April 2001
IMF Country Report No. 01/57

Greece: Selected Issues and Statistical Appendix

This Selected Issues and Statistical Appendix on Greece was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on February 9, 2001. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of Greece or the Executive Board of the IMF.

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International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

GREECE

Selected Issues and Statistical Appendix

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Approved by the European I Department

February 9, 2001

Contents Page

Selected Economic Indicators....6

Introduction and Overview....7

I. Inflation Risks in The Wake of Euro-Area Entry....10
A. Introduction....10
B. Single-Equation Models of Inflation....11
A simple Phillips curve specification revisited....11
Cost-based model with variable markup....12
Inflation projections for 2001–02: single-equation results....15
C. VAR Models....15
D. Regime Change and Structural Reform: Some Possible Implications....18
E. Inflation Prospects in the Light of Other Euro-Area Entrants' Experience....20

Tables
1. Ex Post Analysis: Projections for 1999-2000....12
2. Ex Post Analysis: Projections for 1999-2000....15
3. Inflation Projections for 2001-02....15
4. VAR Impulse Responses of Inflation....16
5. VAR Model Projections, 1999-2002....17
6. Inflation in Selected Euro Countries....20
7. Inflation Forecasts....21

Appendix: Unit Root Tests and Johansen Tests for Cointegration....22

References....23

II. Monetary Union Membership and Greece's External Current Account 24
A. Introduction 24
B. Recent Developments in Greece's Current Account 25
C. Role of the Current Account Inside Economic and Monetary Union 27
D. Channels Through Which Euro Membership may Affect the Current Account 27
E. Simulating a Risk Premium Shock Using MULTIMOD 28
F. Cross-Country Perspective and Concluding Remarks 30

Tables
1. Decline in Risk Premium: Simulated Effects. 29
2. Current Account Movements in Selected Euro Countries 30

Figures
1. External Current Account and the Role of Saving and Investment. 25
2a. Real Effective Exchange Rate 26
2b. Real Effective Rate vs. Euro Area 26
3. Export Market Share 26

Appendix: Capital Market Integration and Risk Premia 31

References 34

III. Greece's Labor Market—Grappling with High Unemployment 35
A. Introduction 35
B. Labor Market Developments 36
C. Labor Market Institutions 39
D. The Interaction of Economic Shocks and Institutions 45
E. Reform Efforts and Potential Extensions 50

Tables
1. Unemployment Rates by Level of Educational Attainment and Gender for Populations 25 to 64 and 34 to 44 Years of Age (1998) 55
2. Youth Unemployment Rates by Level of Educational Attainment and Age Group (1998) 56
3. Tax Wedge and Effective Tax Rates on Employed Labor, 1998 57
4. Summary Indicators of the Strictness of Employment Protection Legislation 58
5. Indicators of the Strictness of Employment Protection for Regular Employment 59
6. Regulation of Temporary Employment 60
7. Regulation of Collective Dismissal, Late 1990s 61
8. Net Replacement Rates of the Unemployed, 1997 62
9. Benefit Duration and Job Availability Requirements 63
10. Public Expenditures on Active Labor Market Programs, International Comparisons. 64

Figures
1. Per Capita GDP at Current Prices 65
2. Labor Market Developments, International Comparisons 66
3. Population Growth Rates 67
4. Employment, Nonparticipation and Unemployment Rates 68
5. Employment Shares 69
6. Unemployment Characteristics 70
7. Real Wages and Productivity 71
8. Wage Dispersion 72
9. Effective Average Tax Rates 73
10. Percentage of 15-19 Year-Olds in Education Who Are Employed and Unemployment to Population Ratio of 20-24 Year-Olds Not in Education 74
11. Real Wages and Unemployment 75
12. Real Wages, Productivity, and Effective Real Wages 76
13. Labor Demand Developments 77
14. Capital's Income Shares and Labor/Capital Ratios 78
15. Labor Supply Developments 79

Appendix: Derivation of the Demand Schedule 80

References 81

IV. The New Economy in Greece 84
A. Introduction 84
B. The IT Sector in Greece 84
C. Policy Issues: Promoting the New Economy in Greece 85

Tables
1. New Economy Indicators 88
2. New Economy Indicators for Selected Countries 89
3. Selected IT Indicators in 2000 and Medium-Term Targets 89

References 90

V. The Greek Banking Sector at the Time of EMU Entry: Recent Developments and Challenges Ahead 91
A. Introduction 91
B. The Banking Sector in Greece Before and After the Recent Liberalization 92
C. Recent Credit Market Developments 95
D. The Health and Recent Performance of the Banking Sector in Greece 96
E. The Regulatory and Supervisory Framework of the Greek Banking System 100
F. Conclusions 103

Tables

1. Historical Data for Profitability and Staff Expense Ratios of the Five Larger Greek Commercial Banks, 1960-96. 105
2. Mergers and Acquisitions in Greece in the 1990s 106
3. Market Share of Greek Commercial Banks 107
4. Bank Ownership 108
5. Credit to the Private Sector, 1995-2000 109
6. Foreign Currency Position of Greek Commercial Banks, 1996-2000 110
7. Average Bank Financial Strength Ratings for Selected Countries, January 2000 111
8. Credit Ratings of Selected Banks, January 2000 112
9. Commercial Banks Balance Sheet, 1992-1999 113
10. Commercial Banks Income Statement, 1992-2000 114
11. Commercial Banks in Greece and Selected European Countries, 1997 115
12. Profitability Ratios of Greek Commercial Banks 116
13. Income Analysis of Greek Commercial Banks, 1998-2000 117
14. Cost Analysis of Greek Commercial Banks, 1998-2000 118

