as evidence of that the central bank’s commitment to price stability has weakened. Consequently, exchange rate volatility may pose a threat to the credibility of the inflation targeting regime.

1.45 **Estimations for Turkey suggest that exchange rate pass-through to prices is still significant.** The inflationary process in Turkey is estimated with a Vector Error Correction Model (VECM, henceforth) for the period 1994q1-2006q2. The main emphasis of the analysis is to explore the role of exchange rate but it also takes other types of shocks, such as energy price shocks, into account. The model is a modified version of the one presented in McCarthy (1999) and includes broad money and nominal exchange rate as endogenous variables; while output gap and energy prices are treated as exogenous variables. The co-integration methodology developed by Johansen and Juselius (1990) is used to estimate the long-run relations. The estimation results show that one percent increase in exchange rate results in 0.58 percent increase in CPI inflation. The extent of exchange rate pass-through also differs across tradable and non-tradable goods sectors: In particular, the exchange rate pass-through is higher for non-tradable goods prices (0.60) compared to tradable goods (0.50). These results are in line with empirical evidence for other emerging markets. Kara and Ogunc (2005) estimate pass-through coefficients before and after introduction of floating exchange rate regime for Turkey. Their estimation results indicate that pass-through is higher before the floating exchange rate with a range of 0.50 to 0.80 percent for different CPI components, but it declines after the floating exchange rate to the ranges of 0.30-0.50. Kara and Ogunc (2005) also report that exchange rate pass-through to core inflation — which is closely monitored by the CBRT—has fallen to about 0.3 after the introduction of floating exchange rate regime in Turkey. Similarly, Kara et al (2007) argue that exchange rate pass-through declined after the introduction of floating exchange rate regime in Turkey. Using a long time series CPI dataset, they find that the exchange rate pass-through to headline inflation declined to around 0.6 in 2004 from above 0.8 in late 1990s. Although these estimations show that pass-through might have declined after the floating exchange rate regime, the level of pass-through is still significant and also the short sample period after the introduction of floating exchange rate regime constrains the reliability of findings.

<table>
<thead>
<tr>
<th>Table 1.8: Long run Impact of Exchange rate and Money Supply on CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal Exchange Rate</strong></td>
</tr>
<tr>
<td><strong>Money Supply (M3)</strong></td>
</tr>
</tbody>
</table>

1.46 **Our estimation results also suggest that the speed of adjustment to long run equilibrium is high and energy prices and output gap have important short run effects.** According to the estimation results, the non-tradable goods prices have a higher speed of adjustment (0.44) than the tradable goods prices (0.37). Regarding the short-run dynamics of inflation, the energy prices and output gap have significant impacts with respective coefficients of 0.27 and 0.29.

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5 Edwards (2006) argues that much of the recent literature on pass-through, has ignored the question of exchange rate effectiveness, and has focused only on the inflationary effects of exchange rate changes. A decline in the degree of pass-through is a positive development since a lower pass-through will result in a decline in inflationary pressures coming from abroad. However, once relative prices are introduced into the picture, it is clear that the pass-through problem does not only affect inflation but also the effectiveness of the nominal exchange rate as a shock absorber. In this context, it is important to make a distinction between the pass-through of exchange rate changes into the price of nontradables and into the domestic price of tradables. While a high pass through for nontradables will reduce the effectiveness of the nominal exchange rate, a high pass through for tradables will enhance its effectiveness.
1.47  **Impulse-response functions indicate faster transition of changes in exchange rate and broad money supply to non-tradable prices.** In order to identify the dynamic effects of exchange rate and broad money supply on inflation, the impulse-response function analysis is used. The response of inflation to a one-standard deviation of innovation in exchange rate or money supply is positive and stabilize after about a year. In the case of non-tradable goods prices, the responses to the same shocks are higher and stabilize faster.

![Figure 1.17: Impulse-Response Functions to Exchange Rate and Money Supply Shocks](image)

**Source:** Staff Estimates

1.48  **The estimated model can also be used to make ex-ante forecasts of inflation.** In order to forecast inflation, some assumptions should be made for exogenous variables, namely output gap and energy prices. In the baseline scenario, the economy is assumed to grow by 5 percent annually, and energy prices are kept stable in 2008-2011. Next, in order to see the impacts of output and energy prices on inflation, different scenarios are set up separately for each variable. First, the impact of energy prices on inflation is considered by constructing upper and lower bounds symmetrically around the baseline path by assuming 30 percent annual increase/decrease for energy prices during 2008-2009. Similarly, the impact of growth on inflation is analyzed by constructing upper and lower bound symmetrically by assuming 1.5 percentage points increase/decrease in growth rate during 2008-2009 around the 5 percent annual growth rate in the base line.

1.49  **The estimations indicate that reducing inflation to the target level of 4 percent in 2008 will be challenging.** In the base line, inflation is forecasted to gradually decline to 6 percent in 2008 from 8.4 percent in 2007. The target level of 4 percent seems to be attainable only after 2009. Moreover, an increase in energy prices or acceleration of the growth rate would raise the inflation to somewhere in the range of 6 to 9 percent in 2008-2009. However, if energy prices fall or growth slows down, then the target level of 4 percent could be reached by 2009, if not in 2008.
Figure 1.18: Inflation Forecast, Energy Price and Exchange Rate Shocks

Source: Staff Forecasts

F. Large Capital Flows and Macroeconomic Management

1.50 Fast expected real income growth, together with the improvement in the investment climate, is typically associated with large capital inflows. Turkey has already been one of the main beneficiaries of the tremendous increase of capital flows to emerging market equity and bond markets over the past few years. Although international investment portfolios may undergo some rebalancing in the future, Turkey is likely to remain an attractive destination over the medium term. Furthermore, a "convergence play", similar to those seen in other EU accession countries and Euro-zone members, where expected declines in domestic interest rates to levels closer to the EU average generate expectations of significant capital gains, is likely to keep portfolio investments in Turkey particularly attractive.

1.51 Large capital inflows will support growth but may also generate macroeconomic imbalances. Capital inflows play a key role in the financing of growth, as in many countries with fast expected real income growth spending tends to exceed savings, thus giving rise to external current account deficits. However, although portfolio investments will help ease financing tensions on the CA, they can potentially lead to exchange rate overvaluation. Such exchange rate overvaluations pose non negligible risks as they may trigger destabilizing capital flow reversals if combined with perceived weaknesses in economic fundamentals or in the direction of economic policies. Capital flows may also encourage bank lending booms that result in a decline in loan quality [Calvo, Leiderman and Reinhart (1993)]. They may ignite asset-market booms that set the stage for disruptive busts. If the authorities attempt to neutralize or moderate these effects by raising interest rates, they may create distress for borrowers with maturity mismatches on their balance sheets. If the real exchange rate is allowed to

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6 The analysis in this section draws largely on B. Eichengreen (2006), background paper for the CEM.
appreciate to damp down incipient inflation, competitiveness may suffer, and a development strategy designed to produce export- and investment-led growth may be placed at risk.

1.52 The additional problem in emerging markets is that sharp shifts in the exchange rate may have destabilizing economic and financial consequences. Financial markets being narrow in emerging markets, a given change in the volume of capital flows will have a larger impact on the exchange rate, leading for example to a larger loss in export competitiveness if the exchange rate appreciates. Corporate governance, prudential supervision and fiscal institutions being relatively weak, firms, banks and governments may respond more to changes in economic and financial conditions, boosting their borrowing, lending, and spending when capital is flowing in and thereby amplifying the procyclical effects.

1.53 This is especially the case in the presence of balance sheet currency mismatches. Firms, banks and the public sector will have larger currency and maturity mismatches on their balance sheets, given high deposit and liability dollarization and relatively short supply of long-term domestic-currency debt securities. In the event of capital outflows and, as the exchange rate is allowed to depreciate, the cost of servicing foreign-currency-denominated debt will rise significantly. Financial stability may be threatened, as debtors find it difficult to maintain service on their obligations. The fears prompting the initial outflow of capital may become self-fulfilling and self-reinforcing.7

1.54 Although there is no perfect solution to the challenges that capital movements pose for emerging markets, a number of partially effective policies—especially as supplements to the normal conduct of inflation targeting—might be adopted. Central banks in emerging market economies may have no adequate response to capital flow shocks. If the monetary authorities reduce interest rates when capital flows in, they will amplify the procyclicality of domestic demand. But if they fail to cut rates, they will do nothing to stem the ongoing flow of capital toward the country. Similarly, if the monetary authorities raise interest rates when capital flows out, they may jeopardize financial stability due to the prevalence of maturity mismatches. But if they fail to raise rates, they may jeopardize financial stability due to the prevalence of currency mismatches [Cespedes, Chang and Velasco (2002)]. Experience suggests three ways out of this dilemma:

1. Sterilized intervention;
2. Changes in financial regulation;
3. Fiscal adjustment.

1.55 The first is a tactic for the monetary authorities. The second may or may not be a responsibility of the central bank, depending on how supervisory functions are organized. The third is clearly not a monetary prerogative. These options are briefly reviewed below.

1.56 Exposure to the impact of capital flows could also be mitigated by tax policies or capital controls but these measures raise the cost of finance and their effectiveness is uncertain. It is often argued that the best way for emerging market economies to cope with global financial markets is by imposing controls or applying non-interest-bearing deposit requirements on inward foreign investment (in the manner of the encaje

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7 The so-called balance-sheet approach to financial crises emphasizes the potential for these consequences (see e.g. Aghion, Bacchetta and Banerjee 2000, IMF 2003).
utilized by Chile in the 1990s). The desirability of such measures and the ease with which they can be evaded are disputed, both retrospectively and prospectively. In addition, statutory restrictions on free capital flows would be inconsistent with the EU acquis and would need to be removed by the time of accession.

1. Sterilized Intervention

1.57 Effective sterilization presupposes the existence of a deep and liquid bond market. Sterilizing capital inflows means intervening to prevent the exchange rate from moving while leaving monetary policy unchanged. Sterilization works best when there is a market for medium- to long-term bonds, since selling short-term bonds, which free investors from interest rate risk, may only encourage further inflows. If the authorities’ sterilization bonds trade on a relatively narrow market, then it may be possible to place more of them only at higher interest rates. Offering higher interest rates may then just attract more capital inflows. To prevent interest rates from rising, the central bank may have to issue more money by engaging in expansionary open market operations. Hence the central bank may have imperfect ability to sterilize.

1.58 The other downside of sterilized intervention in response to capital inflows is its quasi-fiscal cost. It is a defining characteristic of many emerging markets that yields are higher on domestic than foreign bonds. Consequently, swapping domestic for foreign bonds reduces the net interest income on the balance sheet of the central bank. It increases net costs of debt service in the consolidated public-sector balance sheet. Thus, large-scale sterilization may aggravate fiscal problems. If it weakens the balance sheet of the central bank, it may damage monetary policy credibility.

1.59 Using sterilization symmetrically, to address the problems created by capital inflows and outflows, is difficult. Where inflows tend to rise gradually, requiring a gradual increase in sterilization to limit their domestic effects, outflows can surge suddenly. This would require the authorities to engage in very high levels of sterilization in order to neutralize them, incurring very large associated costs. There is also a risk that sterilized intervention may have negative implications for the credibility of monetary policy in the case of capital outflows (see below). A more general drawback of large one-sided foreign exchange intervention to stem exchange rate depreciation is that it signals to short-term portfolio investors a potentially low exposure to exchange risk, therefore amplifying speculative short-term capital inflows.

1.60 Whether sterilized intervention is appropriate and efficient hinges on a judgment about why the exchange rate is moving (or needs to be moved) in the first place. If, on one hand, the movement in the exchange rate reflects a passing increase in market volatility, then sterilized intervention to ensure adequate market liquidity will be appropriate. It will also have the ancillary benefit of preventing an excessive movement in the

8 See for example Crotty (2000).
9 See Kaplan and Rodrik (2001) and Carvalho and Garcia (2006).
10 While this is true of Turkey, it is not always the case of countries with capital controls and high levels of saving; thus, yields on domestic bonds have been lower than yields on foreign bonds in China. Consequently, sterilization does not have quasi fiscal costs. But this situation is exceptional, and it is likely to change with the further relaxation of capital-account restrictions.
11 As argued by Holub (2004). Estimating the cost of sterilization in Turkey is not straightforward, since the central bank does not sterilize through purchases and sales of government bonds but instead uses repo and reverse repo operations, and since it uses the same instruments to manage liquidity on a daily basis. Thus, estimating the cost of sterilization would require one to decompose repo market operations into their sterilization and liquidity-management component.
12 The idea that inflows and outflows can be asymmetric is the basis for the large literature on Sudden Stops. See also Fitzgerald (1999) for a discussion of capital-flow asymmetries.
exchange rate from feeding through into domestic inflation—which may itself be damaging to the central bank’s anti-inflationary credibility. If, on the other hand, the movement in the exchange rate reflects an intensification of domestic inflation, then sterilized intervention alone will be futile and counterproductive. In practice, drawing this distinction is often extremely difficult. A case in point is the impact of financial market turmoil on Turkish financial markets in May/June 2006 (Box 1.6). All this suggests that sterilized intervention may help to relieve an inflation-targeting central bank of some of the dilemmas posed by temporary surges and dips in capital flows, but that it cannot resolve the problems caused by permanent shifts in national competitiveness, whether these are caused by domestic or foreign factors.

Box 1.6: Is foreign exchange intervention appropriate when capital flows out? The case of Turkey in May/June 2006

In response to illiquid and volatile exchange markets in May and June 2006 the Central Bank of Turkey sold USD 3 billion of foreign exchange out of USD 58 billion of reserves (and compared to a USD 21 billion increase in calendar year 2005). Its foreign exchange market intervention seems to have been designed to ensure adequate market liquidity and avoid overshooting but not to prevent the currency from moving to a new equilibrium level. Meanwhile, to address underlying inflationary pressures, the central bank raised interest rates aggressively, by 400 basis points.

Reflecting the difficulty of judgment of the situation, two opposite views have been voiced: It has been argued that the central bank should have intervened more decisively in order to prevent the exchange rate from moving and to keep inflation from deviating from target. To the opposite of that view, it was also argued that attempting to limit the depreciation of the lira but engaging in sterilized intervention only fueled expectations of further, inevitable depreciation in the future and contributed to high risk premia on domestic interest rates. In contrast, refraining from foreign exchange market intervention and allowing the exchange rate to take the hit would have helped ease risk premia on interest rates and address underlying imbalances in the external current account.

Whether any of these contrasting views was justified hinges on one’s judgment of whether the depreciation of the lira was temporary, reflecting a transient increase in volatility in international financial markets, or permanent, reflecting the decline in the carry trade pursuant on higher U.S., Japanese and European interest rates. This was clearly a difficult judgment to make at the time of the market turmoil. At the time the view was widespread that Turkey’s problems reflected declining global risk appetites owing to higher U.S., Japanese and European policy rates—with the shock possibly amplified by domestic policy uncertainties and the large deficit of the external current account. Subsequently, as flows into emerging market assets have recovered, the view has developed that perhaps the difficulties of this period were temporary (implying that more extensive intervention to prevent the exchange rate from moving was justified).

2. Financial Regulation

1.61 Tightening regulations affecting the banks and markets on the receiving end of capital inflows allows leaving monetary policy on hold if its conduct is consistent with low and stable inflation. This technique has many of the same effects as sterilized intervention in the case of a surge in capital inflows [Spiegel (1995)]. It is consistent with the structure of financial systems and financial regulation in emerging markets, where intermediation is bank centered and supervision has traditional focused on the banks. It has the strength
of addressing some of the corollary problems specifically associated with capital inflows. Such problems include lending booms whose consequences extend to a deterioration in the average quality of bank loans, bubbles in financial and real estate markets that may have disruptive effects when they burst, and the diversion of resources to construction from other forms of investment (insofar as the construction sector is disproportionately the destination of the increase in bank lending).

1.62 Specific measures that might be adopted in this context include increases in reserve and liquidity requirements for banks and stricter supervision of standards for the quality and rate of increase of loans. If prudential requirements and oversight are tightened, banks will respond less aggressively to the reduction in funding costs as a result of large capital inflows. To be sure, increases in reserve and liquidity requirements are undesirable because they raise the cost of financial intermediation in an economy where such costs are already high (as in other emerging markets). But a capital inflow reduces the costs of bank funding so that tightening prudential supervision and regulation only neutralizes this positive impact on intermediation.13

1.63 An effective regulatory response to large capital inflows will also require tightening prudential regulation of financial markets directly. As bond and securities markets develop, the same economic effects of credit booms associated with large capital inflows may result from the reaction of securities markets, even if regulation is used to restrain the increase in bank lending. Equity prices may shoot up, enhancing the value of collateral and loosening credit constraints on firms, thereby encouraging investment. Real estate investors, speculators and builders may pour funds into the residential and commercial property sectors via channels other than the banks. To respond effectively to such credit booms, margin requirements on securities purchases can be raised, while supervision of non-bank financial intermediaries can be tightened.14 The authorities can also address the problem by tightening regulatory oversight and corporate governance of the users of credit, in an effort to prevent borrowers in the corporate and construction sector to lever up their use of credit in periods when financial markets are flush and credit is flowing in.

1.64 Turkey’s framework of bank regulation, supervision, and intervention has been improved but challenges still remain. Since the 2001 crisis supervisory functions have been strengthened and consolidated within the Banking Regulation and Supervision Agency (BRSA). Still, while substantial progress has been made, there remain challenges for the BRSA—including further strengthening of consolidated supervision; and further improving the capacity to supervise banks’ risk management techniques and models. There also remain limits on the independence of the BRSA (World Bank and IMF, 2006, FSAP).

1.65 Addressing remaining supervisory challenges is important as credit expansion into new activities, involving new borrowers, is facilitated by large capital inflows and may over time increase the risk profile of the banks’ loan portfolio. Banks have recently shifted their main lending activities towards households and SMEs. These clients do not have significant credit histories, reliable financial information, or experience in

13 A caveat is necessary at this stage because, while the instrument is symmetric in principle—in the same way that supervision and regulation can be tightened when capital is flowing in, they can be loosened when inflows tail off or reverse direction—a symmetric response is likely to be problematic in practice. If there already are problems with loan standards and prudential supervision more broadly, loosening them when capital flows reverse and credit condition tighten may create more problems than it solves. If the capital outflow reflects doubts about the quality of policy, including financial policy, responding in this way may only encourage further outflows.

14 Tightening regulations on bank lending will still help to limit this reaction insofar as some of those buying securities on margin in boom periods obtain credit from their brokers and their brokers obtain credit from their banks.
managing debt during economic slowdowns. Banks have been developing loan pricing and risk management
techniques, but as a result of data limitations such techniques may not accurately capture the risks presented
by the new business. Moreover, given the competitive pressures on the housing lending market, banks may
compete with lower underwriting standards, including applying higher loan to value ratios, which would increase
the risks on the activity.

1.66 In view of the rapid credit expansion, stronger accumulation of general loan loss reserves by banks
could be encouraged. Bank lending more than doubled between December 2004 and December 2006, with
some large banks reporting loan growth above 100 percent. However, the level of loan provisioning to gross loans
in the banking system declined in the same period from 5.3 percent to 3.4 percent, suggesting that some banks
may not be building up sufficient cushion in prevention to potential future loan deterioration or unexpected
losses in off-balance sheet credit activities. While in Turkey the stock of loan provisioning barely covers NPLs,
other countries have taken advantage of the present stable economic environment to build up a significant
cushion to prevent future losses. There is also some concern that the reported level of NPLs may not reflect the
actual level of nonperformance. Furthermore, the negative impact on the quality of banks’ loan portfolios of the
recent increases in interest rates and the currency depreciation has yet to be seen.

3. Fiscal Adjustment

1.67 Another option for responding to capital inflows is to tighten fiscal policy. The logic is straightforward:
fiscal consolidation reduces domestic demand, hence mitigating the expansionary impact of capital inflows.
Unlike monetary tightening, which can also be used to reduce aggregate demand, fiscal consolidation will not
directly compound the capital-inflows problem. Monetary tightening does so by raising domestic interest rates
and making inflows more attractive for foreign investors; fiscal consolidation has precisely the opposite effect.
Fiscal positions were strengthened significantly in Latin America and Central/Eastern Europe in the first half of the
present decade (despite exceptions such as Hungary), a period of abundant capital inflows.

1.68 A first limitation of relying on fiscal policy to counter undesired effects of capital movements
is speed. Capital flows can reverse on a dime, but it is hard to adjust fiscal policy quickly. There may also
be transmission lags between adoption of the new fiscal policy and when its effects begin to be felt. Fiscal
adjustments may thus be feasible as part of the response to a secular increase in foreign capital inflows but not in
response to a sudden spurt or shift.

1.69 As with the use of reserve and liquidity requirements for bank lending, fiscal adjustment cannot
be used symmetrically in response to capital flows. Fiscal consolidation may be helpful as part of the response
to a capital inflow, but fiscal expansion is unlikely to help in response to a capital outflow, especially if that outflow
arises in the context of doubts about the country’s policies and prospects. Only if the initial fiscal position is
strong will it be productive to loosen it in response to capital outflows or a reduction in inflows. In practice,

15 The following are some countries examples that are holding provisioning well above their NPLs: Brazil (150 percent); Chile (150 percent); Mexico
(230 percent) and Spain (250 percent).
16 Some banks may be classifying as performing some loans restructured under the “Istanbul approach” where the rehabilitated creditworthi-
ness of the borrower remains to be determined. Also, the new supervisory standards mandated under the Banking Law have not yet been fully
implemented; prospective enhancements in supervisory practices, including the introduction of risk-focused supervision, and the realignment of
supervisory responsibilities, may lead to revisions in the assessment of banks’ positions.
even emerging markets with exceptionally strong fiscal credentials, such as Chile, have had limited scope for responding this way [see Kearns, Caballero and Cowan (2004)].

1.70 **Turkey has implemented an ambitious fiscal adjustment since 2001 but it would be important to maintain a continuous effort over the medium term.** As noted earlier, over 1999-2005 the primary fiscal surplus of the Consolidated General Government increased by 5.7 percentage points of GDP. However, especially over 2004 and 2005, buoyant fiscal revenues, due to robust growth, contributed significantly to reaching the fiscal targets. Thus, since 2002 the structural primary fiscal surplus—a better measure of policy-induced changes in the fiscal stance as it excludes cyclical contributions to the budget—has actually declined by an estimated 1.2 percent of potential GDP (World Bank, 2006, PER). The declining structural primary surplus has added fiscal stimulus to domestic demand and indicates that the fiscal stance has turned pro-cyclical—a potentially unwelcome development at a time of broadening external current account imbalances. To avoid a pro-cyclical fiscal stance, the structural primary surplus should be maintained unchanged during years of robust growth. This would call for saving fiscal revenue over performance due to robust growth—a policy that would be reflected in an increasing actual primary surplus in proportion to GDP.

1.71 **The bottom line is that there is no “perfect fix”.** The best response may be to pursue a combination of the available responses, but even this is likely to counter the undesired effects of capital movements only to a limited extent.

1.72 **Working toward more credible policies, deeper and more robust financial markets, and a more stable and diversified economy is the optimal long-run solution to the challenges of large and volatile capital flows.** The broader process of structural reform can contribute to achieving these goals. In addition, by increasing the flexibility of the economy it may attenuate the real exchange rate response to capital inflows—by inter alia raising the elasticity of supply of nontraded goods, in turn attenuating the inflationary effects of shifts in capital flows. Naturally, building deeper financial markets, more efficient fiscal procedures and stronger policy institutions as well as completing the lengthy process of economic restructuring, are long-term endeavors.
G. Risks and Mitigating Factors

Key Uncertainties and Risk Factors

1.73 While Turkey’s macroeconomic performance has improved dramatically since the 2001 crisis, vulnerabilities remain and in some cases may have increased. Overall, macroeconomic and financial resilience has continued to increase in Turkey – as the experience of May-June 2006 demonstrates. At the same time, large current account deficit, slowing disinflation process, the still high public debt, especially its maturity and currency composition, imply some well-known vulnerabilities. In addition, there are a number of areas where risks may be on the rise. This sub-section provides a brief overview of a selected number of these key risks.

1.74 Foreign currency lending is still a source of vulnerability. Loans denominated in foreign exchange still account for around a third of all loans extended to corporate sector. In addition, while only corporations with foreign exchange earnings are permitted to obtain loans in foreign currency, these constraints do not apply to loans denominated in Turkish lira but indexed to exchange rate developments. Moreover, as Table 1.9 shows, the incidence of foreign currency and indexed loans seems relatively high in some sectors of activity that typically do not have foreign exchange earnings and hence lack natural hedges against adverse exchange rate movements (e.g., electricity, gas and water). In other cases, such as wholesale and retail trade, the share of loans in foreign currency may have declined but the absolute amounts have risen notably. In fact, by 2006 foreign currency and indexed loans accounted for almost 38 percent of loans extended to wholesale and retail trade sector.

<table>
<thead>
<tr>
<th>Economic Sector</th>
<th>FX (and indexed) loans to firms as percent of total loans to firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale and retail trade, brokerage, repair of vehicles</td>
<td>43.8 37.5</td>
</tr>
<tr>
<td>Transport, storage and communication</td>
<td>79.5 54.7</td>
</tr>
<tr>
<td>Textile and textile product industry</td>
<td>75.3 66.7</td>
</tr>
<tr>
<td>Construction</td>
<td>65.3 50.3</td>
</tr>
<tr>
<td>Industry of tobacco, beverages and food</td>
<td>51.4 46.2</td>
</tr>
<tr>
<td>Manufacture of basic metals and fabricated metal products</td>
<td>76.5 73.5</td>
</tr>
<tr>
<td>Sources of electricity, gas and water</td>
<td>95.6 93.4</td>
</tr>
<tr>
<td>Agriculture, hunting and forestry</td>
<td>22.3 17.3</td>
</tr>
<tr>
<td>Manufacture of machinery and equipment</td>
<td>66.6 45.9</td>
</tr>
<tr>
<td>Hotels and restaurants (tourism)</td>
<td>81.8 75.8</td>
</tr>
<tr>
<td>Total of 10 Sectors</td>
<td>62.5 51.7</td>
</tr>
</tbody>
</table>

Source and Notes: Central Bank of the Republic of Turkey. Includes both foreign exchange loans and loans indexed to foreign exchange.

1.75 The heavy reliance of the corporate sector on external borrowing increases its exposure to exchange rate risks. Although the surge in foreign-currency denominated assets and increasing export revenues have partly mitigated this risk, the corporate sector still bears considerable level of exchange rate risks. After moderating in the aftermath of the global financial volatility in the summer of 2006, corporate sector’s external
borrowing has increased noticeably since end-2006. To illustrate, external credit stock of the corporate sector increased from USD 61.5 billion in 2006 to USD 82.9 billion as of September 2007 – reflecting more than USD 21 billion increase.

1.76 The turmoil in May-June 2006 temporarily interrupted a move towards a de dollarization of foreign exchange deposits. The share of bank deposits denominated in foreign currency had been decreasing in recent years. Foreign currency deposits accounted for 34 percent of total deposits by May 2006, declining from around 45 percent as of December, 2004. Nevertheless, this level is still somewhat high and compares more closely with the degree of financial dollarization seen in developing countries than with that observed in industrialized economies. After surging to about 37.5 percent in the aftermath of the turmoil in May-June 2006, share of foreign currency denominated deposits in total deposits has regressed to the pre-volatility level.

1.77 External debt, especially short-term, has increased. Turkey’s total gross external debt decreased from around 60 percent of GNP in 2003 to around 47 percent in 2005. Nevertheless, as a result of the depreciation of the Turkish lira in 2006 and increased issuance by the private sector, the external debt to GDP ratio increased to 52 percent of GNP in 2006. In addition, short-term external debt has also increased, especially as a result of an increase in private sector borrowing abroad. From end-2005 to end-2006 private sector short-term external debt increased from around USD 32 billion to around USD 38 billion. Overall, indicators of external debt in Turkey appear relatively high when compared with other emerging market economies (Table 1.10).

<p>| Table 1.10: External Debt Indicators in Turkey and Selected Emerging Markets |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|</p>
<table>
<thead>
<tr>
<th></th>
<th>Brazil</th>
<th>Colombia</th>
<th>Hungary</th>
<th>Mexico</th>
<th>Poland</th>
<th>Thailand</th>
<th>Turkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total external debt (percent of GDP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>36.5</td>
<td>40.8</td>
<td>74.6</td>
<td>24.3</td>
<td>50.8</td>
<td>31.7</td>
<td>53.7</td>
</tr>
<tr>
<td>2005</td>
<td>23.6</td>
<td>31.3</td>
<td>71.8</td>
<td>22.5</td>
<td>43.6</td>
<td>30.1</td>
<td>46.8</td>
</tr>
<tr>
<td>2006F*</td>
<td>17.9</td>
<td>30.3</td>
<td>81.7</td>
<td>20.3</td>
<td>42.3</td>
<td>30.4</td>
<td>52.0</td>
</tr>
<tr>
<td>Short-term external debt (percent of reserves)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>35.5</td>
<td>36.8</td>
<td>63.1</td>
<td>29.6</td>
<td>48.7</td>
<td>20.4</td>
<td>88.5</td>
</tr>
<tr>
<td>2005</td>
<td>35.0</td>
<td>39.0</td>
<td>63.2</td>
<td>27.1</td>
<td>45.3</td>
<td>26.8</td>
<td>73.4</td>
</tr>
<tr>
<td>2006H1**</td>
<td>26.3</td>
<td>40.6</td>
<td>63.3</td>
<td>26.0</td>
<td>46.4</td>
<td>25.9</td>
<td>69.5</td>
</tr>
</tbody>
</table>

Sources: World Bank, IMF, central banks.
* IMF projections except for Brazil and Thailand (figure for Brazil is as of September 2006 while that of Thailand is a projection by the central bank of Thailand). ** End-2006 figure for Turkey.

1.78 The expansion of lending activities increases credit and – through maturity mismatches – interest rate risk. Credit growth has been particularly fast in recent years, especially in the areas of consumer finance, housing, and credit cards. While the low starting base has to be considered when assessing the fast pace of credit growth observed, the rapid speed of the credit expansion may mask the actual quality of the loan portfolio. In this context, the recent FSAP calls for stronger provisioning – which contrasts with the decline in loan provisioning observed between 2004 and 2005, when loan provisions decreased from 5.6 percent to 4.5 percent of total loans. An additional risk is that the expansion of credit may be partly driven by a search for market share in anticipation.

---

of a continuing increased foreign interest in Turkish banks (as foreign buyers have tended to pay high multiples for banks with relatively large market shares). At the same time, the maturity of banks’ assets has been increasing as they move into traditional lending activity, while deposits remain overwhelmingly of a short-term nature.

**Risk Mitigating Factors**

1.79 *A strengthened banking sector helps to mitigate external risks.* The risk of a sudden stop to capital flows causing a severe economic downturn depends on the way it may affect the quality of the banks’ loan portfolio. Among the scenarios analyzed, a sudden stop to capital flows – and the subsequent severe economic downturn that would ensue – represented one of the major risks to the quality of the banks’ loan portfolio. Signs of a strengthened banking sector are reflected in a broad improvement of financial soundness indicators – as documented in the recent FSAP (2006). In addition, operating costs have remained contained, liquidity seems appropriate and capitalization is above average when compared to other emerging market economies. Stress tests carried out in the context of the FSAP indicated that the Turkish banking system would be able to absorb a number of downside scenarios without system distress.

1.80 *Exchange rate risk has decreased as banks are increasingly making use of hedging instruments.* The floating exchange rate regime seems to have contributed to a more widespread hedging of exchange rate risk. Banks’ exposure to exchange rate risk has decreased, as currency mismatches have been closed or hedged through reputable counterparts. At the same time, new forms of exchange rate exposure, such as loans in Turkish lira but indexed to the exchange rate or direct borrowing in foreign exchange from off-shore banks, may have increased (see further below on ‘key uncertainties’). These developments highlight the importance of continuously improving the supervisory tools and coordination among the different regulatory bodies as the Turkish financial sector becomes increasingly sophisticated.

1.81 *Interest rate risk stemming from banks’ holdings of securities has decreased.* Banks’ exposure to interest rate risk has decreased. Traditionally, Turkish banks held a large proportion of their assets as government securities, many with fixed rates. This leaves them exposed to the risk that interest rate changes would significantly affect the valuation of that type of assets. Recently, two factors have compounded to diminish the interest rate risk faced by the banking sector. First, banks are increasingly shifting their asset composition towards lending to the private sector. From 2003 to 2005 the share of loans in total banks’ assets increased from 31 percent to 41 percent. This increase has been at the expense of government securities, which have decreased from 42 percent to 35 percent of banks’ assets. Second, while traditionally government securities held by banks were issued at fixed interest rates the share of securities with flexible interest rates has increased to around half. This development reduces the exposure of banks to interest rate changes. However, a different source of interest rate risk has been increasing as a result of the maturity mismatch between the assets (increasingly long-term loans for housing, etc) and the liabilities (mainly short-term deposits).

1.82 *Banks are rapidly increasing their lending activities.* As noted above, Turkish banks are increasingly shifting away from their large holdings of government securities and towards traditional banking activities, lending to the private corporate and household sectors. The loan to GDP ratio in Turkey increased from 24
percent in 2004 to 37 percent in 2006. In a context of such rapid credit growth, assessing the true quality of the loan portfolio may prove to be particularly difficult, hence calling for strengthened provisioning. While the decrease in banks’ holdings of government securities reduces interest rate risk it also poses risks of its own, as the expansion of credit to the private sector may become too fast and may also lead to maturity mismatches in banks’ balance sheets (see further on these risks below). To some extent, however, this increase in credit risk is a sign of the ongoing normalization of Turkish banking activities and of their increasing potential for contributing to the overall development of the Turkish economy. Changes in the structure of the Turkish economy are also being reflected in the sectoral composition of loans, which has seen a decrease in the share of loans to the textile, construction and food industries while loans to transport, storage and communication have increased noticeably from 2002 to 2005 (Figure 1.19).

1.83 The increased resilience of the banking sector was demonstrated during the market turmoil of May-June 2006. The May-June 2006 financial market turbulence posed a significant challenge for Turkey, as the lira depreciated by around 25 percent and bond yields rose by more than 800 basis points within less than two months. The turmoil led to a decisive action by policy-makers, as Turkey’s interest rates were raised by 425 basis points to help the disinflation process while foreign exchange market intervention aimed to ensure that volatility was kept at bay rather than at defending a certain level of the lira. Overall, Turkish banks weathered the financial turmoil relatively well. While banks initially booked losses as a result of the mark-to-market pricing of government securities, the capitalization of most banks did not suffer a lasting impact. In addition the turmoil led to no apparent increase in non performing loan ratios or to a decline in profitability (see Box 1 in IMF, Fifth Review under SBA). In contrast, the financial turbulence led to a temporary reversal in the de-dollarization trend in bank deposits observed in previous years – an issue to which we will return below.

Medium-Term Outlook for Public Debt Sustainability

1.84 The debt sustainability has improved but risks remain. The net public debt to GNP ratio fell from a high of 90.5 percent in 2001 to 45 percent in 2006. The ratio is projected to continue declining in the period 2007-2012, assuming an average primary surplus of 5 percent of GNP, sustained growth, stable exchange rates and favorable external environment. However, sensitivity analyses of the public debt dynamics demonstrate the importance of commitment to sound economic policies. In the case of a combined shock of fiscal loosening, interest rates increase and growth rate decline in 2007-2008, the net public debt ratio would jump to about 70 percent by 2008, declining only slightly thereafter (Table 1.11).
Table 1.11: Public Sector Debt Sustainability Framework, 2001-2012
(In percent of GDP, unless otherwise indicated)

<table>
<thead>
<tr>
<th>Year</th>
<th>Baseline Projections</th>
<th>Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td></td>
<td>89.4</td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td>77.7</td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td>69.7</td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td>63.7</td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td>55.2</td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td>45.0</td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td>41.4</td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td>36.4</td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td>31.6</td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td>28.7</td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td>26.7</td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td>25.6</td>
</tr>
</tbody>
</table>

Key Macroeconomic and Fiscal Assumptions

1. **Public sector debt 1/**
   - 89.4
   - 77.7
   - 69.7
   - 63.7
   - 55.2
   - 45.0
   - 41.4
   - 36.4
   - 31.6
   - 28.7
   - 26.7
   - 25.6

2. **o/w foreign-currency denominated (net) 2/**
   - 37.1
   - 31.8
   - 21.8
   - 17.4
   - 8.5
   - 5.2
   - 4.1
   - 4.4
   - 4.6
   - 4.2
   - 3.9
   - 1.5

3. **o/w domestic debt (net) 3/**
   - 52.3
   - 45.9
   - 48.0
   - 46.4
   - 46.7
   - 39.7
   - 37.3
   - 32.0
   - 27.0
   - 24.5
   - 22.8
   - 24.2

**Key Variables:**
- Real GDP growth (in percent)
- Average nominal interest rate on public debt (in percent)
- Change in the real exchange rate (Local currency per US dollar, in percent)
- Nominal appreciation (increase in US dollar value of local currency, in percent)
- Inflation rate (in percent)
- US Inflation rate (in percent)
- Base Money (percent of GDP)

**Baseline Projections**

- Real GDP growth (in percent): -7.5
- Average nominal interest rate: 48.4
- Change in the real exchange rate: 30.8
- Nominal appreciation: -53.3
- Inflation rate: 68.5
- US Inflation rate: 2.8
- Base Money: 12.7

**Alternative Scenarios**

- S1. Key variables are at their historical averages in 2007-2011
- S2. Real interest rate is at historical average plus two standard deviations in 2007 and 2008
- S3. Real GDP growth is at historical average minus two standard deviations in 2007 and 2008
- S4. Primary balance is at historical average minus two standard deviations in 2007 and 2008
- S5. Combination of 1-3 using one standard deviation shocks
- S6. One time 30 percent real depreciation in 2007

**Source:** Staff simulations

1/ External and domestic public debt net of net foreign assets of the central bank and of central bank owned government securities.

2/ Public and publicly guaranteed external debt net of net foreign assets of the central bank.

3/ Public domestic debt of the general government net of central bank holding of government securities.

4/ Derived as nominal domestic (foreign) interest expenditure divided by previous period gross domestic (external) public debt stock.

5/ change in the real exchange rate it is defined as D(et·Pt*/Pt)/(et-1·Pt-1*/Pt-1) = (1+st)·(1+pt*)/(1+pt), in percent.

6/ The key variables include real GDP growth, real interest rate, and primary balance in percent of GDP.

1.85 Stochastic simulations assign a low probability to a sharp increase in debt ratio, but signal a possible upward trend in 2010-2012. Stochastic simulations produce confidence intervals for the public debt ratios corresponding to varying degrees of uncertainty for four key macroeconomic variables, namely (a) domestic interest rates, (b) growth rate, (c) exchange rate, and (d) foreign interest rate. Assuming gradually declining primary surplus in the period 2007-2012, there is a 97.5 percent probability that the net public debt to GNP ratio will remain between 21 and 44 percent (Figure 1.20). In addition, there is a 75 percent probability that the ratio will remain within 27-35 percent. However, debt to GNP ratio could reverse its trend in 2010-2012 owing to decline in fiscal surplus. Alternatively, if tighter fiscal stance is assumed – for instance, 6.5 percent of GNP primary surplus is maintained throughout the period – public debt ratio would be in 10-33 percent interval with a 97.5 percent probability. Under this scenario, downward trend of the debt ratio would
be maintained throughout the period. On the other hand, a cut in primary surplus to 2 percent of GNP in 2007-08 would lead to an increasing trend in the net public debt to GNP ratio. Under this assumption, there is a 22.5 percent probability that public debt will rise to 45-50 percent of GNP by 2008, compared to 36 percent under the baseline.
Annex 1.1: A Summary Note on The Latest GDP Revision

1. On March 8, 2008, TURKSTAT introduced a fourth revision to Turkey's GDP series and updated the base year to 1998 from 1987. TURKSTAT has been compiling national accounts data since 1929. GDP using the production and expenditure approaches has been estimated both in nominal and real terms based on the concepts of the 1968 System of National Accounts (SNA) since 1972. The data have been published at a quarterly frequency since 1987. The national income accounts data from 1923 onwards were revised based on data in 1948, 1968 and 1987.

2. The main reason for the latest revision was to reflect structural changes in the economy since 1987 in national accounts statistics. Another reason was to harmonize Turkey’s GDP estimates with the European System of Accounts (ESA 95). This work was initiated in 2004 and completed in March, 2008. TURKSTAT plans to complete full alignment with the ESA-95 by 2011.

3. With this revision, the authorities aimed at (a) improving the measurement of Turkey’s economic activities; (b) enhancing international comparability of Turkey’s statistics; and (c) meeting data requirements of international institutions.

4. The new series embody improvements in both methodology – such as introduction of the benchmarking system, changes in the measurement of financial intermediation services, introduction of chain index method – and coverage – such as inclusion of some additional sectors: leasing, factoring, private pension funds and non-profit financial intermediation, to name a few. The historical revision is also due to improvements in data sources and statistical techniques. This revision has brought significant changes to GDP series both in real and nominal terms for the last nine years, as well as for the first three quarters of 2007 (Table 1.12). The revised series maintain the trend of real GDP growth but adjust nominal GDP levels upwards by about 32 percent on average.

<table>
<thead>
<tr>
<th>Years</th>
<th>GDP (current prices, million YTL)</th>
<th>GDP (current prices, million US$)</th>
<th>GDP (constant prices, thousand YTL)</th>
<th>Growth rate of real GDP (%)</th>
<th>GDP (current prices, million YTL)</th>
<th>GDP (current prices, million US$)</th>
<th>GDP (constant prices, million YTL)</th>
<th>Growth rate of real GDP (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>52,225</td>
<td>201,561</td>
<td>116,114</td>
<td>-</td>
<td>70,203</td>
<td>270,947</td>
<td>70,203</td>
<td>-</td>
</tr>
<tr>
<td>1999</td>
<td>77,415</td>
<td>183,214</td>
<td>110,646</td>
<td>-4.7</td>
<td>104,596</td>
<td>247,544</td>
<td>67,841</td>
<td>-3.4</td>
</tr>
<tr>
<td>2000</td>
<td>124,583</td>
<td>198,389</td>
<td>118,789</td>
<td>7.4</td>
<td>166,658</td>
<td>265,384</td>
<td>72,436</td>
<td>6.8</td>
</tr>
<tr>
<td>2001</td>
<td>178,412</td>
<td>147,285</td>
<td>109,885</td>
<td>-7.5</td>
<td>240,224</td>
<td>196,736</td>
<td>68,309</td>
<td>-5.7</td>
</tr>
<tr>
<td>2002</td>
<td>277,574</td>
<td>182,564</td>
<td>118,612</td>
<td>7.9</td>
<td>350,476</td>
<td>230,494</td>
<td>72,520</td>
<td>6.2</td>
</tr>
<tr>
<td>2003</td>
<td>359,763</td>
<td>241,302</td>
<td>125,485</td>
<td>5.8</td>
<td>454,781</td>
<td>304,901</td>
<td>76,338</td>
<td>5.3</td>
</tr>
<tr>
<td>2004</td>
<td>430,511</td>
<td>300,578</td>
<td>136,693</td>
<td>8.9</td>
<td>559,033</td>
<td>390,387</td>
<td>83,486</td>
<td>9.4</td>
</tr>
<tr>
<td>2005</td>
<td>487,202</td>
<td>361,470</td>
<td>146,781</td>
<td>7.4</td>
<td>648,932</td>
<td>481,497</td>
<td>90,500</td>
<td>8.4</td>
</tr>
<tr>
<td>2006</td>
<td>576,322</td>
<td>400,046</td>
<td>155,732</td>
<td>6.1</td>
<td>758,391</td>
<td>526,429</td>
<td>96,738</td>
<td>6.9</td>
</tr>
<tr>
<td>2007 (Q1-Q3)</td>
<td>468,212</td>
<td>348,472</td>
<td>121,670</td>
<td>3.8</td>
<td>635,911</td>
<td>489,250</td>
<td>75,341</td>
<td>5.0</td>
</tr>
</tbody>
</table>
The recent revision to national income data has resulted in significant changes in Turkey’s key macroeconomic indicators – although their trends have remained broadly unchanged (Table 1.13). For instance, the revised GDP data also show that the CAD-to-GDP ratio increased substantially, while the public debt-to-GDP ratio was on a sharply declining path in the period 2002-2006. Nevertheless, with the revision, shares of expenditure components in GDP have changed considerably. To illustrate, the revised data show an increase in the domestic savings-to-GDP ratio in 2006 – compared to a 1.5 percentage point of GDP decline implied by the old series. A similar difference can also be observed in the gross investment-to-GDP ratio in 2006.

<table>
<thead>
<tr>
<th>Table 1.13: Key Economic Indicators of Turkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicators</td>
</tr>
<tr>
<td>Real GDP growth rate</td>
</tr>
<tr>
<td>Private consumption growth rate</td>
</tr>
<tr>
<td>Private GFCF growth rate</td>
</tr>
<tr>
<td>Gross investment (%GDP)</td>
</tr>
<tr>
<td>Gross domestic savings (%GDP)</td>
</tr>
</tbody>
</table>

| Public Sector (Percent of GDP)                  |                                      |
| Primary balance                                 | 5.1 4.2 6.3 7.1 6.8 6.6 | 3.8 3.3 5.0 5.4 5.1 5.1 |
| Gross debt stock                                | 106.1 92.5 82.5 77.1 71.6 63.3 | 78.8 73.3 65.3 59.4 53.8 48.1 |
| Domestic                                        | 70.3 55.8 56.0 54.3 52.9 46.4 | 52.2 44.2 44.3 41.8 39.7 35.2 |
| External                                        | 35.8 36.8 26.6 22.8 18.8 16.9 | 26.6 29.1 21.0 17.5 14.1 12.9 |
| Net debt stock                                  | 89.4 77.7 69.7 63.8 55.4 45.0 | 66.4 61.5 55.2 49.1 41.6 34.2 |
| Domestic                                        | 52.3 45.9 48.0 46.4 46.7 39.7 | 38.9 36.3 37.9 35.7 35.1 30.2 |
| External                                        | 37.1 31.8 21.8 17.4 8.6 5.3 | 27.6 25.2 17.2 13.4 6.5 4.0 |

| External Sector (Percent of GDP)                |                                      |
| Current account balance                         | 2.3 -0.8 -3.3 -5.2 -6.3 -8.1 | 1.7 -0.7 -2.6 -4.0 -4.7 -6.1 |
| Trade balance                                   | -2.5 -4.0 -5.8 -7.9 -9.3 -10.3 | -1.9 -3.2 -4.6 -6.1 -7.0 -7.8 |
| Exports of goods and non-factor services        | 33.6 29.6 28.6 29.9 28.6 29.1 | 25.2 23.5 22.7 23.0 21.5 22.1 |
| Imports of goods and non-factor services        | 29.3 28.6 29.0 32.5 32.5 35.1 | 21.9 22.6 23.0 25.0 24.4 26.6 |
| Gross external debt                             | 77.1 71.0 59.8 53.5 46.8 51.9 | 57.7 56.3 47.3 41.2 35.1 39.5 |
| of which private                                | 28.6 23.6 20.3 21.2 23.0 30.1 | 21.4 18.7 16.1 16.3 17.3 22.9 |
| Short-term external debt                        | 11.1 9.0 9.5 10.6 10.3 10.6 | 8.3 7.1 7.5 8.2 7.7 8.0 |
| Foreign direct investment                       | 2.3 0.6 0.7 1.0 2.8 5.0 | 1.7 0.5 0.6 0.7 2.1 3.8 |

Source: TURKSTAT, Turkish Treasury, CBRT, Staff calculations.

Data changes associated with the recent GDP revision have not been reflected in this CEM since the revision was announced after the report had been completed. As a result, revision of the analyses would have delayed the dissemination of the report considerably. Furthermore, key findings and policy recommendations presented in the report are unlikely to have changed as a result of revision. This is due to the fact that analyses in the report are not based on the levels of key variables – but rather on their trends, which have remained broadly unchanged as discussed above.

