CHAPTER 2. GROWTH, MACROECONOMIC ADJUSTMENT, AND LABOR MARKET OUTCOMES

A. INTRODUCTION

2.1 The demand for labor is derived from the demand for goods and services produced in the economy. Thus increasing employment is dependent on growth in the economy. Broadly speaking, growth depends on increasing productivity in the long run and macroeconomic factors in the short run. This chapter analyzes the interactions between growth, productivity, and macroeconomic adjustment on one hand and labor markets on the other.

2.2 The next section reviews the relationship between growth, productivity, and employment relative to a group of comparator countries. Turkey's growth performance from 1980 to 2003 was reasonably good, although it fell short of best performers such as Korea and Ireland. Employment generation slowed during the period. An important element in the slowdown in employment generation has been structural change in the economy, as agriculture has lost jobs. Over the long term, productivity in Turkey has been improving. Productivity growth since 2001 has been particularly encouraging. Productivity in agriculture has been stagnant while services and manufacturing have been growing, a sectoral review finds. However, part of the increase in productivity since 2001 has been due to the increased working hours per worker rather than increased factor productivity per worker.

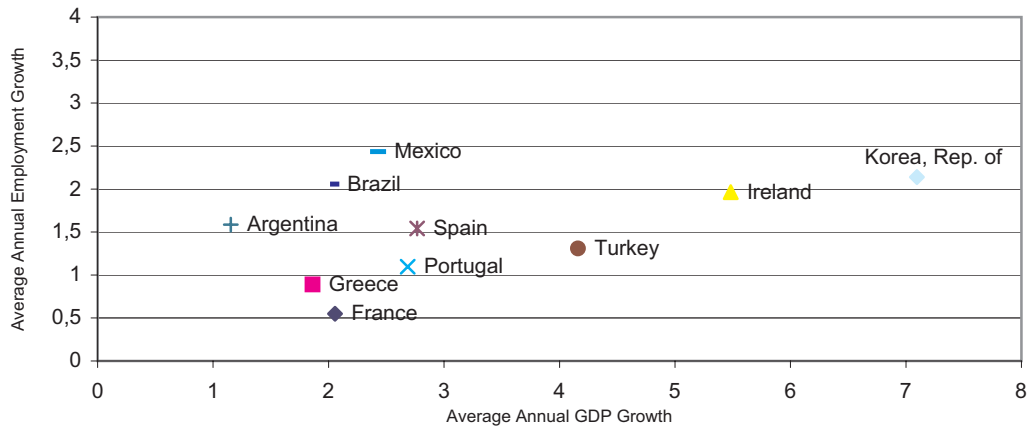
2.3 Section C analyzes the impact of wages and labor costs on employment. Unit labor costs (labor costs relative to productivity) are low in Turkey relative to a number of comparator countries, suggesting that labor costs are competitive. Although the unit labor cost data do not suggest unduly high labor costs, there is a concern that high payroll taxes (discussed in chapter 4) may be stifling employment and encouraging informality. There is little evidence that wage indexation is contributing to inflation inertia.

2.4 Section D reviews Turkey's experience with macroeconomic adjustment, with a focus on employment effects. Fiscal volatility has been an important component in explaining Turkey's growth and productivity performance, a recent IMF study finds. However, the analysis in this report is not able to find a significant statistical relationship between volatility and employment. Simulations of the impact of monetary and fiscal policy on employment also suggest that labor market adjustment takes place mostly through wages rather than employment. Given that employment has not been very flexible, flexibility in wages has been important to allow the economy to respond to changes in macroeconomic conditions. An implication of falling inflation is that labor market flexibility may require more variability in employment in the future.

B. Growth, Productivity and Employment

2.5 Turkey's growth performance has been remarkably consistent when averaged over a two decades. As figure 2.1 indicates, GDP growth has averaged around 4 percent over 1981–2003. For the sample of countries in this study, Turkey was one of the fastest growing countries with only Ireland and Korea growing faster than Turkey.

Figure 2.1: GDP and Employment Growth 1981-2003



Source: Groningen Growth and development centre, Total Economy Database; World Bank

2.6 On the other hand, six of the nine comparator countries had faster employment growth than Turkey, even though only Ireland and Korea had faster GDP growth. Employment grew faster in Brazil, Mexico, Argentina, and Spain, though they had slower GDP growth than Turkey. For the earlier period, Turkey's growth performance was not very good relative to the other comparators, but the employment growth was relatively good. In the later period, while GDP growth was reasonably good, employment growth was relatively weak. Korea's remarkable ability to sustain growth led an outstanding performance on employment generation.

2.7 Why did employment in Turkey grow slowly relative to GDP from 1981 to 2003, compared to the other countries in the sample? Three factors are worth noting. The first is structural change in the economy as the population has been shifting out of low-productivity agriculture. The second is the changing relationship between productivity and employment within sectors. The third are labor market regulations and institutions. The first two are discussed below, while the third is discussed in chapter 4.

2.8 A key factor for slow employment growth has been the high starting share of agriculture. The reason is simple: when the largest sector is shedding workers, even relatively fast employment growth in the smaller sectors is not sufficient to generate fast employment growth overall. This intuition is confirmed by a study of 10 European countries from 1974 to 1991 (which sought to explain the poor employment performance of

Spain at that time). It found that up to 80 percent of the long-run employment growth was explained by sectoral effects, and that the initial distribution of labor across sectors plays a crucial role in explaining cross-country differences in employment (Marimon and Zilibotti 1998). As table 2.1 indicates, the comparator countries are significantly further along in the transition out of agriculture than Turkey.

Table 2.1: Sectoral Distribution of Employment, 1950–1990

Percent

		Agriculture	Industry	Services
Europe	1950	40	32	28
	1970	21	41	38
	1990	12	36	52
Latin America 1950		54	19	27
	1970	42	22	36
	1990	25	24	51
East & SE Asia	1950	71	11	18
(excl. China)	1970	54	18	28
	1990	44	20	35
Turkey	1970	63	12	25
	1990	47	15	38

Source: Van Ark, Frankema, and Duteweed (2004); Turkey added.

2.9 Based on worldwide trends, it is likely that agricultural employment will continue to shrink from the current level of over 30 percent, acting as a brake on expansion of total employment. Expansion in employment must come from rapid GDP and productivity growth, as it did in Korea and Ireland.