References 119

Statistical Appendix Tables

1. Aggregate Demand (at constant prices). 120
2. Aggregate Demand 121
3. Private Sector Income Account 122
4. Saving-Investment Balance 123
5. Agricultural Production 124
6. Manufacturing Production 125
7. Price Developments 126
8. Implicit Price Deflators 127
9. Cost-Push Indicators of Inflation 128
10. Labor Force, Employment, and Unemployment 129
11. Employment in Selected Sectors 130
12. Wages and Salaries in the Nonagricultural Sector 131
13. Employment, Productivity, and Unit Labor Costs in Manufacturing 132
14. Collective Labor Agreements, Compulsory Arbitration and Impact of Labor Disputes 133
15. Summary of Central Government Finances 134
16. Ordinary Budget Revenue (In billions of Drachmas) 135
17. Ordinary Budget Revenue (In percent of GDP) 136
18. Ordinary Budget Expenditures 137
19. Investment Budget Expenditure by Sector 138
20. Budget Transfers from and to the European Union 139
21. Central Government Expenditure, Functional Classification 140
22. Summary of General Government Finances (In billions of Drachmas) 141
23. Summary of General Government Finances (In percent of GDP) 142
24. Public Entities Balance 143

25. Public Enterprise Balance 144
26. Operating Balance of Selected Public Enterprises 145
27. Financing of the PSBR 146
28. Gross General Government Debt 147
29. Monetary Program and Outturn 148
30. Monetary Survey 149
31. Growth of Money and Credit Aggregates 150
32. Growth of Bank Credit to the Private Sector 151
33. Short-Term Interest Rates 152
34. Official Interest Rates 153
35. Bank Interest Rates 154
36. Interest Rates on Government Paper 155
37. Exchange Rates 156
38. Official Reserves 157
39a. Balance of Payments, 1994-98 158
39b. Balance of Payments, 1997-2000 159
40. External Services and Transfers 160
41a. External Current Account Deficit and Financing (on old settlement basis) 161
41b. External Current Account Deficit and Financing (on new settlement basis) 162
42a. Current Account of the Balance of Payments (on old ESA97 national account basis) 163
42b. Current Account of the Balance of Payments (on ESA95 national account basis) 164
43. Selected Indicators for Trading Partners 165
44. Capital Account 166
45. General Government External Debt 167
46. General Government External Debt Service 168

Table 1. Greece: Selected Economic Indicators, 1995-2001
(Percentage changes, unless otherwise indicated)

	1995	1996	1997	1998	1999	Est. 2000	Proj. 2001
Domestic economy							
GDP	2.1	2.4	3.5	3.1	3.4	3.9	4.0
Output gap	-1.4	-1.3	-0.5	-0.4	-0.1	0.5	0.8
Domestic demand	4.4	3.3	3.6	4.7	2.9	5.0	4.8
Private consumption	2.7	2.4	2.8	3.1	2.9	3.7	3.4
Public consumption	5.6	0.9	3.0	1.7	-0.1	1.0	1.0
Gross fixed capital formation	7.8	8.4	7.8	11.8	7.3	9.3	10.1
Private	5.8	9.7	7.3	12.1	5.8	9.4	11.0
Public	14.3	2.0	10.4	10.5	14.7	8.8	6.0
Change in stocks (contribution)	-0.1	0.1	-0.1	0.2	-0.5	0.0	0.0
Foreign balance (contribution)	-2.1	-1.1	-0.4	-2.1	0.2	-1.1	-1.1
Exports	0.5	3.5	18.2	5.9	6.5	9.2	6.3
Imports	9.2	7.0	13.9	11.3	3.9	10.0	7.6
Unemployment rate	9.1	9.8	9.7	11.2	12.0	11.8	11.6
Employment	0.8	-0.4	-0.3	3.4	-0.7	1.3	0.9
Average compensation of employees (economy wide)	13.4	8.8	13.5	6.0	4.8	4.6	4.6
Unit labor costs (economy wide)	11.9	5.9	9.3	6.4	0.6	2.0	1.8
Consumer prices, end of period	7.9	6.9	4.7	3.9	2.7	3.9	3.5
Consumer prices, period average	8.9	8.2	5.5	4.8	2.6	3.2	3.6
Consumer prices (HICP), period average	...	7.9	5.4	4.5	2.1	2.9	3.4
GDP deflator	9.8	7.4	6.8	5.2	2.9	2.9	3.0
External sector							
Trade balance (in percent of GDP, settlements basis)	-12.3	-12.5	-14.3	-13.7	-14.4	-18.8	-19.0
Current account (including capital transfers; in percent of GDP, settlements basis)	-2.4	-3.7	-4.0	-3.0	-4.0	-7.0	-7.2
Foreign exchange reserves (US$ billions)	14.6	17.3	12.4	17.2	17.7	14.2 1/	...
Drachma/euro (period average) 2/	-4.1	-0.5	-2.4	-6.9	1.8	-3.0 3/	...
Nominal effective exchange rate	-1.6	-0.4	-1.5	-4.6	-0.6	-5.5 4/	...
Real effective exchange rate (consumer prices)	3.3	4.3	0.9	-2.7	0.0	-5.5 4/	...
Real effective exchange rate (manufacturing ULCs)	6.5	3.6	3.5	-3.5	1.6	-3.2 5/	...
Public finances (general government, in percent of GDP) 6/							
Current revenues	36.4	36.9	38.8	40.1	42.1	42.8	42.7
Current expenditures	43.3	42.2	40.4	40.1	40.1	39.6	38.7
Primary expenditures	32.1	31.6	32.2	32.3	32.6	32.5	32.2
Interest expenditures	11.1	10.5	8.2	7.8	7.6	7.2	6.5
Net capital spending	3.3	2.2	2.5	2.5	3.7	3.7	3.5
Overall balance	-10.2	-7.4	-4.0	-2.5	-1.8	-0.5	0.5
Primary balance	1.1	3.1	4.2	5.4	5.8	6.6	7.0
Structural primary balance	1.5	3.6	4.4	5.5	5.8	6.4	6.7
Structural overall balance	-9.6	-7.0	-3.8	-2.3	-1.7	-0.7	0.1
Debt	108.7	111.3	108.3	105.5	104.6	103.9	98.2
Financial variables							
M4N 7/	13.0	15.3	7.8	9.8	5.6	12.6 8/	...
Total credit	9.6	8.1	11.0	9.7	12.2	18.6 9/	...
3-month treasury bill rate (average)	14.3	11.9	10.1	11.9	9.8	5.7 10/	...
12-month treasury bill rate (average)	15.5	12.8	10.4	11.6	8.9	4.6 11/	...
Short-term bank lending rate (average)	23.1	21.0	18.9	18.6	15.0	11.1 12/	...