The GDP revision will be reflected in future World Bank documents on Turkey.
Annex 1.2: An Empirical Model of the Current Account

1. To explore the determinants of the current account in (non-oil exporting) middle income countries we estimate a reduced form equation of the current account as a function of a number of variables that the literature has typically found to be significant determinants of the current account. Using a number of model specifications and estimation techniques it is found that there is a positive relationship between a country’s GDP growth and its current account deficit – both when examining the cross-section and the time dimensions of our panel of countries. In the preferred estimation method, using first differences as instrumental variables (Anderson-Hsiao approach) with fixed time effects, a 1 percent increase in the domestic growth rate would increase the current account deficit by around 0.4 percentage points of GDP in the long-run. More sophisticated estimation techniques, including generalized methods of moments (Arellano-Bond and system GMM as in Arellano-Bover/Blundell-Bond) also confirm the importance of domestic GDP growth in affecting the current account balance. In so far as the methodology controls for the endogeneity of GDP growth, the results go beyond a mere correlation and suggest a direction of causality from fast GDP growth (and the other explanatory variables considered) to a widening of the current account deficit.

2. Overall, the analysis highlights that Turkey’s current account deficit has widened more than predicted on the basis of common trends in other middle-income countries. This widening of the Turkish current account in excess of what the model predicts suggests that Turkey is more sensitive to changes in the fundamental determinants of the current account than other middle-income countries are. One possible reason behind this may be related to the nature of Turkey’s trade specialization and integration in the world economy. This could be the case if Turkey’s exports are particularly intensive in imported intermediate goods and raw materials. In particular, Turkey appears to exhibit a relatively greater dependency on oil than most of the countries in the sample studied, as shown by a higher share of fuel imports relative to merchandise imports (Figure 1.8). The prospect of lastingly elevated oil prices underscores the importance of improving energy efficiency.

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18 The full list of variables are: GDP growth, per capta GDP adjusted by PPP relative to the OECD average, national savings ratio as a share of GDP, age dependency ratio relative to high income countries, domestic credit as a share of GDP, general government balance as a share of GDP, real effective exchange rate index (in logs), terms of trade index (in logs), openness (merchandise trade as a share of GDP), net foreign assets as a share of GDP, and world GDP growth.

19 A total of 829 observations (for 54 countries) is available, and the estimated model explains around one-third of the overall variation in the data. The estimation includes all variables referred to in the footnote to the above paragraph, although the age dependency ratio and openness fail to be statistically significant, while the terms of trade and domestic credit are significant only at the 10 percent level.
Annex 1.3: Estimating the Inflationary Process in Turkey

1. The literature considers the impacts of many factors – both domestic and international on domestic inflation. The below analysis aims to explain the CPI inflation in terms of nominal exchange rate, money supply, output gap, and energy price, of which the expected impacts are positive. This relationship can be represented as 

$$\text{CPI} = f(\text{NER}, M, \text{gap}, \text{ECPI})$$

where CPI denotes the seasonally adjusted quarterly consumer price index, NER the nominal exchange rate expressed as the YTL price of the USD, M the money supply defined as the sum of M2 and deposits at the Central Bank (official and other deposits), gap the deviation of the actual output from its potential level, and ECPI the energy price index. Similar relationship is considered between the explanatory variables and prices of tradable and non-tradable goods, separately.

2. The above relationship is estimated with a Vector Error Correction Model for the period 1994q1-2006q2. In order to obtain efficient estimates, the variables in the regression should be stationary. The results of the standard ADF test show that all variables are integrated of order one, except the output gap, which is level stationary as expected. Next step is to test the presence of a co-integrating relationship among the variables; and then determine the number of co-integrating vectors, if any. In conducting co-integrating analysis, the methodology developed in Johansen-Juselius (1990) is used. The tests based on trace statistics and the maximum eigenvalue of the stochastic matrix of the equation indicate one co-integrating vector among the variables.

3. However, the co-integration analysis does not identify the direction of the causality between the variables. For this purpose, Granger Causality test is conducted. The results of the test show that money supply and exchange rate are endogenous, while output gap and energy prices are exogenous variables in the model presented below.

$$\Delta X_t = \Gamma(L)\Delta X_t + D Z_t + \alpha \beta[\Delta X_{t-1}]$$

where $\Delta X_t$ denotes the vector of endogenous variables, $Z_t$ the vector of stationary exogenous variables including dummy for date of the inflation target announcement, $D$ the matrix of parameters associated with the exogenous variables, $\beta$ the estimated vector of the long-run co-integrating relationships between the variables, $\alpha$ the speed, at which the variables in the system adjust to restore the long-run equilibrium. The Equation-2 below shows the estimated long run parameters under the above model specification:

$$\ln(CPI) = 6.15 + 0.58 \ln(\text{NER}) + 0.35(\text{M})$$

$t$-values in parentheses.

20 The money supply and exchange rate data are obtained from CBRT. The source of CPI and energy prices is TURKSTAT. Output gap and tradable/non-tradable price series are Staff calculations.

21 $t$-values in parentheses.
CHAPTER 2.

PROMOTING PRODUCTIVITY AND COMPETITIVENESS

A. Overview

2.1 The sustainability of high growth will eventually depend on the capacity of the Turkish economy to maintain and further improve its competitiveness in the coming years. Sustaining fast growth will be more challenging within a context of fast globalizing international markets and stiffer competition from low-cost producers—especially from China and India in traditional sectors, such as textiles and clothing, but also in more technologically advanced sectors. Improving competitiveness will be key to attracting larger FDI inflows to finance the CA deficit, especially in export-oriented sectors, as pressures on Turkish exporters may intensify with exchange rate appreciation during EU accession. Indeed, exchange rate appreciation, if excessive, may deny some of Turkey’s low-cost competitive advantages, possibly discouraging export-oriented FDI. Maintaining a fast pace of productivity growth will thus be all the more important to preserve competitiveness.

2.2 Several complementary factors determine competitiveness including productivity; availability and cost of production and capital inputs; skills, availability and cost of labor; availability and cost of finance; and a business environment where firms are free to operate efficiently. Competitiveness refers to firms’ ability to compete internationally. Topics covered in the chapter are those that are found to be

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2 This chapter draws extensively on a recent Turkey Investment Climate Assessment (World Bank, Turkey ICA, 2007) and some other background papers. The Turkey ICA provides detailed analysis and policy options regarding the business environment as well as firms’ access to finance, infrastructure, and labor skills.
positively associated with export performance thus using export performance as a proxy for competitiveness at the firm level23.

2.3 Separate sections below are devoted to several important aspects of competitiveness. The first section provides an overview of Turkey’s successful international integration. The second section addresses issues in the business environment that define firms’ ability to operate efficiently. The third section analyses the cost of labor and the need for upgrading skills in order to stay competitive. The fourth section analyses the importance of financial intermediation and suggests measures for improving access to and allocation of finance. The fourth section addresses the still large presence of state owned enterprises (SOEs) in Turkey and its implication for competitiveness and the cost of infrastructure services. A final section concludes and provides policy options.

B. Turkey’s Stronger Global Trade Integration

2.4 The competitiveness of Turkish firms is becoming increasingly important for economic performance as Turkey continues to integrate into the global economy. The Turkish economy has gradually opened up over decades with the Customs Union with EU that became effective in 1996 being a major milestone. Turkish firms have taken advantage of the liberalized trade regime to increasingly source goods from abroad for investment purposes and modernization (Figure 2.1 and Figure 2.2). Trade grew to 65 percent GDP in 2006, which is comparable to other emerging markets in the region. The lion’s share of the change in imports since 1996 (73 percent) is accounted for by intermediate goods, 11 percent of the change is capital goods, and just 13 percent is directly for consumption.25 Importantly, capital goods import, which often embodies new and modern technology, has also expanded as a share of GDP since the early nineties.

2.5 Turkish firms often enter late in the value chain as evidenced by large imports of processed intermediate goods. Turkey’s better integration in the global value chain is evidenced by the fact that three quarters of the import growth over the past decade was accounted for by intermediate goods. The latter reached 25 percent of GDP in 2005. However, within the category of intermediate goods and excluding fuels and oils, just 8 percent were imports of unprocessed fuels and oils.

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23 Productivity is a key component of competitiveness and is controlled for in the analysis. Therefore, some drivers of competitiveness such as R&D and innovation are not covered. Please refer to the Turkey CEM (2006) and the Turkey ICA (2007) for a discussion of those topics.

24 2006 is estimated as the latest 12 months of imports available: October 2005 - September 2006.

25 The decomposition of the growth is based on the change in the USD value of imports by broad economic classification between 1996 and the latest 12 months available (October 2005 – September 2006).
materials, while processed materials for industry dominated with 46 percent (Figure 2.3).

2.6 The internationalization of the Turkish economy has been driven by a few sectors mostly within manufacturing. Internationalization is measured by whether trade (imports plus exports) as a share of GDP grows or shrinks. Thus, sectors above the downward sloping blue line in Figure 2.4 have become increasingly international. Motor vehicles and trailers, manufacture of basic metals and petroleum products account for a large part of Turkey’s integration into the global economy, and the large import growth of crude petroleum and natural gas reflects Turkey’s reliance on foreign suppliers for the country’s energy needs (Figure 2.5). Meanwhile, large traditional sectors such as textiles and apparel have maintained almost constant imports and exports as a share of GDP.

2.7 Revealed comparative advantages have shifted across sectors, but few sectors have lost exports as a share of GDP. Change in comparative advantage is measured as the change in exports minus imports as a share of GDP, so sectors that gain more in the export markets than they lose in the domestic markets have gained comparative advantage. Thus, firms in industries above the upward sloping gray line have gained comparative advantage, and industries below the line have lost comparative advantage. Motor vehicles and trailers is the most unique performer, but it is noteworthy that its export success has been accompanied by substantial, albeit smaller, imports. It is a reflection of the production model, in which assembly firms rely on an international network of suppliers.

2.8 The automobile sector in Turkey is a celebrated success story of global integration. The industry includes about 15 large assembly firms that rely not only on imported parts, but also on a large number of SMEs. Ten of those assembly firms are foreign owned or joint ventures with large foreign manufacturers operating under licenses. Foreign investors include Ford, Fiat, Renault, Isuzu, Daimler-Chrysler, Honda, Hyundai, Peugeot, Mercedes Benz, M.A.N., Iveco, Mitsubishi, and
Toyota. SMEs operate as suppliers of parts and components, and the links between the assembly firms and supplier SMEs — and between foreign and local firms — are reportedly tight. McKinsey reported in 2003 that over 150 automotive parts manufacturers were “effectively positioned within European or global supply networks.”

C. The Business Environment and Determining Factors for Strengthened Competitiveness

2.9 Recent evidence on the export performance of Turkey’s manufacturing firms confirms the importance of productivity, labor skills, access to finance, quality of electricity services and several other aspects of the business environment. Econometric analysis of a recent investment climate survey (ICS) data on 1,323 firms provides insight into the interactions between the business environment and the propensity to export, productivity, and employment at the firm level. As discussed below, productivity is a key component of firms’ competitiveness, and the positive relationship between productivity and the propensity to export is confirmed by the analysis. Likewise, access to finance and the skills of the labor force — above and beyond their impact on productivity — are found to be positively related to export performance, and those issues are addressed in separate sections below. Many aspects of the investment climate contribute to competitiveness, and this section highlights some of those uniquely related to export performance rather than productivity, employment, wages, and FDI.

Table 2.1: Estimated Coefficients of Relationship Between Investment Climate Variables and the Propensity to Export

<table>
<thead>
<tr>
<th>Short name</th>
<th>Long name</th>
<th>Coefficient</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power outage</td>
<td>Number of power outages suffered by the plant in 2003 (in log)</td>
<td>-12.3%</td>
<td>***</td>
</tr>
<tr>
<td>E-mail</td>
<td>Does the firm use e-mail? (dummy)</td>
<td>13.6%</td>
<td>***</td>
</tr>
<tr>
<td>Manager’s education</td>
<td>Does the manager have a bachelor degree or higher? (dummy)</td>
<td>12.8%</td>
<td>***</td>
</tr>
<tr>
<td>Security expenditure</td>
<td>Expenditures on security (in log)</td>
<td>8.4%</td>
<td>***</td>
</tr>
<tr>
<td>External audit</td>
<td>Does the firm use external auditory? (dummy)</td>
<td>7.3%</td>
<td>***</td>
</tr>
<tr>
<td>Inspections</td>
<td>Number of inspections in 2004 (in log)</td>
<td>4.6%</td>
<td>***</td>
</tr>
<tr>
<td>Skills</td>
<td>Percent of skilled workers</td>
<td>8.9%</td>
<td>**</td>
</tr>
<tr>
<td>Quality certification</td>
<td>Does the firm have a quality certification? (dummy)</td>
<td>6.4%</td>
<td>**</td>
</tr>
<tr>
<td>Training</td>
<td>Weeks of training of unskilled workers in 2004</td>
<td>1.5%</td>
<td>**</td>
</tr>
<tr>
<td>Customs delays</td>
<td>Average number of days to clear customs for imports (in log)</td>
<td>-7.5%</td>
<td>*</td>
</tr>
<tr>
<td>Sales declared</td>
<td>Percent of sales declared for tax purposes</td>
<td>-0.3%</td>
<td>*</td>
</tr>
<tr>
<td>Bank loan</td>
<td>Does the bank have a loan from a bank? (dummy)</td>
<td>4.6%</td>
<td>*</td>
</tr>
</tbody>
</table>


Notes:

*** significant at 1 percent.
** significant at 5 percent.
* significant at 10 percent.

26 The Turkey ICS survey was conducted in 2005 in collaboration between the World Bank and the Economic Policy Research Institute in Turkey. The survey is a key pillar in the recently published Turkey: Investment Climate Assessment.
2.10 **Investment climate factors affecting the propensity of a firm to export turn out in many cases to be different than those affecting productivity.** The propensity to export is measured by whether or not the firm exports at least 10 percent of its sales.\(^{27}\) In the analysis in this section, the positive impact of productivity on competitiveness is controlled for, and the effects on propensity to export discussed in this section are those that are not a direct result of higher productivity.\(^ {28}\) Investment climate factors with a negative relationship to the propensity to export include customs delays, power outages, and informality (Table 2.1).\(^ {29}\) A broad set of factors on the other hand are positively related to exporting—including control of crime, inspections,\(^ {30}\) human capital, finance and the use of technology. Key issues are discussed in detail below. The table provides an overview of significant factors, but the reported coefficients are not directly comparable, and interpretation should be made in the context of the more detailed analysis of each indicator.

2.11 **Non-tariff barriers to international integration such as inefficient customs, anti-dumping measures, and state aid impede competitiveness.** Custom delays impede the firms’ ability to export as well as to use foreign inputs in the production of exports. Import customs clearance is relatively slow in Turkey (Figure 2.6). Anti-dumping measures may protect inefficient domestic industries while increasing the cost of inputs for firms that use the goods that the measures are targeting. Under certain conditions, such measures are allowed by the WTO, but most countries rarely turn to them. Turkey, however, has been a fairly frequent user of such measures since the tariff regime was liberalized in 1996 (World Bank, 2006 CEM). State aid disrupts a level playing field and usually in favor of uncompetitive firms, which has an obvious negative effect on competitiveness. The state aid regime is in the process of being made more transparent as a part of the EU accession process. The comprehensive EU Road Map\(^ {31}\) identified the draft bill on “Framework, Monitoring, and Supervision of State Aids” as a priority item in the competition area. The draft law which aims to establish a state aid authority within SPO is currently at Prime Minister’s Office and is expected to be enacted in 2008. The establishment of the new State Aid Authority will provide Turkey an opportunity to introduce formal procedures for monitoring state aid and controlling its potentially distorting effect on competition.

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27 The variable is a dummy taking the value 1 if exports exceed 10 percent of sales and otherwise 0.
28 The relationships are estimated in a set of simultaneous equations, including the investment climate factors, several control variables and the economic outcomes including propensity to export, FDI, employment, wages, and productivity.
29 Informality is measured reversely as sales declared for tax purposes.
30 Inspections are visits by public officials evaluating compliance with for instance taxes, environmental standards, health, fire safety, etc.
31 A document announced by the government which lays out the timetable for approximating the Turkish legislation with EU Acquis in the 33 negotiation chapters.
2.12 An efficient inspection regime and the use of quality certification are important for exporters, which get inspected more than other firms and also use quality certifications more often. The use of quality certification helps exporting firms verify the quality of their goods in international markets. Turkish firms are already frequent users of quality certifications relative to comparator countries (Figure 2.7), but it is an area with ample scope for improvements. A wide range of certifications exists for different purposes, and many firms still have room for improvement.

D. Sustaining Productivity Growth

2.13 Productivity growth will be a critical component for sustaining and improving competitiveness. During the post-crisis period up to 2003, growth was supported by firms reactivating idle capacity, but sustaining high growth will be increasingly challenging as such low hanging fruit gets picked. Early in the recovery period growth was driven by improved capacity utilization (Figure 2.8), thus allowing firms to expand without fundamentally changing production technology and capacity. However, since 2003, when capacity utilization reached 84 percent\(^3\), the growth has mostly been sustained by an expansion of the productive capacity of the Turkish economy. As firms are back to normal capacity it becomes more difficult to continue high growth, and other aspects of productivity as well as greater employment growth, and faster accumulation of capital become more critical factors in sustaining productivity growth.

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32 This section draws from “Firms’ entry and exit dynamics”, Turkey ICA, 2007, Chapter II.
33 Capacity utilization is based on the average for the year.
Productivity growth will be supported by a dynamic business sector where poor performers shrink or exit the market, new innovative firms enter and highly productive firms grow. Such dynamics ensure that resources are smoothly reallocated in the economy to where they are most efficiently applied, and recent evidence identifies critical aspects of these dynamics. The Turkey ICA includes an analysis of Turkish firms’ dynamics compared with international benchmarks. Firm growth is measured by employment and productivity evaluated based on an “Annual Industrial Survey” for the period 1995-2001. Turkey is benchmarked against several relevant comparator countries in which a consistent methodology has been applied. Key findings of the analysis include:

- Entry and exit of Turkish firms is vibrant, but the dynamics are driven by small firms entering and exiting frequently, and the net entry is modest.
- The survival rate and employment growth in new firms is low.
- Firm turnover is high in exporting sectors in particular.
- Growth of surviving entrants is slow in Turkey.

Box 2.1: A Decomposition of Productivity Growth by Firm Dynamics

The growth in productivity in Turkey is decomposed into the average productivity of firms and the effects stemming from firm dynamics following a methodology proposed by Foster, Haltiwanger and Krizan. The analysis uses the following framework to break aggregate productivity growth into the following five components: the ‘within effect’, ‘between effect’, ‘cross effect’, ‘entry effect’, and ‘exit effect’, as follows:

\[
\Delta P_t = \sum_{i \in C} \theta_{i,t} \Delta P_{i,t} + \sum_{i \in E} \Delta \theta_{i,t}(P_{i,t} - P_{i,t-1}) + \sum_{i \in N} \Delta \theta_{i,t} \Delta P_{i,t} + \sum_{i \in X} \theta_{i,t} (P_{i,t-1} - P_{i,t}) - \sum_{i \in X} \theta_{i,t-1} (P_{i,t-1} - P_{i,t})
\]

where \(\Delta\) means changes over the k-year interval between the first year \((t-k)\) and the last year \((t)\), \(\theta_{i,t}\) is the share of industry employment in firm \(i\); \(C, N,\) and \(X\) are sets of continuing, entering, and exiting firms, respectively; and \(P_{i,t}\) is the aggregate (i.e., weighted average) productivity level of the sector as of the first year \((t-k)\).

The Turkey analysis was conducted based on data for the period 1995-2001 for the Turkey ICA (2007).

2.15 The productivity effects from these dynamics are measured and compared across countries (Box 2.1 for methodology). A decomposition of the effects showed that (Figure 2.9):

- As it is commonly found, most of the productivity growth in Turkey (71 percent) comes from improvements in the average productivity of existing firms (within effect) rather than through firm dynamics.
- The effect of high productivity firms growing faster than low productivity firms was strong in Turkey (“between effects”).
- Net entry of new firms contributes to productivity growth because exiting firms have very low productivity (exit effect), but the productivity of entering firms does not initially match incumbent firms (entry effect).
- Firms that increased productivity, reduced employment – in low-tech industries in particular (“cross effect”).

2.16 The low productivity of entering firms (as compared to incumbents) is commonly found in comparator countries and helps explain their poor growth performance. The below average productivity of entering firms was also found in the other non-transition countries in the ICA study. Many firms exit after a short time in the market, but even those that survive tends to grow slowly. Their low productivity may partly reflect the cost of marketing, building capacity and getting established in the market while the firms are young rather than their long-term productivity potential. It therefore remains problematic to witness the slow growth of surviving incumbents.

2.17 The importance of firm dynamics underscores the need for competitive entry and exit in Turkey both in the form of foreign and local entry. Foreign investment restrictions have mostly been eliminated and recently foreign direct investment into Turkey has surged driven in part by privatizations. Although firm entry and exit conditions appear to be working well, lower costs of business registration and a more streamlined system for acquiring licenses for operating businesses could further foster contestability and dynamism. Business registration cost estimates range from USD 700 to over USD 1,200, which is high for a country of Turkey’s income level. Reportedly there are more than 200 types of licenses for different types of business activities, and a simplified licensing regime could foster more entry.37

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37 See detailed discussion in the Turkey ICA, Op. Cit., Chapter III.
2.18 **The slow growth of successful entrants and sluggish reallocation across firms points to potential problems in product market competition, inflexible allocation of labor and capital and firms' low capacity to innovate and adopt technologies.** Firms that enter and survive a seemingly vigorous selection process grow less than in comparable countries suggesting they are constrained in their growth despite an apparent potential. The between effect is also small relative to comparator countries implying that allocation from the less productive incumbents to the more productive incumbents is sluggish. These observations suggest rigidities in (a) product market structures, (b) markets for labor and capital; and/or (c) firms’ capacity to use resources more efficiently by innovating and adopting quality standards and new technologies.

2.19 **Turkish firms do not seem to be taking sufficient advantage of available knowledge in the world.** Evidence indicates that Turkey lags behind fast growing emerging markets and some new EU members in acquiring new technologies, use of general purpose technology, licensing new technologies and introduction of new products and patenting. According to the Business Environment and Enterprise Performance Survey (BEEPS) data, 42 percent of Turkish firms declared to have acquired new technologies in 2005, compared for instance to 52 percent in Thailand. In addition, despite the recent surge, FDI in Turkey is low compared to most new member states and is directed mostly to services, limiting the spillovers to tradable sector. For example, in 2005, only about 2.7 percent of Turkish firms established a joint venture with foreign firms—the FDI modality that leads to highest levels of technology transfer, as opposed to 6.1 percent in Czech Republic. In 2005, only 4.85% of Turkey’s enterprises declared to have licensed a new technology in the previous 3 years, roughly one third the levels of Romania (15.67%). As a result, the ratio of capital per work in Turkey is below comparator ECA-countries such as Poland and the Czech Republic, part of the explanation for the also low rates of output per worker. Thus, Turkey could sustain faster growth, by promoting adoption of new technologies and increasing output per worker through a higher ratio of capital per worker. An in-depth discussion of firms’ capacity to –and policies aimed at promoting—innovation and adoption of new technologies and quality standards (point c above) are included in the Turkey ICA and in the previous Turkey CEM.

2.20 **In conclusion, as sustaining productivity growth is becoming increasingly challenging, the policymakers may choose to focus not only on enhancing the average productivity in firms, but also on enabling the most productive incumbents and the most successful entrants to grow.** This will require a mix of reforms to the labor and financial markets combined with better entry and exit conditions.
E. Labor Costs and Skills

2.21 The cost of labor in Turkey has increased, but remains competitive on a productivity adjusted basis. Turkey has an underutilized workforce, and upgrading skills to match the needs of firms is a part of the solution. Turkey has relatively high unemployment, a low labor force participation rate, and a young and growing population. Therefore, the availability of labor is not expected to be an important constraint on firms. The cost and the skill mix of the labor force will therefore be critical conditions for job creation and productivity growth. Chapter 5 of this report addresses taxation issues in the labor market, and this section discusses wages and skills.

2.22 Wages in Turkey are growing faster in Turkey than in comparator countries presenting a threat to competitiveness. Nominal wages in Turkey were closely linked to the USD during the high inflation period before 2003, but since then they have decoupled from the USD. It is evident from Figure 2.10 that while prices in Turkey were unstable and inflation ranged from 30 to more than 100 percent, wages were effectively priced in USD, as shown by the real wages in local currency moving closely together with the wage measured in USD. For firms that operated in internationally competitive markets where products are priced in hard currency, this provided stability between input and output prices. Since 2003, however, nominal wages have decoupled from the USD, as they have been indexed to the appreciating local currency. Thus, real wages in USD terms have grown by 77 percent (and in Euro terms by 38 percent) with a resulting potential loss of competitiveness.

Figure 2.10: Hourly Real Wage and Productivity in Manufacturing

Figure 2.11: Minimum Wages and National Income Per Capita

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Note: The minimum wage refers to the statutory minimum wage applicable on January 1 and set by national legislation and applicable to the majority of full time salaried workers in each country. It reflects the gross monthly amount before deduction of taxes and social security contributions.

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38 Wage growth between 4th quarter of 2002 and 3rd quarter of 2006 based on “index of wages per production hour worked in manufacturing industry”, Turkstat.
2.23 Minimum wages in Turkey are high compared to the income level in the country and relative to key competitors in the region. In USD terms, minimum monthly wages in manufacturing were about USD 400 and higher than those of all the EU-8 countries, except for Slovenia (Figure 2.11). However, the high minimum wage does not seem to translate into high average wages for Turkish labor, and it is probably a contributing factor for unregistered employment.

2.24 Average wages are more in line with comparators, but they have grown to exceed those in key competitors in the region. Largely reflecting strong currency appreciation, wages grew from being the lowest among the four countries to being the highest by 2003 (Figure 2.12).

2.25 Although strong wage growth could be a threat to competitiveness, on a productivity-adjusted basis, Turkish labor remains competitive. Unit labor costs in manufacturing remain low in Turkey when compared to other emerging markets in the region. Unit labor costs combine the average cost of labor with labor productivity to show the labor cost of producing one output unit. Because data is not available on units, the value of output is used as a proxy for the volume of output, and unit labor costs are estimated as follows:

\[
\text{Unit labor cost} = \frac{\text{Monthly labor costs (USD)}}{\text{Monthly output (USD)}}
\]

2.26 By that measure, unit labor costs in Turkey compare favorably from a competitiveness point of view. Unit labor costs in Turkey’s manufacturing sector are substantially below those in Czech Republic, Hungary, Poland and the Slovak Republic (Figure 2.13).

39 The large discrepancy between Turkey and comparator countries raises a question of reliability of the data and a potential reflection of informality in the labor market. Labor costs amount to just 13 percent of output in Turkey in 2005 compared to around 50 percent for the comparators, and the discrepancy may in part be a result of difficulties in measuring labor costs. Unregistered labor and underreporting of wages to evade taxes are reportedly important problems in Turkey and would lead to a lower reported unit labor cost indicator for Turkey. Thus, the numbers should be interpreted with this caveat in mind.
Within sub-sectors of manufacturing there is substantial variation in how competitive unit labor costs are, but Turkey generally remains competitive. Recent developments are similar across sectors with a drop in 2001 and Turkey’s costs remain below the included comparators for almost all sub-sectors (Table 2.2 provides data by sub-sector).

Informality in the Turkish labor market is widespread and creating a level playing field represents an opportunity for enhancing competitiveness. According to one estimate, about half of Turkey’s employment is informal. The ability to evade labor taxes, social security contribution, and labor regulations creates an artificial competitive advantage for some firms. Firms operating informally tend to be smaller and less productive. Promoting formalization, so as to eventually create a level playing field for all firms with taxes and regulations equally enforced across firms therefore promises important potential for improving competitiveness through enhanced productivity. Creating a level playing field and thus promoting the growth of the most competitive firms requires a unified tax and regulatory framework for all sectors and firms. This is advised to be pursued through a mix of better enforcement and reduced regulatory requirements, as focusing only on enforcement would hamper the growth of firms. At the same time, an equal and effective application of lighter regulatory requirements is likely to be more effective in reaching the objectives of regulation.
2.29 Successful exporters in Turkey use more skilled labor than other firms, underscoring the need for upgrading skills to support competitiveness. The share of the labor force that are skilled as well as having a manager with at least a bachelor degree are positively related to the propensity to export. Low cost producers such as China and India are eroding Turkey’s ability to compete on low wages, and increasing labor’s skills is therefore key to succeed in international markets. This is especially true in sectors with comparatively higher technology content, where Turkey has started making inroads as an internationally competitive exporter, such as the automotive industries and ICT (see World Bank, 2006 CEM). On both indicators, Turkey has room for improvement when benchmarked against comparator countries (Figure 2.14 and Figure 2.15).

F. Cost and Availability of Capital and Financing

2.30 Improving firms’ access to finance will be an important part upgrading Turkey’s competitiveness. The banking sector, which dominates the financial system, is emerging from one with lending concentration to big and often related firms to a sector with more dispersed lending to the private sector. The improvements in financial intermediation have been facilitated by better economic policies and improved regulation and supervision of the banking sector in particular. These improvements have allowed banks to gain better access to international capital markets thus lowering their cost of financing, and thereby fostered a strategic shift in focus to credit generation to the private sector. As a result, private credit has grown from 12.3 percent of GDP in 2002 to 31 percent in 2006. However, consumer lending has been an important driver of the recent credit growth, because it is a fairly straightforward business segment to scale up, while lending to firms has grown at a less impressive pace. The pace of credit growth to firms is in part limited by banks’ need to manage their risks and increase their number of staff with an understanding of the SME market segment, the products, and their associated risks. However, it is also in part limited by inadequate institutional underpinnings for the credit market as discussed below. In addition, developing alternative structured finance vehicles could also help improve the access to finance for firms.
2.31 **Access to finance and financial reporting on the one hand are associated with the propensity to export on the other.** Firms with external finance in the form of bank loans had a 4.6 percent greater likelihood of being classified as exporters, and firms using external audit had a 7.3 percent greater likelihood of being exporters (Table 2.1). This said, the use of external audit remains low in Turkey compared to other emerging markets (Figure 2.16). For the companies that are subject to the capital markets law financial reporting and independent audits are mandatory and mainly in line with international standards.

2.32 **A study of the capital structure of firms in Turkey provides some insight into the financial sector’s contribution to private sector performance.** A brief background on the study is provided in Box 2.2. Leverage of several thousand real sector firms are related to other financial indicators such as profitability, liquidity, and tangibility. The study uses data up to 2003 and therefore does not capture recent improvements in financial intermediation.

**Box 2.2: Study of Capital Structure of Firms in Turkey**

The econometric study by Nuri Yildirim, Murat Donduran, and Huseyin Tastan is based on firm level financial data over the period 1990-2003. The study uses panel data on 4,923 firms, and a balanced panel including 646 firms is constructed. The data are collected by the Central Bank of Turkey to monitor the private sector, and although 2004 data is available, they are not included in the study because inflation accounting was introduced in that year making the data incomparable. The firms sampled in the database tend to be the larger ones and the ones with higher leverage, because the data in part are collected through lending banks. The analysis uses several model specifications to ensure robustness of the conclusions: pooled ordinary least squares, fixed effects, and random effects, balanced and unbalanced panels, instrument variable specifications, and dynamic Arellano-Bond specifications.

Capital structure is measured as leverage defined as external sources as a share of total liabilities. Explanatory variables include indicators for profitability, liquidity (working capital, acid-test ratio, and collection time for receivables), tangibility (measured as the collateral value as a share of bank loans), growth of production, exports as a share of sales, firm size, investment propensity, dummies for 1994 and 2001 when Turkey experienced financial crises, sector dummies, and macroeconomic control variables.
2.33 **Leverage**, measured as external resources as a share of total liabilities, is found to have the following relationships with other variables:

- **Profitability has a negative relationship with leverage.** This suggests that firms appear to turn to external borrowing only when internal cash flow is insufficient to cover investment needs.
- **Tangibility (collateral value as a share of debt) has a negative relationship with leverage** in contrast to theoretical expectation and what most other empirical studies around the world find.
- **Size (measured by employment) as expected has a positive relationship with leverage.** Larger firms are easier for creditors to evaluate, as their corporate governance and financial disclosure are likely to be more transparent, and can therefore get easier access to external finance.
- **Growth in production is positively related to leverage.**
- **Export as a share of sales is positively related to leverage.** The reason is uncertain, but it may be related to greater sophistication of exporting firms, location in major urban areas, and perhaps a better ability to leverage export receivables as collateral for borrowing.

2.34 The negative relationship between profitability and leverage suggests that the financial sector has not been efficient in allocating funds were they were best applied. Considering that the period of analysis was characterized by high inflation and the financial sector dominated by banks with extensive related lending and volatile liquidity conditions, it is not surprising that allocation of funds was somewhat crude.

2.35 The negative relationship between tangibility and leverage suggests that collateral is not effectively used in Turkey. Lenders are generally more willing to lend, when marketable assets can be pledged as security for the loans as it not only increases loan recovery when the borrower default, but the threat of foreclosure also improves the borrowers’ willingness to pay. In Turkey, where credit to firms is relatively small, firms should have sufficient assets for collateral, and the constraint is probably that those assets cannot effectively be pledged for collateral. This is consistent with other evidence showing that movable collateral (as opposed to land and buildings) suffers from legal impediments and inadequate collateral registration. Improving those institutional underpinnings is likely to support greater access to finance for firms in Turkey.

2.36 Continued improvement in both the volume of credit to firms and the efficient allocation of those credits depends on the institutional underpinnings of credit markets. The financial sector reforms pursued in the post-crisis period focused on fostering economic and financial stability and ensuring the soundness of financial institutions. This has greatly improved the funding conditions of financial institutions. Solidifying these achievements will require a continued enhancing of supervision and sound economic policies. Furthermore, a new focus on building better institutional underpinnings for credit generation will help the banking sector reach its potential in serving businesses. Following are some specific policy options for policymakers’ consideration.

- **Development of better credit information could be pursued through the launch of the business credit registry at the Turkish Credit Bureau.** Better credit information sharing will help reduce the cost of providing credit to small firms.

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40 Fleisig et al. (2006).
41 Specific reforms on credit information system and the movable collateral regime are detailed in the Turkey ICA (2007).Reforms on accounting and auditing are included in the Turkey Accounting and Auditing Report on the Observance of Standards and Codes (2007).
Improved framework of accounting and auditing is a key element of strong credit markets. Better financial reporting will help lenders assess credit worthiness and growth opportunities of borrowers.

The effective use of movable collateral (registration, publication, and enforcement) could be fostered through legal reform and the introduction of a unified registration of such assets. These reforms will help firms gain access to finance by pledging movable assets, which make up most of their potential collateral.

G. SOEs in Manufacturing and Infrastructure Services

SOEs continue to have strong presence both in the manufacturing sector and in infrastructure services. Turkey carries a legacy of strong state presence in the manufacturing sector since the early days of the Turkish republic when the state led industrialization as a matter of policy. A privatization program was launched in 1984, but remained dormant until recently. State owned enterprises (SOE) still employ some 226,000 or about 1 percent of employment in Turkey.

A strong privatization program can help unleash the potential of the SOEs. In almost every manufacturing sub-sector, labor productivity growth of private manufacturing firms has exceeded that of manufacturing SOEs over the past five years (Figure 2.17 and Table 2.3). Moreover, SOEs labor productivity growth has been negative in about half of the manufacturing sub-sectors. The period has been one of strong growth and economic transformation, and it appears that SOEs have not been able to adjust with the same agility as private firms. A continued strong privatization program has the potential to improve productivity and strengthen product market competition.

The Government accelerated privatization in 2005 and 2006. The Government collected some USD 16.2 billion in proceeds from 50 privatizations in 2005 and 2006, which is a dramatic increase over the previous twenty-year period (Figure 2.18). A substantial number of SOEs remain to be privatized including in important business service sectors. Companies with a total of 82,073 employees remain in the portfolio of the Privatization Administration. Figure 2.19 shows the distribution of employment in these firms by sector. In addition to the companies, a number of non-company assets are in the privatization portfolio including toll-roads, two bridges, several ports, a hotel, two resorts and a water facility entity. The companies and other entities cover a wide range of sectors including infrastructure services that are of great importance to the business environment such as ports, roads, and electricity generation and distribution.

42 Excluding Isbank and a marketing firm.
2.40 The implications and the policies to address the SOE presence tend to differ between the manufacturing sector and the infrastructure services. Manufacturing sector firms are mostly subject to both domestic and foreign competition and are not important input providers for other businesses. Infrastructure services, in contrast, are often critical to the business environment as they for instance provide transportation and energy services to the majority of domestic businesses, and in addition they may be prone to natural monopolization. Privatization of infrastructure services is therefore a more risky endeavor that requires attention to appropriate market structures and in some cases proper specific regulation.

2.41 Encouraging participation and creating a competitive industry structure will help maximizing the benefits of privatizations both in manufacturing and in infrastructure services. Turkey appears to have managed the process well including inviting foreign investors. The interest of foreign investors in the Turkish economy has picked up substantially. Turk Telecom, the largest privatization in Turkish history, was sold to a joint venture between a domestic and a foreign partner, and similar foreign/domestic joint ventures have been common in other recent cases of FDI in particular in the banking sector, although these were not related to privatizations. For SOEs in industries that are prone to monopolization or market concentration, there is a risk that privatizations may create excessive concentration. The competition authority currently provides ex-ante opinion and decisions on all privatizations to successfully overcome this challenge. Considering the large-scale privatizations recently implemented, an ex-post review could help guide future efforts.

2.42 Efforts are underway to strengthen governance of SOEs. A project under the Coordination Council for the Improvement of the Investment Environment aims to implement
Reforming the electricity sector requires a well-coordinated mix of privatization, regulation, and continued investments in segments that remain public. The unbundling and privatization of the integrated state monopoly operating the electricity sector began in 1994, but has since then progressed with delays. In 2001, a regulatory authority was established to regulate the industry, and several private participants have entered the generation segment of the industry, while the distribution remains in Government hands.

In addition to the productivity gains and reduced fiscal burden, privatizations can both directly and indirectly contribute to increasing FDI and thereby help finance the current account deficit. Foreign investors often take a direct strategic interest in privatized entities and can contribute with advanced technology and fresh capital. In addition investors, domestic and foreign alike, may be reluctant to enter a sector in which they have to compete with SOEs, which can be perceived as having preferential treatment by the state.

H. Conclusions and Summary of Policy Recommendations

Turkey’s recent history has proved that ambitious and coordinated economic reforms are rewarded with good economic performance. Continued strong performance, however, requires continued commitment to enhancing structural policies. Sustaining and improving Turkey’s competitiveness can be promoted by:

Over the short term (up to 2 years):

- Strengthening incentives for entry and formalization (see Chapter 5 for issues related to labor taxations).
- Improving access to finance by encouraging the launch of the business credit registry, reforming the legal framework and registration system for movable collateral, and improvements in the accounting and auditing framework.
- Reviewing performance of privatized entities with regard to growth, productivity, export performance, and specifically in the case of infrastructure services, the scope of services offered and the associated costs. Guided by such analysis, continuing to pursue privatizations in both the manufacturing sector and in infrastructure services.
- Supporting the adoption of quality certifications by improving the efficiency of public institutions and supporting certification and training programs.
- Improving state aid monitoring and controlling state aid in line with EU requirements.

Over the medium term (2-4 years):

- Upgrading the skills of the labor force.
### Table 2.2: Unit Labor Costs by Manufacturing Sub-Sector in Turkey and Comparator Countries

**Unit labor costs unadjusted for purchasing power parity**

<table>
<thead>
<tr>
<th>Sub-Sector</th>
<th>Turkey</th>
<th>Czech Republic</th>
<th>Hungary</th>
<th>Poland</th>
<th>Slovak Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturing (15-37)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>0.169</td>
<td>0.537</td>
<td>0.534</td>
<td>0.599</td>
<td>0.525</td>
</tr>
<tr>
<td>Latest</td>
<td>0.132</td>
<td>0.526</td>
<td>0.544</td>
<td>0.606</td>
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<tr>
<td><strong>Textiles (17)</strong></td>
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<tr>
<td>1997</td>
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<td>0.718</td>
<td>0.749</td>
<td>0.781</td>
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</tr>
<tr>
<td>Latest</td>
<td>0.180</td>
<td>0.798</td>
<td>0.754</td>
<td>0.609</td>
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</tr>
<tr>
<td><strong>Wearing apparel (18)</strong></td>
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<tr>
<td>1997</td>
<td>0.213</td>
<td>0.746</td>
<td>0.642</td>
<td>0.734</td>
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<tr>
<td>Latest</td>
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<td>0.810</td>
<td>0.716</td>
<td>0.716</td>
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<tr>
<td>1997</td>
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<td>0.375</td>
<td>0.442</td>
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<tr>
<td><strong>Motor vehicles (34)</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>0.155</td>
<td>0.328</td>
<td>0.798</td>
<td>0.614</td>
<td></td>
</tr>
<tr>
<td>Latest</td>
<td>0.147</td>
<td>0.355</td>
<td>0.785</td>
<td>0.172</td>
<td></td>
</tr>
</tbody>
</table>

**Unit labor costs adjusted for purchasing power parity**

<table>
<thead>
<tr>
<th>Sub-Sector</th>
<th>Turkey</th>
<th>Czech Republic</th>
<th>Hungary</th>
<th>Poland</th>
<th>Slovak Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturing (15-37)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>0.082</td>
<td>0.211</td>
<td>0.223</td>
<td>0.282</td>
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<tr>
<td>Latest</td>
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<td>0.258</td>
<td>0.239</td>
<td>0.280</td>
<td>0.158</td>
</tr>
<tr>
<td><strong>Textiles (17)</strong></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>1997</td>
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<td>0.299</td>
<td>0.352</td>
<td>0.311</td>
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<tr>
<td>Latest</td>
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<td>0.350</td>
<td>0.322</td>
<td>0.213</td>
<td></td>
</tr>
<tr>
<td><strong>Wearing apparel (18)</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>0.103</td>
<td>0.311</td>
<td>0.302</td>
<td>0.292</td>
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<td>0.355</td>
<td>0.306</td>
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<tr>
<td><strong>Chemicals (24)</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>0.076</td>
<td>0.147</td>
<td>0.184</td>
<td>0.264</td>
<td>0.154</td>
</tr>
<tr>
<td>Latest</td>
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<td>0.184</td>
<td>0.176</td>
<td>0.247</td>
<td>0.111</td>
</tr>
<tr>
<td><strong>Motor vehicles (34)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>0.075</td>
<td>0.137</td>
<td>0.375</td>
<td>0.244</td>
<td></td>
</tr>
<tr>
<td>Latest</td>
<td>0.087</td>
<td>0.156</td>
<td>0.335</td>
<td>0.060</td>
<td></td>
</tr>
</tbody>
</table>

Source: Laborsta (ILO), Turkstat, and estimations.
Numbers in parentheses indicate the ISIC, rev. 3 code for the sector.
Table 2.3: Labor Productivity Growth in SOEs and Private Firms

<table>
<thead>
<tr>
<th>ISIC</th>
<th>Manufacturing sub-sector</th>
<th>Private</th>
<th>Public</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Food products and beverages</td>
<td>22.1</td>
<td>-33.8</td>
<td>29.5</td>
</tr>
<tr>
<td>16</td>
<td>Tobacco products</td>
<td>46.4</td>
<td>-1.3</td>
<td>48.4</td>
</tr>
<tr>
<td>17</td>
<td>Textile industry</td>
<td>8.5</td>
<td>-36.3</td>
<td>10.4</td>
</tr>
<tr>
<td>21</td>
<td>Manufacture of paper and paper products</td>
<td>38.3</td>
<td>-49.2</td>
<td>76.7</td>
</tr>
<tr>
<td>22</td>
<td>Publishing and printing</td>
<td>62.4</td>
<td>41.6</td>
<td>64.9</td>
</tr>
<tr>
<td>23</td>
<td>Manufacture of coke refined petroleum</td>
<td>-62.2</td>
<td>34.8</td>
<td>15.1</td>
</tr>
<tr>
<td>24</td>
<td>Chemical and products industry</td>
<td>59.6</td>
<td>50.2</td>
<td>59.2</td>
</tr>
<tr>
<td>26</td>
<td>Manufacture of non-metallic</td>
<td>19.0</td>
<td>-6.0</td>
<td>20.2</td>
</tr>
<tr>
<td>27</td>
<td>Basic metals industry</td>
<td>28.7</td>
<td>17.7</td>
<td>24.5</td>
</tr>
<tr>
<td>29</td>
<td>Machinery and equipment n.e.c</td>
<td>70.5</td>
<td>-16.0</td>
<td>74.2</td>
</tr>
<tr>
<td>31</td>
<td>Electrical Machinery and apparatus n.e.c.</td>
<td>65.4</td>
<td>9.5</td>
<td>65.0</td>
</tr>
<tr>
<td>32</td>
<td>Radio, TV and communication equipment</td>
<td>27.8</td>
<td>-24.7</td>
<td>27.2</td>
</tr>
<tr>
<td>36</td>
<td>Manufacture of furniture n.e.c</td>
<td>0.1</td>
<td>-57.3</td>
<td>-0.7</td>
</tr>
</tbody>
</table>

Source: Turkstat and calculations.

Note: Includes only industries where both SOEs and private firms are represented.
3.1 Sustaining high economic growth will require a long period of sustained reforms, which in turn call for a strengthening of the institutions of public sector governance. Improving public sector governance encompasses a broad agenda supporting Turkey’s long-term development goals.

3.2 This chapter focuses on three key aspects of the governance system in Turkey: efforts to control public sector corruption, efforts to reform and modernize the judiciary, and efforts to reform the systems and incentives in civil service. While progress has been made in reducing corruption to levels that are not unusual in international comparison, this progress is attributable mostly to economic reforms as the systems of accountability and transparency have mostly been stagnant for several years. Judicial reforms have been a priority in recent years—the expansion of budgetary resources has signaled Turkey’s commitment to the sector, but continued progress will also call for reforms in court and case management, human resources, information technology and infrastructure. The orientation of Turkey’s civil service reform program has not yet taken shape, and the government is sensibly evaluating options for systems that provide incentives for performance.

3.3 Public sector governance is a key priority for Turkey in the medium term. The 9th Development Plan of the Government for the 2007-2013 period identified “increasing quality and effectiveness of public services” as one of the 5 development axes. Priorities under this axis include among others restructuring of the public administration, human resources management and judicial reform. The public sector governance and judicial reform agendas are of crucial importance for a strong investment climate conducive to growth and job creation, and thus for meeting Turkey’s long-term development challenges. Turkey would also benefit from a strong public administration that is more apt to implement the EU Acquis. Similarly the justice sector will play a critical role in adapting to EU requirements and standards. Improving public sector governance encompasses a broad agenda, underpinning many of the short-term and medium-term priorities in the Accession Partnership with Turkey adopted by the EU Council in January 2006. Some key challenges, for example, include:

- Strengthening institutions implementing anti-corruption policy and coordination among them—a prerequisite for further improving the investment climate;
- Promoting judicial reform—to ensure consistent interpretation of legal provisions and strengthen the efficiency of procedures.
- Reforming public administration and civil service, to improve efficiency, accountability, and transparency—a key “horizontal” requirement for the effective implementation of the EU acquis;
- Strengthening the independence and effective functioning of regulatory bodies—for example,
in key network industries, such as energy, or for public procurement—and establishing new ones when needed (for example, for monitoring of state aid);

• Ensuring effective, transparent, and participatory regional and local government—a key for improving the quality of public services; for effective implementation of regional policies and rural development and the absorption of EU pre-accession funds;

3.4 **Aware of this, the Government has initiated a comprehensive public administration reform process with an emphasis on transparency and accountability, including.**

• New legislation has been enacted to promote transparency and accountability, and reduce corruption. A Law on the Right of Access to Information was passed for the first time in 2003. New legislation created a Board of Ethics for Public Servants in 2004 to supervise the implementation of the Code of Ethics adopted in 2003. A new Penal Code has increased deterrence by lengthening the statute of limitations.

• A new Law on Public Financial Management and Control (2003, fully in force since 2006) and a series of other laws concerning sub-national levels of government seek to tighten internal accountability mechanisms and ensure fiscal discipline while linking planning to budgeting.

• Performance-based budgeting is being piloted in some government agencies to improve the efficient allocation and use of resources in public administration. Strategic Development Units have been created within each Ministry with the task of developing new management approaches emphasizing results orientation and evaluation of organizational performance through measurable indicators.

• Reform efforts have included legislation envisaging the decentralization of public service delivery to local authorities with the aim of improving responsiveness and flexibility, including through cooperation with the private sector and civil society.44

• The Government has embarked on a comprehensive e-government program particularly on key sectors such as taxation, customs, social security, land registry and justice.