2.10 The rising share of services in employment generation is also noteworthy. Although over 40 percent of the workforce in Europe was in manufacturing in the 1970s, that share has since declined, while the share of services has risen. In East Asia and Latin America, although there has not been a decline in the share of manufacturing, manufacturing employment growth has slowed and the share of services has risen.

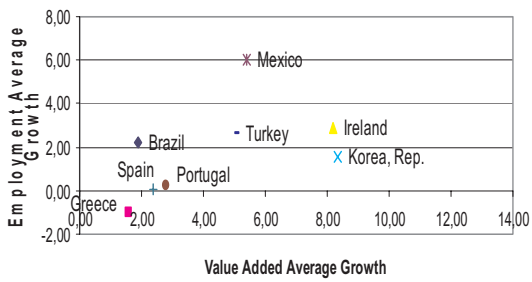
2.11 These worldwide trends suggest that employment growth in Turkey must come from growth in manufacturing—and particularly services. As noted above, actual employment growth will depend on the overall growth in these sectors, as well as the relationship between productivity and employment, and labor market regulations and institutions. While it is not possible to disentangle these effects, slow employment growth with fast GDP growth suggests that incentives against hiring of labor may exist (particularly if wages have not been growing).

2.12 Employment growth in services in Turkey was slower than all the other countries in the sample, despite the fact that output growth was faster than in four of them: Brazil, Greece, Portugal, and Mexico. Both output growth and employment growth were faster in Mexico, Korea, and Ireland. Employment growth in industry in Turkey was much faster than in Spain, Portugal, and Greece, countries that have already started seeing the transition towards shrinking share of employment in industry. Employment growth in Turkey was roughly comparable to Brazil, Ireland, and Korea, and much slower than Mexico. The

comparison with Brazil and Mexico is particularly noteworthy, since they provide a comparison of output growth with industrial and wage structures that are closer to Turkey's current situation. Both these countries showed much higher employment elasticities with respect to output growth than Turkey.

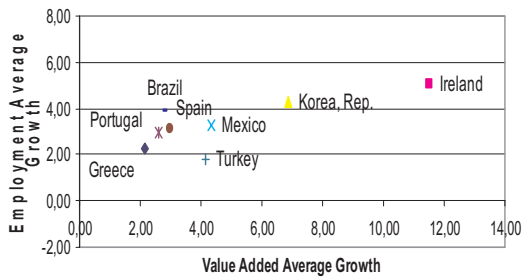
2.13 Growth is the prerequisite for employment generation and the comparison in figures 2.1-2.3 suggest that Turkey's performance has been reasonably good, but short of best performers such as Ireland and Korea. Employment generation has not been as good. On comparing output and employment generation in services and industry (to account for slow growth due to the large share of agriculture in Turkey), employment generation has been particularly slow in services relative to growth. In industry, while employment generation has been faster than the European countries, this may be partly accounted for by their different wage and production structures. Employment growth has been slow relative to Brazil and Mexico, the middle-income countries in the sample.

Figure 2.2 : Value Added and Employment Growth in Industry (1980-2003)



Source: World Bank; ILO Laborsta; SIS.

Figure 2.3 : Value Added and Employment Growth in Services (1980-2003)



*Only years for which value added and employment data available.

Note: Only years for which data on value added and employment are available

Productivity and Employment

2.14 The experience of Western Europe, North America, and Japan confirms that over time increasing productivity is the basis for sustained job creation and rising standards of living. Large increases in population after the first industrial revolution in the 19th century, and again after World War II, led to large increases in the labor force. These periods also saw a rapid increase in per capita income and labor productivity, as millions of new entrants into the labor force were accommodated in higher productivity jobs. Between 1970 and 1998, twelve Western European nations increased labor productivity about nine-fold. In the United States, labor productivity increased eight times (Maddison 2001).

2.15 Table 2.2 shows the results of a growth accounting exercise that estimates the contribution of physical and human capital accumulation and productivity to growth. For the period 1961–2000 as a whole, Turkey's performance is similar to the group of upper-middle-income countries. During 1961–80, capital accumulation and productivity growth

was faster in the upper-middle-income countries, generating faster per capital GDP growth. However, during the worldwide slowdown from 1981 to 2000, the positions reversed, with Turkey generating faster productivity growth through both physical capital accumulation and productivity gains.

2.16 Turkey's performance from 2002 to 2004 is striking. If sustained, it will put Turkey in a position to achieve growth and employment performance similar to Korea or Ireland (shown in figure 2.1). While these figures show low contributions of physical capital accumulation and high human capital accumulation, the particularly low figures for physical capital accumulation may represent a measurement problem. But even allowing for some measurement error, it is a strong performance. Sustaining this performance will be the key to generating employment growth over the next twenty years for Turkey.

Table 2.2: Growth Accounting, 1961–2000

Annual percent changes

	Per capita GDP	Total factor productivity	Physical capital	Human capital
		1961–2000		
Turkey	2.33	0.92	1.77	0.40
Upper-middle-income countries	2.45	0.97	1.76	0.40
All countries	1.98	0.73	1.56	0.34
		1961–80		
Turkey	2.32	1.10	1.69	0.37
Upper-middle-income countries	3.07	1.41	2.01	0.43
All countries	2.62	1.07	1.92	0.33
		1981–2000		
Turkey	2.35	0.73	1.86	0.43
Upper-middle-income countries	1.83	0.53	1.51	0.36
All countries	1.33	0.37	1.20	0.34
		2002–04		
Turkey	7.6	5.3	1.0	1.3

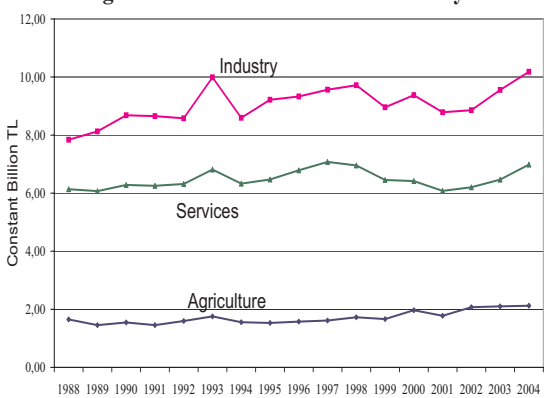
Source: IMF staff calculations. The table covers 73 countries for which Bosworth and Collins (2003) provide physical and human capital stock data. GDP data are from the Penn World Tables (6.1).