Sources: National Statistical Service; Ministry of National Economy; Bank of Greece; and Fund staff estimates and projections.

1/ End-November.
2/ Drachma/ECU before 1999.
3/ End-November compared with end-December.
4/ September compared with December.
5/ November compared with December.
6/ For 2001, fiscal projections are based on unchanged policies.
7/ M4N is defined as sthe sume of base money, private sector deposits in domestic and foreign currencies, repos, banks bonds, money market funds, and private sector holdings of Greek government securities with an initial maturity of up to one year.
8/ 12-month change in November.
9/ 12-month change in September.
10/ Latest auction November 21, 2000.
11/ Latest auction December 19, 2000.
12/ November.

INTRODUCTION AND OVERVIEW

1. After a protracted period of macroeconomic stabilization, Greece finds itself at a crossroads. Its pursuit of nominal convergence has resulted in euro-area participation on January 1, 2001, a singular achievement in light of its financial position in the early 1990s. Nevertheless, Greece continues to face a number of challenges in its goal to secure price stability and macroeconomic sustainability, especially regarding its external balance. The first two chapters of this selected issues paper address various aspects of these topics from both the near- and medium-term horizons. In contrast with its relative success in achieving nominal convergence, Greece has been less successful in achieving convergence of real living standards with its euro-area partners. Chapters III and IV examine various aspects of this process, notably the roles played by Greece's labor markets, and it success in nurturing the "new economy." Finally, Chapter V examines recent developments in Greece's financial sector, an area crucial both for financial stability as well as for long-term growth prospects.

2. In the run-up to joining the euro, monetary conditions in Greece eased by a substantially larger amount than in any first-wave EMU entrant. A number of first-round euro entrants, who were in a similarly advanced stage of the economic cycle as Greece is in now and who also experienced a substantial easing in monetary conditions, have since endured higher inflationary pressures. Chapter I (by Mads Kieler) draws on a variety of quantitative models—including some that have previously been used by staff—to shed light on inflation prospects and risks in the wake of euro-area entry. The methods employed—ranging from single-equation to vector autoregression models—unanimously suggest that consumer price inflation in 2001-02 risks exceeding the roughly 3 percent recorded in 2000. However, the fundamental change in the economic and monetary policy regime engendered by euro-area membership could alter the economy's response to inflationary shocks relative to historically observed relationships. The chapter suggests that signs of change are already visible, particularly in a reduced pass-through of exchange rate depreciation to consumer prices. A probable reason is that, whereas depreciations of the drachma exchange rate in the past tended to be permanent and spill over to inflation, price and wage setters may have become less inclined to view euro weakness as a lasting phenomenon or one that would be allowed to generate inflation. Nonetheless, although staff's assessment of inflation prospects is predicated on some improvement in price and wage behavior owing to the regime change and some structural reforms, inflation in Greece is projected to stay above the euro-area average in 2001–02 by a margin somewhat above estimated Balassa-Samuelson effects. The prospects for lower-than-projected inflation would depend foremost on future wage agreements among the social partners.