• Legislation has been adopted to streamline business registration. Moreover, to improve the efficiency and transparency of law making, the Council of Ministers issued a decree requiring that agencies undertake a regulatory impact assessment, and elaborate the expected costs and benefits of proposed legislation.

3.5 **This chapter examines three key aspects of governance all of which are essential for Turkey’s long term development:** efforts to control public sector corruption, efforts to reform and modernize the judiciary, and efforts to reform the systems and incentives in civil service. While the last two topics are currently on the Turkish reform agenda, the fight against corruption is a cross-cutting subject which has partly been addressed in the last five years through various public sector reform efforts. As the form that Turkey’s civil service reform will take is not clear at this time, the last section focuses on issues and lessons learned from civil service reform in other countries.

44 Not all the relevant draft laws have been adopted. The Law on Greater Municipalities was passed in 2004, but the President vetoed the Framework Law on Public Administration, the Law on Special Provincial Administrations and the Law on Municipalities. The latter two laws were passed with amendments in 2005. Upon the veto of the former President, the Parliament enacted an amended Law on Public Inspection Authority (Ombudsman) in September 2006. The Constitutional Court, however, has decided to temporarily suspend the provisions on implementation.
B. Controlling Corruption

An Imperative for Turkey’s Development

3.6 One aspect of governance that has received heightened attention in recent years is that of corruption, and for good reason. A growing body of empirical research shows that corruption is bad for development in many ways: it stymies investment, leads to wasteful government spending, and ultimately erodes credibility in state institutions. The ultimate effect is bad for firms, and this is also true in Turkey. The most recent two rounds of the BEEPS provide an illustration. Forty-seven firms participated in both rounds of the survey making it possible to see how firms that were most beset by corruption in 2002 performed over the next three years. Firms that managed to avoid paying bribes in 2002 saw their sales grow more than 40 percent faster than firms that were paying bribes in 2002.

3.7 Progress has been made in many areas in reducing levels of corruption. In order to better understand the phenomenon of corruption in Turkey, this section will first examine the scope of the problem and recent trends, and argue that progress has been made in many areas in reducing levels of corruption to levels similar to those in EU member countries. Progress in creating the anticorruption infrastructure will then be examined, and here the message is less positive. While there have been achievements in some areas in recent years, there is much more that Turkey can do to show investors, its citizens, and external partners, that fighting corruption is firmly on top of the agenda.

Corruption Levels and Trends in International Perspective

3.8 External perceptions of corruption in Turkey, and even the perceptions of Turkish citizens, are worse than warranted. While corruption exists everywhere, the frequency with which corruption is encountered can vary significantly across countries. Preconceived notions about how bad corruption is in different places can be very stubborn to change. One way to understand how bad corruption really is is to ask people how often they encounter various types of corruption. A large-scale population survey known as the Transparency International Global Corruption Barometer has several questions that both give a sense of how prevalent people

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45 Examples include Mauro (1995) and Kaufmann and Kraay (2002).
46 Based on the panel element of the BEEPS dataset. The average three year growth of firms that had paid bribes in 2002 was 10.2 percent, compared to 14.8 percent for firms that did not.
47 The Global Corruption Barometer should not be confused with the Corruption Perceptions Index (CPI). The CPI is an index of various sources, while the Barometer is an actual population survey carried out as part of the Gallup organization’s Voice of the People Surveys in the summer of 2006. The sample size for Turkey was 2,045. See www.transparency.org for more information.
think corruption is, and of how often they actually encounter it. While the Turkish population perceives corruption to be very widespread, compared to new members of the European Union and to the original four “cohesion” countries, relatively few had actually experienced corruption (Figure 3.1).

3.9 Surveys of firms also suggest that corruption levels in Turkey are similar to those in many EU member countries. According to firms that participated in the BEEPS, the frequency of bribery declined markedly between 2002 and 2005 in many areas, most strikingly for business licensing, customs, and taxation. For many areas of enterprise-state interactions, the level of corruption experienced by firms is not markedly different from that experienced by firms in the EU countries included in the survey (Figure 3.1).

3.10 The conclusion from surveys of firms suggesting that corruption levels in Turkey are not unlike those of EU member countries is echoed in a recent household-level survey. The EBRD-World Bank Life in Transition Survey (LITS) covered 1,000 households in each of 29 countries, including Turkey, ten new members of the EU, and others. Respondents were asked how often it is necessary for people to make unofficial payments in typical interactions between citizens and the state. For many of the interactions depicted in Figure 3.3 people in Turkey reported unofficial payments to be about as frequent as reported by people in the new members of the EU, and for higher education and medical treatments at public health facilities respondents in Turkey reported less

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48 The ten new members of the EU refer to Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, and Slovenia. The EU Cohesion countries are Greece, Ireland, Portugal, and Spain. The “perception” measure is a simple average of the 14 sectors for which respondents were asked to evaluate “To what extent do you perceive the following sectors in this country/territory to be affected by corruption? 1=not at all corrupt … 5=extremely corrupt.” The “experience” measure is based on the question “In the past 12 months have you or anyone living in your household paid a bribe in any form.”

49 The survey covered Turkey and all of the former socialist countries in central and eastern Europe, the former Soviet Union, and Mongolia.
frequent unofficial payments. The two areas where respondents in Turkey reported unofficial payments to be more frequent than in the EU were for obtaining unemployment benefits and for interactions with the road police.

3.11 The trends over time are also favorable. The BEEPS showed a marked decline in the frequency of firm-level bribery in many areas between 2002 and 2005, a pattern echoed in other surveys. The largest improvements were in the areas of business licensing and permits, connections to public utilities, taxes and customs.

3.12 Despite improvements, further reducing corruption remains a priority for Turkey’s development. More than one in three firms said in a recent survey that corruption was a problem for the operation and growth of their firm, more than for crime, business regulations, and other areas of the business environment. Continuing the positive progress will require an understanding which policy and institutional changes are having the most impact. The remainder of this section examines certain aspects of Turkey’s policy and institutional environment that might help explain the patterns of corruption in Turkey.

Institutions of Oversight

3.13 There has been some progress in creating and strengthening the institutions of oversight. Responsibility for controlling corruption has, in the past, been highly fragmented, and one of the subjects of discussion with the EU has centered on whether or not these structures need to be consolidated, or even to have a new institution created. Turkish officials argue persuasively that the creation of a new agency would lead to confusion and duplication, and that a better course of action is to clarify roles, consolidate functions and enhance coordination among relevant agencies.

3.14 In addition to the courts and prosecutors, many other governmental bodies play a role in the field of anticorruption, including the Inspection Boards (IBs) of each ministry and agency. This decentralized system of enforcement of various provisions, including asset monitoring and regulation of conflict of interest (as described below), is not unique to Turkey. However, the lack of a central authority combined with confidential declarations of information means that there is less incentive to vigorously pursue allegations of corruption.
because there is less public oversight of the bodies and officials themselves. Moreover, the lines of hierarchy whereby the IB’s answer to the relevant minister or head of agency, and indeed need that person’s approval to begin an investigation, may give the appearance of a lack of independent investigation or, worse, hamper investigations from their inception. The Prime Ministry Inspection Board has the power to carry out investigations of the highest officials at line agencies.

3.15 **The system of audits has been strengthened, but there remains room for improvement.** As the primary body conducting external audits, the Turkish Court of Accounts (TCA) is an especially important institution for the fight against corruption in Turkey. The role and scope of the TCA has been expanded through various legislative initiatives. A new Law on the Turkish Court of Accounts has been at the Grand National Assembly for some time, awaiting approval. Once passed, this law will greatly enhance the potential for the TCA to help fight corruption, for example by making the results of audits public and allowing the TCA to draw systematic lessons from their audits.

3.16 **The creation in 2004 of the Public Sector Ethics Board to oversee the implementation of Turkey’s Code of Ethics has given a fresh boost to ethics in the public service.** The Ethics Board provides training and outreach aimed at building an ethical culture, in addition to carrying out investigations of alleged ethical abuses by high-level officials. The Ethics Board is also authorized to examine the (confidential) assets declarations submitted by high-level officials if warranted by an investigation, and also has competence to regulate adherence by public sector bodies to the law regulating the registration of gifts received by public officials.

3.17 **While the creation of the Ethics Board is a positive step, its potential as a body for preventing and controlling corruption remains hindered by several factors.** First and foremost, the Board has four specialists and six administrative personnel, and these employees are merely seconded from other institutions in government—the Board does not have a separate allocation from the Budget and is under funded for a country the size of Turkey. Second, the purview of the Ethics Board is limited to executive agencies. Allegations related to the President, Members of the Cabinet, Members of Parliament, universities and personnel of the judiciary and the military are specifically excluded. Indeed, the majority of the complaints that the Ethics Board processed in 2005 could not be addressed because they involved an official in one of these excluded categories.

3.18 **The institutions for fighting money laundering are established, but have had little impact on public sector corruption.** The Financial Crimes Inspection Board (MASAK) was created in 1997 to fight money laundering, and the legislation has been renewed in the past few years. A special effort has been made to align Turkey’s policies with the recommendations of the Financial Action Task Force. While fighting public sector corruption...
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corruption is not the specific mission of MASAK—most cases surround drug smuggling and fraud—the potential to uncover acts of corruption through laundered proceeds makes MASAK one of the bodies that can contribute to Turkey’s fight against corruption. To date, however, MASAK’s activities have focused (not inappropriately) on drug smuggling and fraud, with no cases of laundering of public sector corruption proceeds. Indeed, the role of MASAK in the fight against money laundering has been strengthened in a series of legislative changes. In order to better monitor the illegitimate transactions, relevant financial institutions are now mandated to report suspected cases directly to MASAK for further investigation.

Institutions of Openness and Accountability

3.19 Turkey can continue to push the frontiers of reform by making government more open and high level officials more accountable. The World Bank’s Public Accountability Index includes detailed evaluations of the laws governing four key areas of openness and accountability, including the systems for monitoring assets, for resolving and preventing conflicts of interest, for ensuring free access to government information, and for ensuring properly bounded immunities for high-level officials. A detailed scoring system assigns points for systems that have good qualities, and the resulting aggregates provide rudimentary indicators of the overall thoroughness, clarity, stringency of legislation in these four areas. As is clear from Figure 3.4, Turkey’s legislation in several of these areas falls short of the standards being met by the new members of the EU.

3.20 Turkey’s system of asset monitoring has several weaknesses compared to those of many of the new members of the EU: they are confidential, infrequent and cover too many officials to be effective. Asset disclosures as they currently exist are submitted every five years to the official’s own organization, the head of which is ostensibly required to verify their accuracy. There is no indication that the vast number of governmental organizations receiving the declarations has the skills, databases, or manpower needed to do the job justice. More importantly, given that the contents remain secret and that there is no systematic disclosure of the results of audits, there is no way to know whether the declarations even receive any scrutiny. Public declarations for high level officials help to make all of society allies in the fight against corruption. In some countries, objections to public declarations have been raised citing loss of privacy, and risk of criminal misuse of the information, and some countries have opted for declarations that keep some portions of the declarations confidential (such as personal

Figure 3.4: Assessments of Cross-Cutting Accountability and Transparency, 2006


Notes: The scale refers to an index whereby higher values indicate greater accountability and transparency. New EU includes Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, and Slovenia.
identification numbers and street addresses), while most of the declarations describing wealth and interests are made public. Requiring declarations to be submitted in a decentralized fashion for so many officials without formally mandating professional audits, while at the same time keeping them secret, does not, however, provide a useful framework for asset monitoring. While centralizing the collection and auditing of the declarations would be an enormous (and expensive) proposition, mandating that they be made public for high-level officials would help to make them effective without the cost or delay of creating a new government institution.

3.21 **Conflict of interest remains very poorly regulated.** Several laws regulate conflict of interest for officials of various levels, but practical enforcement is weakened by certain shortcomings. Some incompatibilities are listed, although these focus primarily on the incompatibilities between one public office and other positions related to the state. Other interests may or may not be in conflict with the official state position, yet there is no requirement for a systematic and full disclosure of interests, other than the subset that may appear in the assets disclosures. The Public Sector Ethics Board has the potential to play an important role in regulating conflict of interest of high-level officials, and indeed they are considering strengthening disclosures of interests in amendments to its Statute and Regulation planned for 2008. The small size of the professional staff for the Ethics Board will continue to pose challenges, making it difficult to achieve its potential.

3.22 **Turkey’s adoption of the Law on the Right to Information in 2003 was a key step forward in making the shift toward a more open government sector.** This law laid the foundation for the idea that information possessed by the state should be available to the general public, with only carefully circumscribed exceptions. Such laws have become essential components of anticorruption activities in many countries, and as in other countries implementation does encounter obstacles. A recent study by TESEV evaluated the implementation of the law by using applications for information from a wide assortment of governmental bodies. Although some were fully compliant with the law, there was wide variation. In addition to the implementation challenges, critics have identified shortcomings in the legislation, including broad categories of information exempted and a lack “tests” used to override non-disclosure. Moreover, a list of frequently requested information to be regularly updated and provided ex officio would help to ease implementation for both the state body and for those requesting information.

3.23 **Excessive immunities are problems in many countries, and are perhaps even more problematic in Turkey.** Turkey’s apparent comparability with new EU members for the measure of immunity in Figure 3.4 does not reflect favorably on Turkey as much as it reflects the lack of progress in many other countries in addressing this complex and politically sensitive issue. Both the European Commission and the Council of Europe’s Group of States Against Corruption (GRECO) have remarked on the excessive scope of immunities covering a wide range of officials. Immunities cover not only members of Parliament, but members of the government, as well. Although procedures for lifting immunity are in place, they almost never are instituted in practice. The scope of immunity is also excessive, covering not only votes but all activities, and the immunities cover not only prosecution, but even searches and arrests. Even a guilty verdict passed prior to becoming a member of Parliament becomes

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58 The field test by TESEV covered offices in different sectors and in different locations in Turkey.


60 The legislation is at times conflicting on this point. The Law on Asset Declaration and the Fight Against Corruption indicates that corruption offenses are not subject to preliminary permission and they are directly investigated by the relevant prosecutor. Yet, other legislation creates permission mechanisms for certain groups of officials, namely judges, prosecutors, and rectors.
suspended during the Parliamentarian’s term in office. While all countries have immunities for some high level officials, Turkey is unusual both for the breadth of officials covered by immunity and for the lack of objectivity in the procedures for removing immunity.

Preventing Corruption by Reforming the Interactions between Firms and the State

3.24 Economic and administrative reforms are also anticorruption. As is clear from Figure 3.5, the largest reductions in the frequency of unofficial payments between 2002 and 2005 were related to business licensing and permits, taxation, customs, and utilities connections and maintenance. Not coincidentally, these are all areas where the Turkish authorities have made intensive business environment reforms. The number of steps and time needed to register a business have been significantly reduced, as have the number of documents needed to obtain a general business license. Automated customs clearance systems have been instituted system-wide and recent tax reforms have brought corporate income tax rates down considerably. Although these reforms are usually oriented toward easing the official burden of firms, they also have the important effect of reducing the number of interactions that firms have with state officials, replacing discretionary decision-making with rule-based decisions, and reducing the incentive for firms to skirt the rules. All of these effects tend to reduce the opportunities and incentives for corruption.

3.25 Systems of government procurement have improved considerably. Reforms began in earnest with the adoption of the public procurement law in 2003. The system now includes a unified set of procedures for all of the public sector, standard bidding documents, debarment from government procurement by violators, a public procurement agency to receive and investigate complaints and other hallmarks of procurement systems that control opportunities for corruption.

Figure 3.5: Bribe Frequency According to Firms, 2005

Source: BEEPS

Figure 3.6: Ranks for Ease of Doing Business, Early 2006

Source: Source: Doing Business in 2007. Note: New EU includes Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, and Slovenia.

SIGMA, Turkey—Elements of the Public Integrity System, June 2005.
Many implementation challenges have arisen, especially for atypical situations (such as a national emergency) or industries with unique arrangements (such as the leasing of aircraft) for which special procurement rules may be needed. Indeed, resisting the tendency to write exemptions from standard procedures into other laws has been a challenge in the past. Although Figure 3.5 shows little rise in the percentage of firms saying that bribes are frequent for government contracts, this may be due in part to the fact that fewer firms said as much in 2002 compared to other members of the EU (Figure 3.6).

3.26 A renewed determination to address the sources of corruption would strengthen the confidence of the public and of investors. The 2001 Strategy to Increase Transparency served as a useful organizing framework for reforms. However, the momentum for reforms aimed directly at reducing corruption has waned. An updated strategy, outlining the key actions to be taken and a timeline for implementation would help to restore momentum. A step in the right direction came in October 2006 when the Prime Minister issued a circular aimed at strengthening the institutional structure of fight against corruption. The circular reinforced the role of the inter-ministerial steering group in combating corruption by expanding its duties to cover cooperation with international anti-fraud organizations (such as OLAF) and determining principles and measures in this context. The circular also identified the Prime Ministry Inspection Board (PMIB) as the secretariat for the committee with the task of providing technical assistance to the committee in developing national anticorruption strategies and monitoring their effectiveness. The immediate challenge for Turkey is to continue easing the administrative burden on firms, and thus easing a key motivator of corruption, while increasing the focus on key institutions of integrity, such as asset monitoring and control of conflict of interest. The more complex challenges of judicial reform and civil service reform, the subjects of the next two sections, are recommended to be kept high on Turkey’s reform agenda.

### C. Judicial Reform

3.27 Turkey has long-standing judicial and legal traditions that distinguish its reform efforts from those of other EU accession countries. With the foundation of its modern republic in 1923, Turkey initiated a series of reforms aimed at modernization. As part of these reforms, Turkey established a centralized, secular legal system modeled on the European continental civil law systems (mostly, Swiss and French). The longevity and stability of the resulting judicial institutions and the legal system may be the reason why surveys of the business community have consistently ranked Turkey at or above the average level of the ten transition countries that have recently joined the European Union (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, 62 The Government’s Urgent Action Plan also had a section on corruption, although it was not as comprehensive.
Slovenia and the Slovak Republic). According to these surveys, the business community views the Turkish judicial system as relatively stronger and faster in its ability to reach fair outcomes and enforce court decisions than those of the average of new EU countries (Figure 3.8). It is important to emphasize, however, that this does mean that firms gave positive assessments—in the case of court speed, for example, only 23 percent of firms agreed that courts were quick, although the ratio is higher than in the new EU and EU cohesion countries (Figure 3.7). Nevertheless, the business community views the functioning of judiciary as less of a problem for doing business in Turkey compared to the EU8 countries, while still not at the level of older members of the EU (Figure 3.8).

3.28 **There is a strong demand for improvements to the judicial system to bring it in line with the highest standards.** For many assessments in Figure 3.8 and Figure 3.9, the assessments of firms in Turkey remain worse than in the older members of the Cohesion countries of EU. As part of the comprehensive public sector reform program, legal and judicial reform has emerged as a significant topic of discussion since 1999. On the one hand, Turkey has since embarked on legal reform efforts focused on constitutional and legal changes intended to strengthen democracy, the rule of law and the protection of human rights.63 On the other hand, there remain problems with backlogs and delays in the court system and concerns about the quality of judicial process. The Turkish judicial system would need to improve with respect to its human resources, infrastructure, and alternative dispute resolution systems to operate at levels of efficiency in line with international standards.

3.29 **Strengthening the independence of judiciary in Turkey is a major component of the judicial reform.** Article 140/6 of the Constitution, which attaches the judges and prosecutors administratively to the Ministry of Justice, is seen as the main impediment to judicial independence. The Ministry of Justice retains a significant

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63 This chapter does not address issues related to human rights or the reform of the criminal justice system but focuses mainly on business and civil law aspects of the judiciary.
influence over the recruitment, promotion and training of judicial personnel and the Minister of Justice chairs the High Council of Judges and Prosecutors that is responsible for most administrative matters concerning the judiciary. Several new EU members, including Romania and Bulgaria, have strengthened the independence of their judiciaries by eliminating the role of the Ministry of Justice from the process of appointment, promotion, disciplinary measures and training of judges and prosecutors. Although the assessments of the business community of the independence of the Turkish judiciary have improved and are now in line with those of the new members of the EU, the assessments remain worse than those provided in older members of the EU. Carrying out reforms to ensure the independence of its judiciary could help improve confidence in the impartiality of the courts.

3.30 Since 2002 Turkey has made significant progress in the area of legal and judicial reform. Turkey revised the main body of laws governing the system, including the Criminal Code, Criminal Procedural Code, Civil Code, and Law on the Establishment of the Regional Courts of Appeal and the Law on the Establishment of Justice Academy. Further revisions to the Commercial Code, Code of Obligations and Civil Procedural Codes are in the legislative process. As a result of these revisions, several specialized courts in the area of family disputes, maritime law, intellectual property rights and consumer protection have been established. Moreover, the Ministry of Justice has developed and implemented an advanced information technology system (called the National Judicial Network Project, otherwise known by its Turkish acronym UYAP) aimed at improving the judiciary’s ability to collect information, data, and communicate with other governmental institutions.

3.31 Many countries orient their judicial reforms toward increasing resources available to judiciary and restructuring the court system and its management. Judicial reforms generally aim to enhance the performance of the judiciary by, first, ensuring sufficient human resources and physical infrastructure available to the current court system and, second, re-orienting the systems to make more efficient management of these resources. Judicial reform efforts usually seek to identify bottlenecks and structural issues in the system and try to address them by creating specialized courts, or different appeal structures, or alternative dispute resolution mechanisms. By deploying efforts in these three different categories, judicial reforms aim to improve typical measures of judicial efficiency such as lower case backlog, shorter duration of cases, improved access to justice, and better popular assessment of judicial quality. Data from the Ministry of Justice web site shows that during 2005 the commercial courts received approximately 75,000 cases, and have yet to decide on half of them. The average time to decide a case is 403 days not including appeals—it is no wonder that more than three out of four firms said courts were slow (Figure 3.7). Serious reforms such as those envisaged for Turkey require resources, and Turkey has already begun to expand resources for the Turkish judiciary. The budgetary allocation of the Ministry of Justice has increased by more than 50 percent both in absolute value and relative to the overall budget, allowing for significant raises in the salaries of judges. Although Turkey has made significant progress in many areas of judicial reform, sustained efforts are necessary to further improve the efficiency of the judicial system.

Human and Physical Resource Capacity

3.32 Improving the system of continuing legal education is a pre-requisite during an intensive period of legal reform. While Turkey is overhauling all areas of law, there are concerns that the current level of programs for continuing education is not sufficient. Additional training programs for judges and prosecutors – and better coordination of existing training – would help ensure that the human capacity to implement judicial reforms improves along with the reforms themselves.
3.33 The Justice Academy plays an essential role in the judicial system. The Judicial Academy is charged with many important functions, including: (i) pre-service training for judges and prosecutors; (ii) in-service training for judges and prosecutors; and (iii) the initial and continuous training for court clerks and other court personnel. Based on similar experiences from other countries in the region (e.g., Romania, Bulgaria), it is recommended that the Justice Academy should, in addition to providing mandatory pre-service training for future judges and prosecutors, have on-going mandatory in-service training for sitting judges and prosecutors. This would require a clarification of roles between the Justice Academy and the Department for Training within the Ministry of Justice. Furthermore, it would be important for the Justice Academy to have a comprehensive strategy to improve its capacity to design and implement curricula and ensure a mandatory continuing professional training. Moreover, subordinating the Justice Academy to the High Council of Judges and Prosecutors will ensure its independence and responsiveness to professional concerns of the judiciary. In short, the court system cannot provide high quality legal service unless the candidate judges and prosecutors receive pre-service training of adequate duration and quality, as well as a mandatory and comprehensive in-service training program. Court clerks and other court personnel similarly need to receive adequate training, and a comprehensive bar exam is recommended to ensure the competency of lawyers. The Justice Academy’s capacity to deliver on these reforms calls for: (i) development of long-term training policies, including pre-service and in-service training strategy (drafting curricula, creating a trainers’ network, and creating regional training centers); (ii) capital investment and budget planning; (iii) public communication; and (iv) introduction of a bar examination as a mandatory qualification for lawyers.

3.34 The number of judges, prosecutors and qualified assistant judicial personnel falls well below the norms for a country the size of Turkey. Furthermore, compared to the EU countries the number of cases per judge and support personnel is extremely high (Table 3.1). Although around 137 under-utilized courts were closed and the judges and prosecutors in those courts were transferred to other courts, the forthcoming establishment of Regional Courts of Appeal will increase demand even further – thus the need to increase the number of judges and prosecutors remains pressing. To accommodate the growing demand, a decision was made to decrease the duration of the pre-service training to one year on a temporary basis. In order to maintain the quality, however, emphasis on the in-service training to be provided to judges and prosecutors becomes even more important. One way to ease the pressure on judges would be to consider the establishment of assistant judge positions, as has been done in new EU countries (e.g., Poland).

<table>
<thead>
<tr>
<th>Countries</th>
<th>Number of Judges</th>
<th>Number of Judicial Support Personnel</th>
<th>Number of Court Cases</th>
<th>Cases per Judge</th>
<th>Cases per Judicial Support Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic</td>
<td>28</td>
<td>89</td>
<td>3,666</td>
<td>131</td>
<td>41</td>
</tr>
<tr>
<td>Germany</td>
<td>25</td>
<td>62</td>
<td>4,842</td>
<td>194</td>
<td>78</td>
</tr>
<tr>
<td>Greece</td>
<td>20</td>
<td>71</td>
<td>3,384</td>
<td>169</td>
<td>48</td>
</tr>
<tr>
<td>Poland</td>
<td>26</td>
<td>89</td>
<td>4,481</td>
<td>172</td>
<td>50</td>
</tr>
<tr>
<td>Portugal</td>
<td>17</td>
<td>71</td>
<td>7,071</td>
<td>416</td>
<td>100</td>
</tr>
<tr>
<td>Romania</td>
<td>19</td>
<td>41</td>
<td>7,243</td>
<td>381</td>
<td>177</td>
</tr>
<tr>
<td>Turkey</td>
<td>8</td>
<td>26</td>
<td>4,455</td>
<td>557</td>
<td>171</td>
</tr>
</tbody>
</table>

Upgrading the infrastructure and strengthening automation is essential for continued judicial modernization. Adequate courthouse and IT facilities are critical to the functioning of modern judiciaries. Modest yet adequate courthouses with public waiting areas, sufficient space for trials, and offices for judges and support staff promote efficiency and accountability and enhance the public’s view of the legal system. Information technology is essential for efficient and transparent case management, recording and maintenance of trial records, legal research, continued professional development for judges, and publication of decisions and judicial statistics.

The Turkish judiciary has already begun a program to upgrade courthouses and IT facilities—continuing these efforts will help ensure sustainable judicial reform. Currently, there are around 145 projects to either upgrade existing courthouses or construct new ones. Given the government’s fiscal constraints, it is important to develop a comprehensive, cost efficient (covering both investment and maintenance needs), and monitorable plan that can guide the investment process going forward.

Restructuring the System and Its Management

Better court management could lead to an enhanced administration of justice. Many courts in Turkey, particularly in big cities, have excessive backlogs, which seriously undermines the ability of litigants to obtain a final judgment within a reasonable time. While the reform efforts already described will help alleviate the backlogs, increasing the efficiency and effectiveness of court proceedings will also require improvements in court management. Modernizing the current case management system and expanding both the number and the quality of the judicial support personnel will help ensure that judges and prosecutors spend less time on administrative tasks and focus on cases at hand. Similarly, streamlining civil and criminal procedural rules will help eliminate unnecessary delays. By establishing guidelines and training processes for court management and judicial support personnel, developing a program for transferring administrative responsibilities from judges to judicial support personnel, and streamlining the legal framework for judicial procedures allowing for faster resolution of cases, the Turkish judicial system will be much better placed to help citizens and the business community settle their disputes quickly and fairly.

There is no monitoring mechanism for judicial efficiency. The available sources of data and information about the performance of the Turkish judicial system remain limited. On the one hand, collecting and tabulating accurate data on all aspects of the judicial operations would be beneficial. On the other hand, it would be advisable to have a correcting mechanism to take action when the data indicates a problem. Enhanced monitoring and proactive correction of problems would greatly help Turkey achieve its judicial reform goals.

The establishment of the Intermediate Courts of Appeal has been a significant step forward in reducing the case load of the Court of Appeals. The Law Establishing the Intermediate Courts of Appeal came into force on June 1, 2005. The establishment of this new level of appeals aims at reducing the case load of the Court of Appeals. The Law provides that the Courts are to be established within two years of its entry into force. However, it would be necessary to carefully assess the number, location, and staffing levels for these courts.
3.40 **Enacting revised civil procedural code will be important in reducing the duration of cases.** The Ministry of Justice has finalized the preparation of the revised civil procedural code. Under the current draft a new procedure for pre-examination of cases by judges is envisaged that will significantly reduce the delay in collection of evidence and scheduling of hearings. The new draft gives more powers to judges to speed up the court proceedings. Measures are envisaged to eliminate delays caused by bad faith parties. The draft code proposes to eliminate the differentiation of rules between international and domestic arbitration. The enactment of this new civil procedural code will lead to significant efficiency gains for the judiciary.

3.41 **The introduction of mediation as an alternative dispute resolution mechanism and establishment of its institutional set-up will also be important in the long run in making the judicial system more efficient.** By developing the legal basis for mediation similar to EU countries, Turkey can provide an alternative for cases where the parties prefer to settle outside of the court system. In parallel to the drafting of the mediation law, the necessary steps for the establishment of its institutional base could be considered. One possible approach might be the establishment of arbitration and mediation centers that oversee the training and certification of mediators. These centers may also disseminate information on the new mediation processes to public and can be the backbone of alternative dispute resolution mechanism.

3.42 **Turkey would greatly benefit from continuing its successful judicial reform programs and deepening its efforts to increase the independence, efficiency, accountability of judiciary and the overall capacity to meet rising demands of economic growth.** As a result of the reforms carried out since 2002, the performance of Turkish courts has improved significantly. These improvements contribute to better service delivery, favorable business environment, and implementation of the EU legislation which is a key factor in promoting Turkey’s integration with EU. At the same time, economic growth and expansion of market interactions will only bring added pressure on the courts. Deepening the existing judicial reform efforts can help Turkey stay ahead of these pressures, expanding the economy by allowing entrepreneurs to engage in contracts with confidence they will be enforced, to extend credit with confidence it will be repaid. By strengthening the independence of the judiciary, while building comprehensive training programs, increased human resources, incremental changes to the structure of the courts, emphasis on court management, and the development of alternative dispute resolution mechanisms, Turkey will be able to meet international standards for judicial efficiency and quality.

### D. Comparative Civil Service Reforms: Selected Issues of Relevance to Turkey

#### Current Priorities in Civil Service Reform

3.43 **Turkey has a well-established professional civil service.** Based on the career model characterized by early entry for a lifelong career, the system’s tenure helps safeguard civil servants against political pressures in the exercise of their duties. Some flexibility is ensured by the use of contracted personnel who perform a wide range of functions. Recruitment and promotions in the Turkish civil service occur according to set procedures, which broadly ensure meritocratic principles.64

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64 SIGMA, “Turkey Public Service and Administrative Framework Assessment”, June 2005
3.44 **The Turkish authorities recognize that there is scope for raising the effectiveness of the civil service.** The Turkish government’s 9th Development Plan (2007-2013), which aims to prepare the Turkish economy and public administration for EU membership, notes several goals and challenges with regard to civil service reform. These concern primarily human resource management (HRM). The plan points to staffing imbalances across different agencies within the civil service and calls for a more efficient allocation of human resources based on effective planning of future staffing requirements – both in terms of numbers and skills composition.

3.45 **Other priorities focus on developing the potential and strengthening the motivation of civil servants.** The Plan recognizes that at present career development planning falls short of these objectives. It calls for better on-the-job training and the introduction of incentives for improved individual performance, including through closer linkage of merit and performance with promotion prospects. The Plan recognizes that rewards for good individual performance are currently absent and identifies the unequal salary scales across the civil service as a factor undermining staff motivation.

3.46 **The draft Law on Public Personnel, which aims to overhaul the public personnel regime, is yet to be adopted and implemented.** Turkey is pursuing several goals and challenges with regard to civil service reform through the draft public personnel law. Key priorities include: (i) a more efficient allocation of human resources to meet future staffing requirements—both in terms of numbers and skills composition; (ii) developing the potential and strengthening the motivation of civil servants; and, (iii) establishing incentives for good individual performance and addressing unequal salary scales across the civil service which often undermine staff motivation. A new draft Law on Public Personnel, which is under preparation, provides for a number of innovations, whose successful implementation would address many of the current weaknesses in the functioning of the civil service (also see World Bank, 2006 PER for a more detailed discussion).

3.47 **The following section will outline some main trends and highlight examples from the experience of other OECD countries that have undertaken civil service reform in recent years.**

**Experience of Reforms in Other OECD Countries**

3.48 **In the past two decades, most OECD countries have introduced reforms to increase efficiency and productivity in their civil services, notably by adapting some management tools inspired from the private sector.** The main trend has been a shift towards a results-oriented approach, also known as New Public Management (or performance management) with implications for budgetary planning, and with a growing focus on measuring organizational and staff performance. New approaches to human resources management (HRM) have been introduced, including in many cases separate arrangements for the senior civil service, with the aim of changing to a performance-oriented mentality. However, comparative data remain insufficient to draw reliable conclusions on the effectiveness of different reforms.65

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Staff Planning and Flexibility

3.49 Studies by the World Bank and the OECD suggest that civil service staff downsizing strategies driven by fiscal considerations pose the risk of losses in essential competencies, while the resulting efficiency gains may not be sustainable in the longer term. These comprehensive staffing adjustment strategies, such as the one currently under elaboration in Turkey, involve careful planning to ensure that staff allocation corresponds to actual organizational functions and needs. Gains in terms of both efficiency and effectiveness may result from modest staff reductions in conjunction with staff redeployments within the civil service, combined with re-training, where appropriate. In career-based systems, where the scope for redundancies is restricted by legal guarantees of lifelong employment for most public personnel, staff reductions aimed at budgetary savings are typically obtained through natural attrition and hiring freezes, whereby recruitment is fixed below the replacement rate (e.g., Austria, Belgium, Germany, France and Spain). In many cases, salary freezes have been used in conjunction with hiring limits to contain wage costs.

3.50 There is a growing trend towards reforms aimed at increasing staffing flexibility, notably in career-based civil service systems. In the past decade, several OECD countries with career systems have increased the number of posts open to external competition, decentralized human resource policies to line ministries, and placed greater emphasis on individual performance. The decentralization of recruitment policies to line ministries (e.g., UK since 1980s, Ireland 2004) is intended to increase staffing flexibility, but carries the risk of inflating the total wage bill, if not accompanied by tight central budgetary controls. Some countries have moved in the direction of increasing the share of contracted staff as opposed to tenured civil servants (e.g., Canada, Denmark, Spain, and UK). An increase in the use of contracted staff in the interests of flexibility or cost-effectiveness may risk undermining quality and meritocracy, if ad hoc recruitment mechanisms prevail. Minimum qualifications requirements and central guidelines for recruitment can address this risk. Such guidelines are also used in many decentralized, position-based systems (e.g., UK).

3.51 Some countries achieve flexibility by restricting civil service status. Limiting the scope of the civil service to staff exercising core policy-making and regulatory functions divests personnel engaged in service delivery (e.g., teachers, medical staff) from the legal civil servant status. In most EU countries (except Austria, Denmark, Germany, Italy and the UK) the civil service tends to encompass most public sector employees. Denmark narrowed the scope of the civil service as far back as 1969, and Italy did so in 1993. During the post-communist transition in the 1990s, Hungary and Poland also introduced narrow legal definitions of the civil service. The scope of the civil service can also be narrowed to include personnel of central government departments and exclude staff of SEEs and/or regional and municipal authorities, whose employment would become subject to general labor legislation. Such a strategy would allow for variation in the salaries and benefits of ‘core’ civil
servants, on the one hand, and those of other public service personnel and/or local government staff, on the other. However, such reforms may de-motivate staff and encounter significant opposition from trade unions.

3.52 Some previously closed career systems are opening up management positions to external recruitment. In order to attract highly-qualified candidates with proven leadership ability, such reforms have been instituted in Poland (1996), Korea (1998), France (2003), and Ireland (2004). Many career systems have introduced fixed-term appointments for senior management, while maintaining civil service tenure (Austria, Belgium, France, Hungary, Italy, Netherlands, and UK). Mandatory mobility for managerial staff also serves as a career development tool.

3.53 Some countries have replaced statutory lifelong tenure in the civil service with permanent contracts with the exception of very few positions. Finland, Sweden, and Switzerland carried out such reforms in 2002. Austria introduced limited term appointments for senior civil servants in 1995 and is currently considering reforms to end tenure for all civil servants by moving to a contractual basis in public employment. Spain is contemplating similar reforms, following the transition to contract employment in some sectors.

Reforming Salary Scales

3.54 In many OECD countries salary scales are fixed in collective agreements negotiated with public sector trade unions. This is true, for example, in Finland, Germany, Hungary, Italy, Norway, and Slovakia. Collective agreements cover either the whole of the civil service or are negotiated separately by ministries and agencies acting as employers (e.g., Denmark). In cases of failed negotiations salary scales may be set unilaterally by the government (e.g., France since 1998, Estonia 2004). In other countries (e.g., UK) the government engages in consultations with unions over pay levels at its discretion.

3.55 In countries where salary scales are subject to negotiation with staff unions, progress in the reform of salary schemes has tended to be rather slow. For example, in Finland collective bargaining over the implementation of the current salary scheme, which was first launched in 1992 (and introduced PRP), resulted in very gradual progress. By 2004 the salary scheme had been implemented by 40 percent of government bodies; full implementation was achieved in 2005. A new salary scale introduced in Greece in 2001 was phased-in during a three-year period; the new salary scheme increased the share of base salary and reduced that of various allowances.

3.56 Reform to reduce vertical salary compression (i.e., increasing pay differentials between grades) has been undertaken in a few cases. Aiming to increase salary incentives for senior officials, both Hungary, and the USA have done as much. Such reform strengthens incentives attached to promotion, but risks being perceived as unfair by lower-level staff.

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A frequently discussed area of civil service reform is to introduce Performance Related Pay. PRP is a remuneration element awarded to some members of staff on the basis of individual or team performance – as opposed to allowances provided on the basis of an ex ante assessment of the nature of the functions attached to a post. Starting in the 1960s (e.g., Canada) and increasingly in the 1980s and 1990s, civil services in many OECD countries introduced PRP schemes as a productivity-enhancing tool. PRP is considered as a means of encouraging staff to improve their performance, while projecting the notion of civil servants’ accountability to the wider public.

PRP in one form or another is growing in popularity. By 2004, two thirds of OECD countries had introduced some form of PRP, though only a third of OECD countries could be said to have remuneration systems based on PRP (e.g., UK). Some countries have – at least initially - restricted PRP to managerial staff or senior officials (e.g., Italy and some ministries in France). In recent years, however, the overall trend has been towards the extension of PRP schemes to cover non-managerial staff.

PRP for individual civil servants can take two basic forms: one-off bonuses (calculated as a fixed sum or as a percentage of basic salary) or merit increments, which become part of the base salary. One-off bonuses are the most common form of PRP in OECD countries and the current trend is towards increased use of bonuses rather than merit increments. The latter are less flexible given that, once they are awarded, they affect salary levels for the longer term. They also have a higher financial cost due to their impact on other payroll costs such as pensions. Many countries use a combination of bonuses and merit increments (Canada, Finland, Germany, Korea, Netherlands, Switzerland, UK, and USA).

Levels of PRP tend to be modest. Typically bonuses amount to less than 10 percent of base salary, though levels can be higher for senior officials. To limit the financial costs of PRP, many countries use fixed budget allocations for bonuses either at the level of the civil service as a whole (e.g., Germany) or for each government structure (e.g., Denmark). Several OECD countries have introduced bonuses for high-performing teams. Surveys suggest that group-based PRP makes the distribution of rewards more acceptable to staff and encourages teamwork.

73 In France, however, bonuses are included in pensions calculations since 2004.
Box 3.1: Examples of PRP schemes

Finland has used PRP since 1992; it provides rewards based both on individual performance and on team results. PRP covers all staff up to the middle-management level; top managers are excluded. Bonuses average 15 percent of salary, but can reach 25-50 percent for exceptional performance.

In France PRP was introduced for senior officials in six pilot ministries in 2004 before being applied throughout the civil service in 2005. Bonuses are awarded at the discretion of each ministry (subject to a budget limit) for good performance, working overtime, or difficult tasks. They range from 15-20 percent of base salary and are higher for senior managers (up to 40-60 percent). Some ministries apply PRP to all staff, whereas others restrict it to senior management. In future, PRP is due to be extended to all civil servants.

Germany introduced three elements of PRP in 1997: 1) one-off bonuses equaling up to one month’s base salary; 2) performance allowances (up to 7 percent of base salary) payable monthly for a maximum of one year. These are not permanently incorporated into the salary and therefore may be revoked; 3) performance steps, whereby a member of staff advances to a higher step of the salary grid faster than the standard interval. PRP applies to all civil servants and is allocated both on the basis of individual and team performance. Budgetary costs are contained by limiting the share of staff in receipt of PRP to 15 percent.

The United Kingdom was among the first countries to introduce PRP in 1985. PRP levels vary widely across government departments and agencies, as relevant policies are fully decentralized since 1996. Since 2004, a shift towards teams-based PRP is observed in several departments. PRP is now used in all departments and applies to staff of all levels.

3.61 OECD studies show that PRP can be rather difficult to manage in practice, primarily due to the challenges involved in assessing individual performance in the public sector. A robust performance evaluation process and a strong link between appraisal and rewards are key to the successful introduction of PRP. In some cases, a weak linkage of bonuses to actual performance appraisals has allowed managers to use PRP to supplement base salaries that are considered too low.74 In the absence of trust in management, PRP may become divisive and counterproductive by eroding staff morale. PRP tends to be best suited to mature civil service cultures and stable political environments, where perceptions of favoritism and patronage are less salient.75 The introduction of PRP also needs to anticipate and address possible resistance from staff associations by investing in internal communications and dialog.76

3.62 Overall results seem to be mixed and so far no clear link has been established between PRP as such and improved organizational performance. Extensive staff surveys indicate that the impact of PRP on staff motivation and performance tends to be overestimated. For the majority of civil servants PRP in itself at best acts as a secondary incentive; base salary levels and career development prospects tend to have a more powerful impact on motivation. On the other hand, positive results are reported from countries that have introduced group-based PRP (Finland, Spain, and UK). Evidence from positions-based systems (Denmark, Finland, 74 This was reportedly the case in some departments in France. OECD Human Resources Working Party, “Individual Country Reports on Performance-Related Pay,” 2004, p. 29
75 OECD Policy Brief “Paying for Performance: Policies for Government Employees,” May 2005, pp. 4-7
Sweden, UK) also suggests that PRP does help recruit high-quality external candidates. Decentralized HRM authority (e.g., Denmark, Italy and UK), often within the framework provided by central guidelines, facilitates the effective implementation of PRP, as each department is in a better position to set goals for individual or team performance.

3.63 **Some aspects of PRP seem to work better than others.** Many advantages associated with the introduction of PRP appear to be a function of accompanying changes such as a clearer definition of employees’ tasks and the setting of individual performance targets aligned with broader organizational objectives. Recent research suggests that meritocratic recruitment and promotions policies rather than particular incentives schemes are the most important factor accounting for improved organizational performance in civil services.

*Career Development Incentives*

3.64 **Many OECD countries have seen a move towards merit-based promotions at the expense of the traditional link between promotions and length of service.** In recent years several countries have abolished the entitlement to automatic promotion on the basis of seniority and made it conditional on adequate performance appraisals (e.g., Germany 1997, Switzerland 2002, and Ireland 2004). In 2002 Germany introduced the possibility of accelerated promotion to the next step for high performers identified through performance evaluations. It is now possible to advance to the next step in less than half the standard interval. An alternative mechanism is ‘broad-banding’ (e.g., USA in the 1990s), whereby the number of hierarchical grades is reduced to lower barriers to high performers’ upward mobility.

3.65 **Transparency is also an important element of a meritocratic system of promotions.** In many career systems, posts open for promotion are now advertised and filled through an internal competitive application process. Some countries (e.g., France, Hungary) combine performance-based criteria with internal competitive examinations for promotions. In some career-based civil services such as France, internal examinations also allow for the selection of staff to be promoted to a higher category (e.g., from the secretarial to the professional career path, subject to minimum education qualifications). Possibilities (paid or unpaid leave, coverage of education costs) may also be offered for staff to upgrade their educational qualifications. In Canada and the USA promotions are based entirely on performance evaluations. Some career-based systems have placed greater emphasis on inter-departmental mobility as a career development tool and as a mechanism of improving coordination (France, Italy, and Netherlands).

3.66 **Some countries have created inter-departmental pools of senior executives as a distinct upper layer in the civil service subject to special arrangements, including higher salaries and/or PRP** (Hungary 2001, Italy 1998, Netherlands 1995, Poland, UK 1996). Several civil services have formulated skills profiles used for selecting and training candidates for senior management posts (Canada, Korea, Netherlands, and UK). These core competencies typically include strategic thinking, vision, communications skills, initiative, integrity, decisiveness, capacity to manage stress, and ability to motivate staff.

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77 Ibid.
78 OECD, “Performance-Related Pay for Government Employees”, 2005
79 World Bank, “Understanding Public Sector Performance in Transition Countries”, 2003, pp. 35-37
3.67 There is a general trend in OECD countries towards specific training aimed at developing management and leadership skills. In France since 2002 training in human resource management is mandatory prior to all appointments to executive positions. Leadership development programs with distinct selection processes are used in Germany and Norway, while leadership training programs for managers operate in many countries, e.g., Canada, Korea, Netherlands, Spain, Sweden, UK and United States. It has been noted that training aimed at behavioral change needs to take account of the organizational culture of the target group. Evaluating the impact of training programs is also necessary to ensure a better link with career development prospects.

Box 3.2: Performance Incentives: The Case of Germany

Amendments to the Public Service Law in 1997 introduced PRP in the form of bonuses and merit increments (performance steps). At the same time, the automatic entitlement to incremental salary increases (steps) on the grounds of seniority was abolished; advancement to a higher step became conditional on satisfactory performance.

The element of merit increments (performance steps) was enhanced by the introduction of fast-track promotion on the basis of outstanding performance appraisals in 2002. Evaluation considers past performance as well as future potential. Top performers may advance to the next step in one year (compared to standard intervals of two, three and four years).

All posts open to promotion are internally advertised. Officials selected for promotion receive preparatory training, which includes training in key competencies (e.g., negotiations, simulation of administrative decisions, organizational theory and leadership behavior). In addition, young officials with good performance evaluations may participate in a competitive selection (assessment centers) for admission to the Leadership Academy. This is a 15-month program, which includes 4-month intensive study and an internship in the private sector or an international organization. Managers’ leadership ability forms part of their annual performance evaluation, which includes assessment by their own staff.

Performance Evaluation

3.68 Performance evaluation is a key element of strong systems of civil service. The evaluation of individual civil servants’ performance is a regular process (usually conducted on an annual basis), whereby employees are appraised according to a set of predefined criteria. Different evaluation systems are based on a mixture of criteria, which typically include some of the following: an employee’s professional competencies (level of technical knowledge, ability to communicate clearly); work-related behavior and personal qualities (e.g., teamwork, industriousness, commitment, initiative, sociable nature); managerial skills (supervision of staff, decision-making capacity; and results achieved (productivity, timeliness, effectiveness, or measured against specific targets). Recent OECD surveys point to some broad trends in reforming evaluation systems:

- A tendency towards appraisal based on results (outputs) rather than competencies and behaviors (inputs). This is increasingly done by assessing results against predefined job-specific objectives and targets linked to broader organizational objectives (e.g., Denmark, Portugal).

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81 OECD, "Public Service Training Systems in OECD Countries", SIGMA paper no.16, 1997, pp. 11, 22
Some civil services have adopted specific appraisal systems for managerial staff, whose evaluation is linked to the performance of their departments. This is mostly the case in decentralized, positions-based systems (e.g., Australia, Denmark, Finland, Sweden, UK), but has more recently been introduced in career-based systems such as France, Korea, and Portugal.

- Objectives and measurable performance targets (as opposed to static job descriptions) are increasingly set and reviewed in consultation with the employee to be evaluated. Targets may include both quantitative and qualitative elements and may be reflected in written individual agreements or may be the subject of an ongoing informal review between managers and their staff.