2.17 Over the long term, productivity growth will be essential to generate employment growth. In the medium and short term, however, there can be a trade-off between productivity growth and employment. The sources of labor productivity can be attributed to two processes, according to a convenient typology. One is structural change, as resources, including labor, are moved from low-productivity to high-productivity sectors. The shift out of low-productivity agriculture into high-productivity manufacturing and then services has been important for generating productivity growth. The second mechanism is productivity growth within sectors. Both processes can lead to imbalances and adjustment costs as some people loose jobs and others find them. In the aggregate, the relationship between growth, productivity, and employment has varied across countries and over time (Van Ark, Frankema, and Duteweed 2004). Some countries have seen fast growth in GDP, productivity, and employment Others have seen slow GDP growth but relatively fast employment growth (and thus low labor productivity growth—not a sustainable situation).

2.18 Figure 2.4 shows the evolution of a commonly used measure of aggregate labor productivity, value added per worker. (A related measure, value added over labor costs, is used in the next section for an international comparison.) Conceptually, value added per worker can be thought of as the result of a combination of capital accumulation and total factor productivity.

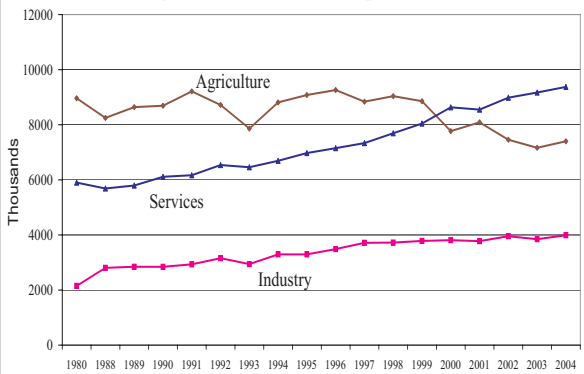
2.19 Agricultural productivity is low and has been rising very slowly. Productivity in industry and services rose steadily through the 1980s, but then became volatile as the economy was hit by a number of shocks. Industrial productivity started to decline in 1998, and with the crisis in 2001, hit levels reached in the early 1990s, before starting to recover. By 2004, industrial productivity had recovered only to the 1998 levels. Productivity in services followed a roughly similar path. Labor productivity in industry has not increased very much since 1993, and has closely tracked output. This indicates that employment does not change with the business cycle. Firms keep the number of workers roughly constant and adjust in other ways (such as increasing working hours to respond to changes in demand for output).

Figure 2.4: Sectoral Labor Productivity



Source: SIS, WDI and ILO

Figure 2.5: Sectoral Employment

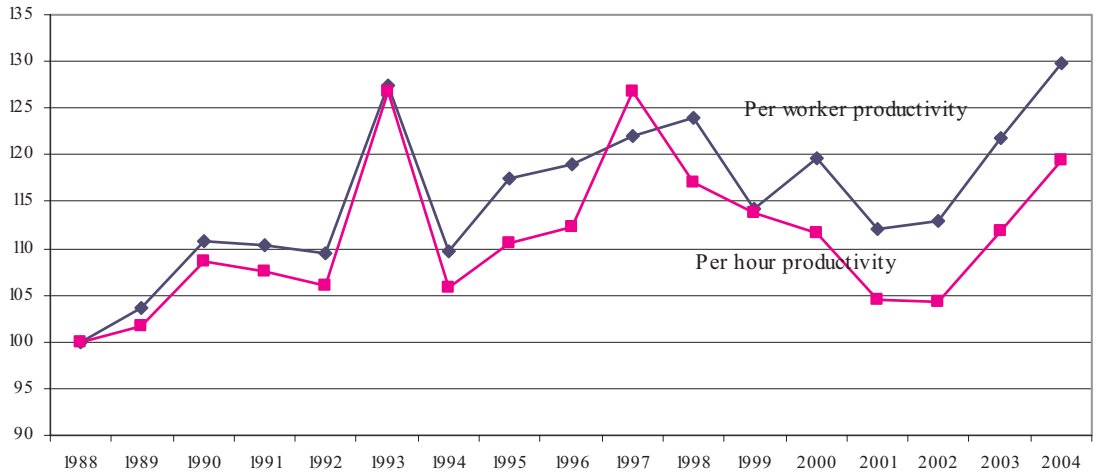


Source: SIS Labor Force Database

2.20 Employment has grown fastest in services and is now the largest sector in Turkey (figure 2.6). Industry has grown slowly, while agriculture has shrunk. Taken together, figures 2.5 and 2.6 indicate that the sectoral relationship between productivity and growth is positive. In the sectors where productivity has grown, employment has also grown. While productivity growth in agriculture has been very slow, employment has declined. (The increase in agricultural productivity probably comes from the decline in employment rather than an increase in total factor productivity.)

2.21 Sectoral productivity for manufacturing and services confirm the results from the analysis of total factor productivity: a sharp rise after the crisis of 2001. However, as will be discussed in chapter 4, working hours have increased in Turkey since 1995. Part of the increased productivity has come from increasing working hours rather than increasing productivity. Using data on actual working hours from manufacturing workers to construct a productivity index, figure 2.7 compares productivity per worker and per working hour.

Figure 2.6: Labor Productivity In Industry
Per Worker and Per Hours Actually Worked