3. A second aspect in which the decline in interest rates associated with euro entry could challenge macroeconomic stability is Greece's external current account position. Greece's current account deficit widened sharply over the past two years to the second-highest share of GDP among euro-area countries. The current account balance has deteriorated markedly also in those first-wave euro-area entrants in which interest rates fell substantially and the rates of catching up to the income level of euro-area partners have accelerated (notably Portugal and Spain). Drawing again on the experience from these countries, Chapter II (by Mr. Kieler)

reviews the extent to which euro-area entry may affect Greece's external deficit—and if the current account remains a useful indicator of macroeconomic balances for monetary union members. The analysis identifies two main channels through which euro-area participation may affect the current account. One is the reduction in interest rates consequent upon the elimination of risk premia that had previously raised required returns on capital in Greece. The second is that euro participation could act as a catalyst for better economic policies and enhanced competition, raising potential output. With the help of the Fund's macroeconomic model MULTIMOD, calibrated to Greek data, the chapter investigates the extent to which a decline in risk premia may explain the widening deficit. The simulations indicate considerable shifts in saving and investment to lower interest rates, which may still leave the current account deficit in coming years somewhat above historically "normal" levels. However, the observed changes in Greece's external current account are substantially larger than can be attributed to factors directly emanating from EMU. The chapter concludes that this raises concerns about competitiveness—concerns that would intensify should the euro appreciate sharply.

4. With Greece's successful accession into the euro area (and mindful of the inflationary and external pressures discussed above), attention is shifting to achieving a real convergence of living standards in Greece with those in its partner economies. In this respect, and in comparison with other lesser advanced peripheral euro-area economies, Greece has so far made only limited progress. This has contributed to a rising unemployment rate in Greece—in contrast with the euro area, where the rate has declined in recent years. With the unemployment rate now the second highest in the euro area, the focus of Chapter III (prepared by Mark Lutz) is to explore the reasons behind the poor labor market performance in Greece, and to discuss remedial policies. The chapter's main findings are as follows. While over the last two decades Greece has generated employment at a rate in excess of the euro-area average (although not so for the second half of the 1990s), even faster labor force growth in Greece has resulted in a substantial increase in the unemployment rate. Developments in Greece reflected an interaction between "shocks" to the labor market and the institutional setting. The shocks included declining agricultural sector employment, rising female participation rates, and immigration, as well as industrial restructuring and a halt to rapid growth in public employment. Greece's labor market structures and institutions are comparatively rigid, with high relative minimum wages, strict employment protection legislation, and shortcomings in the educational system. The interactions of shocks and institutional weaknesses have resulted in increasing unemployment with lengthening duration, especially among women and the young. The authorities have responded to these developments with some reforms that have been in general useful, but fail to address key structural weaknesses in the labor market.

5. In addition to labor market reforms, growth prospects could benefit from structural measures in other areas, including those that would facilitate the emergence of the "new economy." As discussed in Chapter IV (prepared by Athanasios Vamvakidis), the information technology (IT) sector in Greece is still small compared with other industrial countries, but growing rapidly. The high cost of IT product use in Greece until recently partly explains the gap in new economy indicators with other industrial countries, and the use of IT

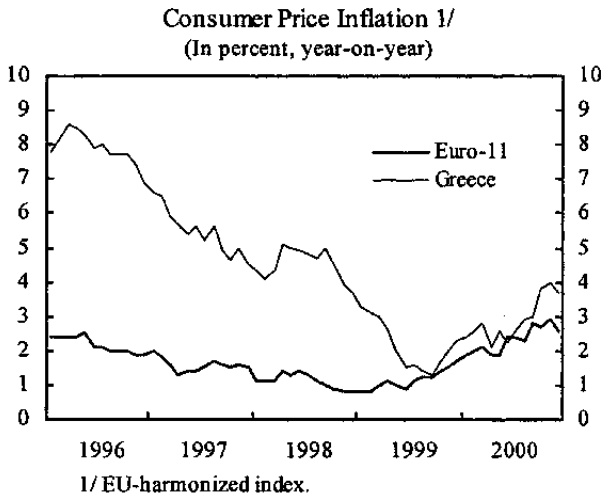
in the Greek public sector is still limited. The government has adopted plans for the promotion of the new economy, with medium-term targets for IT applications in public administration, education, and health care. And the start-up of new IT companies in the private sector is to be facilitated. The plan supports job creation in IT and its applications, and IT training of the labor force.

6. The final chapter (Chapter V, prepared by Mr. Vamvakidis) examines key issues facing the Greek banking system, a sector crucial both for macroeconomic stability as well as for long-term growth prospects. The Greek banking system is in the process of far-reaching restructuring, with further impetus provided by euro-area participation. During the 1990s, the sector changed from one that was heavily regulated and primarily served an inefficient public sector to one freed from many layers of state interference and increasingly exposed to competition. Consolidation and privatization have created larger and more cost-conscious financial groups, which have raised profitability and expanded into new financial services. Furthermore, supervision has improved and prudential regulation has been strengthened according to EU directives. Nevertheless, the system faces evolving challenges, particularly with Greece's euro-area entry. Despite recent privatizations, the state continues to control (directly or indirectly) large parts of the banking system. Even though the sector's financial strength increased after liberalization and is currently considered adequate by international rating agencies, it is still below that of other EU countries. Furthermore, the ratio of nonperforming loans (NPLs) is relatively high, despite improvements in recent years—and provisioning for nonperforming loans is relatively low. In addition, Greek banks have had only limited success in reducing costs and still lag behind other EU countries, particularly for personnel expenses. To reach best industry practices, Greek banks will have to improve risk management and internal control procedures. The sector is generally considered to be well prepared to deal with these challenges, and most performance indicators have strengthened in recent years. However, past strong reliance on high interest margins and rising competition increase the urgency for Greek banks to further strengthen their performance, while recent rapid credit growth and evolving financial market structures underline the key role for continued vigilance by financial market supervisors.