- In many civil services, performance evaluation is becoming a staff development mechanism as much as a control tool. For example, in France the new evaluation system, which was introduced in 2002 and generalized in 2005, provides for mandatory performance evaluation interviews. The evaluation process is thereby used as a means of providing regular feedback to help staff improve their performance. Appraisals inform the assessment of individual employees’ training needs and career development planning. For this function of performance evaluation to be successfully achieved, supervisors need to be trained in providing constructive feedback in the course of the evaluation process.

- The tendency in OECD countries has been towards less standardized and less complex evaluation systems, with a focus on objectives agreed with the employee rather than fixed quantitative targets. Qualitative assessments are also increasingly used. Many countries still employ numerical rankings or points systems (e.g., Germany) or use formulae for weighing different evaluation criteria (e.g., core vs. secondary objectives – Korea).

- To address the temptation for supervisors to rate all staff too positively, which reduces the usefulness of evaluations and could inflate the financial costs of PRP, an increasing number of OECD countries set limits on the number or share of staff that may be given the top ratings. In Germany, only 15 percent of civil servants may be placed in the top category and qualify for PRP. Switzerland uses both maximum quotas for staff placed in the top categories and minimum levels for staff given the lowest rating. More targeted systems aimed at identifying top performers and unsatisfactory employees are increasingly favored, as they dispense with the complexities of attempting to differentiate among employees with average performance.

- In recent years there has been a tendency to broaden the pool of evaluators beyond a civil servant’s immediate superiors to include feedback from colleagues of similar rank and/or subordinates. This approach, known as ‘360-degree feedback’, increases the likelihood of balanced and credible evaluations by diversifying the sources of information on which the appraisals are based. Evaluation by subordinate staff has been introduced in some cases (e.g., Germany, UK, USA) to assess the leadership skills of managerial personnel.

3.69 Results reported from reforms implemented so far indicate overall positive outcomes. The strong emphasis on individual performance, however, has not always met expectations and has often been difficult to implement, particularly in career-based systems. To some extent, this is due to inherent difficulties involved in measuring individual performance in civil services, where results may be hard to identify (let alone quantify)
and where links between individual actions and results may be clouded by exogenous factors. However sophisticated, all appraisal systems rely to some extent on the evaluators’ judgment and therefore contain an element of subjectivity.

3.70 **Safeguards may include the use of multiple evaluators or multiple evaluation methods, incentives for managers to be objective in their appraisals, as well as appeal mechanisms.** Many evaluations systems include internal appeal possibilities open to civil servants who do not agree with their appraisal (as well as possibilities for recourse to a special tribunal and/or judicial review). Another approach is reducing the risk of damaging consequences from inaccurate evaluations by weakening the link between appraisals and rewards or sanctions, especially in the initial stages of an evaluation system.

3.71 **Perceptions of inaccurate and unfair evaluations may create tensions, de-motivate staff and erode the cultural cohesion of a civil service, especially where traditionally there has not been much focus on individual performance.** Performance evaluation systems, like other management tools aimed at changing mentalities towards greater performance orientation, are more successfully implemented when they build on the strengths of a civil service system. A focus on group performance might be more appropriate to the institutional culture of some career-based systems.

3.72 **Realistic performance targets, rigorous procedures and transparency (e.g., statistical results of appraisals, where full publication of individual files is protected by confidentiality rules) can strengthen the legitimacy of appraisal systems.** Some countries (e.g., Finland) have ensured broad acceptance of performance evaluations among staff by consulting staff representatives in defining evaluation criteria and in finalizing appraisals. Rating systems that avoid differentiation within the category of staff with satisfactory performance pose a lower risk of de-motivating averagely-performing employees. Finally, experiences of countries that have used performance evaluations for many years suggest that appraisal systems can become more accurate and credible, if they remain subject to review and improvement.

84 G. Reid, “Making Evaluations Useful”, World Bank 1997; OECD “How and Why Should Government Activity be Measured”, pp. 27-28. Besides, there are different approaches to the measurement of organizational results, e.g. quantifying outputs, impact evaluation, customer satisfaction, benchmarking.
85 Ibid.
86 OECD, “Modernizing Government”, p. 182
87 In assessing the effectiveness of an appraisal system, a quantitative indicator would be the variance in individual performance ratings. Low variance might indicate managerial aversion to giving negative or above-average evaluations. Surveys of managers could illustrate whether such a mechanism is at work. If so, minimum and maximum quotas for staff being given below-average and above-average ratings respectively may be advisable. Another indicator would be staff perceptions of the system’s accuracy and fairness.
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CHAPTER 4.

PROMOTING EMPLOYMENT AND MANAGING MIGRATION

A. Overview

4.1 Sustaining high economic growth with inclusiveness will be crucial to ensure support for the reform effort needed to meet Turkey’s long-term development goals. Generating more jobs is a crucial aspect for ensuring the inclusiveness of growth. Moreover, despite Turkey’s strong economic growth, labor market performance in recent years has been sluggish.

4.2 Against this background, this chapter provides first an overview of key issues in the labor market and then moves on to consider more in depth a number of specific issues affecting Turkey’s labor market prospects: (i) the patterns, prospects and implications of migration; (ii) the situation regarding youth employment; and, (iii) the implications of labor taxes.

4.3 Turkey’s sluggish labor market performance in recent years is puzzling given the strong economic growth. The employment rate (15-64 years) in 2005 was only 46 percent, 17 percentage points below the EU-27 average and far from the 2010 Lisbon target of 70 percent. The unemployment rate has hovered around 10 percent since 2002. This labor market record is especially concerning given the relatively strong economic performance in recent years. Between 2002 (after the last crisis) and 2005, the number of jobs increased by less than 700,000 (3.2 percent) despite the fact that GDP grew by 7.5 percent annually during this period. A second dimension of Turkey’s “jobs deficit” is the high level of employment in the informal sector. Just under one-half of the employed labor force is not registered with a social security institute. In the non-agricultural workforce, about one in three is not registered.

4.4 The overall labor market picture is heavily influenced by the very low participation of women in the workforce. Extremely low female employment is a major factor in explaining Turkey’s relatively poor overall labor market situation (Figure 4.1). In fact, the employment rate for men is comparable to those in the European Union. However, less than one-quarter of Turkey’s working-age women is employed, compared to 50-60 percent in the EU. This is due to extremely low female participation in the labor force in Turkey, rather than high unemployment among women. In 2005, the female participation rate was just 26.5 percent, compared to 56.3 percent in the EU-25. Understanding why so many women are choosing not to participate in the workforce is a complex issue which undoubtedly involves economic, social, and cultural variables. However, in the Labor Market Study, the World Bank (2006a) identified two key factors. The first is the extremely low level of participation in urban areas, where less than one in five women is in the labor force. The second is education. University-educated women are an exception to the overall picture, with participation rates similar to those found in the EU.

88 These figures comparing Turkey with EU members are based on standardized Eurostat methodology, which calculates labor force indicators for persons 15-64 years of age. These indicators differ slightly from Turkstat figures which are based on a working-age population definition of 15 years and over.
4.5 **In the past year, the employment picture has seen moderate improvement.** Recent Household Labor Force Survey figures indicate that employment as of August 2006 was 441,000 higher than it had been 12 months earlier. The unemployment rate for those 15 years of age and over was 9.1 percent, down from 9.4 percent in August 2005. Formal employment has also rebounded since late 2004.89 These gains notwithstanding, jobs remain a priority issue for Turkey. This is also evidenced by the fact that the Government included in its 9th development plan, “increasing employment” as one of the five axes of development.

4.6 **Addressing Turkey’s labor market problems will require a comprehensive policy approach.** The World Bank has studied Turkey’s “jobs deficit” in two recent reports: the Labor Market Study and Country Economic Memorandum (World Bank 2006a, 2006b). The analysis underlying these reports concludes that many factors come into play, some outside the labor market and others directly related to labor market policies, institutions, and practices. The general theme of the World Bank’s recommendations is to improve labor market performance by “protecting workers not jobs”. This would involve reforms to encourage job creation by making severance pay and contracting more flexible while, at the same time, improving the tools available for workers to protect themselves through a stronger unemployment insurance (UI) system and access to cost-effective active labor market programs based on needs of the labor market.

4.7 **In this chapter, three specific issues are addressed that have potentially important implications for employment trends in the future.**

- One is international migration, which is a key issue for Turkey’s integration in the EU single market, both in the public perception and in the policy domain. The facts, prospects, and incidence of migration will be studied in relation to the performance of the domestic labor market. To a large extent, future migration is likely to be determined by employment prospects in the domestic labor market and how they compare to opportunities elsewhere, particularly in the EU countries. This comparison will be most relevant for young people since they are the most likely to move in search of better jobs.

- The second issue addressed is youth employment, which is relevant not only for migration, but also for the country’s economic and social prospects, more generally. Turkey has a large youth cohort and the share of young people in the population will continue to rise over the next

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89 In 2005, according to HLFS data, growth in employment registered with SSK was 12%.
PROMOTING EMPLOYMENT AND MANAGING MIGRATION

The third topic to be addressed in this chapter concerns labor taxes and their impact on job creation. The Bank’s recent reports have noted the high level of taxation on labor and its potential for hampering job creation in the formal sector if it increases the cost of labor. However, until now, there has been very little empirical analysis in this area to guide policymakers in Turkey. New evidence on the impact of labor taxes on employment is presented.

B. Managing Migration: Patterns and Prospects

Turkish migration, especially to the EU countries, is a heavily debated topic; there are many misperceptions and unanswered questions. There is great need to provide relevant facts and conduct empirical analysis on migration patterns from Turkey in order to support a better-informed debate. This is the main goal of this section.

Migration patterns are closely linked to the performance of national labor markets, as shown by EU accession waves, whether it is the earlier experience of the Southern European countries or the recent experience of Eastern Europe. As a result, Turkey’s labor market conditions will likely be the single most important factor in shaping future migration flows to the EU and the rest of the world. In particular, current labor market prospects for young people are not very favorable, with low employment rates and long transitions into employment, especially into “good” jobs (see section B). Many of the labor market issues that are being addressed in this CEM, such as labor market policies and institutions, labor productivity, and regional disparities in labor markets will be highly relevant for determining migration patterns.

Migration Trends

Current demographic trends in both developed and developing countries indicate significant pressures for migration flows. Labor forces in many developed countries are expected to peak around 2010 and decline by about 5 percent in the following two decades according to the projections of the United Nations Population Division. This process will naturally be accompanied by rapidly increasing dependency ratios where the vast majority of the dependents will be the elderly. Conversely, labor forces in many developing countries are expanding rapidly, resulting in declining dependency ratios making it difficult to reduce unemployment. Rapid structural change out of agriculture and other traditional sectors is also contributing to this process. The combination of growing working-age populations, with weak labor markets, in developing countries and aging populations in developed countries will continue to reinforce pressures for international migration from developing countries to developed ones. This creates opportunities for mutually beneficial migration, both to meet labor demands and to finance social security and other welfare expenditures.
4.11 Migration from Turkey has been stable in the past decade. Figure 4.2 presents the proportions of the labor force from Turkey and a selection of other important migrant-sending developing countries that were employed in the developed-country OECD labor markets in 1990 and 2000. As the figure shows, the percentage of workers who are in industrialized countries is close to 6 percent of the total Turkish labor force and is broadly comparable to the corresponding share from the other comparison source countries. Furthermore, Turkish migration did not grow faster than the labor force between 1990 and 2000 despite economic crises and a low employment ratio. By contrast, migration from Slovakia and Albania was particularly strong due to political processes unfolding in the 1990s. Mexico, El Salvador, and many other Latin American countries experienced large migration flows, mostly to the U.S.

![Figure 4.2: Share of Labor Force in Developed OECD Labor Markets from Selected Sending Countries 1990 and 2000](image)

`Source: Docquier and Marfouk (2006)`

4.12 The destination of migrants depends on the level of their education and the geographic proximity to their home countries. As of 2000, over 90 percent of Turkish migrants were living in EU countries, while a similar proportion of Mexican migrants were in the U.S. and Canada. While North African and Eastern European migrants have more diverse destinations, the majority are in EU countries (Figure 4.2). However, for all of the countries in Figure 4.3 (and in other major sending countries like the Philippines, India, Egypt, and South Africa), well-educated migrants tend to prefer North American destinations relative to less educated migrants. For example, over 30 percent of college-educated migrant Turks choose North America compared to 6 percent of all Turkish migrants. About 60 percent of Eastern Europeans and 20 percent of North African migrants with tertiary education also choose North America. The importance of North America as a destination for well-educated migrants reflects policies in Canada and the U.S. that explicitly target educated migrants and the relative ease with which these migrants socially and economically integrate into the North American countries.

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92 These are the EU-15, the US, Japan, Switzerland, Norway, Australia, and New Zealand.

93 It should be understood that a large portion of the Turkish and North African migrants in Western Europe are actually “statistical” migrants – i.e., they are European-born children of previous generations of migrants. They are considered migrants since they do not carry the host countries’ citizenship and enter the official statistics as migrants. In this sense, these migration levels are overstated.

94 Throughout this paper, several countries are chosen for comparison. For North Africa, these are Algeria, Tunisia and Morocco whereas, for Eastern Europe, they are the Czech Republic, Hungary, Poland and Slovakia.

95 It should be added that a large portion of college-educated North African and Turkish migrants received their education in the EU, mostly as children of the previous generation. Thus, among the “new” migrants, the choice for North America is even stronger than the figure suggests.
4.13 **Understanding migration patterns of the well-educated is particularly important from an economic perspective because of the centrality of human capital as a determinant of economic growth and development.** Concerns over the long-term development impact of the migration of the educated labor force to developed countries have become rather serious. The loss of the positive externalities generated by the highly educated in the local economies – the theme of the endogenous growth theory – or the fiscal implications are frequently cited as the main costs of brain drain. Migration data reveal that the extent of brain drain is less severe in the case of Turkey than in many other developing countries (Docquier and Marfouk, 2006). Actually, as of 2000, the percentage of the college-educated among the migrants – around 9 percent – was not much higher than their ratio in the overall population. There are various reasons for this pattern including the higher demand in the domestic economy for the college educated, and the rapid increase in the college enrollment levels which compensates for any brain drain.

4.14 **In Turkey and in most sending countries, the overall education level of the labor force has increased.** Most sources of migrants have had increasing school enrolment rates (Figure 4.4), which have translated into better educated working-age populations. For example, in Turkey, the share of the labor force with some level of tertiary education increased from 5 to 9 percent between 1990 and 2000. Primary school enrollment rates are approaching 100 percent among middle-income countries that are important sources of migrants. As shown in Figure 4.4, they also achieved significant gains in secondary enrollment rates. The increases in tertiary enrollment rates also have been impressive: between 1990 and 2000, they increased from 13 to 23 percent in Turkey, from 14 to 20 percent in Mexico, and from 11 to 14 percent in North African countries. This rapid improvements in enrollment levels indicate that the future migrants from all of these countries will be much more educated compared than previous migrants. This will not only increase their economic integration but also decrease potential cultural conflicts. However, the improvements in education also increase the stock of human capital that developing countries could potentially lose through migration.

**Demographic Trends**

4.15 **The single most important determinant of migration flows are the underlying labor supply and demand imbalances in the source and destination countries.** On the labor supply side, the most important consideration is long-term demographic trends including population growth and the age distribution of the population. The population of Turkey is projected to reach 87 million in 2020 from the current level of 73 million.
which implies a total growth of 18.5 percent. While population growth patterns between 1990 and 2005 were almost identical in Turkey, Mexico and the North African countries, they are projected to diverge in the future with Turkey’s population growing more slowly than North Africa but slightly faster than Mexico (Figure 4.5). The decline in the Turkish population growth rate is mostly attributed to economic growth and increases in the education and the labor market participation levels of women.

4.16 Population growth in the EU27 is projected to slow down significantly. The U.S. population is expected to grow by 13 percent between 2005 and 2020. Higher American fertility rates and higher immigration levels explain the difference in population trajectories with the EU-15 where the total population is projected to grow by just 2 percent during the same time frame. On the other hand, the population of the four Eastern European countries96 used for comparison in these figures has been almost constant since 1990 and is projected to decline by 3 percent over the next fifteen years. In other words, the new accession countries will be of little help to resolve the demographic challenges and labor-market shortages facing the EU-15 countries.

![Figure 4.4: Enrollment Levels, 1990 and 2000](source: World Development Indicators (2006))

4.17 Migration flows will be heavily influenced by the age distributions in sending and receiving countries. Turkey will have roughly constant 0-14, 15-29, and 30-39 age cohorts through to 2020. Mexico and, to a lesser extent, North African countries, will have similar age profiles. Older age cohorts in these countries will grow because of increased life expectancy and the relatively large current working-age cohort moving through their life cycle. In the U.S., child and younger working-age cohorts are slightly increasing, with more rapidly increasing elderly and older working-age cohorts. Figure 4.6 presents the growth path for the 15-29 cohorts, which is the most important one for migration. Somewhat surprisingly, the U.S. will experience the fastest growth of all the countries we have considered while the age-population dynamics in Eastern European and the EU-15 countries are markedly different, with rapidly increasing elderly cohorts and shrinking younger populations. The EU-15 and especially Eastern European countries will experience rapid declines (10 and 30 percent, respectively) in the size of the 15-29

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96 These are the largest of the new accession countries - Czech Republic, Hungary, Poland and Slovakia.
age group between 2005 and 2020. This is a harbinger of the serious labor market imbalances these countries will be facing in the near future.

4.18 **Unless offset by significantly faster productivity growth than in the past, projected population patterns will create labor shortages in the EU27 labor markets.** Serious labor shortages are expected in the near future in many service sectors, such as health and homecare, which need to be locally provided. Such shortages will create significant demand for younger workers from outside the EU. Moreover, while the population levels are still rising in many migrant-sending countries, including Turkey (as well as Mexico and North African countries) beneath this growth there are some important qualifications. Fertility rates are rapidly declining in these major migrant sending countries, especially when compared to previous decades. Life expectancy is increasing and current young working-age population is making its way through the lifecycle. As a result, the “migrant supply” in the source countries will eventually decline while “migrant demand” will continue to increase, especially in the EU countries. By 2020, this demand may outstrip the supply of potential migrants. Finally, because of economic policies and cultural factors, it seems that the U.S. is managing to escape the demographic problems faced by the EU.

The Determinants of Migration

4.19 **In order to analyze the determinants of migration, two different formulations of a gravity model were estimated using data from 226 countries.** The estimation of the models generally confirmed the expected relationships (see Annex 4.1).
4.20 The model results suggest that if Turkey continues to grow rapidly and sustains moderate inflation, migration pressures will subside. Migration levels are very sensitive to economic performance variables as the results indicate. If GDP per capita in Turkey were to double from USD 6,320 to USD 12,640, or from 25 percent to 50 percent in proportion to per capita GDP in Germany, migration level would be predicted to decline by over 27 percent compared to its current levels. Furthermore, if the GDP per capita in Turkey were to triple to 75 percent of German GDP per capita, then the migration level would be almost 40 percent lower. Migration levels are sensitive to economic growth rate as well as overall level of income since sustainable growth generates future prosperity and less incentive to migrate. If Turkey were to sustain a stable annual growth rate that is 3 percent higher than Germany’s, migration would be 10 percent lower than the current level. Economic growth that is 6 percent faster than Germany’s would result in migration levels that are 20 percent lower. In 2000, which is the year for which the model is estimated, the inflation rate in Turkey was over 60 percent and only 1.2 percent in Germany. The current inflation rate in Turkey is around 10 percent and, if this level is sustained, then migration levels to Germany would be expected to decline by about 21 percent, reflecting more stable economic conditions. Further decline in inflation rates, for example, to identical level as in Germany, would lead to migration levels that are 26 percent lower.

4.21 On the other hand, although different population-related factors have counteracting effects, overall demographic trends suggest that pressures for migration from Turkey to Germany (and, indeed, other aging EU countries) will increase. While population increases will play some role, the most important impact will come from differences in how the dependency ratios evolve in the two countries. In 2000, the dependency ratio was 0.558 in Turkey and 0.471 in Germany. In 2020, the ratios are expected to be 0.468 and 0.532 respectively, reflecting the increasing working-age population in Turkey and the rapid aging in Germany. This decline in Turkey and the parallel increase in Germany will create significant upward pressure on the migration flows.

4.22 On balance, then, the analysis indicates two strong forces working against each other in influencing migration patterns. On one hand, the recently favorable economic developments in Turkey, such as the decline in inflation and faster economic growth are subduing pressures. This was the experience of the Southern European countries, such as Spain, Portugal and Greece. Rapid economic growth brought a similar decline in their emigration levels, and, actually these countries became a popular destination for many migrants. On the other hand, the relatively faster increasing population in Turkey and, especially, the changes in dependency ratios will add considerable pressures for out-migration to Germany and other EU countries that are aging quickly. However, it is important to note that Turkish migration to the EU is based on “pull” (demographic) factors originating in Europe as well as “push” (domestic economic and demographic) factors. Over the next decades, the former are likely to get stronger while the latter will weaken if the current trends continue. However, whether the “push” factors of migration will weaken over the next decade or so greatly depends on the conditions in the Turkish labor market. Many of the labor market issues that are being addressed in the remainder of this chapter and the rest of the CEM—such as the level and quality of employment, opportunities of employment for youth, and the regional disparities in labor markets—are highly relevant for the migration patterns. Labor market reforms that impact these dimensions and create more and better quality jobs will certainly help ease migration pressures.

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97 This is assuming populations stayed constant so that increase in GDP per capita is identical to increase in GDP. If it is assumed that population grows by 10 percent in Turkey and GDP per capita doubles, then GDP has to increase by 120 percent. Then migration level would decrease by 29 percent.
C. Youth Employment

4.23 Over the next 15 years, the numbers of young people in Turkey will increase substantially. There are more people below the age of 25 in Turkey now than ever before. Moreover, the share of young people in the population will continue to rise and will only peak around the year 2020 (Figure 4.6). This demographic profile is a “double-edged sword”. On the one hand, these large numbers of young men and women will add pressure on the labor market that could potentially lead to high unemployment and attendant social and economic problems. But they also present an unprecedented opportunity for Turkey to reap a “demographic dividend” through their productive potential.

4.24 Improvements in education provide a reason to be optimistic about the future for this large youth cohort. Education is a critical factor in shaping the future for today’s youth and Turkey has made remarkable progress in recent decades in this area. For example, as shown earlier in Figure 4.4, school enrollment rates have risen dramatically since 1990.

4.25 However, serious deficiencies still exist which are recommended to be addressed to better prepare young people for the 21st century. About 10 percent of young children are still not enrolled in primary school. Completion of secondary education is low, especially for girls, the poor, and those in rural areas. Additionally, while the top students perform at the highest international standards, more than half of Turkey’s high school students perform at the lowest standards. Less than one-third of young people are enrolled in postsecondary institutions.

4.26 Currently, labor market outcomes for young people are disappointing. Figure 4.7 shows the main indicators in 2005 for people aged 15-24, in comparison to the working-age population as a whole (15-64 years of age). The labor force participation rate for youth is under 40 percent which, by itself, might not seem too worrisome given that non-participants may be in school. However, another 40 percent in this age group are neither in the labor force nor in school. One factor may be discouragement, since outcomes for those who do enter the labor market are unfavorable. In 2005, the youth employment rate was 31.8, well below the national employment rate of 46.6 which, in itself, is far lower than aggregate employment rates in the EU. In most countries, the youth unemployment is typically two times (or more) the overall rate, and this is the case for Turkey as well. Turkey compares poorly with countries in the European Union, both in terms of unemployment and employment.98

98 For example, the 2005 unemployment and employment rates for 15-24 year-olds in EU-15 countries were 16.7 per cent and 47.6 per cent, respectively (Eurostat).
Table 4.1: Youth Labor Market Indicators, by Age Group and Gender, 2005

<table>
<thead>
<tr>
<th>Age/Gender</th>
<th>Labor Force Participation rate</th>
<th>Employment rate</th>
<th>Unemployment rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>27.9</td>
<td>23.0</td>
<td>17.4</td>
</tr>
<tr>
<td>Male</td>
<td>36.7</td>
<td>30.1</td>
<td>17.9</td>
</tr>
<tr>
<td>Female</td>
<td>18.5</td>
<td>15.5</td>
<td>16.2</td>
</tr>
<tr>
<td>20-24</td>
<td>51.5</td>
<td>41.2</td>
<td>20.1</td>
</tr>
<tr>
<td>Male</td>
<td>74.0</td>
<td>59.3</td>
<td>19.8</td>
</tr>
<tr>
<td>Female</td>
<td>32.5</td>
<td>25.8</td>
<td>20.5</td>
</tr>
<tr>
<td>25-29</td>
<td>63.1</td>
<td>55.1</td>
<td>12.7</td>
</tr>
<tr>
<td>Male</td>
<td>93.3</td>
<td>81.9</td>
<td>12.2</td>
</tr>
<tr>
<td>Female</td>
<td>31.9</td>
<td>27.4</td>
<td>14.1</td>
</tr>
</tbody>
</table>

Source: Household Labor Force Survey

4.27 Labor market indicators are particularly poor for young women, especially with low educational attainment. Female employment rates are very low in Turkey in general and this applies, as well, to young women (Table 4.1). In 2005 only 23 per cent of women below 30 years of age were employed. The dominant factor underlying the low employment rates are extremely low participation rates. Less than one-third of women in their twenties are in the labor force and this rate is no higher for those between 25 and 29 than for those between 20 and 24. Education is very highly correlated with labor force participation and employment among Turkish women (World Bank 2006a). This is very true for young women: in the under-30 group, employment rates are three times as high for those with postsecondary education than for those with only primary schooling.

Table 4.2: Unemployment Rates by Age Group and Educational Attainment, 2005

<table>
<thead>
<tr>
<th>Age group</th>
<th>Less than Primary</th>
<th>Primary or more</th>
<th>Secondary or more</th>
<th>MYO</th>
<th>Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>14.4</td>
<td>14.3</td>
<td>26.5</td>
<td>36.2</td>
<td>n/a</td>
</tr>
<tr>
<td>20-24</td>
<td>12.4</td>
<td>15.2</td>
<td>24.3</td>
<td>28.9</td>
<td>32.0</td>
</tr>
<tr>
<td>25-29</td>
<td>13.0</td>
<td>11.4</td>
<td>13.7</td>
<td>17.9</td>
<td>12.5</td>
</tr>
<tr>
<td>30-34</td>
<td>11.1</td>
<td>9.8</td>
<td>8.3</td>
<td>8.5</td>
<td>5.0</td>
</tr>
<tr>
<td>35-39</td>
<td>8.6</td>
<td>8.6</td>
<td>6.0</td>
<td>1.6</td>
<td>2.8</td>
</tr>
<tr>
<td>40-49</td>
<td>6.3</td>
<td>7.2</td>
<td>5.1</td>
<td>2.7</td>
<td>2.4</td>
</tr>
<tr>
<td>50-59</td>
<td>4.2</td>
<td>6.1</td>
<td>6.2</td>
<td>5.1</td>
<td>2.9</td>
</tr>
<tr>
<td>60+</td>
<td>1.0</td>
<td>1.8</td>
<td>4.2</td>
<td>0.0</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Source: Household Labor Force Survey

Note: MYO = Post-secondary vocational/technical institutions
4.28  **Education eventually pays off in terms of better employment outcomes but the transition from school to work is unusually long, especially for the well-educated.** The high unemployment for young people with university education receives a lot of attention. Indeed, as Table 4.2 indicates, unemployment rates for the 20-24 year age group actually increase with education, reaching 32 per cent in 2005 for those with tertiary education. Eventually, the better-educated do outperform others in the labor market although the data show that this does not take place until young people are in their late 20s and 30s. Even among those between 25 and 29 years old with postsecondary education, unemployment rates were 12.5 per cent.

4.29  **Improving employment outcomes for young people will necessitate reforms in education and in the labor market.** However, this will pay off in economic and social terms, as well as reducing pressures for out-migration. The difficulties experienced by young people in entering the labor market reflect deficiencies in the education system in terms of access, equity, quality, and relevance. For example, the high unemployment rates for educated workers may indicate mismatch between the skills provided by their schooling and labor market needs. The labor market regulations and institutions also play a role, since they do not ensure broad access to jobs, especially good jobs.99

D.  **Labor taxes and their implications for employment**100

4.30  **Taxation of labor income remains high in Turkey.**101 Combined employer-employee contributions to finance pensions and disability insurance, health insurance, unemployment benefits, and workers’ compensation represent 36.5-42 percent of gross wages. Income tax ranges from 15-35 percent of the gross wage. Table 4.3 below compares the “tax wedge” on labor income in Turkey with the EU-15 countries (pre-2005 members) and a selection of EU-10 countries for workers at different earnings levels and with different family characteristics.102 Turkey’s relative position varies, depending on family status and earning levels. In the cases of single individuals and married couples with no children at or above the average production wage, Turkey’s tax burden is in the middle ranks in Europe. But for families and singles with children, Turkey’s taxes on labor are among the highest. This is especially the case for low-wage workers with children where Turkey has the highest tax wedge of all of the European OECD countries. It should be noted that these tax wedge calculations will change with Law 5615, which became effective at the beginning of 2008. This law introduces a minimum living allowance and differentiates the amount that will be exempt from income tax based on the employment status of the spouse and the number of dependents. This will improve Turkey’s tax wedge for lower-income workers and those with dependents.

4.31  **Since a high tax wedge can be expected to reduce employment especially in the formal sector, the possibility of reducing taxes – and specifically, social contributions – has provoked considerable policy debate.** One question at the heart of this debate is what the employment gain would be if labor costs in the formal sector were decreased because of a reduction in the tax wedge. This obviously has important implications not only for the labor market but, also, for the fiscal position of the social security funds.

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99 This relationship between regulations and institutions and employment is addressed in detail in the recent Labor Market Study and the last Country Economic Memorandum (World Bank 2006a and b).

100 This section is based on a recent study of labor taxes and their implications for employment and the fiscal position of social security taxes. See Betcherman and Pagés (2007) for the synthesis report of the project.

101 “Labor taxes” is used as a term to include both social security contributions (levied on employers and employees) as well as personal income taxes levied on employees.

102 The “tax wedge” is defined as income taxes and combined (employer-employee) social security contributions, minus cash benefits, as a percentage of total labor compensation. The calculations of the tax wedge are based on OECD estimates with additional calculations made by the World Bank to take into account Turkey’s consumption tax credits which were not included by the OECD. Note that payroll taxes account for about 70% of Turkey’s overall labor taxes.
Table 4.3: Comparing Average Tax Wedges in Turkey with European Countries by Family Type and Wage Level, 2004

<table>
<thead>
<tr>
<th>Family type</th>
<th>Single No children</th>
<th>Single 2 children</th>
<th>Married 2 children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage level 2</td>
<td>67</td>
<td>100</td>
<td>167</td>
</tr>
<tr>
<td>Turkey tax wedge (percent), OECD methodology</td>
<td>41.8</td>
<td>42.7</td>
<td>44.4</td>
</tr>
<tr>
<td>Number of EU-15 countries with higher tax wedge</td>
<td>3</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Number of “EU-4” countries3 with higher tax wedge</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Turkey tax wedge (percent), with consumption tax credit</td>
<td>39.0</td>
<td>40.0</td>
<td>41.5</td>
</tr>
<tr>
<td>Number of EU-15 countries with higher tax wedge</td>
<td>5</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Number of “EU-4” countries3 with higher tax wedge</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Income tax plus employee and employer contributions less cash benefits; consumption tax credits added for Turkey.
2. Figures in this row indicate wage level as a percent of average production wage. In the married family examples, wage levels for each adult are given (e.g., 67-0 means that primary earner has wages at 67 percent of average production wage and the other adult has no earnings). The last example (44-0) represents the case of a family with one minimum wage worker and a non-earner.
3. Includes EU-10 (new accession) countries that are also OECD members – Czech Republic, Hungary, Poland, and Slovak Republic.

Source: OECD (2004), with calculations by IMF and World Bank staff.

4.32 Various studies internationally that have looked at the question of how employment responds to changes in labor taxes. These include some evaluations of actual policy changes as well as studies of labor demand elasticity that more generally estimate how much labor demand changes when labor costs change. The most reasonable assessment based on the complete literature available is that labor taxes do have a modest effect on employment. For example, this is the conclusion drawn by Nickell (2003) who assembled the results of a number of studies, albeit only from OECD countries. He concludes that a 10 percentage point change in the tax wedge can be expected to affect employment by between 1-3 percent, “… a relatively small but by no means insignificant effect” (p. 8). The analysis that exists for Turkey is roughly consistent with findings elsewhere but the evidence is very limited and dated.

4.33 In order to assess the likely implications of a reduction in social security contributions on employment, the World Bank has carried out different analytical studies. One has been to use data from two establishment surveys to analyze how much employment changes in response to changes in labor costs and payroll taxes (Taymaz, 2006). A second study evaluates the impacts of regional incentive programs that allow for an assessment of how much employment is created when taxes or social security contributions are reduced.
Estimations of Labor Demand Elasticity Using Establishment-Level Analysis

4.34 The effects of labor taxes on employment depend on various factors that determine the elasticity of labor demand and labor supply. Labor demand elasticities are conventionally defined as the percentage change in employment in response to a one percent change in labor costs. However, in the specific case of labor taxes (regardless of whether it is statutorily imposed on the employer or on the employee); it is not clear, a priori, what the effect is on labor costs. This depends on the “tax incidence” – i.e., whether it is actually being paid by the employer or by the employee. At one extreme, when the incidence is fully on the employer (when labor supply is perfectly “wage-elastic”), the result of a tax reduction will be lower total labor costs and increased employment. But when the incidence is fully on the employee (when labor supply is perfectly “inelastic” to real wages), the result of a tax cut will be higher take-home pay for the worker and no immediate effect on employment. However, the higher take-home wages would have an upward effect on labor supply that would increase employment. The tax incidence can be observed by estimating the “pass-through” – i.e., the extent to which labor taxes are shifted on to employees. Labor market conditions and institutions also matter for the impact of changes in labor taxes (Box 4.1).

4.35 The elasticity of labor demand in Turkey is towards the higher end of the range of calculations found internationally. Taymaz (2006) estimates a dynamic, fixed-effects model with establishment panel data to calculate labor demand elasticities and pass-through rates in manufacturing and construction. Table 4.4 reports the constant output long-run total wage elasticity estimates for three manufacturing sub-sectors and construction for production workers, administrative employees, and all employees. The estimates in the table are based on annual data. Looking first at the elasticities for all workers, the estimates for the four sectors are roughly clustered in the -0.4 to -0.6 range, which means that total employment increases (decreases) by 0.4-0.6 percent for a 1 percent decrease (increase) in labor costs. In all sectors, production employment is much more responsive than administrative employment to labor cost changes. These elasticities are towards the higher end of estimates made in other industrialized and middle-income countries. Moreover, Taymaz (2006) also finds that employment in Turkey adjusts fairly quickly, compared to many other countries, to changes in labor costs. In other words, the results suggest that, by international standards, labor demand in Turkey is relatively responsive to changes in labor costs.

103 The results of this project, with policy implications, are summarized in Betcherman and Pagés (2007).
104 However, the higher take-home wages would have an upward effect on labor supply that would increase employment.
105 For manufacturing, the sources are the Annual Survey of Manufacturing Industries, from 1992-2001 and the (quarterly) Short Term Production Survey, from 1988 to 2005. The construction survey is conducted annually, and the analysis covers the period 1992-2001. Unfortunately, appropriate data were not available for the service sector.
106 These elasticities are calculated at the mean values of the variables. “Constant output” estimates do not take into account second-order employment effects of labor cost changes associated with changes in product demand due to price changes. However, it is reasonable to assume that constant output elasticities are downwardly biased because they do not take into account output effects. “Long-term” elasticities refer to the completed employment effect, after the full adjustment to new labor costs have taken place.
107 Although the quarterly data for manufacturing cover a longer period of time, the annual data are richer in terms of the variables covered, including the measure of labor cost. The annual data provide information on both gross wages and employer social security contributions, so that total labor costs can be calculated. The quarterly survey did not include social security contributions until 2003.
Box 4.1: The Incidence of the Tax Wedge and the Role of Labor Market Conditions and Institutions

Employment effects of labor taxes depend on two important factors: labor market conditions and labor market institutions. As to labor market conditions, if job opportunities are scarce and unemployment is high, then labor demand is elastic and employers bargaining power is strong, while that of workers is weak and labor supply tends to be less elastic. Under such conditions it is workers who bear the burden of taxation in the form of lower wages. Even if the tax is levied on employers, they are able to shift it backward onto wages, without an increase in labor costs. The resulting fall in wages discourages labor supply and may lead to a fall in labor force participation. In contrast, when the labor market is buoyant and employers find it difficult to fill job vacancies, then labor demand is inelastic, while the bargaining power of workers is strong and they can claim high wages. Under such scenario, it is employers who tend to bear the burden of taxation. Even if the tax is levied on workers, they are able to pass it onto employers by claiming an offsetting pay rise. The resulting increase in the labor cost inhibits labor demand and may cause a fall in employment.

Labor market institutions matter because they influence the relative bargaining power of employers and workers. For example, strong trade unions, strict employment protection legislation or the availability of unemployment benefits increase worker bargaining power and thus the ability of workers to pass a tax increase on to employers. A binding minimum wage, in turn, limits the ability of employers to shift a tax increase onto workers. Thus labor market institutions, which tend to strengthen workers’ bargaining power, enhance the ability of workers to resist real wage cuts implied by an increase in payroll taxes, causing an increase in labor costs. If so, the negative effect of a tax increase on wages will be smaller but larger on employment.

In more general terms, the more elastic is labor demand the smaller is – all else being equal -- the effect of the payroll tax on total labor cost, and the larger on wages and employment. Similarly, the more elastic is labor supply the larger is the employment effect (but smaller the wage effect). There are some important implications of this relationship:

(i) When labor demand and labor supply are inelastic, the employment impact of a change in the tax wedge will be limited. If labor demand is inelastic then the burden of the tax will be borne by the employer in the form of higher labor costs (even if the tax was levied on the employees). Similarly, if labor supply is inelastic then the burden of the tax will be borne by employees in the form of lower wages (even if the tax was levied on the employer).

(ii) The negative (positive) employment effect of an increase (decrease) in labor tax will be smaller in the short-run and larger in the longer run. This is because in the long-run the elasticity of labor demand is larger than in the short-run.

(iii) A change in labor taxes will have the strongest effect on employment of worker groups for whom labor demand is most elastic. These include low-skilled workers, youth, older workers, and women. The negative employment effect of a high tax wedge will be amplified by relatively high elasticity of labor supply by those groups.

(iv) The negative employment effect of payroll taxes will be stronger if the labor market regulations (such as the minimum wage or unemployment benefit) or strong trade unions limit the downward wage adjustment and the tax cannot be absorbed by a commensurate fall in wages.

Source: World Bank, ECA Fiscal Study (forthcoming)

However, a significant share of labor taxes is passed on to workers. Taymaz (2006) also calculates pass-through rates which indicate how much labor costs change as a result of a change in labor taxes. For manufacturing, the average pass-through rate is 0.30, calculated as the average of mean-wage production and social security contributions divided by gross wages. For more details on the methodology, see Taymaz (2006).
Administrative workers for the three manufacturing sectors weighted by actual employment levels. In other words, in the case of a mean-wage worker in manufacturing, a 1 percentage point reduction in labor taxes will reduce labor costs by 0.30 percent, with the remaining 0.70 percent passed through to the employee in increased wages. Assuming a mean elasticity rate of 0.50 implies that the employment gain will be 0.15 percent.

4.37 A key finding, however, is that the pass through is strongly correlated with wage levels. Where wages are high, essentially the total effect of a tax reduction is further increases in wages. On the other hand, as wages fall, the pass through declines as well and the impact of tax cuts on labor costs becomes significant. Figure 4.8 illustrates this for mean- and low-wage workers (defined by wages one standard deviation below the mean) in the three manufacturing sub-sectors.109 The pass-through rate is much lower for low-wage workers, especially in capital and intermediate goods, with the result that labor costs will decline substantially—and employment will increase as a result—for low-wage labor in the event of tax cut.

The implication of these findings is that a reduction in social security contributions will have a stronger impact on employment when it is targeted on low-wage workers than when it is instituted across the board. In order to consider these effects, the elasticity and pass-through calculations from Taymaz (2006) were used to calculate the employment effects of various tax reform scenarios. Two scenarios are summarized in Table 4.5. One is an across-the-board reduction of 7 percentage points in employer social insurance contributions while the other is a targeted reduction on the same magnitude for new hires under the age of 30. This latter

109 The calculations on total labor cost reductions in Figure 2 for mean-wage workers in each of the sub-sectors are below the 0.30 average cited in the text for manufacturing as a whole. This is due to differences in methodology. The 0.30 estimate is a single weighted average for production and administration workers in the three sub-sectors. The figures in Figure 2 are calculated from a single pass-through rate for all employees in each industry.
option is intended to maximize the efficiency of a tax cut because of the high correlation between low wages and youth.\footnote{According to HLFS data, in 2005 (fourth quarter), 54\% of workers earning less than 1.25 times the minimum wage were under 30.} Because of the pass-through differences, the employment impact of the targeted cut is over 80 percent of the impact of the across-the-board cut (70,200 vs. 84,200 new jobs). Neither scenario leads to a major decrease in the aggregate unemployment rate – about three-tenths of a percentage point. However, the targeted cut would reduce the unemployment rate for the 15-29 year age group about eight-tenths of a percentage point.

### Table 4.5: Estimated Employment Effects of Social Insurance Reduction Scenarios

<table>
<thead>
<tr>
<th>Type of Reform</th>
<th>Social Insurance Contribution Reduction</th>
<th>Increase in Contributors</th>
<th>Reduction in Unemployment Rate (Percentage Points)$^2$</th>
<th>15-29 age group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Percent</td>
<td>Number$^1$</td>
<td>Total</td>
</tr>
<tr>
<td>1. Across the board</td>
<td>7 percentage points</td>
<td>1.11 percent</td>
<td>84,200</td>
<td>0.034</td>
</tr>
<tr>
<td>2. Targeted at new hires under 30</td>
<td>7 percentage points</td>
<td>2.09 percent (of employment under 30)</td>
<td>70,200</td>
<td>0.029 0.079</td>
</tr>
</tbody>
</table>

1. The added employment numbers are calculated on the basis of the latest available data of covered workers (contributors) under SSK.
2. Unemployment rate calculations assume that employment effect of cuts in social insurance contributions is due to flows into employment from unemployment, not from out of the labor force.

The reductions in unemployment rates are based on 2005 HLFS data.

\textbf{Source:} Betcherman and Pagès (2007)

In any event, the employment gains of a contribution cut would not be large enough to compensate for decreased social insurance revenues from the reduced rates. Not surprisingly, the targeted cuts would have a smaller negative impact on fund balances reflecting the greater efficiency of reductions when their impact is greatest on low-wage labor. However, to be fiscally neutral, any reform – across the board or targeted – would need to include an increase in tax revenues from other sources.

### Estimation of Employment Impacts from Regional Incentives

This technical analysis evaluates the employment impacts of regional incentives offered by the Government of Turkey to encourage investment and employment in low-income provinces. The research examines three different incentive regimes, legislated through Law 4325 (1998) which covered 22 provinces, Law 5084 (2004) which expanded coverage to an additional 15 provinces (while leaving out one of the formerly included provinces), and Law 5350 (2005) which added 13 more provinces. These laws have differed somewhat in terms of qualification requirements and the actual subsidies. However, in general, subsidies have included employer social security contributions, employee personal income taxes, electricity consumption, and land. Employers in eligible provinces have qualified on the basis of meeting new job creation thresholds, either by opening new establishments or by expanding employment in existing ones.
4.41 Since these subsidies reduce the cost of labor in some provinces but not in others, the programs constitute policy changes that can be used to estimate how much new employment is likely to be created when taxes or social security contributions are reduced. Often the impact of programs such as these is assumed by policy-makers to be simply equal to the number of new jobs that have been subsidized. However, this does not take into account the job creation that would have occurred if the program had not been introduced.

4.42 Although the analysis assesses the impact of the subsidies offered under Laws 5084 and 5350, only the results of the former law are summarized in this chapter. Law 5084 offered incentives to employers in 36 provinces, 21 of the 22 provinces that had been covered under the previous law plus 15 new ones. Eligible provinces had a per capita GDP of less than USD 1500 (in 2001) or had been designated as priority development regions. Beginning in January 2004, employers could qualify for monthly subsidies based on the additional registered employment they reported above a benchmark based on their October 2003 level. New start-ups were eligible for subsidies for their total registered workforce. Subsidies offered under Law 5084 covered social security contributions, income taxes, energy costs, and land.

4.43 Two control groups are used to estimate the employment effects of Law 5084: (1) provinces that have never been included in any of the regional incentives programs (“never-subsidized”), and (2) provinces that were only added to the regional incentives program under Law 5350 in May 2005 (“5350-subsidized”). Figure 4.9 shows the ratio of registered employment in “5084-subsidized” provinces relative to control groups, 2001-05. The charts suggest that registered employment has responded to the subsidies. Employment in the “5084-subsidized” group visibly turned upward relative to the “never-subsidized” group just after the introduction of the new law (January 2004) and it continued to increase through the sample period (panel a). This upward turn in employment at the beginning of 2004 is also clear when “5084-subsidized”
employment is compared to “5350-subsidized” employment (panel b). However, in May 2005 when Law 5350 was implemented, the employment ratio turned downward as employment in this last group of subsidized provinces responded to the newly-available incentives.

4.44 In order to systematically evaluate the employment impacts of the regional incentives, Betcherman, Daysal, and Pagés (2007) use “difference-in-difference” models to estimate SSK-registered employment (levels and growth) in a province in a given month as a function of whether the regional incentives program is in force, the time period, and provincial variables that cover province-specific effects.114

4.45 The conclusion of the analysis is that the regional subsidies did have a positive effect on employment. Figure 4.10 shows the magnitude of the calculated employment effect under three different specifications. As the chart shows, the size of the effect is sensitive to the model specification and the control group. Estimates of the number of jobs created ranges from about 10,000 to 28,000, with the mid-point estimate around 18,000.115 These estimates translate into relative employment gains of between 4.1 percent and 12.7 percent, with the mid-point around 8.2 percent.116 However, the size of the calculated impacts should be interpreted as upper-bound estimates because we have not been able to take into account certain potential substitution effects that would reduce the net job creation impact of the subsidies if we were able to observe them.117

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114 Various alternative specifications incorporating these determinants in different ways are estimated. The net impact of the subsidies under Law 5084 is estimated by comparing the econometrically-modelled employment trajectories of the 15 provinces added under this law to the employment trajectories in the two control groups. The models are estimated using administrative data provided by the SSK. These data are reported by provincial unit for every month and cover the number of registered workers, their insurable earnings, SSK premiums, number of workplaces registered, the number of newly registered employees and workers, as well as other variables. The models are estimated using the monthly data for the period covering 2002-2005.

115 These findings on the employment effects of the regional incentives are consistent with the labor demand estimates by Taymaz (2006) based on the establishment data, even though the two studies employ very different methodologies. The best estimate by Betcherman, Daysal, and Pagés (2007) is that the subsidies, on average, reduce the total cost of employing a minimum wage worker by about 14%. Assuming no pass-through, which is plausible since the subsidies apply at the minimum wage level, and applying a labor demand elasticity of 0.50 (which is the summary estimate from Taymaz (2006)), then this would suggest an employment gain of at least 7%, which is just below the 8% increase which is the mid-range estimate from the regional incentives analysis.

116 These percentage estimates were calculated as of April 2005 (at the end of Period 1). The formula used was number of new jobs created as a percentage of total employment in “5084-subsidized” provinces in April 2005 minus new jobs created (i.e., what employment would have been without the subsidy effect). The actual registered employment in the “5084-subsidized” group was about 248,000 in April 2005.

117 The first involves the fact that our estimates of registered employment gains include both new jobs created as well as the formalization of previously informal jobs. The second unobserved effect concerns any shift of existing jobs from non-subsidized to subsidized provinces.
Although new jobs were created because of the subsidies, the net impact was much smaller than the number of jobs that were subsidized. The net employment gain estimated from the econometric modeling was much smaller than the number of workers who received the subsidy. In fact, the estimates shown in Figure 4.10 represent between 20 percent and 50 percent of the total number of subsidized workers. This indicates that somewhere between about 50 and 80 per cent of the subsidized jobs would have been created without the regional incentives program.