Source: SIS; WDI; ILO & author calculations

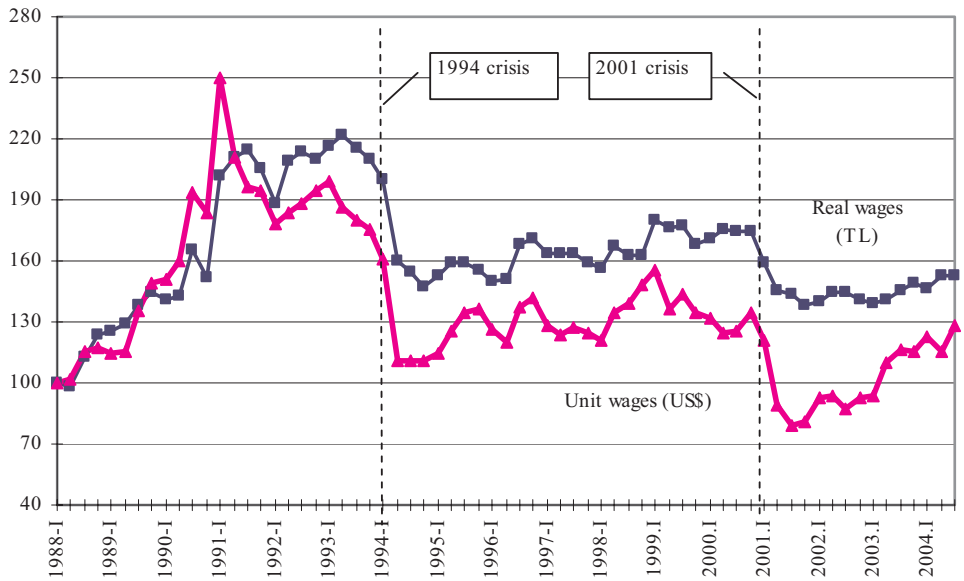
2.22 Except for 1997, productivity in industry when measured using an index based on hours worked has been lower than when using a per worker index. While there has been a strong recovery from the depths of the 2001 crisis, labor productivity in industry had recovered only to the 1993 levels.[10] The sources of productivity growth are complex, and include investments in physical and human capital, labor and product market regulations, and the international environment. One source of the remarkable increase in measured TFP productivity is actually an increase in labor intensity. Workers are working more hours.

C. Labor Costs, Wages and Employment

2.23 From an economic perspective, explanations for slow employment growth often start with labor costs. Are high labor costs constraining the demand for labor? Real wages in manufacturing fell significantly following the 2001 crisis, and have only recently started to recover (figure 2.7). However, an assessment of the impact of wages on employment should be relative to productivity.

[10] A widely cited measure of productivity is from the quarterly manufacturing surveys of SIS. These are based on per person productivity, and reveal a picture somewhat similar to figure 2.7. They also have the advantage of allowing more frequent monitoring of productivity developments. However, the manufacturing surveys are based on a relatively small sample of larger firms and thus are not as comprehensive as the measures presented in figures 2.5 to 2.7, which are based on the National Accounts and Labor Force Surveys.

Figure 2.7: Real Wages in Private Manufacturing



2.24 Measuring the individual productivity of particular firms is often difficult, but labor costs should be low enough to generate profit. The approach taken here is to compare unit labor costs: the ratio of labor costs to value added across countries. Table 2.3 shows Turkey in a strong competitive position vis-à-vis the other comparators despite some recent erosion. Economy wide, Turkey's value added at $14,239 in 2004 was relatively low, but so was labor compensation at $3,654. Calculating the ratio of these two figures gives labor cost per unit value added of 0.26, the lowest in the group and substantially less than the other EU and accession comparators. Turkey's nearest competitors were Greece and Mexico, but particularly in manufacturing Turkey had a significant edge.

Table 2.3: Labor Costs and Competitiveness
per employee, in current US $

	Value added per employee[a]		Compensation per employee		Unit Labor Cost											
					Total economy			Agriculture			Manufacturing			Services[b]		
	1995	2004	1995	2004	1995	2004	% ch.[c]	1995	2004	% ch.	1995	2004	% ch.	1995	2004	% ch.
Turkey	3184	14239	683	3654	0.21	0.26	2.4	0.08	0.10	2.5	0.21	0.27	2.8	0.23	0.32	3.7
Portugal	21892	26505	11411	14832	0.52	0.56	0.9	0.17	0.16	-0.8	0.59	0.65	1.2	0.54	0.56	0.5
Spain	41529	47162	21484	25153	0.52	0.53	0.2	0.17	0.21	2.7	0.62	0.68	1.2	0.51	0.52	0.2
Greece	28436	39550	9924	14260	0.35	0.36	0.4	0.09	0.11	2.5	0.50	0.44	-1.6	0.36	0.37	0.3
Poland	7779	11167	3753	5574	0.48	0.50	0.6	0.19	0.23	2.8	0.54	0.61	1.8	0.49	0.49	n.a
Hungary	10834	18389	5787	9713	0.53	0.53	n.a	0.38	0.41	1.1	0.59	0.54	-1.3	0.52	0.53	0.3
Mexico	8366	14751	2700	5098	0.32	0.35	1.1	0.17	0.19	1.4	0.27	0.31	1.7	0.34	0.35	0.4
Korea	22857	24275	11887	12138	0.52	0.50	-0.5	0.10	0.12	2.3	0.55	0.49	-1.4	0.55	0.52	-0.7

Notes. a. Value added at basic prices. b. Including public services. C. Compound average annual growth.

Source: OECD STAN database for all countries except for Turkey; SIS for Turkey

For total economy: Turkey (2004); all other countries (2003), except Poland (2002); For sectors: Turkey (2004); Portugal, Spain, Greece, Mexico and Korea (2003); Poland & Hungary (2002);

2.25 However, the increase in Turkey's labor cost in manufacturing and services—2.8 percent and 3.7 percent respectively from 1995 to 2004—was substantially higher than any

of the other competitors and underscores the need to maintain a competitive macroeconomic environment, in particular by stabilizing the real effective exchange rate, which appreciated by 25 percent over the period. In addition, it is notable that Turkey's favorable competitive position is underpinned by low wages. They are around two-thirds of the nearest competitor, Mexico, on average. That indicates there is considerable scope to raise living standards by achieving faster growth in both wages and productivity. Note that the definition of labor costs includes wages and salaries plus all employers' social contributions (reviewed in chapter 4). The relatively low unit costs of labor in Turkey suggest that cost of labor is not a constraining barrier to expanding employment, particularly in manufacturing. The implications of the possible impact of a cut in non-wage labor costs are discussed below.

Non-wage Labor Costs, Employment, and Informality

2.26 Chapter 4 presents data on payroll tax rates and finds that these taxes as a share of average wages are high in Turkey relative to the OECD countries. The relatively high payroll tax rates (which include pension, health insurance, and unemployment insurance) have prompted concerns that these taxes may be restricting employment and encouraging activity in the informal sector.

2.27 The actual impact of lowering payroll taxes on employment and formality is likely to depend on the structural characteristics of the labor market: the elasticity of labor demand (how many workers firms are willing to hire as labor costs fall) and the incidence of the tax (who actually pays the tax, rather than who is supposed to pay). If employers are required to make a contribution for workers' social security, but are able to reduce wages below what they would otherwise be, then workers are actually paying the tax, even when it is levied on employers. To the extent that taxes are shifted onto workers, the employment effect of lowering taxes might be relatively small. The intuition is straightforward: if the taxes are really being paid by workers through lower wages, then lowering taxes will raise wages rather than increase employment.