I. Inflation Risks in The Wake of Euro-Area Entry[1]

A. Introduction

7. The process of disinflation embarked upon by Greece in the early 1990s succeeded in bringing headline inflation down to euro-area levels by mid-1999 but was followed by an uptick in inflation last year. Consumer price inflation had gradually been lowered from 20 percent in 1990 to 2½ percent in 1999. Tight monetary and fiscal policies have aided disinflation in recent years, encouraged by the desire to qualify for euro-area entry. In the buoyant economic conditions of 2000, however, the tripling of oil prices and the unwinding of administrative measures that had helped Greece fulfill the Maastricht inflation criterion pushed headline inflation back up toward 4 percent. The rekindling of inflation has coincided with a substantial easing of monetary conditions related to euro entry—significantly larger than in any first-round EMU entrant—and occurred at a time when the output gap may already have closed. A number of other euro countries that entered EMU in similar conditions have since experienced substantial price and cost pressures.



8. Staff previously considered the impact of monetary conditions and the cyclical position on inflation in Greece, using a variety of approaches ranging from single-equation models to vector autoregressions (VAR).[2] This chapter draws on several of these approaches to provide model-based projections of inflation, as well as to quantify the impact of the factors that determine inflation (see Sections B and C for single-equation and VAR models, respectively).

9. Given the fundamental change in the economic and monetary regime engendered by Greece's adoption of the euro as well as recent steps toward structural reform, the "Lucas critique" applies: econometric results based on historical data do not necessarily provide a reliable guide to behavior in the new regime. Indeed, EMU participation does seem likely to

---

[1] This chapter was prepared by Mads Kieler.

[2] See Halikias and Sobczak (1998), and Swagel (1999).

affect the way inflationary shocks are propagated through the economy and, moreover, accelerated structural reform has the potential to lower price pressures significantly (these issues are reviewed in Section D). Against this background, the chapter concludes with a brief discussion of near-term inflation prospects and risks in Greece, drawing on the experience from other euro entrants (Section E).

B. Single-Equation Models of Inflation

10. This section presents two single-equation models of inflation and the associated model-based projections for inflation in 2001 and 2002. The first is an update of the simple Phillips curve model employed by staff in a 1998 Selected Issues paper (referenced above). The second is a more elaborate markup model of inflation that embeds features from the Phillips curve. To help evaluate the models' forecasting properties, the out-of-sample forecasts for the last two years are examined.

A simple Phillips curve specification revisited

11. Expressing the Phillips curve in terms of price inflation instead of wage inflation, and substituting the output gap for the unemployment rate, with the help of a simple Okun relation between output and unemployment, yields the following equation:

$$\pi = \pi^e + \beta\, gap + Z,$$

where π and π^e stand for the actual and expected year-on-year rate of inflation, respectively, *gap* is the output gap, and Z represents other shocks, such as commodity prices.

12. Of the two econometric specifications given in the 1998 Selected Issues paper, attention focuses here on the error correction version, which has had the better ex post performance. Inflation expectations are specified as a weighted average of forward-looking elements (e.g., based on foreign consumer price inflation in drachma, π_f) and a backward-looking component stemming from less than fully rational expectations or overlapping wage contracts. With the sample updated to 2000, estimation yields the following result (with standard deviations in parentheses below the estimated parameter values):[3,4]

$$\Delta\pi = \underset{(0.0012)}{-0.0006} + \underset{(0.03)}{0.18}\,\Delta\pi_f + \underset{(0.06)}{0.16}\,gap_{-2} - \underset{(0.02)}{0.08}\,(\pi - \pi_f)_{-1}$$

---

[3] In the absence of quarterly national accounts time series, quarterly data for the output gap have been derived from staff's annual estimates using a numerical technique based on the Hodrick-Prescott filter with residuals added to ensure that the annual averages of the quarterly series equal the annual series.

[4] The long-run cointegrating relationship anchors domestic inflation 1:1 to foreign inflation (in drachma); the annual growth rate of the real exchange rate is stationary.

Sample: 1981:2 – 2000:4 $R^2 = 0.37$ $\sigma = 0.97\%$ DW = 1.7

13. The estimated equation suggests a significant role for the output gap in determining inflation. The short-term direct pass-through of foreign inflation in drachmas stands at 18 percent, just below the share of imported goods and services in private consumption which is about 20–25 percent. The overall pass-through converges gradually to one as a result of the long-term cointegrating relation between domestic and foreign inflation (which is equivalent to a relative purchasing power parity condition).