Moreover, the new employment due to Law 5084 was created at substantial cost. The expenditure side of the regional incentives program was also examined in order to estimate the cost of the job creation. When the net employment effect of the subsidies is taken into account, the cost-effectiveness of the program is not favorable. Costs range from 819 YTL per job-month with the lower-end estimate of the employment effect in Figure 4.9 to 286 YTL for the upper-end estimate. The mid-range cost per job-month is 441 YTL. During the period covered by the analysis, the average monthly total labor cost for a minimum wage worker was 548 YTL so the mid-range cost estimate represents 80 per cent of the total labor cost of employing a minimum-wage worker.

E. Conclusions

Within the context of continuing employment challenges, this chapter has looked at migration, youth employment, and labor taxes. Each of these issues has potentially important implications for the labor market situation in upcoming years.

For decades, Turkish workers have responded to limited domestic job prospects by entering European labor markets, most notably German’s. Demographic trends suggest that this is likely to continue. EU countries are aging rapidly and they will likely need to look to external sources for workers to meet their labor demand. On the other hand, Turkey – like other important traditional sending countries – will continue to have strong increases in its working-age population over the next two decades. Demographic trends, alone, indicate that external migration will be an important phenomenon for Turkey’s workers.

However, migration flows will be heavily influenced by labor market conditions as well. If Turkey’s economy enjoys robust growth and job creation is strong, then migration pressures will decline substantially. Deepening integration with Europe and the process of EU accession are likely to decrease migration in the medium term since they will contribute to economic stability and growth, even though they will decrease costs of labor mobility. This was the experience of the Southern European countries in an earlier accession period. It needs to emphasized, however, that although migration can lead to a loss of productive resources and potentially brain drain, it can also continue to provide benefits not only to receiving countries, but also to Turkey (and other sending countries) through remittances, skills and knowledge transfer, and relieving pressure on slack domestic labor markets, if needed.

118 Actual data on the amount of social security subsidies and energy subsidies were included in the cost calculations as well as estimates of the amount of income tax subsidies computed as a percentage of social security subsidies. The value of free land provided under Law 5084 is not included so our estimates of total costs are downwardly biased.
Since migrants tend to be young, employment prospects for Turkey’s large youth cohort will be a decisive factor. Currently, their labor market outcomes are not favorable and improving their situation will require education and labor market reforms. Less than one-third of those in the 15-24 year age group are employed, with the figure for young women even lower. In part, the low youth employment rates reflect increasing school enrollments. However, about 40 percent of the 15-24 year age group is neither in school nor in the labor force. Better education at all levels will be beneficial in improving access, quality, and relevance for the needs of the economy. At the same time, existing labor market institutions and regulations have the unintended effect of limiting access of young people to good jobs.

High non-wage costs, including social contributions, discourage the hiring of new workers in the formal sector, which disproportionately affects youth and re law skilled. Reducing social contributions could help but its effect would be relatively modest beyond a certain level. Turkey’s labor tax wedge is among the highest in the OECD, especially for low-wage workers and workers with families. Different lines of evidence indicate that some new employment would be created by cutting labor taxes although gains would not be enough to compensate for revenue losses because of reduced rates. As a result, any plausible cut in social contributions would have only small effects on employment. However, targeting cuts on low-wage labor does lead to greater job impacts than across-the-board reductions.

Policy-makers are advised to address the labor market situation with a comprehensive approach that covers a number of related areas. Addressing the high tax wedge need to be part of a broader, integrated approach to jobs. This includes more flexible labor market regulations, including greater opportunities for flexible contracting and reductions in severance payments. At the same time, support for workers is advised to be upgraded through a strengthened unemployment benefits system and cost-effective active labor market programs. Finally, addressing needed education reforms at all levels will be essential for Turkey’s workers to converge towards skill levels that characterize more developed OECD countries.
1. Gravity models have been mainly employed in the analysis of trade flows, but they have recently been applied to examine the determinants of migration by linking supply and demand for migrants to the size of population, economic size or the level of economic development, and various other cultural and geographic factors of respective origin and destination countries (e.g., Karemera et al., 2000; Mayda, 2006). Two separate formulations of the model have been specified, as described in Box 4.2.

### Box 4.2: Specifications of Gravity Models

The first model estimates the magnitude of migration from a specific sending country to a destination country as a function of a set of variables describing economic, demographic and social conditions in both countries.

**Model A**

\[
\ln M_{ij} = \alpha + \beta X_i + \gamma Y_j + \nu Z_{ij} + \epsilon_{ij}
\]

where \(i = \text{origin country}; \quad j = \text{destination country}\)

The dependent variable, \(\ln M_{ij}\), is the logarithm of the number of migrants from country \(i\) to country \(j\). \(X_i\) and \(Y_j\) are a vector of economic and demographic characteristics of origin country \(i\) and destination country \(j\) as shown above. On the other hand, \(Z_{ij}\) is a vector of bilateral variables that express some relationships between origin and destination countries. Finally, \(\alpha, \beta, \gamma\) and \(\nu\) are parameters (the latter three are a vector of parameters) to be estimated and \(\epsilon_{ij}\) is an error term. In addition to Model A, the following specification is also estimated whereby instead of including variables for both origin and destination countries individually, a ratio of these variables is included as shown below.

In Model B, instead of including variables for both origin and destination countries individually, explanatory variables are specified as ratios of the variables describing conditions in both countries.

**Model B**

\[
\ln M_{ij} = \alpha + \beta X_i + \nu Z_{ij} + \epsilon_{ij}
\]

In this model, \(\ln M_{ij}\) is identical and \(X_i\) includes country-specific variables. Most of the ratios are now included in the \(Z_{ij}\) vector.

In order to examine the different effects of various factors on migration depending on the level of economic development of origin and destination countries, these models are estimated using the whole sample and also for different sub-samples. The origin and destination countries are divided into three groups – low, middle, and high income – based on ppp-adjusted GDP per capita. Models A and B are then estimated using (1) the whole sample, (2) middle-income origin countries to all destination countries, (4) from all origin countries to high-income destination countries, and (5) middle-income origin countries to high-income destination countries.

The models are estimated using Ordinary Least Squares. Tobit estimations were also performed for consistency check and the results were very similar. The migration data come from the Global Migrant Origin Database which contains bilateral migration stock data for 226 countries. Only legal migrants are included and migrants are defined by country of birth, i.e., foreign born population. The data were typically collected from the latest round of censuses, generally 2000 and 2001. Further information on the variables and other aspects of the methodology is available in Ozden (2007).

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119 The database was constructed by the Development Research Centre on Migration, Globalisation and Poverty at the University of Sussex.

A detailed description of the migration database can be found in Parsons et al. (2007).
2. The explanatory variables included in these models are listed in Table 4.6, along with their summary statistics. These variables fall into four categories:

3. **Demographic patterns.** Population size, annual population growth rate, and age dependency ratio (dependents to working-age population) in origin and destination countries are included. The coefficients on population size and population growth should be positive for the origin country and negative for the destination country. Higher population levels and growth rates in sending countries increase the potential pool of migrants, especially if it outpaces the growth rate of labor market opportunities. On the other hand, similarly high population growth rates in receiving countries decrease the demand for “imported” labor. A higher age dependency ratio of origin country is likely to result in a lower emigration rate as this implies a relatively lower number of working-population. In the destination country, on the other hand, if this dependency ratio is high, this is likely to attract more immigrants. In addition to these variables, we also include a school enrolment ratio for tertiary education in the origin country. Given that it is generally easier for educated people to migrate legally, its coefficient is expected to be positive.

4. **Economic conditions.** As a proxy for the general state of economic development of origin and destination countries, the logarithm of GDP (ppp adjusted) is included. The expected impact of growth of GDP per capita would be negative for origin country and positive for destination country. Annual inflation rates are also included, with a higher rate in the origin country likely to lead to higher emigration rates as it is an indication of domestic economic malaise. Higher inflation rate in destination countries makes them economically less attractive to potential immigrants. GDP growth rates should also have a negative coefficient for the origin country and positive coefficients for destination countries. In order to identify the impact of labor market conditions on migration, labor force participation rates are also included, with an expectation that lower rates in the origin country would increase emigration while higher rates in the destination country would lead to higher numbers of immigrants.

5. **Geographic factors.** Since the available empirical evidence shows the importance of distance in determining the level of migration (e.g., Mayda, 2006; Niimi and Ozden, 2006), this variable is included with a negative coefficient expected. In addition, an island dummy for origin country and another dummy variable for sharing a common land border between origin and destination countries are included. It is expected that if the origin country is an island, there would be more emigrants as economic opportunities are likely to be limited. If the two countries share a common land border, this is likely to encourage migration between the two.

6. **Cultural and historical relationships.** The last set of variables includes a dummy variable for common language and another dummy for any colonial relationship between origin and destination countries. Both dummy variables are likely to have a positive coefficient.

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120 Actual GDP is included in the estimation, instead of GDP/capita even though the latter is the more relevant variable for migration. The reason is that \( \log(GDP/capita) = \log(GDP) - \log(population) \). Since \( \log(population) \) is already included in the estimation, the results are qualitatively identical. In order to identify the impact of changes in GDP/capita on migration, the coefficients from both variables need to be used together.
**Results**

7. The estimation of the models generally confirmed the expected relationships. Demographic, economic, geographic, and cultural factors all matter for migration. Looking first at Model A (Table 4.7), results for the whole sample indicate that the demographic variables affect migration patterns as expected. A one percent increase in the population of the source country increases migration levels by 0.6 percent. The strongest effect is found for the age dependency ratio in destination countries which indicates the strength of the “pull” factor of a country needing labor. However, the dependency ratio in the destination country does not seem to impact migration patterns from middle to high-income countries. Part of the reason is probably the fact that the demographic profiles of many middle income countries are similar to those of high income countries. Origin countries with a higher level of education seem to send more migrants abroad.

8. There is a statistically significant correlation between the level of migration and the economic development of origin and destination countries. A one percent increase in GDP per capita decreases migration levels from middle to high income countries by around 0.3 percent. By contrast, an increase in the GDP per capita of source countries increases migration levels. The coefficient for the GDP growth rate of destination countries has the expected positive sign. However, it is also positive for the source countries. This is rather puzzling, but as discussed below, when the model is estimated using the middle to high income country sub-sample, the findings become more in line with what is expected. The higher the labor participation in origin countries the lower the migration while high labor force participation in destination countries encourages migration.

9. Geographical and cultural/historical factors have relatively significant effect on levels of migration. The distance between origin and destination countries is negatively correlated with migration. Similarly, migration is higher when two countries share a common land border. Finally, having a colonial link or sharing a common language seems to encourage migration as expected.

10. Results are generally stronger within country sub-samples linked to economic development. When the model is re-estimated using the sub-samples described above, for the most part these results are confirmed (the fourth column of Table 4.7). Among the most important changes, the coefficients for dependency ratios and population growth rates in the origin country are positive. For example, a decline in the population growth rate from 1.6 percent (the level in Turkey for 1990-2005) to 1.1 percent (the projected level for 2005-2020) decreases the migration level by 5 percent. Finally, a decline in the dependency ratio from 0.55 (level in 2005) to 0.45 (projected level in 2020) decreases the migration level by 20 percent. The expected negative sign of the coefficient on the GDP growth rate in origin countries is now found for the sample that is restricted to middle-income origin countries (columns 2 and 4). As for the GDP growth rate in high-income destination countries, we observe an expected positive correlation with migration (columns 3 and 4).

11. Relative economic conditions are important drivers for migration. This is better underscored by the estimation results for Model B (Table 4.8), which specifies explanatory variables as origin-to-destination country ratios. One of the most striking observations is the significant negative effect of the ratio of logarithm of GDP, with the magnitude of the effect increasing as the sample is restricted. If the coefficient from the last

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121 In order to calculate the impact of the change in GDP per capita levels, the coefficient of population need to be subtracted from the coefficient of GDP variable (since they are both in logs).
column in Table 4.9 is used, a 10 percent increase in the GDP of the source country relative to the destination country decreases migration by around 2.6 percent. A negative correlation between migration and the ratio of GDP growth rates is also observed in addition to the level effect. If the source country grows at a rate that is 3 percent faster than the destination country, the migration level is expected to be 10 percent lower, confirming the importance of economic convergence (or the lack of it) as a driver of migration.

Source: UN Population Division, Medium Variant
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variables</strong></td>
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</tr>
<tr>
<td>Log of bilateral migrant stock</td>
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<tr>
<td><strong>Independent variables</strong></td>
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<td></td>
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<tr>
<td>Log of population in origin</td>
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<tr>
<td>Log of population in destination</td>
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<td>1.713</td>
</tr>
<tr>
<td>Log of GDP per capita (ppp adjusted) in origin</td>
<td>8.484</td>
<td>1.171</td>
</tr>
<tr>
<td>Log of GDP per capita (ppp adjusted) in destination</td>
<td>8.498</td>
<td>1.164</td>
</tr>
<tr>
<td>Inflation in origin (percent)</td>
<td>11.491</td>
<td>30.209</td>
</tr>
<tr>
<td>Inflation in destination (percent)</td>
<td>11.326</td>
<td>29.554</td>
</tr>
<tr>
<td>GDP growth rate in origin (percent)</td>
<td>3.295</td>
<td>2.386</td>
</tr>
<tr>
<td>GDP growth rate in destination (percent)</td>
<td>3.166</td>
<td>2.281</td>
</tr>
<tr>
<td>Labor force participation rate in origin (percent)</td>
<td>69.798</td>
<td>8.848</td>
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<tr>
<td>Labor force participation rate in destination (percent)</td>
<td>69.920</td>
<td>8.615</td>
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<td>Log of population density in origin</td>
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<td>Log of population density in destination</td>
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<td>Age dependency ratio in origin</td>
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<td>Age dependency ratio in destination</td>
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</tr>
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<td>Population growth rate in origin (percent)</td>
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<td>Population growth rate in destination (percent)</td>
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<td>1.237</td>
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<td>Ratio of log of population</td>
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<tr>
<td>Ratio of log of GDP per capita (ppp adjusted)</td>
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<td>0.203</td>
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<tr>
<td>Ratio of inflation</td>
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<td>19.901</td>
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<tr>
<td>Ratio of GDP growth rate</td>
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<td>Ratio of labor force participation rate</td>
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<tr>
<td>Ratio of log of population density</td>
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</tr>
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<td>Ratio of age dependency ratio</td>
<td>1.082</td>
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<td>Ratio of population growth rate</td>
<td>0.444</td>
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<td>Tertiary school enrollment in origin</td>
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<td>Log of distance</td>
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<td>Dummy for common language</td>
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<tr>
<td>Dummy for sharing border</td>
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<td>Dummy for colonial relationship</td>
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<tr>
<td>Dummy for islands (origin countries)</td>
<td>0.125</td>
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</table>

Note: The figures are also for the year 2000. The ratio of respective figures of origin countries to those of destination countries.
### Table 4.7: Regression Results: Model A

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All</td>
<td>Origin: Middle</td>
<td>Destination: Top</td>
<td>Origin: Middle</td>
</tr>
<tr>
<td>Log of population in Origin</td>
<td>0.521***</td>
<td>0.577***</td>
<td>0.600***</td>
<td>0.562***</td>
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<td>[0.085]</td>
<td>[0.039]</td>
<td>[0.128]</td>
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<tr>
<td>Log of population in Destination</td>
<td>-0.260***</td>
<td>-0.198***</td>
<td>-0.255***</td>
<td>-0.234***</td>
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<tr>
<td></td>
<td>[0.022]</td>
<td>[0.038]</td>
<td>[0.066]</td>
<td>[0.116]</td>
</tr>
<tr>
<td>Log of GDP* in Origin</td>
<td>0.091***</td>
<td>0.068</td>
<td>0.128***</td>
<td>0.214</td>
</tr>
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<td>[0.025]</td>
<td>[0.090]</td>
<td>[0.040]</td>
<td>[0.137]</td>
</tr>
<tr>
<td>Log of GDP* in Destination</td>
<td>1.024***</td>
<td>0.984***</td>
<td>1.215***</td>
<td>1.225***</td>
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<tr>
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<td>[0.060]</td>
<td>[0.106]</td>
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<tr>
<td>Inflation in Origin (percent)</td>
<td>0.001**</td>
<td>0.004***</td>
<td>0.001*</td>
<td>0.004**</td>
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<td>[0.011]</td>
<td>[0.019]</td>
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<tr>
<td>Inflation in Destination (percent)</td>
<td>0.003***</td>
<td>-0.001</td>
<td>-0.130***</td>
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<td>GDP growth rate in Origin (percent)</td>
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<td>0.025**</td>
<td>0.015</td>
<td>-0.038**</td>
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<td>[0.006]</td>
<td>[0.010]</td>
<td>[0.009]</td>
<td>[0.024]</td>
</tr>
<tr>
<td>GDP growth rate in Destination (percent)</td>
<td>-0.090***</td>
<td>-0.079***</td>
<td>0.107***</td>
<td>0.104***</td>
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<td>[0.006]</td>
<td>[0.010]</td>
<td>[0.014]</td>
<td>[0.016]</td>
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<tr>
<td>Labor force participation in Origin (percent)</td>
<td>-0.004**</td>
<td>-0.002</td>
<td>0.070***</td>
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<td>[0.006]</td>
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<tr>
<td>Labor force participation in Destination (percent)</td>
<td>0.032***</td>
<td>0.028***</td>
<td>-0.003</td>
<td>0.066***</td>
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<td>[0.004]</td>
<td>[0.006]</td>
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<tr>
<td>Age dependency ratio** in Origin</td>
<td>-0.298*</td>
<td>0.898**</td>
<td>2.568***</td>
<td>2.007***</td>
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<td>[0.168]</td>
<td>[0.301]</td>
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<td>[0.753]</td>
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<tr>
<td>Age dependency ratio** in Destination</td>
<td>2.319***</td>
<td>1.542***</td>
<td>1.382***</td>
<td>0.124</td>
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<td>[0.177]</td>
<td>[0.361]</td>
<td>[0.442]</td>
<td>[0.550]</td>
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<td>Population growth rate in Origin (percent)</td>
<td>-0.093***</td>
<td>0.219***</td>
<td>0.471***</td>
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<td>[0.026]</td>
<td>[0.060]</td>
</tr>
<tr>
<td>Population growth rate in Destination (percent)</td>
<td>0.180***</td>
<td>-0.185***</td>
<td>-0.044</td>
<td>0.536***</td>
</tr>
<tr>
<td></td>
<td>[0.019]</td>
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<td>[0.027]</td>
<td>[0.043]</td>
</tr>
<tr>
<td>Tertiary school enrollment in Origin (percent)</td>
<td>0.008***</td>
<td>0.008***</td>
<td>0.009***</td>
<td>0.009***</td>
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<tr>
<td></td>
<td>[0.001]</td>
<td>[0.002]</td>
<td>[0.002]</td>
<td>[0.003]</td>
</tr>
<tr>
<td>Log of distance</td>
<td>-1.084***</td>
<td>-1.044***</td>
<td>-0.996***</td>
<td>-1.232***</td>
</tr>
<tr>
<td></td>
<td>[0.022]</td>
<td>[0.039]</td>
<td>[0.033]</td>
<td>[0.063]</td>
</tr>
<tr>
<td>Dummy for common language</td>
<td>0.843***</td>
<td>0.847***</td>
<td>0.842***</td>
<td>0.866***</td>
</tr>
<tr>
<td></td>
<td>[0.039]</td>
<td>[0.070]</td>
<td>[0.063]</td>
<td>[0.111]</td>
</tr>
<tr>
<td>Dummy for sharing border</td>
<td>1.944***</td>
<td>1.810***</td>
<td>1.430***</td>
<td>2.283***</td>
</tr>
<tr>
<td></td>
<td>[0.120]</td>
<td>[0.195]</td>
<td>[0.209]</td>
<td>[0.390]</td>
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<tr>
<td>Dummy for colonial relationship</td>
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<td>2.157***</td>
<td>2.350***</td>
<td>2.147***</td>
</tr>
<tr>
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<td>[0.139]</td>
<td>[0.283]</td>
<td>[0.161]</td>
<td>[0.290]</td>
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<tr>
<td>Dummy for islands (origin countries)</td>
<td>0.507***</td>
<td>0.843***</td>
<td>0.639***</td>
<td>1.180***</td>
</tr>
<tr>
<td></td>
<td>[0.049]</td>
<td>[0.089]</td>
<td>[0.079]</td>
<td>[0.133]</td>
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<tr>
<td></td>
<td>[0.577]</td>
<td>[1.327]</td>
<td>[0.872]</td>
<td>[2.011]</td>
</tr>
<tr>
<td>Observations</td>
<td>18008</td>
<td>6111</td>
<td>6301</td>
<td>2143</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.554</td>
<td>0.566</td>
<td>0.677</td>
<td>0.695</td>
</tr>
<tr>
<td>F test</td>
<td>1203.74(0.00)</td>
<td>411.34(0.00)</td>
<td>863.71(0.00)</td>
<td>295.21(0.00)</td>
</tr>
</tbody>
</table>

Note: *ppp adjusted; **ratio of dependent to working-age population.

All the variables are for the year 2000. Robust standard errors in brackets.

* significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent
Table 4.8: Regression Results: Model B

<table>
<thead>
<tr>
<th></th>
<th>(1) All</th>
<th>(2) Origin: Middle</th>
<th>(3) Destination: Top</th>
<th>(4) Origin: Middle Destination: Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of log of population</td>
<td>4.942***</td>
<td>8.385***</td>
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<tr>
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<td>[0.295]</td>
<td>[0.572]</td>
<td>[0.656]</td>
<td>[1.561]</td>
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<td></td>
<td>[0.469]</td>
<td>[0.966]</td>
<td>[1.073]</td>
<td>[2.618]</td>
</tr>
<tr>
<td>Ratio of inflation</td>
<td>0.001</td>
<td>-0.003*</td>
<td>0.005***</td>
<td>0.006**</td>
</tr>
<tr>
<td></td>
<td>[0.001]</td>
<td>[0.002]</td>
<td>[0.001]</td>
<td>[0.002]</td>
</tr>
<tr>
<td>Ratio of GDP growth rate</td>
<td>-0.004***</td>
<td>-0.004**</td>
<td>0.047***</td>
<td>0.033*</td>
</tr>
<tr>
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<td>[0.001]</td>
<td>[0.002]</td>
<td>[0.010]</td>
<td>[0.017]</td>
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<tr>
<td>Ratio of total labor participation</td>
<td>-1.448***</td>
<td>-0.782***</td>
<td>-2.306***</td>
<td>-1.807***</td>
</tr>
<tr>
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<td>[0.105]</td>
<td>[0.203]</td>
<td>[0.200]</td>
<td>[0.406]</td>
</tr>
<tr>
<td>Ratio of age dependency ratio**</td>
<td>-0.892***</td>
<td>-1.705***</td>
<td>-1.965***</td>
<td>-3.255***</td>
</tr>
<tr>
<td></td>
<td>[0.071]</td>
<td>[0.145]</td>
<td>[0.123]</td>
<td>[0.236]</td>
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<tr>
<td>Ratio of population growth</td>
<td>0.019***</td>
<td>0.026***</td>
<td>0.017***</td>
<td>0.023***</td>
</tr>
<tr>
<td></td>
<td>[0.002]</td>
<td>[0.003]</td>
<td>[0.002]</td>
<td>[0.003]</td>
</tr>
<tr>
<td>Tertiary school enrollment in Origin (percent)</td>
<td>0.027***</td>
<td>0.005*</td>
<td>0.027***</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>[0.001]</td>
<td>[0.003]</td>
<td>[0.002]</td>
<td>[0.005]</td>
</tr>
<tr>
<td>Log of distance</td>
<td>-0.783***</td>
<td>-0.725***</td>
<td>-0.416***</td>
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</tr>
<tr>
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<td>[0.027]</td>
<td>[0.048]</td>
<td>[0.044]</td>
<td>[0.080]</td>
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<tr>
<td>Dummy for common language</td>
<td>0.662***</td>
<td>0.528***</td>
<td>0.884***</td>
<td>0.780***</td>
</tr>
<tr>
<td></td>
<td>[0.051]</td>
<td>[0.091]</td>
<td>[0.095]</td>
<td>[0.170]</td>
</tr>
<tr>
<td>Dummy for sharing border</td>
<td>2.984***</td>
<td>3.037***</td>
<td>2.799***</td>
<td>3.585***</td>
</tr>
<tr>
<td></td>
<td>[0.138]</td>
<td>[0.230]</td>
<td>[0.283]</td>
<td>[0.568]</td>
</tr>
<tr>
<td>Dummy for colonial relationship</td>
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<td>3.480***</td>
<td>3.716***</td>
<td>3.685***</td>
</tr>
<tr>
<td></td>
<td>[0.167]</td>
<td>[0.377]</td>
<td>[0.200]</td>
<td>[0.435]</td>
</tr>
<tr>
<td>Dummy for islands (origin countries)</td>
<td>-0.621***</td>
<td>-0.981***</td>
<td>-0.880***</td>
<td>-1.009***</td>
</tr>
<tr>
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<td>[0.060]</td>
<td>[0.116]</td>
<td>[0.112]</td>
<td>[0.216]</td>
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<tr>
<td>Constant</td>
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<td>21.130***</td>
<td>27.608***</td>
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<tr>
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<td>[0.371]</td>
<td>[0.745]</td>
<td>[0.651]</td>
<td>[1.334]</td>
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<tr>
<td>Observations</td>
<td>18008</td>
<td>6111</td>
<td>6301</td>
<td>2143</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.023</td>
<td>0.233</td>
<td>0.2699</td>
<td>0.269</td>
</tr>
<tr>
<td>F test</td>
<td>416.15(0.00)</td>
<td>141.16(0.00)</td>
<td>213.03(0.00)</td>
<td>70.95(0.00)</td>
</tr>
</tbody>
</table>

Note: * ppp adjusted; ** ratio of dependent to working-age population. 
All the variables are for the year 2000. Robust standard errors in brackets. 
* significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent
<table>
<thead>
<tr>
<th></th>
<th>Turkey</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log of migrants (from Turkey to Germany)</td>
<td>14.225</td>
<td></td>
</tr>
<tr>
<td>Log of population</td>
<td>18.026</td>
<td>18.225</td>
</tr>
<tr>
<td>Log of GDP</td>
<td>26.777</td>
<td>28.361</td>
</tr>
<tr>
<td>Inflation (percent)</td>
<td>60.758</td>
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</tr>
<tr>
<td>GDP growth rate for (percent)</td>
<td>1.238</td>
<td>1.720</td>
</tr>
<tr>
<td>Labor force participation rate (percent)</td>
<td>53.894</td>
<td>71.782</td>
</tr>
<tr>
<td>Log of population density (people per sq. km)</td>
<td>4.473</td>
<td>5.462</td>
</tr>
<tr>
<td>Age dependency ratio (dependents to working-age pop)</td>
<td>0.558</td>
<td>0.471</td>
</tr>
<tr>
<td>Population growth rate (percent)</td>
<td>1.680</td>
<td>0.106</td>
</tr>
<tr>
<td>Tertiary school enrollment (percent)</td>
<td>23.098</td>
<td></td>
</tr>
<tr>
<td>Ratio of log of population</td>
<td>0.989</td>
<td></td>
</tr>
<tr>
<td>Ratio of log GDP</td>
<td>0.944</td>
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</tr>
<tr>
<td>Ratio of inflation</td>
<td>46.033</td>
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<tr>
<td>Ratio of GDP growth rate</td>
<td>0.720</td>
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</tr>
<tr>
<td>Ratio of labor force participation rate</td>
<td>0.751</td>
<td></td>
</tr>
<tr>
<td>Ratio of log of population density</td>
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<tr>
<td>Ratio of age dependency ratio</td>
<td>1.183</td>
<td></td>
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<td>Ratio of population growth rate</td>
<td>15.822</td>
<td></td>
</tr>
<tr>
<td>Log of distance (km)</td>
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<td>Dummy for common language</td>
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</tr>
<tr>
<td>Dummy for sharing border</td>
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<td></td>
</tr>
<tr>
<td>Dummy for colonial relationship</td>
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<td></td>
</tr>
<tr>
<td>Dummy for islands</td>
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</tbody>
</table>
### Table 4.10: Data Description

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log of bilateral migration stock</td>
<td>Log of international bilateral migration stock</td>
<td>Global Migrant Origin Database (2006)</td>
</tr>
<tr>
<td>Log of population</td>
<td>Log of population</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Log of GDP per capita</td>
<td>Log of GDP per capita (ppp adjusted, constant 2000 International USD)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Inflation</td>
<td>Inflation rate, consumer prices (annual percent)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>GDP growth rate</td>
<td>GDP growth rate (annual percent)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Labor force participation rate</td>
<td>Total labor force participation rate (percent)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Log of population density</td>
<td>Log of population density (people per sq. km)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Age dependency ratio</td>
<td>Age dependency ratio (dependent to working-age population)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Population growth rate</td>
<td>Population growth rate (annual percent)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Tertiary school enrollment rate</td>
<td>School enrollment, tertiary (percent of gross)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Log of distance</td>
<td>Distance between origin and destination countries calculated using the formula for the great-circle distance (km)</td>
<td>Authors’ calculations based on data from CIA World Fact Book</td>
</tr>
<tr>
<td>Dummy for common language</td>
<td>1: use a common language 0: otherwise</td>
<td>Glick and Rose’s (2002) dataset, CIA World Fact Book</td>
</tr>
<tr>
<td>Dummy for sharing border</td>
<td>1: sharing a common land border 0: otherwise</td>
<td>Glick and Rose’s (2002) dataset, CIA World Fact Book</td>
</tr>
<tr>
<td>Dummy for colonial relationship</td>
<td>1: ever been in colonial relationship 0: otherwise</td>
<td>Glick and Rose’s (2002) dataset, CIA World Fact Book</td>
</tr>
<tr>
<td>Dummy for islands</td>
<td>1: country is an island 0: otherwise</td>
<td>Glick and Rose’s (2002) dataset, CIA World Fact Book</td>
</tr>
</tbody>
</table>
A. Overview

5.1 Regional economic disparities in Turkey are wide and persistent. They run primarily on an east-west axis and reflect the predominance in the East of a large, relatively static, agriculture sector. This is a cause of concern for three reasons. First, disparities in regional economic development are reflected in disparities in household income, with relatively high concentrations of poverty in the East. Second, the absence of economic growth in the East could spur additional migration to the large cities of the West, contributing to urban congestion. Third, the absence of growth in the East may reflect a bias in the allocation of investment capital, suggesting that the East harbors unexploited investment opportunities which could benefit Turkey as a whole.

5.2 Past Government efforts to spur economic growth in the East have not been particularly successful. In recent years, they have included direct investment by state enterprises, incentives for private investment, and infrastructure. Regional economic disparities have not declined.

5.3 This report recommends a strategy focused on human capital investment in the East, combined with selective infrastructure investment in promising urban areas. Such a strategy will require modification in institutional arrangements. Turkey’s highly centralized public sector is organized in sectoral ‘stovepipes’ and will require a mechanism for coordinating and prioritizing investment at the regional level.

5.4 The expected impact of such a strategy is modest, however. Simulations suggest that economic growth in the East is unlikely to reduce the regional gap in economic development. Growth in situ is therefore likely to be accompanied by continued migration to Western Turkey.
5.5 **Regional disparities are wide.** Turkey is characterized by large regional economic disparities. As shown in Figure 5.1, variations in regional GDPs are significantly larger than in EU15 countries, and comparable to the level of disparities prevailing in several EU countries of new accession.

### Box 5.1: Defining Regions

The measurement of regional economic disparities is sensitive to the definition of regional boundaries and the scale of regional detail. A decomposition of overall per capita inequality across different territorial scales can provide clues on the appropriate level at which the issue of regional development should be addressed in policy terms. For purposes of this analysis, three levels of regional detail were tested. The smallest consists of Turkey's 81 provinces. The second consists of the 26 NUTS2 regions into which Turkey has been divided for purposes of consistency with EU's system of regional nomenclature. (In EU parlance, NUTS2 regions have populations from 800,000 to 3 million.) The third consists of an aggregation of Turkey's seven macro regions into two groups: the 'advanced' group, consisting of those with an average GDP per capita greater than 75 percent of the national average, and the lagging group, consisting of the remainder. Analysis of Theil coefficients (Annex 5.1) suggests that the last of these groupings is the most relevant, in the sense of accounting for 40 percent of the variation in per capita GDP. Variations among provinces account for another (39 percent) and inequality among 26 NUTS2 regional accounts for the remaining 21 percent. The results of this exercise suggest that it is reasonable to conduct the analysis in terms of “lagging” and “advanced” regions. As shown in the map below, the advanced group, consisting of the Marmara, Aegean, Mediterranean and Central Anatolia regions, form a contiguous group in the western half of the country. The lagging regions, Eastern Anatolia, Southeast Anatolia, and the Black Sea region, form a contiguous group to the east. Taken together, the lagging region accounts for 40 percent of Turkey's land area and 30 percent of its population, but less than 20 percent of its economy. It has a per capita GDP equal to 60 percent of the national average (Table 5.1).

![Map of Turkey regions]

5.6 **These disparities are persistent.** Table 5.2 summarizes the findings of several recent studies of regional economic disparities. While disparities among individual provinces appear to have decreased, disparities between

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>56.3%</td>
<td>68.9%</td>
<td>80.7%</td>
<td>117.2</td>
</tr>
<tr>
<td>Lagging</td>
<td>43.7%</td>
<td>31.1%</td>
<td>19.3%</td>
<td>61.8</td>
</tr>
<tr>
<td>Turkey</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100</td>
</tr>
</tbody>
</table>
the lagging region as a whole and the advanced region as whole have increased or remained constant. Absolute convergence is found only in the productivity of labor. Conditional convergence (which measures convergence after taking differences in initial conditions into account) is found in one study. The studies also find that regional inequality tends to increase when the national economy is growing rapidly.

<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology and contribution</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tansel and Gungor</td>
<td>Convergence in labor productivity</td>
<td>Absolute convergence of productivities across 67 provinces in the 1975-95 and 1980-</td>
</tr>
<tr>
<td>Yildirim and Ocal</td>
<td>Spatial error model</td>
<td>Inequality across 67 provinces in the 1979-2001 period has pro-cyclical: regional disparity decreases when the economy slows down while increases in booms</td>
</tr>
<tr>
<td>Dogruel and Dogruel</td>
<td>Beta and sigma-convergence</td>
<td>Beta convergence across 67 provinces in the 1987-1999 period, with no automatic implication of reduction in regional income disparities; sigma convergence, but only among the relatively rich provinces.</td>
</tr>
<tr>
<td>Gezici and Hewings</td>
<td>Theil decomposition of income inequality</td>
<td>Decline in intra-regional inequalities, and increase in inter-regional disparities in the period 1980-1997</td>
</tr>
<tr>
<td>Erlat (2006)</td>
<td>Time-series analysis, structural break test</td>
<td>No convergence at national level.</td>
</tr>
<tr>
<td>Kirdar and Saracoglu (2006)</td>
<td>Explaining regional convergence with internal migration</td>
<td>Internal migration does not contribute to regional convergence.</td>
</tr>
</tbody>
</table>

5.7 **Why are there differences in regional economic output per capita?** There have been several studies looking at the factors explaining regional income disparities in Turkey, including initial economic conditions, the structure of the market, and economic activities of the region, and migration. Filiztekin (1998) discusses the role of the initial sectoral composition of economic activity in regional convergence, suggesting the importance of the economic structure in explaining regional growth patterns. Kirdar and Saracoglu (2006) study the role of internal migration on the speed of convergence, and find that the net internal migration does not contribute significantly to the speed of convergence. Sayek (2006) discusses the possible role of international integration in the convergence process, and suggests that the integration of Turkey to the international goods and financial markets have not reduced the regional imbalances.

5.8 **Additional analytical work** has been undertaken in the context of the present CEM to include among the factors explaining income disparities other relevant variables, such as human capital, public spending and its components, incentives and other government policies. This analysis was undertaken at two levels of geographic detail—the 26 NUTS2 regions and the 81 provinces. Using the econometric framework of Mankiw, Romer and Weil (1992) for the period 1989-2001, the study finds that:

---

There is strong evidence of the impact of human capital on regional growth. The regions with higher schooling rates (i.e., quantity of human capital accumulation) tend to grow significantly faster than other regions.

While the size of the public investment in a region does not affect its growth performance, its composition does. The results point to two findings, although they should be interpreted with caution: (i) public investment in social sectors has a positive association with regional growth performance and (ii) public investment skewed towards the primary sector spending has a negative association with regional growth performance.

Incentives have no impact on regional economic growth. This finding is robust, regardless of the way incentives are measured. This finding is consistent with the findings of the limited net employment impact of the incentives, discussed earlier.

5.9 Differences in labor productivity are the key determinant of regional disparities. A separate study was undertaken of the impact of employment characteristics on output per capita. The difference in GDP per capita between lagging regions and advanced regions can be broken down into four components: labor productivity, unit effort (hours per employee), employment rates, and activity rates. Analysis of data from 2000 suggests that variations in productivity are by far the most powerful explanation. Agricultural productivity in lagging (Eastern) regions was only 36% of that of the advanced regions; productivity in services only 40%, and productivity in manufacturing, 45%. As shown in Figure 5.2, variations in productivity account for 88 percent of total variation. Unit effort (average hours per employee) and activity rate follow, each with a contribution of a little over 20 percent. Employment rates are actually higher in lagging regions, probably due to hidden unemployment in agriculture (see below). They therefore slightly offset the impact of the three other variables.

5.10 Variations in labor productivity reflect the predominance of low productivity agriculture in the East. The findings of the decomposition analysis are largely explained by wide differences in the economic structure of the lagging and advanced regions, i.e., the composition of output and employment (Table 5.3). In the lagging region, agriculture accounts for almost 30 percent of GDP and 60 percent of employment. Even discounting a likely high hidden unemployment in agriculture, this represents a significant difference from the advanced regions, in which the figures are respectively 12 percent and 27 percent. Agriculture is at the same time the least productive source of employment in the lagging region (Table 5.4). This is partly due to strong climatic disadvantages. Long and harsh winters tend to prevail in Eastern Anatolia, with a relatively high number of snowy and frosty days. This significantly limits the number of workable days, which are on average 118 in Kars, 132 in...
Erzurum, 152 in Bitlis, and 153 in Mus. As a result, agricultural productivity in the East is about one third of the level prevailing in the West. The gap is somewhat less pronounced in services (39 percent), and industry (45 percent). The role of agriculture in the economy of lagging regions has been declining over time, although at a fairly sluggish rate (Figure 5.3).

| Table 5.3: Sector Shares of GDP and Employment by Group of Regions (2001, Percent) |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| Variable/Group of regions      | Agriculture     | Industry        | Services        | Total           |
| GDP                             | Advanced        | 12.06           | 37.40           | 50.54           | 100.00          |
|                                 | Lagging         | 29.98           | 26.83           | 43.18           | 100.00          |
|                                 | Turkey          | 14.35           | 36.05           | 49.60           | 100.00          |
| Employment                      | Advanced        | 27.64           | 27.39           | 44.97           | 100.00          |
|                                 | Lagging         | 58.00           | 13.00           | 29.00           | 100.00          |
|                                 | Turkey          | 37.58           | 22.68           | 39.74           | 100.00          |

Table 5.4: Productivity of Labor by Sector and Group of Regions (2001; advanced regions=100; percent)

<table>
<thead>
<tr>
<th>Group of Regions</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>Lagging</td>
<td>35.62</td>
<td>45.44</td>
<td>39.83</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.3: GDP Composition by Group of NUTS2 Regions and Year

C. The Institutional and Policy Framework

5.11 Turkey has a long history of regional development efforts. Due to the historically large regional disparities, the economic crisis of Eastern provinces following the constitution of the modern Turkish state, and the strong political drive for national cohesion, "regional policy" has long been one of the key economic policy issues of Turkey. The evolution of regional policy falls into a distinct historical pattern. Following Eraydin (2006), regional policies in Turkey can be divided in five different periods:
A first period (1929-1957), in which the main instruments to foster regional development were public enterprises and the development of the railway system;

The 1960s, characterized—within a national strategy of import substitution—by regional projects aimed at promoting the efficient use of resources; these project however concentrated mostly in relatively prosperous regions (East Marmara, Antalya, Cukurova, Zonguldak, Keian), and were inspired more by a sectoral approach than a territorial one;

The early to mid 1970s, in which economic incentives for investments in disadvantaged areas were the main tool of regional policy, within a broader economic policy goal of attracting foreign capital;

The 1990s and early 21st century with increased emphasis on the planning or implementation of large regional development projects: Zonguldak-Bartin-Karabuk (1997), DOKAP (Eastern Black Sea) (2000) and DAP (Eastern Anatolia) (2000) and the Eastern Mediterranean and Marmara Regional Plans;

Early 21st century, with the initiation of EU financed regional development programmes and the creation of Development Agencies. These activities, along with the continuation of large regional projects and tax incentives for private investment constitutes the current regional development strategy.

**Box 5.2: The South-Eastern Anatolia Project (GAP)**

The first and so far largest of Turkey’s regional plans is the South-Eastern Anatolia Project (GAP). The Plan was initially undertaken as a program to develop water and energy infrastructures in 9 provinces in the South-East of the country, accounting for some 10% of Turkey’s area and population. The whole project included 22 dams, 19 hydraulic power plants (with a substantial contribution to the national goal of exploiting water resources and increasing energy production) and irrigation covering an area of 1.7 million hectares. In 1989 the GAP Master Plan was prepared, which purported to transform the project into a more integrated regional development effort, including rural and urban infrastructures, transportation and industrial development. In the same year the GAP Regional Development Administration was established, with a term of 15 years, extended for 3 more years in 2004. GAP Administration has central offices in Ankara and a local office in Sanliurfa, but the bulk of the staff is located in Ankara (around 200 out of 270). Albeit on a more limited scale, GAP Administration also carries out broader tasks related to integrated regional development.

The completion of project activities has been slower than anticipated: at the financial level, as of end-2006 some 21 billion YTL were effectively spent, which is 56% of the 37 billion YTL (in 2006 prices) amount programmed in the 1989 Master Plan. In physical terms, energy components have overall been performing much better than irrigation.

Complete and independent evaluations of GAP are not yet available. Opinions of analysts are different: the project has “hardly succeeded in producing co-ordinated effects across the regions; (...) the objective of converting the region to an agricultural-based exporting region has not been attained” (Bilen 2006, p. 5). “There are fairly dynamic provinces in the region of GAP. This dynamism is largely associated with development planning projects and provides a good model for the other less developed – peripheral regions” (Gezici-Hewings 2004, p. 129).

**Source:** Republic of Turkey, 8th Five Year Development Plan
The main investment incentives schemes in Turkey provide tax exemptions, subsidized credit, subsidized energy, free land, and on-site infrastructure (industrial parks). The major programs include:

- The Decree Concerning State Encouragement to Investment. The objective of this program is to encourage the investments in priority regions (as defined by the Council of Ministers) as well as investments in small scale industries, and in research, development, and environmental protection in all regions. The program offers exemptions from customs duties and the VAT and subsidized credit. Eligible costs include expenditures on land, building construction, purchase of machines and equipment, and other expenditures directly linked to the investment.

- The Credit Allocation for Organized Industrial Zones has the objective of providing infrastructure and land for the establishment of organized industrial zones and Small Scale Estates. Terms and conditions vary according for different groups of provinces (Priority Development Provinces; Normal Provinces; Developed Provinces).

Investment incentives have not had a discernable impact. An assessment of the main features of Turkey’s system of state aid is complicated by the heterogeneity of the existing schemes and the lack of an integrated monitoring system. To date, no comprehensive evaluation has been undertaken of the effectiveness of state aid in terms of reducing regional disparities. Analysis of specific programs, combined with econometric evidence and international experience suggests that these programs have had little impact on economic growth in lagging regions, however.

The programs of state incentives have largely benefited the advanced regions. As shown in Table 5.5, the average per capita value of certificates allocated to advanced regions has been, in the period 2000-2006, 121 percent of the national average, while in the lagging region it has been 54 percent. This reflects the broad geographical coverage of the incentive. The Ninth Plan reiterated that “incentive implementation, which was initially started in 36 provinces, was spread out to cover 49 provinces”. The number and list of PDPs have been changed other times in the past due to “political decisions instead of objective criteria” (Republic of Turkey, 2001a). Broadening the scope of the program to relatively richer areas puts lagging regions at a disadvantage, since typically their location, poorer infrastructural endowment and lower level of human capital and entrepreneurship make them less able to attract private investment. An analysis of the employment impacts of regional incentives offered by the government to encourage investment and employment through three different laws showed that although new jobs were created, net impact was much smaller than the number of jobs that were subsidized. Chapter 4 provides in detail the methodology and the findings of the analysis.

The econometric analysis of the determinants of growth across regions, described above, also shows that state aid has had limited influence on the region’s growth performance. This is consistent with the international literature on state aid to encourage private investments in lagging regions. These include the possible short-term of duration of the impacts (firms may leave the lagging regions once the incentive expires), the absence of any broader impact on the regional economy (if benefiting firms operate as industrial enclaves) and the tendency of such firms to be highly capital intensive and therefore generate little employment.

123 There is a draft law on the establishment of a State Aid Monitoring Authority, which would, for the first time, develop complete inventory of state aid.
Table 5.5: Per Capita Allocation of Investment Incentives Certificates by Year and Group of Regions (Turkey=100)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>124</td>
<td>119</td>
<td>117</td>
<td>128</td>
<td>118</td>
<td>122</td>
<td>115</td>
<td>121</td>
</tr>
<tr>
<td>Lagging</td>
<td>47</td>
<td>58</td>
<td>62</td>
<td>37</td>
<td>59</td>
<td>50</td>
<td>64</td>
<td>54</td>
</tr>
<tr>
<td>Turkey</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Bank staff calculation based on data from Undersecretariat of Treasury

5.16 Large integrated infrastructure programs have also had limited results. Starting with GAP in the 1960s, during subsequent planning periods, several regional development plans were designed and (partly) implemented. The main plans are listed in Table 5.6; GAP is briefly described in Box 5.2. Arguably regional plans have had the merit of focusing planning efforts on relatively large geographical areas, spanning far beyond the jurisdictions of individual provinces, and attempting to address their common development challenges. The original model has been constrained by a focus on a limited number of sectors and a fairly centralized governance structure. The gradual transformation of GAP into a multi-sector, dual-management (central and local) project signals a change in the underlying development model, which is confirmed by the more integrated approach followed by more recent plans (e.g., DAP, DOKAP). The future viability of the regional plan model may be questionable, on account of the limited administrative capacity of local executing agencies, of the prevailing governance structure (which appears still fairly centralized); and on funding uncertainties, since the Government had indicated (in the 9th National Development Plan) that ZBK, DAP, DOKAP and YHGP (but not GAP) "could be supported with limited financing opportunities, and within the scope of sectoral allocations only."

Table 5.6: Main Regional Plans in Turkey At the End of 1990s

<table>
<thead>
<tr>
<th></th>
<th>Area (1000 km²)</th>
<th>Population (millions)</th>
<th>GDP per head (1998) (Turkey=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAP</td>
<td>76</td>
<td>6,1</td>
<td>54</td>
</tr>
<tr>
<td>DAP</td>
<td>159</td>
<td>5,9</td>
<td>37</td>
</tr>
<tr>
<td>DOKAP</td>
<td>39</td>
<td>2,9</td>
<td>60</td>
</tr>
<tr>
<td>ZBK 1</td>
<td>9</td>
<td>1,0</td>
<td>100</td>
</tr>
<tr>
<td>TURKEY</td>
<td>779</td>
<td>62,9</td>
<td>100</td>
</tr>
<tr>
<td>Zonguldak, Bartin, Karabuk</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.17 The Government is now experimenting with regional development agencies. The Law on the Establishment, Co-ordination and Duties of Development Agencies DAs) at NUTS II level (entered into force in February 2006) sanctions the creation of specific agencies responsible for regional development. The rationale for the establishment of DAs is, in part, the need to create structures legally entitled to manage EU-cofinanced development programs spanning the jurisdictions of multiple provinces, thereby replacing -but only after a yet unspecified “transition process”-the temporary system used at present, which is based on Service Unions124. But the legislation also envisions a broader role for DAs, including support of region-specific strategies and programs.