2.28 The unemployment rate, the degree of informality in the labor market, and the extent to which the minimum wage affects the informal sector are all factors that could affect the extent to which the employer's contributions to payroll taxes are actually paid by workers. Econometric studies of Argentina, Chile, and Mexico suggest that 20 to 70 percent of the employer's contribution is actually paid by workers through lower wages. On combining these estimates with labor demand elasticity estimates for Latin America, Heckman and Pages (2004) suggest that a 10 percent increase in non-wage labor costs can lead to a decline in employment rates of 0.6 to 4.8 percent. These estimates do not take into account indirect effects. If lowering tax rates has relatively little direct impact on employment but raises wages for workers, then as workers spend the extra income that could increase production and thus increase employment. The studies cited by Heckman and Pages are significant because they are based on analysis of panel data at the individual level. A number of studies, mostly of OECD countries, use cross-country regressions on macro data to investigate the relationship between employment and tax rates. These studies also find a wide range of elasticities – between -0.11 and -0.55. A more recent study of EU-8 countries (World Bank EU-8, 2005) finds elasticities between 0.5-0.8, suggesting a

strong negative impact of the tax wedge on employment. There is, however, some possibility of bias in these estimates relying on macro data, although it is not clear in which direction any bias might go. In any case, further investigation is warranted, preferably relying on micro data.

2.29 Further empirical work to guide policy is a high priority. This analytical work should be based on comprehensive survey data on employment and wages by occupational category, to assess the elasticities of labor demand and supply in Turkey and inform policy making in this area. Estimating labor demand will require detailed firm level surveys in the industry and services sectors, which are not being carried out. Estimating the labor supply functions will require the use of the household labor surveys with wage data, which were not available at the time of this study. Any reductions in payroll taxes should be cautious and accompanied by compensatory measures to preserve the credibility of the fiscal program.

Volatility and Employment

2.30 The economic volatility that has been a prominent feature of Turkey's economic history can disrupt employment generation directly, and also by disrupting growth. The cross-country evidence does not provide clear evidence as to the impact of volatility on growth. In a cross-country sample of 92 developing and developed countries from 1960 to 1985, Ramey and Ramey (1995) demonstrate a robust negative correlation between growth and volatility, which persists even when other conditioning variables are introduced, such as investment and public expenditure. However, Rancierre, Tornell, and Westerman (2005) find that countries that have had occasional crises have grown faster than countries with stable financial conditions. (The two findings are not inconsistent. A country can experience growth volatility without experiencing a crisis.)

2.31 A recent IMF study of Turkey (Mody and Schindler 2004) finds that the higher fiscal volatility and inflation had a strong impact on growth for 1980–2000, relative to 1960–80. Fiscal volatility is a measure of changes in government expenditure that is not caused by the business cycle. The findings suggest that if Turkey had been able to keep inflation and fiscal volatility over 1980–2000 at the 1960–80 level, then Turkey's per capita GDP growth rate would have been close to East Asian levels.

2.32 Some support for this finding comes from figure 2.9, which divides the period 1980–2003 into three-year, non-overlapping intervals and plots the average and standard deviation of growth in each period.[11] The correlation between the two series in the figure is -0.82. However, correlation

Table 2.4: Correlations of Private Investment Rate and Macroeconomic Variables

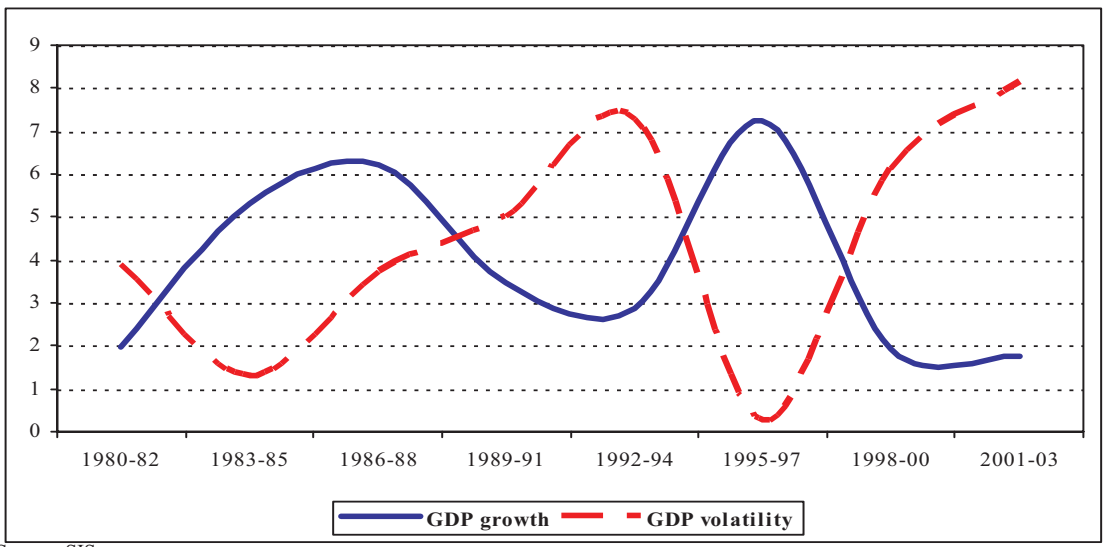
	1970-2003	1980-2003
GDP growth volatility	0.32	0.12
CPI inflation volatility	-0.18	-0.52
REER level volatility	0.42	0.37
Real interest rate volatility	-0.14	-0.27

[11] Notably, calculating the correlation using year-over-year GDP growth finds a much lower correlation because of substantial volatility within each of the three year intervals.

is not causation. The relationship may be saying nothing more than that slower growth tends to result from sudden downward spikes rather than smooth variations in trend growth. One possible causal link is through investment. Some researchers report a negative association between volatility and capital. However, the connection between investment rates and volatility is at best weak, which is striking in light of the amplitude of the cycles shown in table 2.4.