14. Turning to forecasting properties, the model's out-of-sample projection for inflation in 1999 and 2000 (when estimated on data up to 1998) is shown in Table 1. In both years, actual inflation was significantly lower than predicted by the model, but this is due partly to indirect tax cuts and to other inflation-reducing measures whose mechanical effect is estimated to have lowered inflation by 0.9 percentage points in 1999 and by 0.6 percentage points in 2000.[5] Even when these effects are taken into account, however, a sizable overestimate of inflation remains for 2000. It is likely that this reflects in part the indirect effects of the lowering of taxes in 1999 (and previously in 1998), which had a subsequent inflation-reducing effect, all else being equal, since they served to limit wage increases triggered by indexation clauses.

Table 1. Ex Post Analysis: Projections for 1999-2000
(Out-of-sample forecasts; annual average inflation)

	Phillips Curve	Phillips Curve 1/	Outcome
1999	3.2	2.3	2.6
2000	4.8	4.2	3.1

Source: Fund staff estimates.
1/ Adjusted for the mechanical impact of indirect tax cuts.

Cost-based model with variable markup

15. A somewhat richer model specification is needed to take these and other recent events into account. In what follows, the domestic price level is modeled as a markup over total unit costs—including unit labor costs, import prices, and energy costs—where the markup responds to the economic cycle in a manner that retains elements from the Phillips curve.[6] In contrast to the pure Phillips curve, the inflation rate is tied not only to short-term dynamics but also to the long-run determinants of the price level. The starting point is the following long-horizon relation for the consumer price level:

$$P = \mu\,(gap, \cdot)\,(ULC^{\alpha})(PM^{\delta})(POIL^{\gamma}),$$

where μ denotes the mark-up factor (which may depend, for example, on the output gap and indirect taxes); ULC nominal unit labor costs; PM import prices (or, in the absence of a quarterly import price series, foreign consumer prices in drachma); and POIL the oil price in

[5] Fund staff estimates, based on information supplied by the Bank of Greece.

[6] The model and estimation strategy largely follow de Brouwer and Ericsson (1998).

drachma. Both the mark-up and costs may vary over the cycle. The equation can be expressed in log-linear form (where lower-case letters denote logs of the variables):

$$p = log(\mu) + \alpha\, ulc + \delta\, pm + \gamma\ poil.$$

16. Because standard inference tests can go seriously astray when one or more variables in a regression have unit roots, a first step toward a well-specified model is to determine the order of integration of the variables. The unit root test statistics reported in the Appendix indicate that the log of consumer prices, foreign consumer prices, unit labor costs, and oil prices are nonstationary, and the first three possibly integrated of order two (i.e., I(2)).[7] In view of the steady decline in Greek inflation over the last two decades, it is not surprising that the Dickey-Fuller tests should indicate that prices may be I(2). However, this trend reduction is not an innate characteristic of inflation. Rather than basing the analysis on the results of tests that are known to have poor finite-sample properties, the model is specified as if all price and cost series are I(1), bearing in mind that some caveats may apply in estimation.[8]

17. While the individual series are nonstationary, there may be a stationary linear combination of them reflecting a long-run relationship among the variables (namely, a cointegrating vector). The results of Johansen's maximum likelihood procedure reported in the appendix indicate the presence of one cointegrating vector which corresponds to the following long-run relation:

$$\underset{}{p} = \underset{(0.09)}{0.54\, ulc} + \underset{(0.09)}{0.46\, pm} + \underset{(0.02)}{0.01\, poil} + \underset{(0.005)}{0.01\, gap} + indtax.$$

The sum of the elasticities on the three cost terms is close to 1, and tests confirm that linear homogeneity cannot be rejected. The somewhat larger weight of foreign prices compared with the direct import content in private consumption may reflect indirect cost effects (as foreign inputs are used in the production of consumption items by Greek firms), as well as price effects, if domestic producers of import substitutes price strategically by maintaining some relation to import prices. The seeming unimportance of oil prices may be due to the impact of oil on other countries' prices that is already captured in *pm;* that is, *poil* merely captures the additional impact in Greece, which consumes relatively much energy per unit of

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[7] Meaning that the series needs to be differenced twice to produce a stationary series (i.e., a series whose mean and variance are independent of time). This would imply that the first difference of the log-series, namely inflation, is nonstationary.

[8] Modeling prices as I(1) is standard in the literature; see, for instance, de Brouwer and Ericsson (1998). On the use of unit root tests, see, for example, Campbell and Perron (1991) and Cochrane (1991).

GDP. The long-run equation includes indirect taxes, *indtax,* since these constitute a wedge between unit costs and consumer prices.[9]

18. Starting from a general model and simplifying to a statistically acceptable error correction model yields the following equation for the one-quarter change in prices:

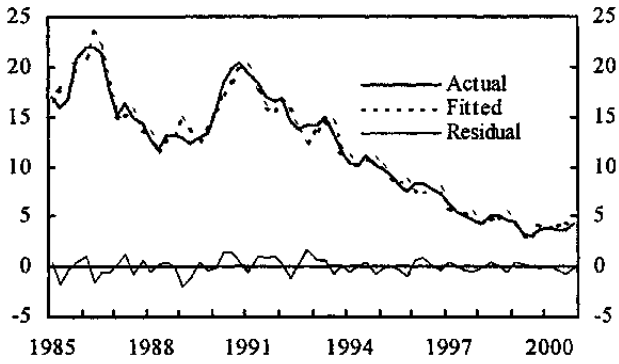
$$\Delta p = const + \underset{(0.04)}{0.10}\,\Delta pm + \underset{(0.0007)}{0.002}\,gap_{-4} - \underset{(0.04)}{0.08}\,(\text{error correction term}) + \Delta indtax$$