124 Service unions, established by the Local Authority Unions Law (amended in 2005) consist of an association of provincial and municipal administrations for the joint provision of services over multiple jurisdictions; hence they can be used as management structures for the implementation of regional development programs.
Box 5.3: EU Co-Financed Regional Development Programs

EU cofinanced regional development programmes have been initiated in 12 priority regions. These were envisaged in the Preliminary National Development Plan 2004-2006 and organized within the framework of Turkey-EU Pre-Accession Financial Cooperation. Grant support is provided on a competitive basis for the development of human resources, construction of small scale and rural infrastructure, and support to entrepreneurship. The main actors are the SPO General Directorate of Regional Development and Structural Adjustment, at the central level, and Programme Implementation Units (PIU) operating under the auspices of service unions at the regional level. At present, grant contracts have been signed for 1,454 projects in 35 provinces with a total value of € 187 million.

Box 5.4: Legal Framework for Development Agencies in Turkey

Under the legislation, “Development Agencies” would be governed by an Executive Board, consisting of the Governors (of the provinces included in the NUTS II area), the Mayors of Metropolitan Municipalities (or mayors of province-center municipalities in the absence of a metropolitan municipality), the Chairmen of the Provinicial Assemblies and of the Chambers of Industry and Commerce, and three representatives of the private sector and/or NGOs selected by the Development Council (in DAs that include more than one province.). The Executive Board is chaired by the Governor. The Development Council is a consultative forum of key regional actors, composed of maximum 100 members, coming from public institutions, private sectors, NGOs, Universities and local authorities. The Development Council selects a chairman and a deputy chairman in its first meeting. DAs will also have a technical secretariat, with executive and technical functions.

SPO retains a substantial power over DAs. According to the Law, SPO shall be responsible for the coordination of the Agencies at national level, providing guidance for agencies on planning, programming and project designing, monitoring and evaluation of the implementation of plans and programmes, determining the principles and procedures concerning the allocation of the national and international funds intended for regional development, approving the DA work program and clearing the selection of the DA Secretary General (Chief Executive Officer). It will also appoint members to the DAs’ staff selection committee.

Funding of DAs is granted mainly by a share of 0.5 percent of the previous year general budget, together with funds transferred by Special Provincial Administrations, Municipalities, Chambers of Commerce, other resources provided by EU and other international funds and operating revenues. The budget estimate for 2007 shows total funding of YTL 846 million (of which 73 percent will come from the general budget) and the remainder from Special Provincial Administrations and local authorities, that is an average of 18.9 million euros for each of the 26 DAs. In 2006 three by-laws on the principles and procedures regarding the operation of the agencies, qualifications and recruitment of the personnel, budget and accounting have been adopted and enacted. Currently, secondary regulations concerning other operational issues (such as audit and performance evaluation) are being prepared.

In July of 2006 the first two DAs were established: the Izmir Development Agency (TR31 NUTS II Region) and the Cukurova Development Agency (TR62 NUTS II, Adana-Mersin Region).
5.18 The establishment of new DAs has been subject to Constitutional Court review. With only two DAs actually established as of end of 2007 (in the relatively affluent regions of Izmir and Adana/Mersin), and secondary legislation required for their full functioning still in the process of being formulated, DAs are, for the time being, largely a work in progress. In May 2007, the Council of State issued an injunction on the implementation of the regulation on the working principles of DAs and also referred the case to the Constitutional Court on the basis that some articles of the Law no.5449 are unconstitutional. While the Court’s decision, rendered in November 2007, annulled certain provisions affecting the appointment of staff and tax exemptions, it left the remainder of the law intact. The authorities are now free to establish new DAs and permit the existing agencies to fully operate.

<table>
<thead>
<tr>
<th>Geographical Region</th>
<th>Growth Pole</th>
<th>Population 2001 (million)</th>
<th>Income per capita 2001 (Turkey=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Anatolia</td>
<td>Erzurum</td>
<td>0.94</td>
<td>49.46</td>
</tr>
<tr>
<td></td>
<td>Malatya</td>
<td>0.86</td>
<td>66.00</td>
</tr>
<tr>
<td></td>
<td>Elazig</td>
<td>0.57</td>
<td>79.43</td>
</tr>
<tr>
<td></td>
<td>Van</td>
<td>0.89</td>
<td>40.04</td>
</tr>
<tr>
<td>South Eastern Anatolia</td>
<td>Gaziantep</td>
<td>1.30</td>
<td>74.20</td>
</tr>
<tr>
<td></td>
<td>Sanliurfa</td>
<td>1.47</td>
<td>46.96</td>
</tr>
<tr>
<td></td>
<td>Diyarbakir</td>
<td>1.38</td>
<td>61.20</td>
</tr>
<tr>
<td>Central Anatolia</td>
<td>Konya</td>
<td>2.22</td>
<td>72.43</td>
</tr>
<tr>
<td></td>
<td>Kayseri</td>
<td>1.06</td>
<td>84.16</td>
</tr>
<tr>
<td></td>
<td>Sivas</td>
<td>0.75</td>
<td>65.16</td>
</tr>
<tr>
<td>Black Sea</td>
<td>Samsun</td>
<td>1.21</td>
<td>78.27</td>
</tr>
<tr>
<td></td>
<td>Trabzon</td>
<td>0.98</td>
<td>70.16</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>13.64</td>
<td>65.77</td>
</tr>
</tbody>
</table>

5.19 The Government is also considering a “growth poles” strategy. Within the 9th National Development Plan (approved by the Parliament in June 2006), the Government has indicated its intention to focus development efforts, within less developed regions, on “centres with high growth potential” – an approach unofficially labelled as the “growth poles strategy”.

5.20 The rationale is to support the development of urban areas that could divert migration from eastern rural areas, away from the conventional destinations in western Turkey (in particular Istanbul and Izmir). Official documents indicate that the strategy will focus on 12 poles, accounting for some 20 percent of total 2001 population, and with per capita income of 66 percent of the national average in 2001 (Table 5.7).
5.21 The Government has also pursued an implicit regional policy through its decisions on the location of investments by sectoral ministries. According to the 2006 World Bank Public Expenditure Review, capital expenditure averaged, in 2003-2004, 7.6 percent of general government expenditure (or 3.7 percent of GDP). Some 80 percent of it was allocated to infrastructure investment. It is difficult to determine whether public investment has been ‘biased’ against the lagging region. First, there are shortcomings in the data. While the SPO provides a regional and provincial breakdown of public investment, a significant share of investment is not attributable territorially because it is spread over multiple provinces. An analysis of the subset of investment data that is disaggregated by province shows that richer provinces have generally received more public investment (on a per capita basis) than poorer ones. Figure 5.4 shows the correlation between a province’s rank in terms of per capita investment and its rank in terms of per capita GDP. As shown, the correlation is consistently positive, varying from 0.16 and 0.36 for the period 1990-2000. Lagging GDP per capita one or two years (hypothesizing that it takes time to work out which are the poorer provinces) does not change the picture significantly. This suggests a prevailing policy of ‘investment for growth’, which would favor wealthier provinces, rather than “investment for cohesion”, which would favor poorer ones.

5.22 Sectoral breakdown of investment reveals a disproportionately low share of investment in certain sectors in lagging regions with respect to its population. An analysis of the sectoral composition of public investment (which is available for the period 1999-2006, again with the exclusion of investments concerning multiple jurisdictions), suggests that investment in lagging regions has been particularly low in sectors that contribute directly to human capital formation—education and health—as well as in transport and “other public services” (which includes general administration, security, land registration and cadastre, water, sewerage, rural area planning, and municipal services.) Lagging regions, as a group, have received only 21 percent of investment in these sectors, despite their 31 percent share of the national population. Lagging regions are over-represented in investments in agriculture, housing, mining and energy (Figure 5.5).

5.23 Turkey’s extensive system of transfers and subsidized loans to local authorities constitutes another sort of implicit regional policy. Turkey’s public sector is highly centralized by the standards of large European countries. Local authorities (as defined in Box 5.5) account for only about 14 percent of general government expenditures. This is considerably below the level of large unitary European countries (France, Poland, UK, and Italy) and less than one third the level in the large European federal countries. In addition to the typical central government functions (national defense, social

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125 The role of local authorities is however more significant in terms of capital expenditure: according to the World Bank Public Expenditure Review for Turkey, the share of local authorities in the total capital investment has averaged 26% in the period 1999-2006.
security, national-scale transportation and public utility networks) the central government in Turkey dominates spending on education and health. Local authorities’ responsibilities are largely limited to water supply, sewerage, street construction and maintenance and solid waste management. Revenues, as discussed below, are also tightly constrained.

5.24 In principle, local authorities can function as an instrument of regional policy to the extent that central government transfers and subsidies favor some localities over others. In Turkey, the majority of local government recurrent revenues are derived from intergovernmental transfers. These are based on fixed shares of central government revenues and are distributed on the basis of a formula fixed at national level. The system now in effect allocates six percent of general government revenues to the municipalities and 1.12 percent of general government revenues to the SPAs. Both shares are distributed on the basis of population. Metropolitan municipalities derive revenues from two sources. The first is a fixed share (35 percent) of the revenues of the municipalities under their jurisdiction. The second is a separate share of general government revenues. This is based on revenues collected within the core municipality of each metropolitan area. Of this amount, 40 percent is allocated to each metropolitan municipality on the basis of origin. The remaining 60 percent is pooled among all metropolitan municipalities and distributed on the basis of population.

### Box 5.5: Structure of Local Authorities
Turkey’s national territory is divided into 81 provinces, each headed by a centrally appointed governor. (An elected provincial assembly has a key role in certain financial decisions.) Provincial authorities are responsible for overseeing national programs for health and social assistance, public works, culture and education, agriculture, and economic and commercial affairs. As chief executive of the province and agent of the central government, each governor supervises other government officials assigned to carry out ministerial functions in his province. Urban areas within provinces are organized as municipalities, and have directly elected mayors and councils. Rural areas, however, remain under the direct control of the provincial authorities, and are administered by Special Provincial Administrations (SPAs). Twenty-one percent of Turkey’s population lives in such unincorporated areas. Turkey also has 16 officially-designated metropolitan areas. These have a two tier structure, in which individual municipalities are subordinate to a metropolitan municipality. The number of municipalities now stands at 3,225. Although critics have argued that Turkish municipalities are too fragmented, this figure is not out of line with other European countries. With an average population of 16,500, the average Turkish municipality is more than twice the size of the average municipality in Italy, three times the size of a municipality in Spain and Germany, and ten times the size of a French commune.

5.25 Given the predominant role of population-based transfers in the system of local finance, one might expect relatively small variations in per capita revenues among jurisdictions. This is not the case. As shown in Figure 5.5, levels of per capita revenues vary substantially among jurisdictions. In general, per capita revenues are highest in the western, coastal, and more urbanized parts of Turkey, and are lowest in the eastern, interior, and more rural regions. In aggregate, municipal per capita revenues in the advanced regions (as defined earlier) are twice those of the lagging regions. Two factors account for this. First, per capita funding for provincial administrations—i.e., for the units of local government serving the rural population—is lower than for municipal

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126 Until 2001, an additional three percent of general government revenues was allocated to the Municipal Fund and 0.28% of general government revenues was allocated to the Provincial Fund. Both funds were controlled by the Ministry of Public Works and Settlement.
authorities. With 21 percent of Turkey’s population, PSAs receive only an estimated ten percent share of general budgetary revenues. Second, metropolitan municipalities—the additional tier of local government serving the officially-designated metropolitan areas—receive a separate transfer of general budgetary revenues. Thus local authorities in metropolitan areas receive both the normal municipal share of general budgetary revenues and the additional share allocated to metropolitan authorities. These factors both work in favor of the advanced regions. Not only are the advanced regions more urbanized; they also contain a much larger proportion of the metropolitan population.

5.26 While the transfer system clearly favors urban areas, it is not clear that it significantly affects the scale of regional economic disparities in Turkey. The scale of intergovernmental transfers is relatively small, compared to the direct spending of the central government. (By law, the transfer is limited to 9-11 percent of the central government’s general budgetary revenues.) The regional distribution of direct central government spending—on roads, schools, clinics, irrigation works, etc.—is likely to have a greater impact on regional economies than the spending of local authorities. And while the present system does not achieve any major interregional redistribution of revenues from advanced to lagging regions, it does not produce a flow of resources in the other direction either.

5.27 The majority of municipal capital investment is financed from current revenues. In 2000, roughly two-thirds of municipal investments were financed from this source. The proportion is considerably higher in smaller jurisdictions. As shown in Table 5.8, 84 percent of the investments in municipalities with populations under 500,000 were financed from current revenue, as opposed to 45 percent in larger jurisdictions. As a result, it is the intergovernmental transfer system, rather than access to credit, that determines smaller municipalities’ ability to invest in works.

Table 5.8: Sources of Funding for Municipal Investments (Percent of Capital Investment Financed by Each Source)

<table>
<thead>
<tr>
<th>Source</th>
<th>all municipalities</th>
<th>large municipalities*</th>
<th>others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic project loans</td>
<td>9</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Foreign loans</td>
<td>27</td>
<td>47</td>
<td>7</td>
</tr>
<tr>
<td>Current income</td>
<td>64</td>
<td>45</td>
<td>84</td>
</tr>
</tbody>
</table>

5.28 **In large cities, the majority of debt-financing for capital investment is provided through foreign loans.** As shown in Table 5.8, foreign loans were responsible for nearly half of municipal investments in cities of over 500,000. These loans typically originate in IFIs, such as the World Bank, EIB, and bilateral donors. Iller Bank is the primary provider of infrastructure credit in small and medium size local authorities. The bank’s lending is financed from three sources. The largest consists of annual, mandatory, non-dividend-bearing ‘capital contributions’ from municipalities and SPAs. (The amount of the contribution is set at five percent of gross municipal revenues.) This is supplemented by profits from short term liquidity support to municipalities and annual contributions from the Government budget. Until 2001, the amount of the Government’s contribution was set at 3.34 percent of general budget revenues. With the abolition of the funds, the level of Government support has declined. As a result, Iller Bank’s project lending has averaged only about 0.08 percent of GDP since 2003.

5.29 **As shown in Figure 5.7, Iller Bank lending is distributed fairly uniformly across Turkey.** In per capita terms, only Istanbul receives a disproportionately small share. In this sense, Iller Bank lending constitutes a subsidy from Western Turkey to the East. A disproportionate share of municipal ‘capital contributions’ are generated in the West, as is a disproportionate share of central government tax revenues. With lending uniformly distributed in geographical terms, Eastern municipalities therefore appear to receive more than they contribute. This inter-regional transfer is not offset by subsequent debt service. While the Bank has the legal authority and the administrative machinery to deduct debt service from intergovernmental transfers,\(^{127}\) it has, until recently, exercised this authority sparingly. As of 2004, the level of municipal arrears to Iller Bank stood at YTL 800 million.

| Table 5.9: Selected Macro-Economic Indicators in the 9th National Plan and Reference Years |
|---------------------------------------------------------------|----------|----------|-------------------------|
| Population (million people)                                   | 67.42    | 72.07    | 79.20                   |
| Activity rate                                                 | 68%      | 71%      | 73%                     |
| Employment rate                                               | 46.7%    | 43.7%    | 48%                     |
| GDP Annual Growth Rate                                        | 4.36%    | 7.00%    | 7.00%                   |
| Employment Annual Growth Rate                                 |          |          | 2.70%                   |
| Agriculture GDP Share                                         | 14%      | 7.80%    |                         |
| Agriculture Employment Share                                  | 38%      | 18.90%   |                         |
| Industry/Services GDP Share                                   | 86%      | 92%      |                         |
| Industry/Services Employment Share                            | 62%      | 81%      |                         |
| Source: Republic of Turkey, 9th National Development Plan     |          |          |                         |

\(^{127}\) Since Iller Bank functions as the payment agent for central government transfers to municipalities, it can deduct debt service at source.
D. The Magnitude of The Challenge

5.30 If the Government intends to raise the level of output per capita in lagging regions to the levels currently enjoyed by advanced regions, it faces a difficult task. The scale of the task can be illustrated by analyzing the conditions under which the per capita GDP gap prevailing in 2000 could be cut in half by the year 2013 (the end year of the current national development plan); i.e., per capita GDP in lagging regions be increased from 50 percent to 75 percent of per capita income in advanced regions. The 9th National Development Plan establishes (Table 5.9) targets at the national level for the growth and composition across sectors (agriculture, industry and services) of GDP and employment. In addition, it also defines projections for the growth of total and working age (15-64) populations.

Box 5.6: Poverty and Regional Development

Governments pursue a variety of objectives under the rubric of regional policy. One of them is to reduce regional concentrations of poverty. There are several well-known drawbacks to this approach. First, it may miss much of the target. Although geographical concentrations of poverty do exist in most countries, poor people also live in regions that are—on average—rich. Focusing poverty reduction efforts on the poorest regions could mean bypassing a large proportion of the poor. Efforts to develop poor regions may also misdiagnose the sources of the problem. The available data suggest that poverty is, at best, only partly related to where people are. It is also strongly related to who people are. While regional concentrations of poverty reflect the particular disadvantages of certain regions—remoteness, absence of infrastructure, limited local consumer demand—regional poverty is also a reflection of the characteristics of the people who live there: low levels of education or age profiles that render them too young or too old to participate in the labor force. Under the latter circumstances, efforts to bring higher-wage employment to poor regions may have little benefit for the resident population. If people characteristics, rather than place characteristics, are the overriding explanation for regional concentrations of poverty, efforts to reduce poverty should focus on improving the educational level of the labor force and on providing income support to households with large numbers of unemployable dependents, rather than on attracting new sources of high wage employment for which the resident population may not be qualified. There is a third drawback to relying on regional economic development to address regional concentrations of poverty: it ignores the potential role of migration. In regions with few economic prospects, the out-migration of labor—rather than the in-migration of capital—is likely to be a more effective means of reducing the poverty of individuals. Efforts at regional development should therefore recognize that the out migration of labor may have to accompany the immigration of new investment.

5.31 By using as a baseline the year 2000 distribution -between lagging and advanced regions- of population, GDP and employment, it is possible to analyze the different ways in which the targets of the 9th development plan could be met, while at the same time cutting in half the per capita GDP disparity prevailing in the year 2000. Although for a more precise assessment a general equilibrium analysis would be required, this approach can help derive some initial, policy-relevant indications of the orders of magnitude of the adjustment required.
5.32 Figure 5.8 illustrates that at the “baseline” employment rate (55 percent) in lagging regions, a 7 percent annual rate of productivity growth would be required to cut in half per capita income disparities by the end of the current national development plan, assuming the labor force remains in situ. This is significantly higher than the average annual rate of productivity growth in Turkey as a whole over the period 1991-2003. This kind of productivity growth has never been achieved in Turkey’s lagging regions, and is in fact rare in the experience of most other regions or countries of the world. The median average annual growth of productivity (Table 5.10) in a group of 150 countries has been in the period 1991-2003 of 1.2 percent; only in the top 15 percent performers of the group (including countries like China, Ireland, Poland), productivity has grown faster than 3 percent per year. Turkey as a whole has trailed behind the median, with an average growth of 0.7 percent per year.

5.33 Slower rates of productivity growth could be compensated by fairly large increases in rates of employment. For example, if productivity grows at 4 percent per year, the end-of-period employment rate would need to increase to 80 percent to reduce the gap by half. In theory, out-migration could also lead to converging levels of GDP per capita. But this depends on the characteristics of the migrants. If the migration flow is dominated by low-productivity agricultural workers (and their dependents) output per capita is likely to increase. But the reverse is more likely to be true. International experience suggests that it is the younger, more educated members of the labor force who are likely to depart.
5.34 There are few prospects for raising agriculture productivity in the East. At the national level, productivity of labor in agriculture has been static over the last decade (growing at a rate of 0.6 percent per year on average). As shown in Table 5.11, this is considerably slower than in a number of countries in Eastern Europe where productivity has been growing much faster. For many of those countries, productivity gains have been accompanied by a significant drop in the agricultural employment (Figure 5.9). Thus, on balance, growth in agricultural productivity is unlikely to contribute to reductions in economic disparities and is certainly unlikely to absorb much of the labor force of the East.

5.35 In Table 5.12 four scenarios of transition of agriculture’s employment and GDP share are considered, depending on whether either, both or none of them is reduced by 50 percent with respect to the year 2000 level. If the employment rate stays constant at its 2000 level of 55 percent, agriculture productivity will need to increase between 1.2 percent and over 12 percent depending on the scenario of adjustment considered; the lower the required growth in agriculture productivity, the higher the corresponding rate of productivity growth required in the rest of the economy (industry and services). If the employment rate grows to 65 percent, the required increases in productivity are somewhat lower, averaging between 3.8 percent and 6.4 percent depending on the scenario.

Table 5.12: Rate of Change of Productivity of Labor Across Sectors Required to Reduce Income Disparities

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Role of Agriculture in lagging regions (in 2013, compared to 2000)</th>
<th>Required annual rate of labor productivity change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GDP share</td>
<td>Employment Share</td>
</tr>
<tr>
<td>(i) Employment rate: 55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>50% reduction</td>
<td>50% reduction</td>
</tr>
<tr>
<td>B</td>
<td>No change</td>
<td>50% reduction</td>
</tr>
<tr>
<td>C</td>
<td>50% reduction</td>
<td>No change</td>
</tr>
<tr>
<td>D</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>(ii) Employment rate: 65%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>50% reduction</td>
<td>50% reduction</td>
</tr>
<tr>
<td>B</td>
<td>No change</td>
<td>50% reduction</td>
</tr>
<tr>
<td>C</td>
<td>50% reduction</td>
<td>No change</td>
</tr>
<tr>
<td>D</td>
<td>No change</td>
<td>No change</td>
</tr>
</tbody>
</table>

Source: European Commission, AMECO Database
5.36 Under these conditions, a meaningful reduction of economic disparities will probably require a change in the economic structure of lagging regions, with a significant reduction in the employment and GDP shares of agriculture, and reallocation of resources to non-farm development activities in rural areas, and to industry and services in urban areas. The rest of this chapter discusses how this might be accomplished.

E. Options for Regional Policies

5.37 The international literature on regional development argues fairly persuasively that, in a market economy such as Turkey's, the location of labor and capital is largely determined by private economic forces. Scholars argue over the nature of initial comparative advantages and the relative importance of plant-level, industry-level, and city-level agglomeration economies. But few dispute the view that economic imperatives cause economic activity to concentrate in some regions and not in others. Therefore, it is important to recognize market forces as the primary determinant of the location of economic activity in government's efforts to influence the location of economic activity.

5.38 The literature—and Turkey's own experience—also suggests that some of the traditional instruments used by government to influence the location of economic growth are not particularly effective. Firm-specific investment incentives have a mixed track record. The evidence suggests that such incentives can affect investors' location decisions, if the incentives are large enough. But they do not guarantee that the resulting investments will have broader multiplier effects on the regional economy. Or that the investors will remain once the incentives expire.

5.39 There are nevertheless key roles for the public sector in regional development. The first is the provision of education. Education, by enhancing skills, productivity, and adaptability, is conducive to long-term economic growth.128 Other things being equal, this suggests that investment in education is an effective means of stimulating growth in poorer regions. This view is reinforced by the analytical work described earlier in this chapter, which found that regions with higher schooling rates tend to grow significantly faster than other regions and that public investment in social sectors is positively associated with regional growth. It should be recognized that education can also increase the propensity of people to move. Nevertheless, the development of a critical mass of educated workers in the larger urban areas of the East could improve this area's attractiveness to investors.

5.40 Governments also play a key role in the provision of infrastructure. Building macro-level infrastructure—power and telecommunications lines, highways, railroads, port and airport facilities—in depressed regions is a time-honored approach to regional development. The OECD's recent report, Building Competitive Regions, notes that "the expectation that improvements in physical infrastructure will generate productivity gains for local business and increase the attractiveness of an area for investment has been a recurring theme in OECD reviews of specific regions."129

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5.41 Infrastructure investment might appear to be a key factor in promoting regional development in eastern Turkey. For example, a relative scarcity of motorways and asphalted roads appears to be associated with low levels of development in Turkey. (Table 5.13). In addition, projects such as the Village Infrastructure Support Project (KÖYDES) have clearly improved basic living conditions (road paving, sanitation and drinking water networks) in rural areas. The Municipal Infrastructure Support Project (BELDES) is expected to do the same in small urban areas. But investment in physical infrastructure did not emerge as a key factor in regional growth in the analysis undertaken for this chapter.

<table>
<thead>
<tr>
<th>Group of regions</th>
<th>Share of Total Land Area</th>
<th>Share of total motorway network</th>
<th>Share of asphalted roads (Turkey=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>56%</td>
<td>94.3%</td>
<td>146.98</td>
</tr>
<tr>
<td>Lagging</td>
<td>44%</td>
<td>5.7%</td>
<td>61.36</td>
</tr>
<tr>
<td>Turkey</td>
<td>100%</td>
<td>100.0%</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Turkstat regional statistics

5.42 Evidence from Europe also suggests that the infrastructure investment does not, by itself, necessarily stimulate the growth of lagging regions. There have been several attempts to analyze the impact of EU-financed infrastructure investments on regional economic growth using econometric techniques. Basile, de Nardis and Girardi analyzed the evidence from the late 1980s to the late 1990s for twelve countries in the EU and were unable to find strong evidence of regional convergence of real per capita income, labor productivity, or employment rates, despite the ‘massive allocation of structural funds’ to poorer jurisdictions. Stierle’s survey of the econometric evidence on the impact of EU regional transfers on regional economic growth finds that ‘a few studies find a positive impact from Structural Funds while others do not.’ Non-econometric policy reviews have also failed to find a systematic relationship between EU structural fund allocations and regional economic growth. A report for the European Commission on the impact of structural funds in the 1994-1999 plan period concluded: ‘interregional disparities remain and for some regions the position does not appear to have progressed significantly…(T)his raises some questions as to the ability of Objective 1 to support balanced territorial development.’ The recent Sapir report, similarly, concludes that ‘it is not possible to establish conclusively what the relative performance of these regions would have been in the absence of EU cohesion policies.’ Boldrin and Canova note that regional convergence within individual member states of the EU came to a virtual halt just after the structural and cohesion policies were introduced.

5.43 The failure of these studies to find a systematic relationship between EU-funded infrastructure investment and regional growth does not mean that the relationship does not exist. Some of the recent literature attempt to distinguish the circumstances under which infrastructure investments are likely to have an impact. A recent survey by de la Fuente concludes that ‘there are sufficient indications that public infrastructure

130 A survey of macroeconomic models regional economic disparities is available in: Herve, Yves, Intergovernmental Transfers as a Macroeconomic Success Story of European Integration: Myth or Reality?, (Europa Institute, 2000).
135 Boldrin and Canova, op.cit. Note that disparities among the individual member states of the EU narrowed during this period.
Investments contribute significantly to productivity growth, at least in regions where a saturation point has not been reached. The returns are quite high when infrastructure is scarce and basic networks have not been completed but fall sharply thereafter.\footnote{De la Fuente, "Does Cohesion Policy Work?" in Funck and Pizzati, European Integration Regional Policy and Growth (2003).} A similar conclusion is reached by Canning and Pedroni who find high returns to investment when infrastructure is scarce and basic networks have not been completed, but sharply falling returns thereafter.\footnote{Canning David and Peter Pedroni, Infrastructure and Long Run Economic Growth, Cornell University Center for Analytic Economics (July 1999).} The 1994 World Development Report concluded that ‘the economic impact of infrastructure investment depends on whether it provides the kind of services valued by users, which in turn depends on such characteristics as quality and reliability, as well as on quantity. Matching supply to what is demanded is what is essential.’ The same admonition would appear to apply to investment in lagging regions. Overall, this suggests that not all infrastructure investments are likely to have a positive impact on regional economic growth. A motorway through a remote and desolate part of the country is unlikely to stimulate the local economy. But it does suggest that the right sort of infrastructure investment can provide a necessary if not sufficient condition for economic growth. What is important is to identify such investments.

Another key role for government is to coordinate and facilitate the development proposals of private investor and public entities. Government has a key role to play in coordinating the development plans and programs of private and public actors in a given geographical area. Because the design and implementation of successful policies to accompany the transformation of lagging regions cuts across sectors and levels of government, the establishment of partnerships among public and private stakeholders alike is advisable, to orient and govern the process, in particular by bridging the gap between knowledge on the constraints to, and opportunities for, regional development (typically more available locally); and the funds required to finance public investments (often provided centrally).

This task is particularly difficult in Turkey. As noted earlier, the Turkish public sector is highly centralized, with most spending decisions taken by ministries headquartered in Ankara. Local authorities have relatively few functional responsibilities and limited bargaining power. At the same time, national sectoral ministries tend to operate in sectoral stovepipes, without considering the wider economic development implications of their actions or possible synergies with other sectors.

The current planning system offers a place to start. Turkey has a system of multi-level development planning spanning different levels of government and aimed at different objectives. The 9th National Development Plan stipulates that an overarching regional development strategy will be prepared at the national level. While SPO has primary responsibility for regional plans, there are a number of other planning instruments, at other territorial levels, that affect regional development outcomes. At lower levels of jurisdictions, Provincial Development and Provincial Territorial Plans (and more recently, strategic planning for Special Provincial Administrations and larger Municipalities) are intended to guide the selection of projects at a more micro level.
Box 5.7: Multi-Level Governance of Regional Policies: The Italian Experience

The Italian constitution sanctions (art. 119/5) the objective of eradicating socio-economic disparities across territories, to be achieved through the allocation of dedicated (and additional) financial resources to lagging sub-national entities (regions, provinces). In addition to mobilizing adequate funding, the enactment of the constitutional mandate poses, in the current institutional context, a number of other challenges, including the harmonization of national and EU programs for regional development, the coordination of central and local governments in planning and implementation of regional actions, the alignment of financial and infrastructure planning through multi-year budgeting.

- In recent times, Italy has made significant progress in addressing these challenges, and, more generally, in adapting to an increasingly complex multi-level (EU, national and local) system of governance of regional policies. In particular:
  - In the mid 1990s, coordination among levels of government has been enhanced by the introduction of “Programmatic Institutional Agreement” (IIP in the Italian acronym), whereby each regions agrees with the central government on the broad objectives, sectors, and geographical areas where infrastructure investment for regional development should take place. IIP are implemented at the individual sector level, through “Framework Program Agreements – APQ”, in which regions and central government define a specific list of projects, complete with financing plan, timetable, and allocation of execution responsibilities.
  - In the early 2000s, a national fund for lagging regions (FAS) has been established. The fund receives block-financing annually from the budget law, which is then allocated, to ensure predictability in the flow of funds, to multi-year investment programs, to be implemented through IIPs and APQs. Since these are co-financed by EU funds, coordination of national and EU regional development programs is enhanced;

The government has formally established targets for the share of public capital expenditure to be allocated to lagging regions: 30 percent of the “ordinary” funds (that is, excluding FAS and EU structural funds); and 45 percent of the capital expenditure as a whole. Attainment of these targets is verified annually through a system of territorial monitoring of public expenditure, and the government reports annually to the parliament on the results.

These innovations are consistent with the requirements of the new programming period (2007-2013) of the European cohesion policy, which mandate that each Member State drafts-and negotiates with the European Commission, a “National Strategic Document”, establishing an overarching framework for regional development interventions, to be financed by combining national programs and EU structural funds.

5.47 There has been some experience with consultative and participatory planning in the context of the SPO regional plans, as well as the EU-supported regional programs. The OECD’s recent report on building competitive regions proposes the use of intergovernmental contracts as a means of orchestrating the activities of various tiers of government. It cites the model of French state-region plan contracts (CPER). According to the OECD, these are developed through lengthy negotiations between two sets of parties: (1) the

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138 For example, GAP, DAP, DOKAP, ZBK
139 These include the MEDA-financed Eastern Anatolia and South-Eastern Anatolia (GAP) programs, with funds for some 92 million euros; plus two more recent regional development programs covering 7 NUTS2 regions, with funding of some 140 million euros
140 OECD, Building Competitive Regions (2005).
elected local and regional authorities and other ‘development actors in the region’ and (2) a regional ‘prefect’ who is designated by the State. All such regional programs are coordinated by the State Delegation for Territorial Management and Regional Action. Each national sectoral ministry forms a steering committee to coordinate its contribution to the program. This mechanism has a well-established track record in France. Successive five year contracts have been in effect in all French regions since 1984. The OECD notes, however, that such contracts involve high costs in terms of negotiation and execution. At the time the OECD report was written, it was expected that the current contracts (covering the period 2000-2006) would have to be extended into 2007 due to administrative delays. A similar system is employed in Italy (Box 5.7).

<table>
<thead>
<tr>
<th>Box 5.8: Regional Development Agencies in England</th>
</tr>
</thead>
</table>
| In England, Regional Development Agencies (established under the Regional Development Agencies Act), were formally launched in eight regions on 1 April 1999. The ninth, in London, was established in July 2000 following the establishment of the Greater London Authority. Regional Development Agencies have become a major focus of government attempts to promote economic development and the regeneration of disadvantaged areas. English RDAs have five statutory objectives: economic development and regeneration; business efficiency and competitiveness; employment; development of skills relevant to employment; and sustainable development. The Regional Development Agencies Act 1998 required the RDAs to develop a strategic vision for each of their regions, and issued statutory and non-statutory guidance to the Agencies on the formulation of these Strategies. The guidance encouraged RDAs to formulate clear priorities for seeking to improve regional economic performance, and to identify strategies for achieving them. The aim was to help to ensure that regional opportunities were fully exploited and that those responsible for economic decision-taking were working effectively together, with common goals and accepted priorities for regional development. RDAs are obliged to review their strategies in full every three years.

Since April 2002, the RDAs have been financed through a Single Programme budget (the “Single Pot”). Instead of managing separately funds made available by the individual contributing Government departments (DTI, DCLG, DfES, DEFRA and DCMS and UKTI), RDAs can now pool them into one single budget. The funding, once allocated, is available to the RDAs to spend as they see fit to achieve the regional priorities identified in their regional economic strategies and to meet the targets established in their Corporate Plans. Resources allocated (or programmed) to RDAs averaged 2.1 billion pounds per year for the period 2004-2008, or some 9 percent of total public sector investment (net of depreciation).

In July 2003, a regional survey of stakeholders’ perceptions of RDAs was conducted. The overall results were positive. Although, RDAs were relatively new organizations, they were evaluated as being successful in developing coherent Regional Economic Strategies and effective in delivering regional initiatives.141

5.48 The proposed Development Agencies could also provide a venue and mechanism for inter-sectoral and central-local coordination. Such a role, for example, is played by regional development agencies in England (Box 5.8). The private sector (represented both in the DAs’ Development Council and Executive Board) could provide an important input through its knowledge of where the market development opportunities are, what are the constraints to seizing them, and what are the priority public investments that would help removing those constraints.

5.49 **How large a role DAs should play in regional development is still an open question.** Current legislation, however, limits the authority of the DAs. As described earlier in Box 5.4, it is the SPO, not the DAs, that prepares regional plans (although the Government envisages that “regional development strategies based on NUTS II classification will be prepared in co-operation with DAs”). The financial power of DAs is also limited. With an estimated average annual budget of some €19 million per agency, DAs will have only a small financial role in regional development. The effectiveness of DAs will instead crucially depend on the active participation of local stakeholders and the technical/administrative capacity of their staff. These assets may be in short supply in some of the regions with limited traditions of public participatory processes and insufficient experience in decentralized management of development programs.
ANNEX 5.1 DECOMPOSITION OF REGIONAL INCOME DISPARITY

Income inequality between and within regions

1. One of the most widespread tools used in the regional income inequality literature is the Theil index. This index has many desirable characteristics which are extensively discussed in Akita (2001):

   • additive decomposability: total inequality can be expressed as the sum of between-group and within-group inequalities
   • mean independence: the value of the index remains unchanged if income of all regions change by the same proportion
   • population-size independence: the value of the index remains unchanged if the population of all regions change by the same proportion
   • Pigou-Dalton principle of transfers: if an amount of income is transferred from a richer region to a poorer one in such a way that the relative ranks of two regions remain unchanged, then the value of the index decreases.

2. Assume that the unit of the analysis is the province and we try to analyze the income inequalities between and within regions based on NUTS1 classification. Then the underlying Theil index can be computed as follows:

\[ T_p = \sum \sum \sum \left( \frac{Y_{jk}}{Y} \right) \log \left( \frac{Y_{jk}/Y}{n_{jk}/N} \right), \]  

where \( Y_{jk} \) is the income of province \( k \) in sub-region \( j \) in region \( i \),

\( Y \) is the total income of all provinces = \( \sum \sum \sum Y_{jk} \),

\( n_{jk} \) is the population of province \( k \) in sub-region \( j \) in region \( i \),

\( N \) is the total population of all provinces = \( \sum \sum \sum n_{jk} \).

As a next step, let us define between-province income inequality as follows:

\[ T_{rp} = \sum \sum \left( \frac{Y_{ik}}{Y_i} \right) \log \left( \frac{Y_{ik}/Y_i}{n_{ik}/N} \right) \]

Then, we can express \( T_p \) in terms of between-province and between-region income disparities:
3. The above equations imply that the overall regional disparity is the sum of within and between-region disparities. Specifically, equation 2 is called the one-stage inequality decomposition equation. For instance, if one wishes to analyze the income inequality between and within sub-regions (or regions), then this equation will be the main tool of the analysis. However, if a three-level hierarchical structure is used, then the below equation will provide the main inequality decomposition:

\[ T_s = T_w + T_r, \]  

where \( T_w = \sum_{i} \left( \frac{Y_i}{Y} \right) \log \left( \frac{Y_i}{N_j / N} \right) \) is the within sub-region income inequality expressed as \( T_s \), \( T_w \) is the between sub-region income inequality expressed as \( T_r \) is the between-region income inequality as previously defined.

4. Obviously, equation 3 gives the two-stage inequality decomposition based on a three-level hierarchical structure.

5. The results of this analysis, for Turkish regions, are shown in Table 5.14.
<table>
<thead>
<tr>
<th>Region</th>
<th>Theil T</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall Regional Disparity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between East and West</td>
<td>0.042</td>
<td>40.0%</td>
</tr>
<tr>
<td>Among NUTS 2 regions</td>
<td>0.022</td>
<td>21.0%</td>
</tr>
<tr>
<td>Among provinces</td>
<td>0.041</td>
<td>38.8%</td>
</tr>
<tr>
<td><strong>Advanced</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aegean</td>
<td>0.007</td>
<td>6.3%</td>
</tr>
<tr>
<td>Central Anatolia</td>
<td>0.011</td>
<td>10.4%</td>
</tr>
<tr>
<td>Marmara</td>
<td>0.010</td>
<td>9.8%</td>
</tr>
<tr>
<td>Mediterranean</td>
<td>0.002</td>
<td>2.3%</td>
</tr>
<tr>
<td><strong>Lagging</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black Sea</td>
<td>0.006</td>
<td>5.3%</td>
</tr>
<tr>
<td>Eastern Anatolia</td>
<td>0.003</td>
<td>2.7%</td>
</tr>
<tr>
<td>Southeastern Anatolia</td>
<td>0.002</td>
<td>2.0%</td>
</tr>
</tbody>
</table>
A. Overview

6.1 As a fast industrializing and growing country Turkey would benefit from ensuring that its natural environment is adequately protected and the quality of the ambient air, water and soil are acceptable to its citizens. This will require significant upgrading of the current environment. There is room for major improvements in areas of water supply, solid waste management, improvements in air quality and more effective nature conservation. It is critical to recognize the costs of achieving these changes will depend on the policies and measures that are implemented. This chapter discusses these policy reforms in some detail. It also emphasizes the importance of better environmental governance, which in turn will require more and better trained regulators and increased and more effective enforcement.

B. Introduction

6.2 Improving environmental quality and protecting the environment are major challenges facing Turkey irrespective of its status with respect to EU Accession. As a modern industrializing country Turkey faces new and growing challenges to improve its water and air quality, to reduce the damages to its valuable natural land and coastal resources and to leave future generations of Turks with a legacy of a clean environment. These objectives have been looked at recently in the context of EU membership, but they are relevant irrespective of whether Turkey gains accession to the EU. In the present circumstances, it would be beneficial to focus on prioritizing measures that provide the greatest benefits to the Turkish people while recognizing the strong fiscal constraints under which the public sector is operating and that are conscious of the limitations and potentials of the private sector to invest in and pay for environmental improvements.

6.3 Upgrading environmental quality to EU norms will provide substantial benefits to the Turkish society in terms of reduced occurrence of illnesses, a better living environment, more recreational opportunities and protection of its valuable biodiversity. The cost of this, however, will depend on the policies that are pursued. Countering the effects of rapid urbanization and industrialization on the environment will require both significant investment outlays and reforms in governance. One estimate of the potential costs of such actions was provided in the government’s program to meet the upgrading that would be required under the conditions of the Environmental Acquis (the "Turkey EU Integrated Environmental Compliance Strategy" or UCES). These costs were estimated at €59 billion over the period 2007 to 2023\(^\text{142}\). It is important to note, however, that the actual costs can be lower than this figure\(^\text{143}\). Indeed, one of the key messages in this chapter is that, with appropriate policies, the costs of upgrading environmental quality in Turkey to EU or similar levels can be reduced considerably.


\(^{143}\) The government’s cost figures are undiscounted, so no advantage arises from delaying investments. It would be better to present the costs with a real discount rate.
6.4 Nevertheless the government estimate of the costs of meeting EU standards is indicative of these costs and even of the costs Turkey will incur in pursuit of its own environmental interests. Given the magnitude of the figure, it will be critical to develop a program that is cost effective and that sequences the investments in an affordable way, taking into account the available resources and public willingness to pay for the improvements (which will also grow as the country becomes richer).

6.5 In determining priorities a useful point of departure is to look at the relative benefits and costs in different environmental areas. As part of the assessment of the value of the EU program, an assessment was made of the benefits of attaining EU standards in different areas (ECOTEC et al. 2001). The types of benefits included in that study are summarized in Table 6.1. The estimation of the monetary value of the benefits made use of a large body of past and ongoing research on economic valuation. The results of the estimation for Turkey are given in Table 6.2, where the benefits are compared to the cost figures as given in the Government of Turkey’s UCES study. The exercise is only possible for a few areas, namely air, drinking water, wastewater and solid waste.

<table>
<thead>
<tr>
<th>Type of Benefit</th>
<th>Air</th>
<th>Water</th>
<th>Waste</th>
<th>Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Benefits</td>
<td>Avoided respiratory illnesses and</td>
<td>Households access to cleaner drinking</td>
<td>Reduced risk of poisoning and accidents</td>
<td>None assessed</td>
</tr>
<tr>
<td></td>
<td>premature deaths</td>
<td>water</td>
<td>due to methane leakage from landfills</td>
<td></td>
</tr>
<tr>
<td>Resource Benefits</td>
<td>Avoided damage to buildings and crops</td>
<td>Cleaner bathing water and cleaner water</td>
<td>Reduced input of primary material</td>
<td>None assessed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>for companies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eco-systems</td>
<td>Avoided global warming from CO2 emissions</td>
<td>Improved river water quality</td>
<td>Avoided global warming from methane</td>
<td>Protected areas and species</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>emissions</td>
<td></td>
</tr>
</tbody>
</table>

Source: ECOTEC et al, 2001

6.6 While the data on the benefits are subject to considerable uncertainties, the table nevertheless reveals some useful findings. First, investments in water supply and reduction in air pollution are probably justified in terms of net benefits (Particularly, as will be shown below, the cost estimates are likely to be on the high side). Second, investments in waste water are very unlikely to be justifiable given the measurable benefits. Of course this does not mean that all individual projects for waste water treatment have negative net benefits; some almost certainly will be of high priority. But it does mean that as a program, with a time profile for investments as agreed between the EU and Turkey, the net benefits are likely to be negative. Third, in the case of solid waste the issue at the program is unresolved; it depends on where the benefits lie in the range that has the upper values 20 times the lower values.

144 The results from the exercise are reported as the net present value of benefits, discounted at a real rate of 4 percent. In actual practice, countries may use higher discount rates, if only to ensure that they prioritize those investments that will yield earlier benefits for the populations.

145 Benefits from the waste directives arise largely from the Landfill Directive, which reduces methane emissions as well as amounts of waste that has to be disposed. The benefit range is so wide because the benefits depend on how much recycling takes place and how much incineration is carried out. The higher the recycling and the fewer amounts incinerated the greater the benefits.
6.7 The cost estimates for compliance with the EU environmental acquis should be seen only as indicative. Even if Turkey accepts the acquis as a legitimate set of targets, the costs can be reduced or lowered by a number of measures, which are summarized below and discussed in greater depth in the rest of this chapter. Actions that can reduce the costs are the following:

- Follow a least-cost investment plan, especially in energy-related investments. Turkey has well-trained engineers and economists who have worked with dynamic models of the energy sector that determine investments needed to meet a given energy demand at least cost, while respecting environmental constraints. The results from the models and the resulting costs depend on what instruments are available to the regulators. With policies such as emissions trading and pollution charges the costs can be considerably lower than in their absence.¹⁴⁶¹⁴⁷

- Increasing the efficiency with which municipalities make investment decisions, removing untar­geted subsidies, opening up procurement to international tender and undertaking careful project appraisal in evaluating the design of the schemes, all these measures will reduce costs significantly.

- Design investments to take into account the lower demand for some services when future service charges and stricter environmental regulations will reduce levels of waste generated. The World Bank has had experience of this in the wastewater projects it funded in the Baltic States, where the level of capacity turned out to be substantially in excess of demand as a result of the large increase in volume based charges.

- Recognize that new investments are likely to reduce total operating costs, because the operation and maintenance costs of new equipment will be lower than that of the equipment they replace. This gain has probably not been fully accounted for in the cost figures presented above.

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¹⁴⁶ Model estimates for emissions trading for NOx, PM10 and SO2 in the thermal power sector carried out under World Bank sector study and are available upon request.

¹⁴⁷ Nevertheless, the cost of administrating economic instruments may be high and in some cases exceed the available capacity in the public sector.
C. Municipal Environmental Services

Water Supply and Wastewater

6.8 Access to drinking water has greatly improved but reaching acceptable water quality standards continues to be a challenge. A TUIK (TURKSTAT) survey on municipal water supply carried out in 2004 indicated that nearly all Turkey’s urban population had indoor access to potable water, while access to an improved water source in rural areas was estimated at 87 percent. Access to safe drinking water in the largely illegal squatter settlements on the outskirts of large cities is highly likely to be below the national average, although reliable data are not available. It is noteworthy that in 2004 only about 45 percent of the water supplied for drinking and utilization purposes was treated. Hence the realization of the Government’s intention to improve water supply nationally to levels prescribed by the EU Drinking Water Directive, which focuses on the quality of drinking water for human consumption and introduces a comprehensive monitoring regime for parameters affecting health, will be a stretch. The Directive also requires broad dissemination of monitoring results and public awareness raising on drinking water quality.

6.9 Of all the municipal service improvements, drinking water is probably the easiest to finance without recourse to significant subsidies. In prioritizing Central Government contributions to the water sector, it is advisable to take into account the fact that drinking water infrastructure may be less difficult to fund through user financing than wastewater infrastructure. This is because households generally have higher willingness to pay for drinking water services than for waste and wastewater services and will therefore accept higher charges for a better service.

6.10 In wastewater treatment, the gap between EU level treatment and current conditions in Turkey is large and the benefits to Turkey are not so clear. Thus a phased approach is required, giving higher priority to settlements with larger environmental impact. In Turkey, the overall rate of connection to sewer systems in municipalities was 87 percent in 2004. This represents an increase from 78 percent in 2002 (TUIK), but is still low relative to that found in other European countries. As Table 6.3 illustrates, sewer connection is around 55 percent in municipalities with populations below 10,000 while in municipalities with more than 100,000 inhabitants it is 96 percent. With regard to treatment of collected wastewater, in 2004, 138 of Turkey’s 3,225 municipalities had secondary or advanced treatment facilities; however wastewater from 44 percent of all municipal households was treated at secondary or advanced level. In municipalities with more than 100,000 inhabitants this rate was 69 percent (Table 6.3). This level may actually be an overstatement of the actual treatment rate since often municipal treatment plants fail to operate continuously or effectively due to poor maintenance.