2.33 With regard to a more direct impact of volatility on employment growth, data limitations make it difficult to reach definitive conclusions. Using Turkish data from 1980–2002 (with or without 2000 in the sample), this study introduced various measures of volatility into regressions seeking to explain employment, employment growth, or elasticity in terms of output growth or other macroeconomic indicators, either on their own or interacted with other right-hand variables. Regressions were estimated at both aggregate and sectoral levels. In no case did impacts appear to be particularly significant. As to more direct impacts of volatility on hiring decisions, transactions costs might suggest the outcome would be a reduction in labor demand, but only if the transaction costs in the labor market outweigh those in adjusting the capital stock.

Figure 2.8: GDP Growth and Volatility



Source: SIS

2.34 This study also examined whether employment fell exceptionally strongly during and after crisis years, but this also failed to yield any conclusive results (table 2.5). Crisis years are shown in bold in the table. Because of timing or lagged responses, output shocks tend to be reflected in the labor market the next year.[12] Thus to see the response of the labor market to crises in 1994 and 2001, one needs to look at 1995 and 2002. There is little to suggest that employers have restructured and laid-off workers during crises. For instance, in 1994 GNP fell by 6.1 percent while employment continued to grow. That may partly reflect a tendency for agriculture to act as a social safety net, as indicated by a sharp increase in agricultural employment. However, employment elasticities in industry and

[12] The contemporaneous correlation between GNP and employment growth is –0.56. The correlation between GNP lagged one year and employment growth is +0.15.

services are not out of line with historical norms. In 2001, GNP fell by 9.5 percent, while employment in 2002 fell by just 0.8 percent. In this case, employment in industry and services continued to grow despite sharp declines in output in these sectors. While employment in agriculture fell, the elasticity was not exceptionally high. The construction sector—which accounts for only 5 percent of GNP and employment—shed a significant number of jobs in 2001 and 2002, though this is more likely related to the aftermath of late 1990s construction boom than any short-term volatility.

Table 2.5: Employment and Output Growth in Crisis Periods

percent change, crises years shown in bold

	1992	1993	**1994**	1995	1996	1997	1998	1999	2000	**2001**	2002	2003	2004
Total													
- Employment	0.9	-4.9	**8.1**	2.9	3.0	-0.3	-0.8	-1.0	0.8	**-0.3**	-0.8	-1.0	3.0
- GNP	6.4	8.1	**-6.1**	8.0	7.1	7.7	4.1	-6.1	6.3	**-9.5**	7.9	5.9	9.9
Agriculture													
- Employment	-5.4	-9.8	**12.1**	3.0	2.0	-5.0	2.0	4.9	-12.4	**4.1**	-7.8	-3.9	3.3
- GNP	4.3	-1.3	**-0.7**	2.0	5.2	-2.7	8.0	-5.0	3.9	**-6.0**	7.5	-2.4	2.0
Industry													
- Employment	7.6	-6.8	**12.0**	0.2	5.8	6.6	0.4	-1.6	6.5	**-0.9**	4.7	-2.7	3.7
- GNP	5.9	8.2	**-5.7**	12.1	7.1	10.4	2.0	-5.0	6.0	**-7.4**	9.0	7.8	9.4
Construction													
- Employment	7.6	18.0	**-2.4**	2.5	4.8	1.5	0.3	0.3	5.4	**-18.6**	-13.7	0.7	6.6
- GNP	6.2	7.9	**-2.5**	-4.2	4.8	5.6	1.1	-12.5	4.4	**-5.8**	-6.3	-9.3	4.6
Services													
- Employment	6.0	-1.2	**3.6**	4.2	2.2	2.4	4.6	2.5	12.6	**-1.0**	5.1	2.1	2.2
- GNP	7.4	11.2	**-8.3**	9.2	8.6	9.4	4.6	-6.3	7.3	**-6.2**	7.4	6.5	7.0

Source: SIS, HLFS

2.35 The finding that economic crises in Turkey do not appear to have led to large-scale layoffs is consistent with the results in chapter 4 that employment protection legislation in Turkey is very strong by international standards. The literature discussed in chapter 4 suggests, however, that such legislation also makes it less likely for firms to hire workers in the first place. The intuition is clear. If firms know that it is expensive to fire workers when economic conditions turn unfavorable, they will avoid hiring them when economic conditions are favorable.

Wages, Inflation, and Employment

2.36 Wages can be a source of inflation inertia when there is a high degree of backward indexation of wages (Agenor 2004). Turkey has been experiencing high inflation since the 1970s, and the persistence of inflation is consistent with a high degree of backward indexation in wages. However, Chapter 4 notes indicate that collective bargaining agreements cover a relatively small proportion of the work force, about 700,000 workers, almost all of them in the public sector.

2.37 With such a small percentage of the work force covered by collective bargaining agreements, little is known about the extent and nature of indexation in the economy. A recent IMF study (Celasun and McGettigan 2004) uses a structural price setting model to test the importance of inflation expectations. The study finds that inflation expectations are forward-looking rather than backward-looking, and are heavily influenced by fiscal variables. Shiller (1997) reports that contracts, including labor contracts in Turkey, are not indexed to inflation but rather of short duration. Both findings are consistent with the

conclusion that backward-looking wage indexation is not a source of inflation inertia in Turkey.

2.38 The minimum wage in Turkey is seen as a mechanism to provide a reasonable standard of living for the poorest workers. However, a minimum wage that is high relative to the average wage can lead to lower employment levels. The relationship between minimum wage and employment is particularly complicated in economies where on the one hand, the minimum wage requirement is not enforced for all workers, and on the other hand, the minimum wage serves as a signal to the informal sector. Whether the adverse employment effect of a high minimum wage is offset by non-compliance is an open empirical question.

2.39 Minimum wage in Turkey has been increasing rapidly. The ratio of minimum to average monthly wage in manufacturing increased from 33.9 percent to 42.1 percent between 1999 and 2004. Currently, the minimum wage in Turkey is 43.9 percent of the average monthly gross wage in manufacturing (2005Q1). By contrast, a ranking of EU candidate, accession and member countries for 2004 (Eurostat 2004) finds the minimum wage as a proportion of average earnings in industry and services varied between 34 and 50 percent. Poland was below 35 percent, the Czech Republic, the United Kingdom, Hungary, and Portugal were between 38 and 47 percent, while Ireland, the Netherlands, and Malta were in the range of 47 to 50 percent.