Sample: 1985:1 – 2000:4, $R^2 = 0.87$ $\sigma = 0.83\%$ DW = 1.7

In free estimation, the coefficient on *Δindtax* was (insignificantly) larger than one; in the final specification the coefficient was constrained to one, which is more intuitive. The relatively low significance of the error correction term (which is stationary by construction) reflects the difficulties that may arise when the left-hand-side variable appears nonstationary over the sample. The estimation equation included a linear trend as well as seasonal dummies. The contemporaneous change in unit labor costs was not significant.

19. The model implies an immediate pass-through of exchange rate changes of around 10 percent, reaching almost one-half in the long run by virtue of the cointegrating relation (assuming that unit labor costs are unaffected).[10] Excess demand pressure, as reflected in the output gap, raises the markup of prices over costs; in addition, the output gap may affect prices indirectly (and more forcefully) through any impact it may have on unit labor costs. The relatively low coefficient on the error correction term implies a considerable smoothing in the inflation process, consistent with what can be gleaned from an informal examination of the data. The half-life of deviations from long-run equilibrium is about eight quarters.

Inflation: Actual, Fitted, and Residuals 1/
(In percent)



1/ Fitted and actual values of one-quarter changes have been converted to four-quarter changes. CPI net of indirect taxes.

[9] If the long-run relation had not included indirect taxes then the error correction term in the short-run model would misleadingly impart upward pressure on inflation after a tax cut—misleadingly because the output gap (and other factors) are controlled for.

[10] If unit labor costs do respond to *pm,* the long-run pass-through may be complete, but this depends on relations outside the current single-equation framework for prices.

20. The model's out-of-sample projections for 1999 and 2000 are shown in Table 2. The projection is quite close to the outcome in the first year, but clearly above the outcome in the second year. The source of this deviation can be traced predominantly to the role of the exchange rate: the sizable depreciation (on account of euro weakness in 1999–2000) appears not to have been reflected in prices to the extent suggested by earlier behavioral patterns (see below).

Table 2. Ex Post Analysis: Projections for 1999-2000
(Out-of-sample forecasts; annual average inflation)

	Phillips Curve	Markup Model	Outcome
1999	3.2	2.9	2.6
2000	4.8	4.4	3.1

Source: Fund staff estimates.

Inflation projections for 2001–02: single-equation results

21. On the basis of the staff's WEO projections for unit labor costs, the output gap, foreign prices, and the exchange rate, the models described in this section can be used to forecast inflation for 2001 and 2002 (Table 3[11]). Both models suggest that inflation could exceed the 2000 level of 3 percent in the coming two years, based on the staff's assessment of the output gap (which is estimated to attain ¾ percent of GDP above potential) and an acceleration in wage increases to some 5 percent a year. The model projection is predicated on the assumption of a broadly unchanged euro exchange rate (the euro/dollar exchange rate is assumed to average 0.94 in 2001 and 0.95 in 2002) and a slight easing in oil prices (to $23 and $21.5 per barrel in 2001 and 2002, respectively).

22. The markup model indicates that inflationary risks—based on past behavioral patterns—may be even larger than indicated by the simple Phillips curve model. The long-run relation between the price level, unit labor costs, and import prices implies that a delayed pass-through of exchange rate depreciation could keep inflation close to 4 percent in 2001—unless the euro appreciates markedly relative to present assumptions. As the import price effect tapers off but economy-wide unit labor costs accelerate moderately, the model projects inflation to ease back to around 3¾ percent by 2002.

Table 3. Inflation Projections for 2001-02
(Annual average inflation)

	Phillips Curve	Markup Model
2001	3.8	4.2
2002	3.5	3.8

Source: Fund Staff estimates.

C. VAR Models

23. In the type of models described above, forecasts of unit labor costs, import prices, and the output gap must be provided as inputs to the inflation projection—and it is by no means obvious that these variables are easier to forecast than inflation itself. Thus, single-equation

[11] Note that the results in Table 2, in contrast to Table 1, are based on the inflation outturn through 2000.

specifications do not provide a self-contained projection of inflation; in a sense, they transform the nature of the forecasting problem to one of forecasting the explanatory variables in the equation. Structural models or vector autoregressions are required to provide a stand-alone model forecast and this section explores the implications of some simple VAR models.

24. VAR models can be used in two fundamentally different ways to shed light on inflation prospects in Greece. One approach is to estimate and identify a VAR model and use impulse responses to derive the inflation impact of particular shocks. This was the approach taken to gauge the impact of movements in the interest rate and exchange rate in the run-up to EMU in the 1999 Selected Issues paper.[12] A second approach is simply to let the VAR system project forecasts for all the endogenous variables, including inflation (in this case, the VAR model does not need to be identified). Each of these approaches is briefly explored below.