### Table 6.3: Municipal Sewerage and Wastewater Treatment by Population Categories

<table>
<thead>
<tr>
<th>Population category</th>
<th>Municipalities</th>
<th>Municipal sewer system</th>
<th>Municipal wastewater treatment (secondary and advanced)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number*</td>
<td>Population (million)</td>
<td>Pop. connected (million)</td>
</tr>
<tr>
<td>&gt; 100,000</td>
<td>58</td>
<td>29.77</td>
<td>58</td>
</tr>
<tr>
<td>100,000-50,000</td>
<td>77</td>
<td>5.34</td>
<td>74</td>
</tr>
<tr>
<td>50,000-10,000</td>
<td>450</td>
<td>9.31</td>
<td>403</td>
</tr>
<tr>
<td>10,000-2,000</td>
<td>2,206</td>
<td>8.93</td>
<td>1,396</td>
</tr>
<tr>
<td>&lt; 2,000</td>
<td>345</td>
<td>0.59</td>
<td>208</td>
</tr>
<tr>
<td>Total</td>
<td>3,136</td>
<td>53.94</td>
<td>2,139</td>
</tr>
</tbody>
</table>

* Does not include number of district and lower level municipalities that are part of metropolitan municipalities.

Source: TUIK (2004) via UCES

6.11 **Careful consideration of the timing of wastewater treatment investments is recommended.** In view of the high costs and relatively low average benefits of wastewater treatment (however with high benefits in some cases) Turkey is advised to develop a careful program with high priority given to those locations where the benefits are significant. This will be the case in larger settlements (unit costs fall due to economies of scale) and in coastal areas where tourism is an important industry. At the same time the central government is demanding that the municipalities develop an ambitious program for upgrading facilities. The provisions of the 2006 Law, amending the previous Environment Law, require that municipalities without sanitary waste disposal facilities or wastewater treatment plants to commission construction of such within 3-10 years (the larger the population the sooner) or face steep monetary fines.

6.12 **The institutional framework for water and wastewater management could also evolve.** At present, key institutions in the water supply and waste management sector are: (a) MEF which sets quality standards for surface waters that are actual or planned drinking water supply sources; (b) MOH which sets the drinking water standards; and (c) municipalities which are responsible for putting in place and operating water treatment and distribution, and wastewater collection and treatment. In addition, the State Hydraulic Works (DSI) develops and finances water resources. Meanwhile water treatment and distribution and sewerage works are financed by Iller Bank. Municipalities collect charges for water supply and sewerage services from households and enterprises, with the level being subject to approval by the Municipal Council. 16 of Turkey’s 3,225 municipalities have the special status of “metropolitan municipality” and as such have in place dedicated semi-autonomous water and sewage administrations (SKIs), which are responsible for all aspects of the service, including financial ones. Overall, service quality varies widely, with the metropolitan areas being the best and the smaller cities and towns the worst managed. There is no quality or economic monitoring and regulation whatsoever of individual systems.

6.13 **The institutional framework for water resources management in Turkey is fragmented.** International experience suggests it is more effective to have one central authority that is responsible for: (i) planning surface water and groundwater resources development in all river basins and aquifers of Turkey; (ii) licensing water allocation from surface and groundwater for all public uses and users; (iii) regulating water resource abstractions (surface and groundwater) by public and private users, and prosecuting unauthorized abstractors or those...
abstracting above their licensed amount; and (iv) collecting, processing, and analyzing data on the quality and quantity of surface and groundwater resources.

6.14 The recent attachment of DSI to MEF is a positive step towards better coordination of water quality (MEF) and water quantity (DSI) issues in the face of increasing and conflicting demands for water for municipal, industrial and agricultural purposes and of increased pollution sources. It is important that water resources administration functions (stewardship of water) be separated from service provision. Monitoring of the water quality for different usage is important and responsibilities should be decentralized. With regard to management of individual river basins, the formality of river basin authorities in Europe varies. Turkey would be advised to consider carefully the benefits and costs of new bureaucratic structures, but international experience suggests a structure comprising river basin councils that involve the major stakeholders in a basin, which is responsible for overseeing developments and management of water in a basin.

State of Solid Waste Management

6.15 The key problem with household waste is not collection but disposal thereafter. According to a Turkish Statistical Institute (TUIK) survey in 2004, about 29 percent of the municipality collected waste is disposed of in sanitary landfills. Of the rest, about 65 percent is disposed of in uncontrolled municipal and metropolitan dumpsites, 1.4 percent composted, 0.3 percent burned, and 0.4 percent discharged into water bodies. Notable initiatives for good management over the past decade include the Bursa Sanitary Landfill and the Kocaeli Izaydas Municipal and Industrial Solid Waste Landfill; and the rehabilitation of four dump sites in Istanbul and of the Bursa Demirtas Waste Dump. While lower than the EU average, Turkey’s composting rate of 1.4 percent is within the 0.5 percent - 3.0 percent range in new EU member states and the existence of five composting plants is encouraging.

6.16 Collection and disposal of hazardous waste is major problem, requiring better regulatory enforcement and phased installation of new treatment facilities. According to TUIK statistics, approximately 1.3 million tons of hazardous waste was generated annually in 2004; of this only about 37 percent was recycled or incinerated, while the rest was stored on–site or disposed of inadequately. There appears to be some improvement in enforcement in past year or so, but limited treatment and disposal capacity is a constraint. Three facilities: a medical waste incinerator in Istanbul, the Izaydas integrated hazardous waste management facility, and the recently licensed incinerator at the PETKIM petrochemical facility in Izmir, are insufficient to cover the country’s needs. Licensing by MEF of cement kilns for the incineration of suitable wastes is helpful. While additional incineration and treatment capacity is needed, European experience cautions: in response to stricter enforcement and cost of incineration, hazardous waste generating enterprises opted for cleaner technologies, which resulted in lower quantities of hazardous waste delivered to treatment facilities, rendering some of them financially unviable (see 1.4 above). In summary, a phased approach taking account of other changes in environmental regulations and demand for services is recommended.
6.17 Illegal waste disposal leads to hazardous contaminated sites, but an inventory of such sites and a strategy for remediation are lacking. Contaminated sites constitute a significant problem for public health and the environment. While a complete inventory does not exist, their number is estimated at 1,000-1,500 with 5-10 percent believed to be in need of urgent remediation. There are four categories of contaminated sites: (i) industrial facilities –spills, leaks and chemical storage; (ii) municipal and industrial waste disposal sites; (iii) mine tailing disposal sites; and (iv) illegal waste dump sites. Municipal and industrial waste dump sites and illegal waste dump sites make up about 80 percent of contaminated sites. Along with enforcement measures to prevent the generation of new contaminated sites; the Government is advised to establish an inventory and a risk-based strategy for remediating the existing sites.

6.18 Waste management policy in Turkey is in harmony with good practice, as reflected in the “EU Waste Management Hierarchy.” In the order of priority, the policy is: (a) waste minimization; (b) reuse and/or recycle; (c) energy recovery/disposal volume reduction, and (d) final disposal by land filling. This is reflected in the newly revised Regulations on Solid Waste Control, Medical Waste Control, Hazardous Waste Control, and Soil Pollution Control. Certain EU Regulations for specific types of wastes, including waste oil, batteries and accumulators, packaging waste, marine vessel wastes, used tires, have also been transposed into the Turkish legislation and others are at a draft stage.

6.19 Furthermore, institutional arrangements in industrial waste management include promising examples of Government – civil society cooperation. MEF is in charge of drafting national strategies, policies, laws and regulations, and municipalities which are responsible for putting in place effective collection, disposal and treatment facilities, including of hazardous waste. Central MEF and Provincial Governorates carry out the tasks of licensing and inspection of solid waste disposal and treatment facilities, enforcement of regulations. The involvement of civil society organizations and industrial sector associations in waste management has helped with recent advances in industrial special waste management. Examples are ÇEVKO, a foundation which collects packaging waste and transfers them to licensed recovery and recycling facilities; the Turkish Association of Chambers and Exchanges (TOBB), which initiated the establishment of a ‘waste exchange’ for certain categories of industrial waste; the Association of Transportable Battery Manufacturers and Importers which collects, disposes of and carries out market surveillance on batteries as well as controlling the packaging and labeling of batteries; and the Association of Accumulator Manufacturers and Recyclers.

6.20 Nevertheless significant obstacles hampering the country-wide implementation of regulations remain. Most notable is the limitation in number and capacity of waste management facilities. Other problems relate to capacity at the municipalities and include lack of training activities, sufficient trained personnel and information about the Solid Waste Control Regulation. Finally rapid population growth and urbanization make planning of optimal waste management strategies a challenge.

6.21 The key recommendation is that investment efforts focus not on individual landfills, but on integrated waste management systems, including minimization of waste, transfer stations, sorting units, separate collection system, recycling/composting, biological mechanical treatment and land filling. For this, an

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improved waste database, accurate waste management planning, and well designed and phased projects to gradually meet EU standards are necessary.

Cost and Financing of Water and Solid Waste Programs

6.22  **The present system of financing municipal programs in Turkey depends heavily on central government subsidies.** Furthermore the targeting of these subsidies is not as effective as it could be. During the period 1995-2002, the average annual investment in water and wastewater services (funded by a combination of DSI, Iller Bank, foreign loans, municipalities’ internal resources) amounted to USD 1.5 billion. It is estimated that USD 650 million of this amount was made up of subsidies in the form of central budget transfers to DSI and Iller Bank, or Treasury guarantees and onlending to municipalities. Furthermore, some of these investments were highly inefficient.

6.23  **But the government is keen to reform the sector.** Significant emphasis is correctly placed on making municipalities more responsible for funding such services. World Bank analysis of Turkey’s fiscal conditions and municipal sector supports the principle that municipalities cease to rely so heavily on central government subsidies for funding their services and Central Government support target those municipalities where revenues from affordable tariffs are not sufficient to cover investment costs. For Central Government contribution the announced plan is to give priority to water supply infrastructure as it is deemed to have highest economic benefits, whereas in the case of wastewater and waste management only projects with high external benefits would be funded.

6.24  **A three-pillar reform agenda is recommended to reduce municipalities’ dependence on Central Government subsidies for environmental investment, including (i) improving governance; (ii) improving the efficiency and financing of investments to levels reached internationally; and (iii) raising operational efficiency.**

I. Improving governance at the municipal and central government levels

6.25  **Municipalities and their utilities have long depended on the Central Government to subsidize sector investment and operations and on consumers to pay high tariffs to service providers with little accountability.** The authorities are recommended to consider an alternative paradigm based on three cornerstones:

- **Municipalities could be fully accountable to citizens for service provision and their performance placed under modern regulation.** The latter would comprise monitoring of service quality and efficiency, and of tariffs charged. Government may also consider introducing the practice of performance audits by an appropriate government agency.

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It is advisable to discontinue the present widespread use of water supply and waste revenues to fund other municipal activities. The practice has two main negative consequences: (i) when revenues are diverted to other purposes, the actual cost of providing waste, wastewater or water supply services are not known; this prevents setting tariffs and levels of service provision based on actual costs; (ii) it undermines the municipalities’ ability to carry out operations and maintenance (O&M) at adequate levels and to make new investments. To end cross-subsidies, effective implementation of legislation earmarking waste, water and wastewater related revenues for investments in the same services are necessary. This would serve the objectives of raising accountability of municipal councils, preventing inefficient use of resources, and assuring sound finances of the water supply, wastewater and waste sectors.

Municipalities could explore different organizational models of service provision that would include a greater use of public-private partnerships to operate the publicly owned systems and where the smaller of Turkey’s 3,225 municipalities would create regional associations for the purposes of achieving economies of scale in service provision, facilitating professional support and ultimately improving the quality and sustainability of operations. In waste management, regional landfills are a cost effective solution as they provide economies of scale. A good example in Turkey is Serik and neighboring municipalities near Antalya who are pursuing a consortium arrangement. The Government may consider supporting such initiatives through incentives, such as co-financing feasibility studies for regional landfills jointly initiated by several municipalities.

II. Improving the efficiency and financing of investments

6.26 Turkey’s increased coverage of water supply and wastewater collection can be achieved at lower cost if investment efficiency is improved. Key factors are appropriate design parameters and dependable central government funding that results in timely construction periods and avoids high risk premiums charged by contractors and equipment suppliers. The recent establishment at Iller Bank of a project appraisal unit is encouraging. This unit will carry out financial analyses and examine borrowing municipalities’ ability to service debt. To further raise investment efficiency it is proposed that all financing from DSI and Iller Bank be on the basis of repayment of loans where the principal is maintained in real value through revaluation and with positive interest rates since this will give the incentive to municipal borrowers to invest only in those works that can justify the payment of debt service.\footnote{Under the modified article 10 of the Law no. 1053 (1968) DSI is authorized to undertake future commitments for domestic, service and industrial water supply to all municipal communities, upon which respective communities are indebted to DSI for the construction of the facilities for repayment in 30 years without the application of interest.}

6.27 Should municipalities raise their tariff levels to help finance investments in infrastructure? The answer is that raising tariffs may be required in some cases but that it will not completely resolve municipalities’ financial difficulties in all cases. As indicated in UCES, most large and medium size municipalities do not have revenue generation problems with regard to environmental services. The problem is one of poor expenditure management. It is well known that water tariffs vary significantly among municipalities and in some cases they are relatively high. Hence, it is advisable to base the decision on whether or not raise tariffs on each municipality’s...
specific conditions. Key factors to keep in mind would be affordability, and the possibility that higher tariffs could lead to lower collection rates or (in case of solid waste) to a diversion to illegal out-of-sight wild dumps. Equally importantly, measures to increase operating efficiency would need to accompany tariff increases, as detailed in the next section.

6.28 As pointed out in UCES, the sheer cost of capital investments and general low level of income in most smaller municipalities make environmental infrastructure investments unaffordable for them. Such circumstances may justify Iller Bank support. Efficient joint approaches by several neighboring municipalities, such as regional landfills, are particularly deserving of support.

6.29 On the other hand, UCES’s suggestion to tax municipalities with large wastewater discharges and transfer these tax revenues to smaller municipalities is problematic on several accounts. First, it is not in line with the “polluter pays” principle. Taking the municipality as the “polluter”, under this principle, its responsibility is to cover the costs of treating its wastewater to achieve discharge concentrations that meet standards prescribed in the legislation. Taxing a municipality won’t achieve this result. If acceptable wastewater treatment is already present, a tax would be beyond what the municipality has to pay. Second, if a municipality is not in compliance with wastewater treatment, the enforcement tool is not a tax but a fine for non-compliance. Third, the proposition raises serious questions on how authorities would determine the tax level and the criteria for selecting municipalities to which the tax revenues would be transferred. Fourth, the proposed tax may introduce a significant disincentive for the municipality to improve the efficiency of its water related operations, as its surpluses would be taxed. Finally, as correctly applied in other parts of UCES, in the municipal services context that the “polluter pays” principle applies mostly to citizens living in a municipality. These receive water supply and wastewater sewerage services and should pay for such services at a level that covers costs of investments and O&M for acceptable treatment.

III. Increasing operating efficiency and sustainability

6.30 Water supply operations are inefficient in the sense that only a minor share of water production is eventually paid for by consumers. Non revenue water (NRW, formerly called “Unaccounted-for-Water”) of 50 percent (typical for the average Turkish municipal water system) and a collection percentage of 70 percent of billings imply that only 35% of the water produced generates financial revenue. Reducing NRW would ensure that existing production capacity suffices longer and, by making new investment pay its full price, municipalities would have an incentive to invest more in maintenance and demand management, which in turn would lengthen the useful life of existing assets. Increased efficiency could be stimulated by yard-stick regulation that would initially comprise performance indicators for each and every municipal water supply and wastewater system. The yard-stick regulation could record connection rates for water supply and wastewater services, continuity and safety of water supply, NRW, staff productivity, the financial working ratio (between cash operating costs and cash operating revenue) and the share of wastewater that is treated. Assuming that the level of NRW could be reduced from the present average of 50 percent to 30 percent without affecting the sales volume, it could be expected that the sector’s internal cash generation from operations would rise from the present annual level of USD 750 million to USD 1,350 million – a significant contribution to meeting cost of making the desired
improvements in water supply and waste water treatment. However, a reduction in the level of NRW from 50 percent to 30 percent is an ambitious target. It will take a number of years to reach, require significant investment, and depend on changed incentives for service providers.

6.31 **New models of public-private partnership (PPP) could help raise operating efficiency.** These include joint public-private ownership companies and schemes where the public sector finances investments that the private sector operates. In smaller municipalities and in low income peri-urban areas where effective connection rates must go up, subsidies may be justified. These could be linked to Output Based Aid (OBA), a system under which payments would be made to service providers against proof of services provided, such as additional connections made, water supplied, or wastewater treated. Any public subsidy would be linked to a parameter of this kind rather than to the inputs (such as physical investment costs), as is now the case in Turkey. Through OBA, the private operator is forced to focus on how to provide good service to the consumers. The operator will also ensure that investments and operations become more efficient because it stands to gain higher profits since its remuneration is only related to service, output, rendered and not to costs. Box 6.1 describes one such OBA-model that relies on small private entrepreneurs to provide service to towns. The replicability of this OBA-model for small-scale private operators in Turkey depends on the central government’s ability to provide the OBA subsidies in case the poorest municipalities cannot pay tariffs sufficient to cover the OBA-entrepreneur’s total costs.

<table>
<thead>
<tr>
<th>Box 6.1: OBA for Small Private Water Entrepreneurs in Towns in Colombia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small private contractors, possibly with small consulting firms, compete for the construction and/or rehabilitation of simple systems where service standards are specified. The winner must build at his own expense a system and commit himself to operate and maintain it for 10-15 years. The tariff is a given because Colombia has a system of national tariff regulation. The winning bid is the one that offers to provide the service during the stipulated period at the lowest possible subsidy per cubic meter consumed, billed and collected. The winning bidder will receive training in management of water utilities as well as written material and management know-how. It is permitted for government employees to leave their services in order to compete for these small private contracts. In such a case their incentive is to operate more efficiently since they can increase their profits in this way.</td>
</tr>
</tbody>
</table>

6.32 There may also be scope for adapting models such as joint private-public ownership models (“mixed ownership companies”) to Turkey to provide the municipalities with greater oversight over the water supply and wastewater operations and through providing them with a stake in the economic fortunes of such operators. Box 6.2 below details the experience of a “mixed ownership company” in Barranquilla, Colombia.

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152 The calculation assumes an average financial working ratio (cash operating costs ÷ cash operating revenue) of 0.50.
Box 6.2: Joint Public Private Ownership Companies—Case of Barranquilla, Colombia

Barranquilla, a city of 1.5 million on the Caribbean coast, was under private operation from 1925 to 1960. Universal coverage and good service quality made the city’s water supply the best in Colombia. However, the municipal government took over operations in 1961 and in three decades operations and service quality deteriorated to rival the worst in the country. The crisis reached a climax in 1991 when the World Bank suspended disbursements under an existing loan. The central government and civic organizations in the city supported reform that resulted in the creation of a new company. A Spanish private operator assumed operational control in 1996 to be followed in 2002 by another Spanish operator. The key was to have joint ownership of private interests and the municipality. Service quality improved rapidly. The positive achievements were possible mainly through a better use of existing facilities and firm management that sharply reduced undocumented connections and un-metered consumption. Annual water production actually dropped from 17 to 15 million cubic meters although annual consumption rose by a third from 7 to 10 million cubic meters and the number of connections grew by 44 percent from 180,000 to 260,000. As a result, the percentage of unaccounted water decreased from 55 percent to 38 percent in five years. Both the municipality and the private partner have gained but the population most of all.

D. Industrial Pollution Control

6.33 The manufacturing sector plays an important role in Turkey’s economy and is dominated by small and medium size enterprises (SMEs). In 2006, manufacturing contributed 21 percent to GNP and accounted for 93 percent of the export value. The approximately 250,000 enterprises engaged in manufacturing employ about two million people. The top four most significant manufacturing sub-sectors in terms of value added and employment are (i) food and beverage; (ii) textile, wearing apparel and leather; (iii) chemical, petroleum, coal, rubber and plastic products; and (iv) fabricated metal products, machinery and equipment, and transportation vehicles. Especially noteworthy is the strong SME character of the manufacturing industry: More than 90 percent of manufacturing enterprises employ less than ten people, while the number of enterprises employing more than 250 people is only around 900.

6.34 Manufacturing contributes significantly to environmental pollution. The four sectors listed above are also key polluting sectors, especially in terms of water pollution. They account for 85 percent of the approximately 640 million m$^3$ of industrial wastewater generated by the manufacturing sector. Wastewater treatment ranges between 7 percent-50 percent per sector. A significant part of the un(pre)treated wastewater is directly discharged into seas, rivers and lakes. These sectors are also highest contributors to industrial waste generation, including hazardous waste. With regard to waste, TUIK reports that in 2004, 17.5 million tons of solid waste was generated by the manufacturing industry. While about 9.3 million tons were recycled through MEF-supported industrial association initiatives mentioned earlier, still an alarming 3.9 million tons were disposed into seas, lakes or rivers and 1.6 million tons onto [uncontrolled] municipal dumps.\textsuperscript{153} Government policy is to establish small industrial estates and organized industrial zones which facilitate collective pollution management. About 18 percent of all manufacturing enterprises are located in small industrial estates, 43 percent in organized

\textsuperscript{153} The rest was controlled land filled, stored on the premises of the enterprises, incinerated or disposed of by other methods.
industrial zones (OIZ). As of 2006 there were 87 OIZs in operation of which 41 had constructed a wastewater treatment plant, however not all are functional consistently.

6.35 However, the trend in sectoral composition is away from polluting industries – a factor that is advised to be taken into account in environmental management planning. Sectoral statistics on GDP and export revenue contribution in recent years provide clear indication of a trend in the Turkish manufacturing industry away from traditional low-labor-cost, low-tech industries, such as textiles, garments and leather to medium and high-tech industries, including automotive, machinery and electronics. Considering that the former are among the most polluting sectors and have tight profit margins to allow for investments in environmental protection in the increasingly competitive international market, their anticipated replacement, albeit gradual, is good news for the environment and may guide planning environmental management for the coming decades.

6.36 The main industrial environmental challenges for Turkey are in line with those that the EU has identified as directives for environmental control. The key EU Directives that apply to industry are the Integrated Pollution Prevention and Control (IPPC), the Large Combustion Plants (LCP), the Volatile Organic Compounds (VOC), VOC Emerging from the Storage and Transportation of Petroleum Products Directives, and the Directive on the Control of Major Industrial Accidents involving Dangerous Substances (Seveso) Directives. These are also, by and large, the main areas where Turkey has to focus its efforts to address industrial pollution, irrespective of its membership of the EU, although Turkey may wish to take a different time path to achieving them in the absence of an agreed plan with the EU than it would if such a plan was in place.

6.37 The overall costs of meeting EU standards on these directives are high and will cause difficulties for some sections of Turkish industry. The IPPC Directive involves integrated permitting across environmental media (air, soil, water) based on reasonably achievable pollution reduction under best available techniques rather than media specific emission standards. It applies mainly to large enterprises. The Government has already implemented two projects in the textiles and petrochemicals sectors to pilot integrated permitting. The cost of implementing the Directive is estimated about Euro 12.7 billion for the 2007-2023 period (Table 6.4). A significant difficulty in planning harmonization with the Directive lies in the lack of an inventory of enterprises that will be subject to the IPPC. The VOC Directives aim to reduce VOCs into the environment. An initial cost estimate focusing on large scale enterprises is Euro 800 million, but the actual cost is likely much higher when the large number of SMEs is taken into account. The Seveso Directive is estimated to cost Euro 160 million (Table 6.4). These costs will be largely the private sector’s responsibility.

6.38 Lack of data on the industry, short-term financial constraints and industry’s lack of knowledge on the required upgrading represent one set of constraints to implementing the program of improvements. The initial results of a survey carried out by the Turkish Industrialists’ and Businessmen’s Association among its membership of large industrial enterprises confirms this notion. It is recommended that the Government work

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154 Recent experience points to the need to an upfront integrated approach to negotiating related Directives. For example most LCP are also subject to the IPPC Directive and the National Emission Ceiling (NEC) Directive which sets a ‘national ceiling’ on the emissions of SO2, NOx, VOC and NH3 from each member state. Hence, regulators in Turkey and industry representatives should consider the requirements of the IPPC, the LCP and the NEC Directives as a package. This is especially important when it comes to considering the emission limits to be set for each installation to fulfill the LCP Directive, to ensure that the sum of all emissions do not violate the ceiling determined by the EU under the NEC Directive.
closely with industrial sector associations to develop industrial sector plans for meeting the requirements of these directives. It would be most advantageous if these plans aimed not only at estimating costs, but also at identifying barriers that each industrial sector faces in meeting the requirements and policy measures to help it overcome such barriers.

<table>
<thead>
<tr>
<th>Directive</th>
<th>Cost Estimate (Million Euro)</th>
<th>Financing Responsibility</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volatile Organic Compounds (VOC)</td>
<td>700</td>
<td>mainly private sector</td>
<td>Cost estimates likely to increase when investments to be made by SMEs are taken into account</td>
</tr>
<tr>
<td>VOC from Petroleum Storage</td>
<td>100</td>
<td>mainly private sector</td>
<td></td>
</tr>
<tr>
<td>Integrated Pollution Prevention and Control</td>
<td>12,638</td>
<td>mainly private sector</td>
<td>Detailed inventory study may result in higher cost estimates</td>
</tr>
<tr>
<td>Large Combustions Plants</td>
<td>1,187</td>
<td>largely public sector</td>
<td>Cost estimate may change depending on energy generators’ strategies and investment decisions in new and existing plants.</td>
</tr>
<tr>
<td>Seveso</td>
<td>160</td>
<td>largely private sector</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14,785</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: UCES

Another constraint is the large size of its SME sector, Turkey. This will give rise to further difficulties in improving upgrading industrial performance to meet the directives. Discussions with industry associations have indicated that these difficulties mirror those experienced in several EU counterparts:

- Lack of awareness / knowledge of environmental legislation, problems and risks
- Lack of awareness / knowledge of abatement techniques
- Lack of access to information, tools, training
- Lack of finance and human resources (time)
- Focus on short-term economies
- Environmental issues considered “non-core business”
- Reactive business strategy (not pro-active)
- No systematic environmental monitoring, reporting, documenting
- Lack of competence / sector knowledge with regulator

The problem in the case of Turkey is that the SME sector is exceptionally large, making these issues even harder to handle than in other countries.

Turkey’s present system of policy is mainly one of command and control. With regard to economic instruments, Turkey’s experience in applying these to environmental policy making has been very limited and the Ministry’s capacity to design and implement them is thin. While command and control measures remain the mainstay of environmental policy in all advanced industrialized countries, and increasing role is being given to market based or economic instruments. These take the form of charges and fees against amounts emitted or

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permits that polluters must hold but that they can buy or sell, depending on how efficient they are at reducing emissions. Turkey also could move further to a mixed system of regulation, in which economic instruments and standards work together, along with other factors, such as education, awareness raising and moral suasion. Indeed the 2006 Law provides for increased use of economic instruments. However, the government could increase its capacity to develop such instruments. At present MEF’s staff working on environmental management does not include even one economist. The Government would be advised to increase its staff capacity in this direction.

6.41 A key problem with industrial pollution control in Turkey is the inadequate level of implementation and enforcement of legislation. To address this more inspectors are needed but so is a system for evaluating the regulators. Issues with EIA, permitting, inspection, monitoring, and enforcement are discussed under the “Environmental Governance” section of this chapter, where it is clear that a stronger capacity for inspection and monitoring would be beneficial in Turkey. This is essential irrespective of what policy instrument is used, but the burden of inspection and monitoring could be reduced by adopting a system that made greater use of market-based instruments (see below). Another measure that would improve the implementation of the legislation is by monitoring and evaluating regulators’ performance. A fairly recent development in Europe is to independently monitor the performance of regulatory institutions. This monitoring of regulator performance is done at a national level and results can be used to identify best practices, average and poor performance level and serve as benchmarks for all regulatory institutions in the country.

6.42 MEF must be commended for taking the first steps for performance reviews. It is planning to introduce a scoring system to evaluate inspector performance. Accordingly, chief inspectors would score the performance of the thematic inspectors from Central MEF and PDEF inspectors and vice versa. As discussed in detail in Chapter 4, for a performance evaluation system to be successful, it is important that staff see it as fair and credible, and that it is based on clearly communicated criteria and transparent procedures. MEF may also wish to consider instituting recurring reviews of regulatory performance by independent evaluators.

6.43 In addition to strictly enforcing legislation, it is essential to recognize that different industrial sectors have different environmental concerns and they would be advised to work closely with industrial sector associations to develop tailored sets of policy instruments that address the particular barriers they face. Titled “industrial sector strategy”, this approach to public-private partnership has been applied to eleven industrial sectors in the Netherlands, including the textiles, chemicals, paper, dairy, primary metal, rubber products, and plastics sectors in which covenants have been drawn up to meet certain goals. In Turkey, the Government is advised to investigate this approach in industrial sectors whose associations are strong and have a genuine interest in adopting better practices.

6.44 A major source of expenditure that could impact the public sector is the Large Combustion Plant Directive. The LCP Directive will have a large bearing on state owned thermal power plants. The Directive aims at reducing air pollution (through SO₂, NOₓ and dust) from combustion plants with thermal inputs exceeding 50MW, by making them subject to emission limit values. The overall cost of retrofitting Turkey’s LCPs to meet the acquis was estimated at nearly Euro 1.2 billion over the 2007-2023 period. State owned thermal power plants (TPPs) make up the majority of the affected units; as a result, the public sector could face a large bill of retrofitting.
On the other hand, the Government plans to privatize TPPs in the short to medium term. International experience has shown that the mitigation of ongoing pollution is generally most efficiently handled by the new private owners in line with their overall production plan, rather than by the Government prior to privatization. The important exception is cases where the plant’s pollution is causing immediate danger to public health and the economy, such as damaging a region’s tourism prospects, and privatization is not expected to happen soon. Economic analysis should be used to justify Government spending in such cases.

6.45 More generally, as Turkey proceeds with the privatization of a large number of state-owned enterprises, it is advised to do so in a manner that makes the environmental liabilities fully transparent. The experience from the privatization experience during more than 15 years in Central and Eastern Europe and elsewhere is that incorporating environmental concerns into the process of privatizing polluting industrial enterprises can lead to both environmental improvement and higher privatization prices. Bid prices would increase since (a) bidders would apply a lower price premium for risk of dealing with unexpected environmental liabilities, and (b) a larger number of investors would bid. Indeed, experience has shown that serious international investors are sensitive to environmental issues and consider risks as a much more important deterrent to invest in a state owned enterprise (SOE) offered for privatization than known costs. Generally, risks are of two types: (i) lack of clarity on legal requirements in relation to a company’s ongoing operations and costs to meet the standards, particularly because SOEs often tend to be in persistent non-compliance with environmental requirements,156 and (ii) the risk to be held liable for hazardous waste accumulation and soil and groundwater contamination in and around the facility,157 resulting possibly in exorbitant expenses for clean-up and third-party compensation and damage on the company’s reputation. By sponsoring an environmental audit and making the results available to all bidders, governments can help reduce such real or perceived risks.

6.46 Turkey’s privatization agenda for the next 5 years includes several polluting industries, notably, 17 TPPs, more than 20 sugar refineries and several mines of the Turkish Coal Enterprise and the Black Sea Copper Enterprises. The Turkish practice of dealing with environmental liabilities during privatization is not in line with international best practice (Box 6.3). There is no clarity as to whether the state or the new owner is legally liable for past damages and there is no legal requirement for environmental due diligence (audit). The Privatization Administration (PA) has been addressing environmental problems of polluting SOEs in an ad-hoc rather than systematic manner. In a few high profile cases involving the petrochemical industry and a refinery, PA commissioned environmental audits and financed extensive mitigation and some remediation investments. However no audit was carried out in the case of a highly polluting bauxite mine and aluminum smelter complex. In general, attention paid to accumulated pollution and its effect on public health lags significantly behind emphasis on ongoing pollution. MEF is the key agency in charge of environmental management; however its expertise is not utilized in the assessment of environmental liabilities during the privatization process.

6.47 Turkey would enjoy both economic and environmental gains by following international best practice in its privatization program. Specifically it is recommended that (i) environmental due diligence (environmental audits) is made an integral part in the privatization of high and medium-risk industrial enterprises; (ii) MEF is involved in the privatization process to provide specialized technical input and oversight; (iii) policy is

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156 Pollution caused by a company’s ongoing activities, also known as “flow pollution” or “current damage”.
157 Also known as “past damage,” “stock pollution” or “legacy”
established for assigning current and future liabilities; guidelines are developed for defining the extent remediation activities should take, preferably using a risk assessment approach; and guidelines are devised for the Privatization Administration on mechanisms to incorporate them in the privatization agreement; (iv) phased compliance and remediation plans are made an integral part of privatization agreements and guidelines are developed for their design, negotiation, and monitoring and enforcement, including specification of intra-governmental division of roles and responsibilities; and (v) a pilot project is carried out to apply the abovementioned best practices to a concrete case, such as a TPP and an associated mine, or a self-standing mine.

Box 6.3: International Best-Practice for Addressing Environmental Concerns of SOEs Slated for Privatization

In Central and Eastern Europe and elsewhere in the world, environmental risks for privatized companies were successfully mitigated where (i) good baseline information was ascertained thorough environmental audit about the extent and nature of current and past environmental damage and made available to potential investors; (ii) environmental requirements for ongoing operations were clearly stipulated; (iii) the country’s legal system clearly allocated liability for past damages, such as through the privatization law; and (iv) expectations about remediation, the actions to be taken, the responsible parties, and the costs and financing of such actions are clearly set out in the privatization agreement.

Who should be liable for paying for mitigation of ongoing pollution and for the remediation of past damage, and when should these actions be taken? With regard to current pollution, by the “polluter pays” principle and on economic efficiency grounds (the new investor has better information than the state on the company’s future production plans and technology), in most cases, such investments should be carried out by the new owner after the privatization transaction according to a phased plan included in the privatization agreement. The exception where state intervention prior to privatization is justified is when pollution from the SOE constitutes an immediate and significant threat to public health, vital ecosystems or the regional economy. An economic cost benefit analysis should be used to determine the decision, as in a recent case of a lignite fired thermal power plant in Kosovo.

In the case of past damages, the “polluter pays” principle dictates that the state, as the owner of the enterprises at the time when the damage was caused, should fund its remediation. Stating this clearly in the privatization law reduces the risk premium by which investors reduce price offer prices. Actual remediation works are best carried out by the new owner after the transaction according to a remediation plan included in the privatization agreement. The state can use one of several financial instruments to pay for the remediation. Other key concerns to settle by means of the privatization agreement are the extent of remediation (“how clean is clean enough?”) and how to handle residual risks (i.e., past damage unknown at the time of privatization and third party claims). Finally, successful handling of environmental issues during and after the privatization process requires close cooperation between government agencies in charge of privatization and of environmental protection.

E. Nature Protection

Turkey is one of the most biologically diverse countries in Europe. Possibly as much as 30% of Turkey’s plant species are endemic. These include many wild relatives of important domesticated species, such as wheat, barley, chick peas, lentils, cherry, pear and apple. Three Global Biodiversity Hotspots (the Mediterranean basin, the Caucasus Mountains, and the Irano-Anatolian hotspots) are found partly within Turkey’s geographic borders.
There are a large number of Important Bird Areas found in various wetlands across the country, and these are of crucial importance for migratory birds. Turkey’s biodiversity also provides direct economic benefits especially to local communities engaged in sustainable production of plant resources, such as bay leaf and chestnuts.

6.49 **Turkey has already taken the first steps to develop and introduce principles of nature conservation which are consistent with emerging global best practices.** With support from the Biodiversity and Natural Resources Management Project, the General Directorate of National Parks and Nature Protection has introduced internationally accepted best practices for protected area planning and management in a number of priority sites, and is providing support for replicating this exercise in around a third of Turkey’s network of natural and national parks. These best practices, derived from guidelines from the World Commission on Protected Areas, recognize the diverse challenges which come from efforts to conserve biodiversity on the one hand, while more fully involving local communities in the use and management of natural resources on the other. The Biodiversity and Natural Resources Management Project has financed specific conservation initiatives derived from participatory management plans, piloted a scheme of small grants to support local nature protection activities, and strengthened the General Directorate’s capacity for protected area management.

6.50 **In spite of these measures Turkey still has a long way to go.** Only around 1.6 percent of Turkey’s land area is formally protected under World Conservation Union protected area categories and many of these areas lack comprehensive management plans or the institutional capacity for management. On average, EU countries (with far lower rates of species endemism or diversity) maintain nearly 4 times as large a proportionate area under formally protected status (as national or natural parks), suggesting that the bulk of the critical habitats in Turkey actually lie out of the existing protected area network (Figure 6.1). The EU target for bringing areas into the Natura 2000 network is around 15 percent of the land area by 2010; this includes land both inside and outside of formally protected areas. Furthermore, of MEF’s staff of more than 4,500, fewer than 2 percent have any formal training in biology, botany, or ecology. Yet these skills are essential to understand how complex ecosystems operate so they can be better managed. These skills also need to be complemented by skills in economics, the social sciences, archeology, and participatory planning, to best capture the potential of protected areas in the planning and management process. Coordination among institutions involved in nature protection could also be improved.
Further programs to protect Turkey’s biodiversity are recommended to be structured around the implementation of the EU habitats and birds directives. These two directives are highly relevant to protecting Turkey’s biodiversity and are advised to be implemented irrespective of its EU obligations. They require a country both to establish networks of sites of importance for nature conservation (using both species and habitat-specific criteria) and to put in place management plans and measures for managing this network of sites (so-called Natura 2000 sites). Sites may fall outside of conventionally protected areas, such as natural and national parks, and so will require the development of management and compensation systems for private land owners, which in turn will require the development of paying mechanisms, management, and oversight.

Turkey will have four significant challenges in implementing these two directives. Actions required include:

- **Greatly increasing the area with formally protected status.** This will require both the development of the tools to characterize areas of special interest for nature protection (including good surveys of flora and fauna).
- **Identifying critical natural habitats which fall outside of formally protected areas, and putting in place the incentives and management structures for non-state management of these sites.** Using tools such as agro-environmental programs. In Italy, for example, a large number of nature reserves, natural parks, and monuments are managed by local community groups, NGOs, and other civil society institutions – sites which gained formal protection because of the initiative of these groups. However the current policy and legal framework in Turkey does not provide scope for this type of quite progressive protected area management.
- **Incorporating nature protection more fully in other sectoral policies and legislation.** Wetland conservation, for example, is a critical theme of the Water Framework Directive, but Turkey’s water policy has meant that significant habitat losses have accompanied its longstanding programs of wetland drainage and irrigation (such as in the Sultan Sazligi national park). The various Directives on Environmental Assessment have special relevance for activities in Natura 2000 sites, and much work would be necessary to strengthen the capacity for implementing these directives. Furthermore, landscape character assessment and identification studies should be done for Natura 2000 sites.
- **Significantly increasing MEF institutional capacity and skills needed to plan and manage protected areas.**

Concrete actions for implementation would also be useful. Government has indicated its intention of completing the process of transposition, and of launching activities which are compliant with the Habitat and Birds Directives by 2009. Key specific goals are the development of institutional capacity and stakeholder awareness, the identification and development of management plans for Natura 2000 sites, and the development of a biodiversity monitoring network. In institutional terms MEF holds overall responsibility for the coordination of nature protection activities. MARA, the Ministry of Culture and Tourism and the Undersecretariat of Foreign Trade holds various responsibilities with regard to the protection and trade of wild flora and fauna subject to the CITES Convention, with MEF as coordinator. At present MEF’s institutional capacity for implementation of the Birds and Habitats Directives is very weak: out of MEF’s staff of 4,500, fewer than 2 percent have any
formal training in biology, botany, or ecology. Furthermore, coordination among institutions involved in nature protection is inadequate.

6.54 The cost estimate for the implementation of the key directives is likely to be significantly underestimated – UCES suggested that the costs for this period would total around Euro 264 million (around Euro 16.5 million per year). This is likely to be a considerable underestimate. Other studies, such as the Ministry’s Sector Approximation Strategy in Nature Protection estimated the cost at Euro 1.7 billion for the 2011-2024 period (around Euro 130 million per year) – more realistic, but still perhaps an underestimate, given the expected higher costs of putting in place measures for nature protection outside of the system of national and natural parks. An indication of this underestimate is provided by the actual costs incurred in other countries, which suggest costs of around €75 per ha. Based on this, if Turkey succeeds in including 5 percent of its land in the Natura 2000 network, the annual operating costs will be around €290 million per year.

F. Environmental Governance

Policy and Legal Framework

6.55 Both UCES (para. 7.1) and the 9th Development Plan (2007-2013) emphasize municipal and industrial pollution control and sustainable resource management as important factors for international competitiveness. Both policy documents adopt some of the key EU environmental management principles, namely the “polluter pays” principle, cooperation between the public and the private sector, increasing public awareness and participation in environmental protection, and cleaner production.

Institutions and Their Functions

6.56 Environmental functions can be broadly divided into three categories: Policy-based, regulatory based and provision of services. Since provision of services was discussed at length in an earlier section, this section will focus on policy- and regulatory-based functions and on provision of environmental data to the public.

6.57 The policy functions of different levels of government include:

- Development of environment related plans and strategies
- Development of laws and regulations, and other policy instruments (for example, economic instruments, land use plans)
- Consolidation of environmental information and data for government decision making
- Coordination of environment across other government functions
- Coordination of government actions under international environment treaties
- Promotion of environmental awareness
Environmental policy functions are carried out at the central level, with MEF being the lead organization. The Supreme Council of Environment, which is chaired by MEF and composed of selected relevant government agencies, representatives of professional chambers and (by invitation) other civil society organizations, has the task of ensuring government level coordination of environmental policy, setting overall policy direction, and deciding on membership in international conventions. The State Planning Organization (SPO) plays an important role through medium-term development and annual budgetary investment planning.

Regulatory responsibilities are shared by Central MEF; provincial governorates, which house MEF’s provincial directorates (PDEFs); and municipalities. Local Environment Boards (LEBs) which consist of provincial branches of government agencies, the gendarmerie, the mayor, and heads of provincial chambers of agriculture, trade and industry, provide consent to Governors’ permit decisions and may request inspections among others. PDEFs report both to Governors and to Central MEF, function as secretariats to LEBs, carry out inspections, and provide technical input to the Governors’ permitting and enforcement decisions, among other duties.

The regulatory functions of these agencies on the other hand consist of:

- Assessment of environmental impacts, strategic environmental impact assessment
- Management of natural assets (for example, biodiversity and natural resources)
- Environmental permitting/licensing
- Monitoring (ambient environment and facilities)
- Inspection
- Environmental enforcement
- Consolidating environmental information/reporting

Unlike Turkey, most if not all EU member states have developed organizational structures to separate environment policy from the regulatory functions. The benefit of this separation is that it helps manage conflicts of interest and allows decentralization of regulatory functions where possible. One of the common solutions has been to establish an environmental protection agency (EPA) to coordinate environment regulatory functions and to report to the European Environment Agency environmental data across various environment media (i.e., air, water, soil, waste, nature protection, and noise) in a coordinated manner. About 75 percent of EU countries have an EPA listed as a separate institution from the environment ministry in their organizational structure. In the Central and Eastern European states, 60 percent created EPAs in the pre-accession process. The remaining 40 percent developed other solutions to separate key regulatory functions, such as creation of independent IPPC permitting and EIA bodies. Not all EPAs have full regulatory functions and some have only data reporting, collection, and sharing responsibilities. It is encouraging that the Government of Turkey is considering establishing central and regional EPAs as an option to improve environmental management.

Whether in the current or in separated organizational arrangements, local bodies tasked with regulatory functions could be strengthened. At present time, PDEFs’ employ about 700 people, of which about half work on forestry. Furthermore, the staffing levels of individual PDEFs vary significantly with Istanbul having the largest number (about 80 dealing only with environmental management) and some cities having a
single staff member working on both environment and forestry issues. The recruitment and training of 100 new graduates with various environmental specializations to be employed in PDEFs is a first step in the right direction. More skilled staff would be instrumental as illustrated in the section on environmental inspection below.

6.63 **Environmental impact assessments** (EIAs) are coordinated by MEF’s General Directorate for Environmental Impact Assessment and Planning, and regulated by the By-law on EIA which was revised in 2003 to be in harmony with the EU Legislation. The EIA procedure consists of screening, scoping by an inter-agency EIA Committee, public consultation, review and evaluation of the EIA report by the EIA Committee, and final decision of the EIA by MEF. Most steps in the EIA process would involve the following:

- The public consultation process could be strengthened through the use of broader range of means of communication for publicizing consultation meetings and EIA documentation; publication of the final MEF decision on a project’s EIA; simplifying the language of EIA documentation provided to the public to make it accessible to the public; and increasing the lead times between public consultation meetings and their announcement.

- Detailed guidance on the exact steps of the EIA process would make the process much more straightforward for project proponents. Guidelines could be posted on the web and be available from Governorships detailing in a step-by-step manner what documents are to be submitted to what office and when, what processing fee to pay when and through which means would help avoid confusion and unnecessary costs to the project proponent.

- Transposition and implementation of the Directive on Strategic Environmental Impact Assessment would help integrate environmental concerns into economic sectors through assessment of the environmental impact of plans, programs and policies.

- Explorations for petroleum, geothermal and mineral resources could be made subject to EIA as they can be polluting and disruptive to the natural environment;

- Trans-boundary consultation regarding projects with possible cross-border impact is required by the EU EIA Directive, but not included in the current Turkish EIA Law.

6.64 The responsibility of **environmental permitting** of industrial enterprises and municipal water, wastewater and waste treatment facilities are shared among the MEF General Directorate for Environmental Management (GDEM), governorates, and municipalities/metropolitan municipalities (or by extension SKIs). Local stakeholders have a say in the permitting procedure through LEBs. While some progress has been made in this area in recent years, some key shortcomings of environmental permitting relative to European practices remain:

- **Permits are still issued for emissions into individual environmental media, such as air and water, rather than in an integrated manner.** The latter is a common approach in Europe and other advanced industrial countries and has the advantage of preventing cross-media transformation of pollution. Media-based permitting is not only not ineffective in terms of pollution prevention but is also cumbersome and time consuming for enterprises and open to abuse. In the EU, large plants are subject to integrated permits under the IPPC Directive which are based on best available techniques and seek continued improvement in environmental impact rather than emission limit values or ambient concentrations. Turkey
has not yet adopted this IPPC approach. However, first steps towards integrating permits are taken in the form of a pilot in which MEF assigned teams of media-specialist permit writers to selected large industrial plants. The individual media-based permits were thus issued at the same time and took into account the plants impact on other media. The Government would be advised to intensify training activities in integrated permitting, while accepting that a considerable transition period will be needed for achieving full compliance.

- **SMEs often face numerous and sometimes overlapping permitting requirements.** Commendably MEF intends to introduce a one-stop procedure for all environment permits, a practice that is being adopted in several countries. For example, Germany and the Netherlands have identified industrial sectors and categories of companies that are uniform in type of operations and normally are not heavy polluters, to develop fully standardized permits or even eliminate the need to apply for a permit and prescribe the sector’s environmental requirements by decree and refer to environmental and technical standards.

- **In addition to the environmental permits, businesses classified as unsanitary, are required to obtain a license from municipality.** The relevant by-law defines “unsanitary businesses” as “enterprises that during their operation exert or are likely to exert biological, chemical, physical, psychological and social damage on those around them or may cause pollution of natural resources.” Such license requirements exist in some countries, such as the UK, and aim to control environmental and public health nuisances that are not part of the formal environmental permitting-inspection and monitoring system and are appropriately issued by the most immediate local administrative agency. However, in Turkey, the definition in the law of “unsanitary enterprises” and anecdotal evidence suggest that in practice the license may constitute a regulatory duplication. The Government would be advised to review the relevant legislation and practice carefully to avoid such duplications.

- **Regulatory flaws (coupled with weaknesses in enforcement) have resulted in some polluting enterprises, such as thermal power plants, operating without permit.** New power plants were issued a temporary permit for one year after which they were required to obtain a permanent permit. During this year their emissions were to be tested while operating at full capacity. However, operations at full capacity occurred rarely if at all, resulting in the plant never obtaining a permanent permit. In fact, almost all thermal power plants in Turkey operate without a proper permit. Given economic pressures, there are a number of thermal power plants that continue to operate, some of them emitting pollutants at levels that constitute health hazards. The recent amendment to the by-law which reduces the monitoring period to two months fails to completely resolve the problem.