Table 2.6: Ratio of Minimum to Average Wage

	2004
Turkey[a]	42.1
Poland	33.9
Czech Rep.	38.8
UK	37.9
Hungary	40.7
Portugal	40.7
Netherlands	47.7
Ireland	50.0
Malta	49.0

Source: Eurostat, minimum wages as a proportion of average monthly earnings in industry and services; Netherlands, Poland, Portugal--2003.

a. For Turkey: Author calculations. Average gross minimum wage as percentage of average gross wage in manufacturing industry (private).

Macroeconomic Policy and Employment

2.40 The impact of monetary and fiscal policies on labor market outcomes such as employment and wages can be difficult to predict. This is particularly true in economies like Turkey where the need to continuously refinance the debt means that financial markets responses to government policy will have macroeconomic and labor market impacts. Here, simulations from a computable general equilibrium model are used to simulate the impact of two policies: an increase in the central bank's policy rate, and an increase in the value added tax (VAT) rate.

Simulating an Increase in the Policy Interest Rate

2.41 The Central Bank of Turkey expects to move to inflation targeting in 2006. However, there is a concern that monetary policy that targets inflation can have perverse effects in a high-debt economy with a high proportion of debt denominated in foreign currency and market concern about debt sustainability. An increase in the policy interest rate can lead to a decrease in inflation by decreasing aggregate demand, output, and inflation, or through a real appreciation, which would decrease inflation directly and also by decreasing aggregate demand. If, however, rising interest rates lead to concerns about

the probability of default and hence to a real depreciation rather than appreciation, and higher inflation, then fiscal policy might be more suited to control inflation (that is, fiscal dominance would prevail). Blanchard (2004) estimates these channels for Brazil and argues that in 2002, fiscal dominance prevailed and the monetary policy would not be effective in targeting inflation. This study simulates the outcomes for Turkey.

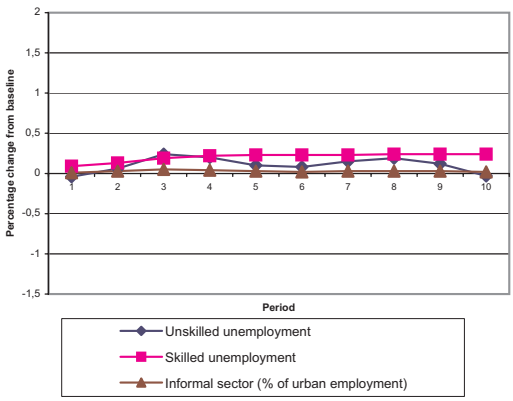
2.42 The simulation finds that in response to a 5 percent rise in the interest rate, the inflation rate is reduced significantly in the short run by almost 4 percent, with a maximum reduction of 9 percent over the medium run, stabilizing around a fall of 5.5 percent in the long run. Interest rate policy is effective in reducing inflation. Increased (lending) interest rates affect the real economy through two channels: reduced investment demand, and increased costs of working capital. The first channel directly reduces demand for private formal sector investment goods. Combined with the reduction in formal sector disposable income and consumption, this leads to strongly reduced demand for private formal sector goods compared to other sectors of the economy and falling GDP. Over the financial side, banks' net worth is negatively affected by the increasing cost of central bank funding. However, it is positively affected by the increasing bond and lending rates.

2.43 The nominal exchange rate appreciates by around 10 percent in the medium run and 6 percent in the long run, closely mirroring the domestic price level. The required primary surplus/GDP ratio increases sharply, reaching a maximum of 5.6 percentage points above the base line path. The fixed budget constraint requires that bond financing is maintained at base run levels while bond interest payments rise sharply. The government budget deficit is closed through declining transfers to households. With declining transfers, real disposable income of formal sector households decline by around 12 percent in the short run.

2.44 The burden of adjustment falls on formal sector labor. In addition to the decrease in government transfers, real wages fall for skilled workers and to a lesser extent for unskilled workers. As was the case with the payroll tax cut, the adjustment takes places mostly through wages rather than employment. However, unemployment increases slightly—more so for skilled labor with reduced demand—and wages decline. There are smaller declines in agricultural and informal sector wages, leading to a narrowing of wage differentials. These wage differentials leads to reduced migration between the sectors. With the increase in interest rates, there is a sharp increase in the earnings of rentiers and profit earners.

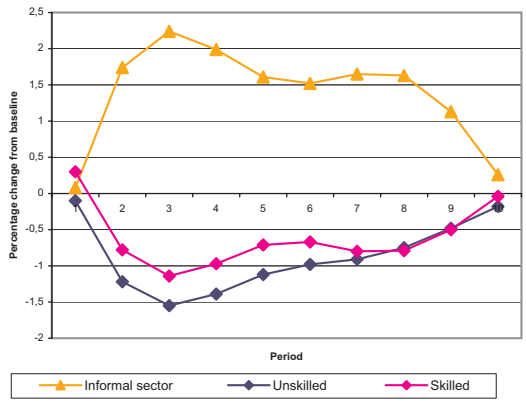
2.45 These results suggest that a disinflation attempt based on a rise in official interest rates increases the probability of default. This occurs essentially because increase in interest rates has a contractionary effect, which translates into lower tax revenues, and hence lower credibility. These results are consistent with those derived by Blanchard for Brazil with a somewhat different mechanism. These results suggest that inflation targeting might have perverse effects in the current Turkish context. A caveat is that the model assumes that credibility depends on fiscal policy. An alternative is to model credibility as dependent on monetary policy: for example, by making credibility depend on the difference between expected and actual inflation. Such a mechanism is likely to reduce the impact of the contraction on the probability of default.

Figure 2.9: Simulated Impact on Unemployment and Informality of %5 Cut in Official Interest Rate



Source: Author calculations

Figure 2.10: Simulated Impact on Real Wages of %5 Cut in Official Interest Rate



Source: Author calculations

Simulating an Increase in the Value Added Tax Rate

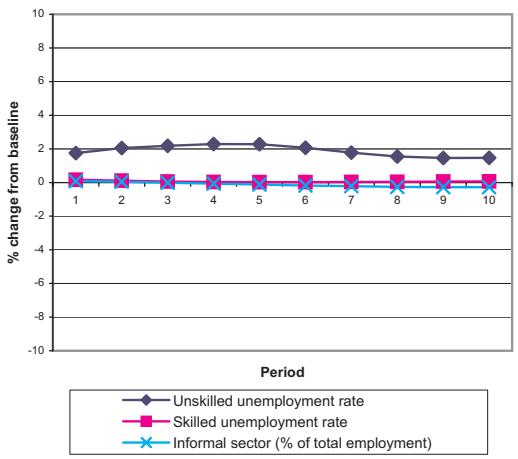
2.46 Fiscal adjustment has been the cornerstone of Turkey's stabilization and crisis recovery program. Turkey has achieved a relatively high primary surplus each year and this has underpinned the growing credibility of the program. However, there has been concern about the quality of fiscal adjustment. One source of this concern is the argument that revenue adjustments are less sustainable than expenditure adjustments, which are more likely to be reversed; and that Turkey has relied on increased revenue adjustment. Another is the view that a reliance on revenue measures such as high tax rates is inhibiting growth and encouraging informality. The mechanisms through which these adjustments might work is illustrated through a simulation of a 2.5 percent increase in the value added tax (VAT).

2.47 The tax rate increase raises the inflation rate significantly in the short and medium run by around 3.6 percent, before returning to baseline levels as GDP contracts. First, the tax rate increase leads directly to increasing prices for formal sector goods. This tends to lower demand for formal sector goods and lead to lower production. The increase in government revenue improves credibility and leads to a decrease in government bond rates by 1 percent in the short run and reaches a maximum reduction of 8 percent in the medium run. The reduction in interest payments leads to rising household transfers and permits a long-run reduction in the primary surplus of around 2.4 percent of GDP. Incomes of formal sector households rise, while rentiers' income falls with the fall in bond rates.

2.48 The nominal exchange rate depreciates by 13 percent in the medium run, and by 10 percent in the long run, following the increase in the general price level. Although the real exchange rate appreciates somewhat, the contraction in GDP leads to a reduction in domestic absorption and hence a slight improvement in the current account balance. Despite the improvement in the credibility of government's program and lowering of bond rates, the exchange rate depreciation increases the domestic currency value of foreign

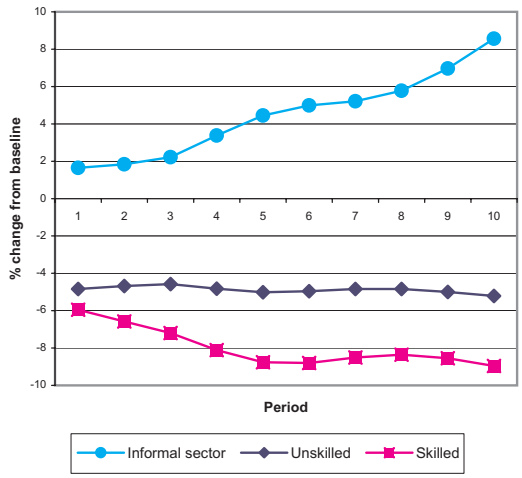
currency loans. The domestic risk premium increases through this balance sheet effect, and lending rates increase.

Figure 2.11: Simulated Impact on Unemployment and Informality of VAT increase of 2.5%



Source: Author calculations

Figure 2.12: Simulated Impact on Real Wages of VAT increase of 2.5 percent



2.49 The combination of an increasing lending rate and tax-induced price increases of formal sector investment goods reduces investment demand strongly in the short run. Lower levels of investment lead to lower production capacity and reduce the marginal product of other factors of production in the private formal sector. However, the increasing credibility of fiscal policy reduces the impact of this effect in the medium and long run. The credibility of fiscal policy increases because increasing tax revenues lowers the debt-to-tax revenues ratio, leading to a lower probability of default (in the modeling context). Overall, GDP contracts by only 0.3 percent in the long run.

2.50 The reduced demand for formal sector goods leads to increase in unskilled unemployment of about 2 percent. The share of the informal sector does not increase, as the adjustments take place on wages. Real wages in the formal sector fall, particularly for skilled employment, while wages in the informal sector rise. The wage differential between formal and informal sectors declines, and migration to the formal sector declines.

2.51 A clear implication of the simulations on payroll taxes and VAT, as well as the sluggish employment response to macroeconomic volatility, is that flexibility in the labor market has been through wage adjustments. This was possible in a high inflation environment because real wage cuts were easier to disguise. They were also easier to justify in the aftermath of crises. Going forward, as inflation falls to levels not seen in 30 years, it will be more difficult to generate real wage adjustments. This suggests a macroeconomic case for a legal framework that makes it easier to achieve employment adjustments in response to macroeconomic conditions. Chapter 4 suggests that this will also increase employment.

Conclusions

2.52 Sustaining growth is the key to long-term employment generation. A comprehensive job creation strategy would include measures that supported all three components of growth: physical capital accumulation, human capital accumulation, and productivity growth.

2.53 In the medium term, structural change will affect the relationship between productivity and employment as workers move out of low productivity sectors such as agriculture. The relationship between growth and employment can also be affected over the medium term by labor market legislation and institutions, as firms react to their environment. The impact of labor market regulations and detailed policy recommendations is the subject of chapter 4.

2.54 Labor costs are sufficiently low relative to productivity to keep labor in Turkey internationally competitive. Chapter 4 notes that non-wage costs are relatively high in Turkey. This has raised concerns that these high non-wage costs may be restricting employment and encouraging informality. Simulating the impact of lowering payroll taxes found that the impact is mostly on wages rather than employment. Lowering the payroll tax raises formal sector wages and reduces unemployment only slightly. There is little or no impact on the share of the informal sector in employment.

2.55 A recent IMF study finds a strong link between fiscal volatility and growth. However, this study is not able to find a link between volatility and employment. This would be consistent with employers adjusting to changing economic conditions not by hiring or firing, but rather through real wage adjustments. Both macroeconomic volatility and strong labor regulations encourage wage rather than employment adjustments.

2.56 Using fiscal policy for employment generation, or reducing informality, is limited by the rigidity of employment and budgetary concerns. A simulation of the impact of adjusting the VAT rate found that the impact is greater on wages than on employment, and there is little effect on informality. If it is not accompanied by compensating fiscal measures, there is an impact on the probability of default. Monetary policy choices also have labor market implications. Raising the policy interest rate (as might be required under an inflation targeting framework) might raise the risk of default as long as credibility is dominated by fiscal policy rather than monetary policy. This would also have adverse effects on employment.

2.57 Labor market flexibility has been achieved through wage adjustments. Going forward, such adjustments will become difficult as inflation falls. A legal framework that allows more employment flexibility will facilitate macroeconomic adjustment (in addition to employment growth, as will be argued in chapter 4).