6.65 **Environmental inspection** activities are regulated by the By-law on Environmental Inspection which was adopted in 2002. The Department for Monitoring and Inspection in MEF has overall coordinating responsibility for environmental inspections, while execution responsibility is shared among this Department, PDEFs, municipalities / SKIs and Specially Protected Areas Administrations. Environmental Inspection has been identified by national and international observers as one of the key weakness in the environmental management system in Turkey. Key weaknesses are.
- **Overlapping or unclear institutional responsibilities.** In certain areas, such as industrial wastewater discharges in metropolitan municipal drinking water basins, there is a lack of clarity as to which institution, MEF, PDEF or the metropolitan municipality is in charge of inspection. Experience shows that inspection, like other regulatory functions, is best delegated to the lowest administrative level that is closest to enterprises to be inspected. Hence in the above example MEF’s decision to amend the By-law on Water Pollution Control to delegate inspection responsibility to metropolitan municipalities is well-conceived.

- **Insufficient number of environmental inspectors.** There are 7 full time principal environmental inspectors and 170 environmental media specialists in central MEF. They allocate around one week a year of their time to inspections. Of PDEFs’ approximately 800 staff about half work on environment issues, and spend about 30 percent of their time on inspection work. This yields 132 as the “effective” number MEF’s environmental inspectors.\(^{158}\) A rough estimation of number of inspectors is carried out using the Balkan Environmental Regulatory Compliance and Enforcement Network (BERCEN) guidelines that high, medium and low polluting enterprises require 7, 1 and 0.14 workdays per enterprise per year, respectively. Assuming that, of Turkey’s 250,000 manufacturing enterprises, roughly 5,000 are high polluters (subject to IPPC or similar regulations), 20,000 medium polluters and the rest low polluters, the total number of full-time inspectors needed is estimated at 577 (Table 6.5). This indicates a need for a significant increase in the number of inspectors.

<table>
<thead>
<tr>
<th>Polluting level</th>
<th>High (&gt;50 employees)</th>
<th>Medium (10-49 employees)</th>
<th>Low (&lt;10 employees)</th>
<th>TOTAL</th>
</tr>
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<tbody>
<tr>
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<td>20,325</td>
<td>221,539</td>
<td>246,899</td>
</tr>
<tr>
<td>2 Frequency of on-site inspections (no/year)</td>
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<td>0.5</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>3 Frequency of administrative inspections* (no/year)</td>
<td>3</td>
<td>1</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>4 Days / on-site inspection</td>
<td>2</td>
<td>1</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>5 Days / administrative inspection</td>
<td>1</td>
<td>0.5</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>6 Inspector workdays per enterprise</td>
<td>7</td>
<td>1</td>
<td>0.14</td>
<td></td>
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<tr>
<td>7 Total inspector workdays</td>
<td>35,245</td>
<td>20,325</td>
<td>31,015</td>
<td>86,585</td>
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<tr>
<td>8 Effective days per inspector / year</td>
<td></td>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>9 Number of inspectors</td>
<td></td>
<td></td>
<td></td>
<td>577</td>
</tr>
<tr>
<td>10 Number of on-site inspections</td>
<td>10,070</td>
<td>10,312</td>
<td>44,308</td>
<td>64,690</td>
</tr>
</tbody>
</table>

*Administrative inspections are desk reviews of compliance of documentation submitted by the enterprise with requirements laid out in legislation.

- **Need for training in integrated permitting and inspection.** Assessing pollution levels in an integrated level based on Best Available Techniques (BAT) as determined for each industrial sector is more challenging than using prescribed discharge concentrations. Hence there is a substantial need to train existing and newly recruited environmental specialists to become...
effective environmental inspectors. MEF plans to train PDEF environmental specialists (100 in 5 provinces in 2007 and 200 in 10 provinces in 2008), which is a promising start.

- **Insufficient number of inspections.** Based on BERCEN guidelines and assumptions made on level of pollution from 250,000 manufacturing enterprises, the annual number of on-site inspections needed is estimated at 65,000. In 2006, MEF’s Monitoring and Inspection Division carried out only 25 planned, integrated inspections. The plans for 2007 and 2008 include 75 and 125 inspections, respectively, still far below the required number. The number of random site inspections carried out by PDEFs and municipalities is unknown, but based on low number of inspectors believed to be significantly below the appropriate level. MEF plans to work together with PDEFs in increasing the number of planned inspections is a step in the right direction.

- **Insufficient coordination and data flow between Central MEF and PDEFs.** PDEFs are required to prepare inspections reports. However, these are often shelved in the PDEF offices and not shared systematically with Central MEF. Hence they do not feed into a long term plan for compliance monitoring. MEF intends to establish a centralized database with permitting and compliance information so as to be able to gauge trends and aid inspection planning. European experience suggests that monitoring systems are most practicable and hence useful if they use simple indicators for which information is readily available. Over-designed systems tend to be costly and difficult to maintain.

- **Inadequate guidelines for inspectors.** Criteria for programming inspections, such as frequency, prioritization and quality are not spelled out in the by-law on Environmental Inspection. Furthermore, manuals to guide on-site inspection are not user-friendly. However, MEF’s cooperation with the EU Network for the Implementation and Enforcement of Environmental Law (IMPEL) to update these regulations and develop manuals following European best-practice will likely be highly beneficial.

6.66 **Enforcement is another weak link in the regulatory system that the Government intends to address.** Enforcement authority is mainly held by Central MEF and Governorates. Better enforcement will involve the implementation of the tougher sanctions for non-compliance introduced by the Amended Law on Environment. This necessitates not only increased staff capacity (number and skills) but also political will. The latter in turn depends on popular demands for better cleaner environment. This demand will continue to grow as the economy continues to grow and as the public’s awareness on linkages between environmental pollution and public health issues. For effective enforcement, it is crucial that environmental decision making is transparent, information is shared with the public and public participation is encouraged.

6.67 **Environmental monitoring.** Progress has been made in ambient air quality monitoring through the installation of a network of monitoring stations in 36 provinces. However, water quality monitoring remains highly fragmented among DSI, SKIs and MARA and data sharing is poor. Emissions discharge data are submitted to MEF or PDEFs but not compiled in a database easily accessible to interested parties. MEF has made some progress in tracking certain types of industrial waste generated and recycled. A centralized pollution registry that includes both ambient quality and plant specific pollutant data would significantly help overcome coordination problems and serve as an enforcement tool. The UK Pollution Registry discussed below is a good practice example.
Providing environmental data to the public. In recent years progress was made in sharing with the public data on local ambient air quality. Data on two key pollutants, SO$_2$ and particulate matter (PM$_{10}$), are available both on the MEF website and electronic boards in prominent areas of 36 cities. Further progress is possible and would be useful. Some EU countries made company specific permit, pollution and compliance information public. Access to such information empowers the public to exert pressure on enterprises for improved compliance. A good example is the UK Environment Agency’s Pollution Inventory, an internet based database that can be sorted by geographical location, type of industry, type of pollution and compliance performance.\footnote{http://www.environment-agency.gov.uk/business/444255/446867/255244/?version=1&lang=e} Most data are entered by enterprises. In addition to informing the public, the Registry meets regulators information needs and helps the Government meet national and international commitments and obligations for reporting.

The cost to the Government budget of reforming and improving the capacity of governmental institutions to effectively implement the reforms described above is not negligible. Given the benefits involved, this is however a price worth paying. MEF estimated the cost of the institutional aspects of implementing four key EU directives, IPPC, LCP, Seveso and VOC, at Euro 48 million for the period 2004-2015. Two main line items in this cost estimate were staff salaries (about Euro 31 million) and technical assistance, including training, information technology consultancies, drafting of by-laws and regulations, investment project development for SOEs, and preparing strategies and plans (about Euro 17 million). EU and bilateral grant funds may be available for some of the activities in the latter category.\footnote{Ministry of Environment and Forestry. An integrated environmental approximation strategy for the Republic of Turkey. Sector approximation strategy in the industrial pollution control sector, April 2004}

Conclusions and Policy Recommendations

As a fast industrializing and growing country Turkey would benefit from ensuring that its natural environment is adequately protected and the quality of the ambient air, water and soil are acceptable to its citizens. This will require significant upgrading of the current environment. Much of the focus in recent years has been in terms of the costs of meeting the directives for environmental management as specified under the EU’s environmental acquis. This has provided an impetus and drive to an important priority. But even in the absence of this framework, Turkey is advised to seek to make many of the changes to its system of environmental regulation that has been under discussion in the EU context.

More specifically previous studies have shown the following:

- Drinking water upgrading is highly beneficial and urgently needed, especially in smaller municipalities.
- Air quality improvements generate high net benefits and are advised to be initiated, although it will take some time to implement the proposed program.
- Solid waste management urgently requires closing illegal dumps and developing modern sanitary new ones. Particular problems arise in dealing with hazardous wastes. A program of rapid upgrading of such facilities in the context of an integrated waste management system is a priority.
Wastewater treatment is a lower priority in terms of the benefits generated and the government is advised to reflect that in its investment program through a phased approach and prioritization according to benefits.

Turkey has valuable natural resources that deserve protection and that are currently inadequately guarded. As custodian of these assets for future generations, the government needs to give higher priority to defining more sites for conservation and making the money available for this purpose.

6.72 A key message in this chapter is that the costs of making these improvements can be significantly reduced by undertaking the right policies. Specifically the recommendations are as follows:

- In the areas of municipal services (water supply, wastewater and solid waste) the government could consider demanding greater accountability from the municipalities, that it discontinue cross-subsidies of one service with another or from one municipality and that it make new arrangements for providing services to smaller towns and cities explored, to take advantage of economies of scale.

- Central government may consider moving to a more targeted program of support introduced when essential services are unaffordable to the consumers.

- Design of new systems could be mindful of future reductions in consumption and waste generation and the risk of overinvestment in treatment facilities.

- New models of PPP could be encouraged where possible, possibly based on Output Based Support to the private supplier.

- In the case of emissions from industry, the government is advised to look to initiate an aggressive program of information and training in more environmentally friendly methods of operation, especially for SMEs. Where possible agreements with industry through covenants to meet higher environmental standards could be explored.

- At the same time, stricter standards could be introduced gradually, with stricter enforcement to ensure better compliance with new standards. This will require more and better trained staff and more resources (see below).

- With respect to the large ongoing privatization program the government is advised to consider integrating the process of environmental auditing and legal determination of liability prior to sale, which is not always the case at present.

- In the case of nature protection, much more land area needs to come under one form of protection or another. This will require existing users of such land to be compensated, which can be costly. There is also an urgent need for increasing the number of MEF staff with skills relevant to protected area planning and management. While this will place an additional demand on budgetary resources, it should be considered a priority, given Turkey’s rich biodiversity in need of protection.
Finally there is the issue of environmental governance. The chapter identifies a number of areas for improvement. The following are areas where the government may wish to consider:

(a) Separating the policy and regulatory functions through the establishment of an Environmental Protection Agency.
(b) Addressing weaknesses in the system of Environmental Impact Assessments.
(c) Adoption of an integrating permitting system instead of separate ones for each media (air, water, land).
(d) Simplification of process of environmental permitting, especially for SMEs.
(e) Eliminating overlapping and unclear institutional responsibilities in regulation between MEF, PDEF and the metropolitan municipalities.
(f) Increasing significantly the number of environmental inspectors and the number of inspections they carry out and proving them with better guidance and training.
(g) Enforcing the environmental regulations more forcefully.
7.1 With its sizable and diversified food and agricultural sector, Turkey enjoys strong competitive advantages over many of its international competitors. The Turkish food and beverage sector contributes about 9 percent to the GDP, yields a positive trade balance with an export/import coverage ratio of 257 percent, and secures over 400,000 jobs, particularly in rural areas (MARA Survey 2004, quoted by USDA Foreign Agricultural Service, 2007)\(^{161}\). Yet, requirements in international trade continue to become more demanding and, if not adhered with, might lead to decreased market shares and thus negatively impact employment in the agri-food sector. Recent outbreaks of animal and plant diseases pose risks to both consumer trust and public health. All these perspectives support the need for continuing efforts to further increase the focus on food safety on the domestic policy agenda. The European Union – as Turkey’s main trading partner and through the pre-accession dialogue and financial support – also reinforces the importance of Turkey’s commitment towards strengthened legal and institutional framework in the food safety field. An integrated approach, that would cover all the stages of the food chain, emerges as the most effective way to boost competitiveness, secure employment and deliver safe food to consumers.

7.2 The domestic food safety situation in Turkey is unsatisfactory. Although no full analytical assessment of foods safety hazards in Turkey is available, the World Health Organization (WHO) benchmark data\(^{162}\), rates Turkey lower than any European Union (EU) member country, even lower than neighboring Commonwealth of Independent States (CIS) countries, except Azerbaijan. Health hazards related to unsafe food cause high economic costs, because of income foregone due to limited competitiveness of food products on national and international food markets, due to diseases and deaths\(^{163}\), and due to the costs of medical treatment.

7.3 The unsatisfactory food safety outcome seems basically related to hygiene practices in the food chain but also in households. Efforts to improve food safety are advised to be based on a good analysis of incidence of food borne diseases, analysis of their causes, and targeted measures to reduce hazards. Creating awareness, education, training, and preventive measures throughout the supply chains will most likely be the most important elements of an improved foods safety policy. The lead in all the above analytical and advisory activities is advised to be taken by the public sector.

\(^{161}\) However, data may vary by source. In the food sector only (beverages and tobacco excluded), the National Statistics Institute reports 250,000 employees (in 2002), whereas the Trade Union of the Employers in the Turkish Food Industry estimates 750,000.

\(^{162}\) WHO benchmark data on diarrheal diseases measured in DALYs per 100,000 inhabitants as a measure of the food safety situation. DALYs for a disease or health condition are calculated as the sum of the years of life lost due to premature mortality in the population and the years lost due to disability for incident cases of the health condition. It is a measure of the health gap between existing conditions and an ideal state in which every person born in a country lives without disease to the age indicated by his or her life expectancy. WHO DALYs don't provide comprehensive coverage of zoonotic diseases.

\(^{163}\) Multiplying the total loss of “healthy years” (DALYs) by the average annual wage of USD 5,500 in the manufacturing sector (ILA Laborsta for 2001) reveals a staggering annual economic cost of USD 1.3 billion. This rough approximation includes cost regardless of whether people affected are economically active or not, but it does not include medical treatment costs. A separation of causes between food and water borne health hazards is not possible since both are closely related.
7.4 The public sector plays a central role in providing incentives for and enforcement of improvements of standards in the food chain. While food safety improvements first and foremost require investments into upgrading food supply chain facilities, potential investment support programs and the enforcement of standards and requirements are among the most important incentives to be provided by the public sector. For larger, more integrated food processing companies, the demands of international markets and related liability risks are among the dominant incentives for compliance. For the many smaller firms producing for domestic markets better surveillance, detection, and inspection capacities often are found to be most effective.

Box 7.1: Food Safety - A Multi-Stakeholder Policy Area

At international, national, and regional levels, Food Safety Policy extends substantially beyond the agricultural policy circuit. In 1983, experts convened by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) came to the conclusion that “illness due to contaminated food is perhaps the most widespread health problem in the contemporary world” and “an important cause of reduced economic productivity”. In 1992, the United Nations (UN) Conference on Environment and Development acknowledged that “food was a major vehicle for the transmission of environmental contaminants – both chemical and biological – to humans”, and advised countries “to take measures to minimize these threats” (cited from Kaferstein, 2003). The World Trade Organization (WTO) responded in 1995 to the adverse impacts of national food safety regulations on international trade and competitiveness by setting out basic rules to ensure increased transparency and equity. The multiple causality- and impact- dimensions of food safety efforts thus go beyond a pure agricultural perspective on food and increase the complexity of the related policy-making. Best practices combine integrated approaches (covering all stages of the food chain) and participatory approaches (bringing together government, producers, and consumers).

7.5 Food safety has become a stand-alone policy field in all countries seeking enhanced international (particularly European) trade integration. Responding to increasing public concern, food safety has evolved from a collection of dispersed sectoral regulations into a stand-alone policy. Food safety policies have consumer health protection as their ultimate goal and priority, whereas other food safety aspects are subordinated to achieving this aim. Raw materials, farming practices, and food processing activities are increasingly assessed and monitored with fully taking into account their environmental implications, and food requirements apply whether the food is produced domestically or imported from third countries.

7.6 From a public health perspective, spreads of several animal and plant diseases in Turkey and their impact on human health demand an increased focus on food safety. Turkey has been challenged with various animal and plant diseases over the last years: Foot and Mouth Disease (in Anatolia), bovine tuberculosis and bovine, ovine and caprine brucellosis, anthrax and PPR (peste des petits ruminants). Although there is limited evidence about how these diseases affect public health, existing estimates\textsuperscript{164} raise concerns. Among the plant diseases, aflatoxin (particularly AFB1) seems to be one of the most important sources causing threats to human health. The mycotoxin can be present especially in hazelnuts, pistachios, dried figs and dried grapes, and can also be transmitted to other food products (e.g., milk) through contaminated animal feed. For humans, Aflatoxin B1, even at extremely low levels, causes cancer of the liver and is genotoxic. Moreover, the outbreaks of avian influenza were particularly strong and also impacted on public, i.e., human health. Bird flu was first detected

\textsuperscript{164} There are around 350 annual cases of Anthrax in humans, between 50,000 and 100,000 cases of brucellosis and sero-prevalence ranging from 1%-5% (i.e., 0.7-3.5 million persons), 0.3% tapeworm carriers (i.e., 210,000 persons), 2,500 cases of Leishmaniosis, and numerous cases of salmonellosis and campylobacteriosis (Oskam, A. et al., 2004).
in Turkey in October 2005 and it spread rapidly over the following months. More than 2.5 million birds have been culled since the first occurrence of the disease. The infection was also transmitted to humans, affecting 21 people in total and causing 6 deaths. These cases were the first occurrence and death in humans from the H5N1 strain of avian influenza outside of Asia.

7.7 From a competitiveness perspective, improvements in the legal and institutional food safety policy framework are crucial to maintaining and enhancing Turkey’s position in national and international agri-food markets. Turkey’s food sector is sizable and diversified, benefiting from a significant and varied domestic supply of raw agricultural products and from a large domestic market. A considerable part of the Turkish food production (including beverages, excluding tobacco) is exported (6 percent), with the EU representing the main trade partner (45 percent). For several agri-food products, Turkey ranks among the prime ten exporters worldwide (e.g., first place for hazelnuts, cherries, apricots in 2004).

7.8 The short- to medium-term compliance costs for producers and processors are high, but the medium- to long-term costs of non-compliance might be higher. Bridging the food safety regulatory gap is crucial for enhancing competitiveness and hence for supporting growth and rural employment in the longer run:

- First, it helps counterbalance a potential erosion of the existing competitiveness. Changes in food demand patterns will put additional pressures on domestic producers. Given the large young population in Turkey, consumers’ preferences are expected to gradually shift towards Western food and healthier or more innovative products. More demanding food safety standards on domestic processors would help prevent them losing market shares against foreign producers.

- Second, it helps offset a potential future decline of market support to producers, as a result of reduced trade protection, during the alignment of Turkey’s external agricultural tariffs to the comparatively lower tariffs of the EU. As the Turkish market becomes increasingly open to foreign competition, domestic producers will need to reshape their competitive edges and increase emphasis on product quality and safety. A strong regulatory and institutional framework would catalyze and even streamline such transformation.

- Third, it boosts competitive advantages by addressing limiting factors. For instance, fragmented production and market structures for agricultural products result in agricultural commodities whose quality differs widely in time and place. An integrated (“from farm to fork”) approach on food safety to also cover farming practices and products would harmonize the quality of these raw materials and would reduce the additional costs incurred by food producers, and enhance their competitive position.

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165 The estimated expenditures in the food and beverage sector went up to about USD 60 billion in 2005.
166 The Turkish population counts 73 million inhabitants (2005).
167 According to HS 2002 tariff classifications, the first 23 chapters include processed and unprocessed food products (excluding tobacco), and based on this classification, processed and unprocessed food exports are approximately 10% of total exports, processed food products alone constitutes 5% of total exports.
168 58.5% of the total population is made up of people up to 29 years old.
Finally, an EU approximation perspective further increases the importance of food safety on the domestic policy agenda. Part of the acquis communautaire, the EU provisions on food safety, veterinary, and phytosanitary issues form a distinctive chapter in Turkey’s accession negotiations with the EU. They are subject to mandatory transposition into the Turkish legislation in the ongoing screening and negotiation process. The initial stage of the analytical examination of the acquis (screening) was completed in October 2006, whereas follow-up screening and regular reports from the European Commission (EC)\textsuperscript{169} will monitor progress in aligning to the EU requirements.

Turkey’s enhanced market integration requires mobilization of significant resources to support food sector’s adaptation towards better coping with competitive pressures and market forces. Improved compliance with the high food safety standards of the EU alone will enhance opportunities for Turkish food processors to supply a Single Market of over 600 million consumers. However, benefits will not unfold fully unless competitive bottlenecks are addressed in advance:

- Turkey’s agri-food sector is dominated in number by (semi-)subsistence farms and by small and medium-sized processors who face technology and capacity utilization problems.
- Cooperation between the agricultural sector and the food industry remains weak, which is detrimental both to their economic performance and to the improvement of food safety across the food chain.
- Food-processing establishments are largely unprepared to meet the EU hygiene and public health standards and thereby prevented from placing their products on the EU market (that will also include Turkey’s, after the accession).

Nevertheless, sectoral adaptation requires significant resources. While the new Instrument for Pre-Accession Assistance/Rural Development (IPARD) can only partially cover these funding requirements, Turkey will be required to complement the EU pre-accession support through public and private national efforts and through other international donors’ assistance (including the World Bank).

The assessment of related funding needs, however, requires a more detailed evaluation of costs associated with a national food safety improvement program. Such evaluation cannot be conducted based on currently available data. Recent EU entrants and their food safety investment programs, however, might serve as valid reference. For the public sector, tentative costs are relatively easy to assign to the various activities of legal approximation and capacity building. However, for the private sector, cost estimation is seriously hampered for several reasons. First, Turkey lacks adequate statistics with regard to the number of operators active in the food industry. Since many of the producers are not registered, it can be assumed that the sectoral costs of compliance are much higher than the ones that can be derived on the basis of the existing data. Second, the multifaceted aspects of food safety requirements in conjunction with the diversity of activities pursued by agri-food enterprises would require a more comprehensive and detailed analysis.

\textsuperscript{169} Initiated in 1998, prior to Turkey’s becoming a candidate country to the EU in 1999.
7.13 During the EU accession period, priority focus is suggested to be placed on two areas:

- Improvements that are beneficial under all three perspectives discussed above. Examples are improvement of capacities, processes, and funding mechanisms in control and inspection, capacity upgrades and accreditation in the laboratory system, and establishment of incentives for an upgrading of private sector performance in handling food safety and quality; and

- Improvements that represent requirements specific to EU-internal procedures (e.g., those related to Integrated Administration and Control System, IACS) or to market segments that are of limited importance for Turkey's agri-food sector (e.g., novel foods). Turkey's benefit from implementing them would be predominantly related to the EU accession process. However, during the pre-accession phase such undertakings are not essential from both a public health and competitiveness perspective.

C. Food Safety From Farms to Forks: Supply Chains Characteristics

7.14 Successful delivery of safe food to consumers requires synchronized actions across the entire food supply chains. As Annex 7.1 illustrates, the food safety system relies on four key actors, who are strongly interlinked. On one hand, the private actors involved – farmers, processors and traders – need to collaborate in order to ensure the transparency that would guarantee safe products for consumption and maximized benefits. These interactions occur both ways: while a “food safety-conscious” upstream industry is a pre-requisite and even a potential source of competitive advantage to the subsequent participants in the food chain, the latter can also take a proactive stance to strengthen the capacities and to improve the performance of the former. Supermarkets and agribusinesses act as central driving forces to improved food safety practices among farmers or even to sectoral integration and concentration. On the other hand, the public sector could develop dedicated policy tools targeting each actor of the food supply chain in order to effectively meet the food safety policy objectives. Moreover, it can adjust the intensity and the scope of its intervention to make best use of and/or to bolster the linkages in the private sector. For instance, support channeled to downstream industries can reverberate up to the primary producers through strong vertical integration in the food chain, whereas measures directed towards consolidating farms and supporting them to meet standards will also benefit processors and traders.

7.15 Food supply chains in Turkey are heterogeneous and remain dominated by small-scale informal operators. There are three broad demand patterns determining domestic agri-food supply.

- The traditional market is prevailing but gradually making room to the growing modern segments. It is widely spread across

![Figure 7.1: Agri-Food Trade in Turkey](image-url)
the country, as it dominates rural areas and is also present in most Turkish cities. Operators in this market are mainly small-scale producers, traders and processors, most of them informal. The agri-food products they supply are usually in limited assortment and of varying qualities.

- A modern urban consumer market is emerging, driven by changing consumer preferences. Increased incomes, urbanization and a growing share of young population are key factors towards demanding better quality, branded, packaged – and presumably safer – food. Suppliers are typically formal enterprises, often large scale, such as commercial farms, modern food processors or supermarkets. Uniform product quality and economies of scale are important characteristics.

- The export markets are expanding tremendously, but remain highly diversified and have various degrees of sophistication. Agri-food exports doubled from 2002 to 2005 and, surpassing import growth, also built up the agri-food trade surplus (Figure 7.1). Improved general supply conditions – rather than particular agricultural supply factors – appear to be responsible for this growth, given that total Turkish exports had a similar development. Agri-businesses and traders are in general large and modernized, as export markets tend to be more demanding than the domestic ones. This is even more the case with the EU being the most important destination for the Turkish agri-food exports (Figure 7.2). More permissive markets are though in the Middle East and North Africa (MENA) and in the CIS.
7.16 Primary agricultural production in Turkey is dominated in number by small, family-owned holdings, largely engaged in (semi-) subsistence practices. According to the 2001 agricultural census, there are approximately 3.1 million farms operating, on average, 6 hectares of land. While this continues to position Turkey below the EU15 and the EU25 average farm size, it is still comparable with or even higher than in some Member States, such as Italy, Poland or Romania (Figure 7.3). However, agricultural holdings are fairly fragmented, each being made up of 6 distinct parcels on average (Malcolm, J, and Bayaner, A., 2006). As a result, many farmers are locked in subsistence or semi-subsistence agriculture, typically centered on family structures. Most undertake crop production (87 percent of the land is for field crops) and/or animal husbandry, though there is a high number of more specialized fruit and vegetable farms located in Aegean and Mediterranean regions. Approximately 65 percent of all farmers own less than 5 hectares of land and about 50 percent of all cattle holdings engaged in cattle raising are small enterprises owning 1-4 heads (Figure 7.4).

7.17 Prevailing farm structures cause diversion of produce towards informal marketing chains and hamper meeting food safety standards. In addition, subsistence and semi-subsistence farmers produce entirely or principally for self-consumption, thus impacting down on the marketing ratios of the various agricultural products. Wheat, which is the most important agricultural commodity in Turkey, is cultivated by almost all farmers in all regions. Still, only about 70 percent of its total output is estimated to reach the market (Malcolm, J, and Bayaner, A., 2006). In the animal sector, the situation is similar. For instance, the informal market holds a large share in the milk production: 20 percent is used for on-farm consumption, while 15 percent is ‘street milk’ (i.e., sold directly to consumers by street vendors). Most of it comes from semi-subsistence suppliers having 1 or 2 cows, who, in addition to milk, typically produce some cereals as well as fruit and vegetables (Malcolm, J, and Bayaner, A., 2006). Given their limited efficiency, such small holdings lack the financial resources to undertake food safety practices. Furthermore, as their output is largely used for self-consumption or pursues informal market outlets, they are either disconnected from standard compliance incentives/requirements, or simply elude them.

7.18 But also the food processing industry is characterized by a high degree of fragmentation and informality. The precise number of agri-food establishments in Turkey is not known, because statistics vary greatly from one source to the other. The National Institute of Statistics has recorded about 40,000 operations, of which only 27,543 are registered for tax purposes (Guittard, C., 2006). Furthermore, the Union of Chambers of Industry and Commerce reports 16,780 facilities, with only around 1,000 employing more than 50 people.

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170 Corresponding to 21 percent of the total agricultural land.
171 It accounts for 67% of the total cereal production and for 16% of the total crop production (Malcolm, J, and Bayaner, A., 2006).
Over 90 percent of the Turkish agri-food processors are small and medium-sized enterprises (SMEs). For quick reference, only 37 percent of the EU25 food businesses have less than 50 employees (Confederation of the Food and Drink Industries of the EU, 2006). According to MARA, most of the Turkish registered enterprises are active in the flour and flour processing sector (70 percent), followed by dairy (8 percent), processed fruit and vegetables, and sugar and confectionary (4 percent each). In contrast, the output figures reveal slightly different shares: cereal products (41 percent), dairy (14 percent), meat and meat products (14 percent). An accurate overview on the degrees of fragmentation across agri-food branches needs to also consider the share of the unregistered production. While on average this is estimated to go up to 40 percent, it may reach almost 70 percent for milk and milk products and approximately 50 percent for the meat sector. According to Oskam, A. et al. (2004) concentration appears to be the highest in starch production and several beverage branches (beer, wine and spirits). Meat and meat products, processing of fruit and vegetables and grain mill products lie at the opposite end.

Numerous agri-food units underutilize their production capacities because of difficulties in marketing their products and a highly fragmented supply base. While data on industry turnover, value added and profits are limited, capacity utilization is used as a proxy for sector profitability. According to a survey carried out by Turkstat on registered processors, the indicator increased up to around 71 percent (2003-2006), after having reached a minimum of 65-66 percent in 2001-2002. However, the food and beverage industry continues to lag behind the manufacturing average, which is now slightly above 80 percent. According to the survey factors contributing to this underutilization are:

- Change in domestic consumer preferences (50 percent of the respondents), particularly in urban food markets, towards higher value-added and convenience products.
- Increased requirements in foreign markets (14 percent of the respondents). The successive waves of EU enlargement have also resulted in a wider application of the demanding EU food safety standards among Turkey’s trade partners. Only about 2,000 enterprises—or less than 5 percent of the total number provided by the National Institute of Statistics—are able to operate in line with the EU norms (Guittard, C., 2006).
- Shortages in the supply of domestic raw materials (13 percent of the respondents). Food producers are affected by the high fragmentation and informality in the primary production sector, as these lead to increased costs and variable quality of inputs. In industries such as dairy, beef, and vegetable oils, most processors need to rely on local open markets to buy agricultural commodities (Oskam, A. et al. 2004).

Modern retail market structures are growing fast and increasingly replace traditional stores. Super and hyper-markets have gained importance over the last few years, reaching a share of about 40 percent in the Turkish food expenditures in 2003 (Oskam, A. et al. 2004). They pushed down the share of traditional stores, including the bakkals, from 50 percent in 1999 to 36 percent in 2003. As modern traders reveal preference towards dealing with a limited number of large suppliers in order to reduce transaction costs, they will play an important role in industry consolidation. Even so, important challenges remain with regard to supporting the integration and adaptation of the small farmers and processors into this new environment.

Please note that the Confederation of the Food and Drink Industries of the EU classifies the enterprises as follows: micro (1-9 employees), small (10-49 employees), medium (50-249 employees) and large (over 250 employees).
7.21 **Given the above structures, integration of primary producers, agri-businesses and traders into a modern food supply system is complex.** In many respects local food systems function well. They provide cheap food, employment and livelihood to large numbers of people, especially poor. The food supply chains are often short and simple and they often use handling and processing methods that are based on local knowledge and experience. The costs of upgrading units to comply with higher food safety standards could significantly increase food prices for the poor, who may not be willing or able to pay. The informal sector could become partly an underground activity, making it more difficult to monitor safety issues. Finally, given the more stringent obligations, structural adjustments may occur within certain industries as some enterprises are forced to exit the sector because of failure to comply with standards or to adapt to the new competitive environment. Judging by the experience of recent EU entrants, many (particularly smaller) food enterprises may not be able to bear the costs associated with facility upgrades (see the example of Bulgaria provided in Box 7.2). The experience of the new member states show that the dairy and milk processing sectors underwent the most radical restructuring, mostly because of the obligation to fulfill the very demanding EU quality and hygiene standards (European Commission, 2006). Industry concentration occurred as a result of the closing down of the non-compliant domestic establishments in conjunction with increased foreign direct investments into large processing units.

**Box 7.2 Bulgaria - Example for EU-Compliance-Driven Structural Transformation in the Meat and Dairy Industry**

The food safety requirements deriving from EU accession raised significant challenges to the Bulgarian operators in the food industry. The meat and dairy industries were doubly affected. On one hand, as they failed to meet the EU norms, more than half of the operations that were functional in the late 90s had to be closed down. Figures speak for themselves:

- Out of 237 slaughterhouses of small and industrial capacity in 1999, 144 were closed down by the middle of 2006. Only 22 of those remaining are fully in line with the EU requirements, whereas the other 71 have been extended a transition period to either complete adaptation or to re-invest from scratch.
- Out of the 312 meat processing operations in 1999, 146 were closed down by the end of 2006. 117 of those remaining reach compliance levels higher than 70 percent but lower than 100 percent and are subject to further upgrading over a transition period.
- Out of 512 units in the milk industry in 1999, 341 were closed down by the middle of 2006. Yet most of the remaining ones (167) are currently fully in line with the EU standards.

On the other hand, even fully compliant food operations are challenged with the lack of not fully-compliant raw materials. This is particularly the case in the milk sector, where milk producers have been granted a transition period ending December 2009 to achieve full compliance with the EU standards. Over this period, milk processors have to deal with two types of milk, which must be clearly separated in their enterprises. Additional investment is needed to that end, impeding on their competitiveness.

7.22 **Modernization of farms and agri-food businesses is central to containing health risks stemming from the widespread animal and plant diseases.** Foot and mouth disease, peste des petits ruminants, Sheep and goat pox, echinococcosis and Newcastle disease are endemic (OIE, 2004 and Budke, Deplazes and Torgerson, 2006). Anthrax is present in certain areas, while bovine brucellosis and tuberculosis are common. In 2005 Turkey had HPAI outbreaks that resulted in human cases in 2006. Though to a lesser extent harmful and endemic, there are also pests that affect plant produce, particularly fresh or dried fruit and vegetables (e.g., aflatoxins).
7.23 **Upgrading of the agri-food sector is also a proven key factor to increasing export market access and competitiveness.** Turkey has solid comparative advantage in fresh and processed fruit and vegetables. These products display high export specialization indices\(^\text{173}\) and also count for more than 50 percent of the Turkish agri-food exports. Conversely, cereals, meat, milk and dairy products reveal very poor export performance. In part, this can be explained through the much higher than national food safety or quality standards and/or the towering protectionism that, for instance, meat and dairy products must clear on most export markets. But it is equally due to inadequate domestic farming or food processing practices and obsolete technologies.

7.24 **The modernization of the agricultural holdings and of the food processing units causes considerable costs.** Enforcement of more demanding standards requires investment into upgrading existing facilities, training staff, improving the procurement systems or hygiene controls etc. Moreover, under an integrated food chain approach, additional costs arise as business partners upstream and/or downstream the food supply chain have, in their turn, to adjust to new rules. For instance, a critical situation occurs when the supply of raw materials is reduced through restrictive standards and thus input prices increase, while market shares are also narrowed down due to more demanding marketing conditions and/or increased competition from already compliant foreign businesses.

7.25 **Foreign direct investments (FDI) are an important source for investment capital in the downstream segments of the agri-food chain.** The foreign capital inflows have increased significantly after 2004, when the permits granted by the General Directorate of Foreign Investment were abolished. As of January 2007, there were 305 foreign capital companies in the Turkish food processing sector (according to the Federation of Food and Drink Industry Associations of Turkey), most of them involved in processed fruit and vegetables (36 percent) and processed flour products (12 percent) and only to some extent in meat and dairy products (7 percent each). They rely on state-of-the-art technology and generally operate on large scales.

7.26 **But for primary producers and SME agri-food enterprises, EU pre-accession assistance might be central in supporting upgrades of units, but funds are limited.** The envisaged IPARD assistance\(^\text{174}\) amounts to about USD 365 million over 4 years, of which only a share (not yet determined) could be directed towards supporting the upgrading of food operations. Other countries’ experience shows that much greater financial efforts are needed to approximate the EU quality and hygiene standards. For instance, Bulgaria invested a minimum of USD 500 million\(^\text{175}\) – through its SAPARD program. Acknowledging the differences in size\(^\text{176}\) and structure, Turkey’s financial needs could be expected to be much higher. The current preparedness of the Turkish agri-food units to sell on the EU market is an additional argument. Particularly in the meat and milk sector, very few processing units are permitted to operate on the Single Market: 19 in the meat sector (out of over 500 registered with MARA) and 13 in the milk sector (out of over 2,000 registered with MARA).

7.27 **Considerable adaptation support might, however, still need be provided by national budgetary sources.** FDI and EU pre-accession funds can only have a limited contribution to increasing the presence of

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\(^{173}\) As calculated by the International Trade Center, the Balassa indices equal 2.2 for fresh vegetables, 7.2 for fresh fruit, and 1.7 for processed fruit and vegetables.

\(^{174}\) To which domestic public and private co-financing will add.

\(^{175}\) 50% of this amount was private contribution, whereas about 12.5% was domestic public contribution.

\(^{176}\) For quick reference, in 2005, the Turkish GDP was USD 362.5 billion whereas the Bulgarian GDP was USD 26.5 billion.
D. Improving Public Sector Oversight in the Food Safety Area

7.28 Food safety policy in Turkey is formulated and implemented by an intricate institutional structure. Currently, MARA through the General Directorate of Protection and Control (GDPC) is designated the function of a lead institution regarding the food safety policy. It took over most of the responsibilities that it was sharing with the Ministry of Health (MOH) before 2004. However, selected subjects such as the ones related to mineral waters and food for special medical purposes remain within the MOH portfolio. Improved coordination between the two institutions could also be promoted in the field of animal disease response and control. Further institutions are involved in the decision-making and/or the implementation of the food safety policy in Turkey (Annex 7.2). The Ministry of Environment and Forestry (MEF) is responsible for various aspects including protection of animals, GMOs and forestry propagating materials. At the same time, the municipalities, subordinated to the Ministry of Interior (MOI), are also partly involved in the enforcement of the legal provisions in the food industry.

7.29 This involvement of multiple institutions on central but also on provincial levels may lead to complexities and difficulties in coordination. This may be illustrated by the potentially conflict-generating competencies held by both MARA and the municipalities in granting licenses to agri-food enterprises. According to applicable legislation, each enterprise in the food sector is required to hold a "license for food production". While this license is provided by MARA, an additional "work place licensing" is to be conducted through municipal authorities. In cases of conflicts between the decisions of these two bodies, the decisions of municipalities would overrule the one of MARA - this would be incompatible with MARA’s assignment as highest national food safety authority. This issue is being dealt via a newly drafted legislation that grants prevalence to MARA’s decisions, in case of a conflict. However, this legislative adjustment would still not provide for a better overall delineation of authorities in food safety enforcement matters and appropriate procedural simplification for agri-food enterprises.

7.30 In a medium- to longer-term perspective, the establishment of an independent food safety agency could represent the ideal approach to streamline present inter-institutional intricacies. For coordination purposes, Turkey may consider following best practice in the EU Member States so as to enable “from farm to

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177 The measures taken by Turkey for fighting animal diseases were differentiated. While no major action was taken on transmissible spongiform encephalopathy – which is though virtually not present in Turkey – for most of the remaining diseases (e.g. bovine tuberculosis, bovine, ovine and caprine brucellosis, anthrax, PPR) vaccination campaigns have been or will be initiated.
fork” coordination on food safety matters. Hungary, for instance, set up a Food Safety Office with the task of supervising the institutions and authorities in the food safety process and making their operations more efficient. The institutions officially control only special areas of the food chain while the Office has an overview on the whole food sector.

7.31 In a short- to medium-term perspective, continued reform within MARA and better coordination between its central and local bodies is recommended to enhance the effectiveness of its food safety policy. Particular emphasis is advised to be given to the (modalities of a) separation of functional responsibilities. While having centralized authority is strength, it is also important to separate (1) functional responsibilities for risk assessment, (2) risk communication and (3) risk management, and responsibilities for (i) policy making, (ii) implementation and (iii) evaluation. The current delineation of responsibilities does not yet mirror the above separation. Besides the MARA GDPC, other General Directorates are also responsible for various food safety, sanitary, and phytosanitary aspects. Food safety related communication between these General Directorates and between their central and the regional offices is not yet conducted in accordance with an operational manual with clearly defined procedures. Another area for further alignment is the relation between national and provincial responsibilities. It is essential that the cooperation, coordination, control and monitoring between MARA and its provincial offices can be carried out in (close-to) real-time. A restructuring of MARA, as part of the public administration reform process is being planned, although the exact timing is not set. The reform envisages shaping the division of responsibilities between central and provincial units. Still, the future organization of the Central Competent Authority (CCA) and of the Competent Authorities (CA) is not yet clear.

7.32 In all the above contexts, strengthening of human capacities in the domestic control and inspection administration is crucial for improving food safety policy outcomes. The MARA GDPC administers 81 provincial directorates, 39 Provincial Control Laboratories and one Food Control and Research Institute. For control purposes, MARA employs a total staff of 4,800 food inspectors and assistants, whereas the official veterinarians and the veterinary technicians go up to about 5,100. The EC judges that current staffing and financial resources do not adequately cover the high number of food enterprises (around 40,000, according to the National Institute of Statistics; see paragraph 7.18) and farms (over 3 million). For quick reference, Poland has around 4,000 food inspectors and almost 9,000 official and authorized private veterinarians to control around 31,200 food enterprises and 2 million farms. Given the high degree of informality in the Turkish food sector, well trained and well equipped personnel would be highly beneficial. Training needs, to be addressed in priority, include computer skills, operational skills, increased knowledge on food technology, auditing techniques, and identification of hazards and associated risks. In parallel with the development of the right skills, GDPC will have to be modernized with an adequate information communications technology system that includes hardware, software, databases and an information network.

178 The General Directorate of Agricultural Production and Development (GDAPD) is involved in some issues falling under intra-community trade in live animals, semen, ova and embryos, import requirements for live animals and animal products, and zootechnics. Also, the General Directorate of Agricultural Research (GDAR) is responsible for GMOs and some of its laboratories take part in food, feed, animal diseases and of phytosanitary controls.

179 CCA is responsible for the enforcement of all food legislation. In the EU countries, an Official Agency carrying out functions under a Service Contract acts on behalf of and as an agent for the CCA as a CA.

180 An ongoing EU twinning project addresses upgrades in the IT system for internal affairs and information exchange.
Equally important is the further development of laboratory infrastructure and their equipment with adequate analytical tools and know-how. Three kinds of laboratories, namely those of the Veterinary Control and Research Institutes, the Provincial Control Laboratories, and the Phytosanitary laboratories operate under MARA GDPC supervision. According to the European Commission (2007), there are currently 16 private laboratories operating with MARA accreditation. However, according to the same source, the administrative capacity at central and local level would benefit from further strengthening in order to enhance the food safety controls throughout the country.

Along with the above capacity improvements, an improved definition of a mechanism providing adequate financial resources for official controls is recommended. Currently, MARA and other public bodies involved (e.g., municipalities and Ministry of Health) finance inspection and control almost entirely from their own budgets, leaving very few cost items to be covered by business operators (e.g., laboratory analyses). Particularly for larger scale producers and/or traders, a control-cost recovery and participation mechanism might be defined. This would facilitate the approximation to European control practices under which most inspection fees, particularly those for producer-specific laboratory controls, are imposed on business operators, with common principles applied to the determination of the level of fees.

Turkey faces a pronounced challenge coming from the illegal movement of foods across its borders. This problem, however, is given high priority. While it is the Ministry of Interior who is responsible for the prohibition and pursuing of smuggling, border control is currently monitored by Prime Minister, Presidency of Economic and Coordination Board in coordination with MARA, General Staff, Ministry of Defense, Ministry of Interior and Undersecretariat of Customs. The high number of agencies involved impedes on the required legislative alignment in import measures (including the list of approved countries and establishments for animal products) with practices applied and expected by Turkey’s European trading partners.

The institutional structure for border controls is being reinforced but further extension efforts may still be needed. At present agri-food imports are being made through 40 border crossings in 25 provinces. The physical conditions at Turkish customs are generally not appropriate for the entry of agricultural and food products. The customs entry ports for perishable agricultural products, food and fishery products could be redesigned and their infrastructure needs could be reinforced. Consequently, Turkey has undertaken the construction of Border Inspection Posts (BIPs), benefiting from dedicated EU support. The first BIP is now operation in Istanbul airport and 6 additional BIPs are expected to be installed in various other entry points. However, close follow up on these plans is necessary, whereas more inspection posts may be built in accordance with the development of trade. Furthermore, it is necessary to establish Quarantine Laboratories in conformity with Community standards at BIPs, in order to ensure efficient inspection during the customs clearance. Setting up of additional BIPs requires buildings, equipment and staff to be in place to carry out border checks.

181 Covering the costs related to the verification of compliance with feed and food law, animal health and animal welfare rules.
182 As a pilot, one BIP is in operation in Istanbul airport (European side), staffed with four veterinarians and it has the facilities for products and live animals and plants. Up to now no products have been imported through this facility. Six more are planned: 4 terrestrial and 2 seaports. The terrestrial ones are planned to serve for imports of products of animal origin excluding food (leather) and the seaport BIPs are planned for all products of food and non-food. The six new BIPs will be tendered in spring of 2007 and expected to be operational in 2008. Imports through the other existing border crossings will not be allowed when the 7 BIPs are in operation. The Istanbul BIP will be the only one for air freight.
7.37 The introduction of the Hazard Analysis and Critical Control Points (HACCP) principles in Turkey brings a new approach to the control services. HACCP complements official controls and requires private sector commitment. It focuses on identifying the potential quality and/or safety problems to prevent hazards, the methods to achieve this and the mechanisms to provide assurance that the preventive methods have been applied properly. Turkey has started to enforce the system: food business operators (other than feed producers) are required to implement procedures based on HACCP principles but they are given 1-3 years of transition period to comply. However, there is no plan in place to protect small operations and traditional products.

7.38 Even if private operators take over certain control or certification functions, the public sector is advised to ensure strong monitoring and enforcement capacities. In many European countries it has become practice to transfer specific tasks pertaining to certification or official controls to private bodies. Delegation is conditional upon the latter operating in accordance with clearly established standards and disposing of adequate expertise, equipment and infrastructure. In such event, the public sector is advised to preserve and exert core functions for the control system to function adequately. It could set the rules and procedures for accrediting private bodies (e.g., laboratories). It could organize audits and inspections of these control or certification bodies. Finally, it could take action against processors, traders or farmers if delegated control bodies report non-compliance. All these public actions require adequate resources to be developed. For instance, given the novelty of the HACCP system in Turkey, hygiene control officials are advised to receive adequate training in order to ensure effective implementation of the new legislative framework.

7.39 In summary, main future investment priorities, funded through domestic, EU and other sources, include:

- developing/reinforcing the national reference laboratories for animal and plant health,
- upgrading the regional laboratories in the food, veterinary, and plant protection fields,
- constructing additional BIPs (estimated at around 20 new inspection posts),
- increasing the numbers and ensuring the adequate training of the food inspectors, veterinary staff and other actors involved in food safety controls
- providing investment incentives and support for upgrading food processing units and farms to comply with the new food safety requirements.

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183 I.e., food processors; farmers are usually not required to apply these principles (see in the EU).
184 1-2 years for meat, milk, fishery products, low acid canned processing enterprises and caterings, and 2-3 years for the others.
ANNEX 7.1: FOOD SAFETY POLICY RESPONSIBILITIES

FARMERS
- Input supply programs
- Investment assistance
- Extension and advisory services
- Trade credit
- Bank loan guarantees

PROCESSORS
- Agricultural products
- Technical assistance
- Investment assistance
- Long term contracts
- Value adding operations (packaging, bar-coding)

TRADERS
- Food products
- Agricultural products
- Regulation
- Inspection
- Financial support

GOVERNMENT
- Regulation
- Inspection
- Financial support
### Annex 2: Organizations Responsible for Food Safety, Sanitary Phytosanitary

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| TITLE 5 | Specific Rules for Feed |
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** Non-Exhaustive List of Issues and Questions to Facilitate Preparations for Bilateral Meetings – Chapter 12; Turkey (http://www.abgs.gov.tr/indexen.html).

(Footnotes)

1 2006 is estimated as the latest 12 months of imports available: October 2005 – September 2006.