25. The response of inflation to standardized shocks to the real interest rate differential (relative to Germany) and changes in the nominal effective exchange rate are shown in Table 4. These impulse responses are based on a structural VAR model with five variables, namely inflation, the real short-term interest rate differential with Germany, and the growth rates of industrial production, nominal wages, and the nominal effective exchange rate. The interactions of the five variables are taken into account in determining the effect of shocks to any of the variables on the others. Identifying restrictions on the contemporaneous interactions of the variables were imposed using the Bernanke (1986) and Sims (1986) methodology. For example, inflation in the current quarter is assumed to be affected directly by activity, wages, and the exchange rate, with a one-quarter delay before shocks to interest rates affect inflation, reflecting the lag in the transmission of monetary policy to the economy.[13]

Table 4. VAR Impulse Responses of Inflation
(Deviation of inflation from baseline; in percentage points)

Shock to:	Interest Differential (1 percentage point)	Exchange Rate 1/ (1 percent)
Quarter 4	0.0	-0.20
Quarter 8	-0.2	-0.05
Quarter 12	-0.3	-0.05

Source: Fund staff estimates.

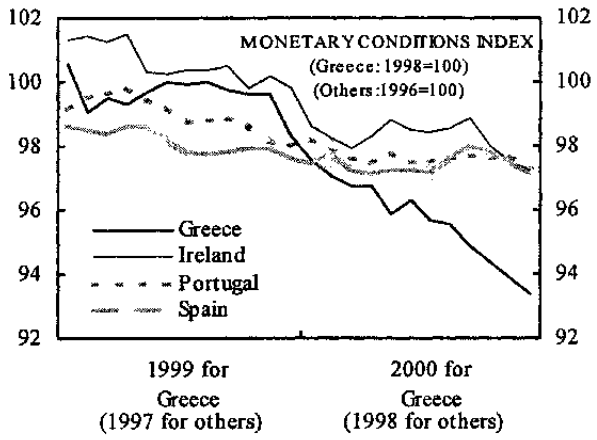
1/ Response to a one-off shock to the nominal effective exchange rate.

[12] This approach does not yield an inflation forecast per se but rather the differential impact of particular shocks.

[13] For details, see SM/99/255 (10/6/99). Industrial production was used as a measure of economic activity in the absence of quarterly GDP data.

26. The tightening of ECB policy rates since 1999 and the 3½ percent revaluation of the Greek drachma's central parity against the euro in January 2000 serve to lessen the inflationary impact of euro-linked monetary easing. Nonetheless, the reduction in the real short-term interest rate spread over the September 1999–December 2000 period was close to 500 basis points, so that EMU-related interest convergence would entail around 1 percentage point of inflation in 2001–02. This reflects the use in the model of the interest rate paid on bank deposits, which is linked to the short-term policy rate. Moreover, the trade-weighted drachma exchange rate depreciated by more than 5 percent in 2000, partly as a result of the euro's weakening against other major currencies. The calculation for the effect of monetary easing already includes the inflationary consequences of a depreciation of around 2 percent, implied by the VAR responses of the exchange rate to the easing of real interest rates. The somewhat larger actual appreciation in 1999–2000 is likely to add further to inflationary pressures in 2001–02, although the model responses suggest that the second- and third-year effects are modest. Thus, taking into account the timing of interest rate and exchange rate shocks and their propagation through time, the inflationary impact of EMU-related easing of monetary conditions—much larger than in previous euro entrants (see figure)—is simulated to be above 1 percentage point in 2001–02.

Monetary Conditions in the Run-Up to EMU



27. The VAR model may also be run as a pure forecasting model—avoiding what is sometimes seen to be overly restrictive identification assumptions and placing minimum economic structure on the quantitative model. The out-of-sample forecasts of the five-variable VAR system[14] overshoot actual inflation by a substantial amount (Table 5). As with the simple Phillips curve model reviewed earlier, the sharp reductions in indirect taxes and other measures that helped reduce headline inflation in 1999–2000 account for most of the discrepancy (about two-thirds, considering only the direct impact of tax cuts). Given the

Table 5. VAR Model Projections, 1999-2002
(Annual average inflation)

	VAR	VAR 1/	Outcome
	Out-of-sample forecast		
1999	3.9	3.0	2.6
2000	4.1	3.5	3.1
	Inflation projection		
2001	4.4		n.a.
2002	4.7		n.a.

Source: Fund staff estimates.

1/ Adjusted for the mechanical impact of indirect tax cuts.

[14] The system was amended slightly by substituting the output gap for industrial production.

"black-box" nature of the unidentified VAR system, it is difficult to pin down exactly what drives the results. The system incorporates the historically observed interactions and mutual repercussions between policy variables (interest rates and exchange rates) and the state of the economy (the output gap, inflation, and wage increases) and projects them assuming unchanged policy reaction functions and behavioral patterns.

28. The VAR specification is also employed to obtain a system projection for inflation in 2001 and 2002 directly. The results imply that inflation could rise further to 4.7 percent in 2002. The projection entails a very buoyant economy with output exceeding estimated potential by more than 2 percent by end-2002, as well as further exchange rate depreciation and a negative real interest rate differential vis-à-vis Germany—all these factors contribute to higher inflation. The results are perhaps best seen as a worst case scenario in which the euro depreciates and demand severely outpaces supply in the Greek economy.

D. Regime Change and Structural Reform: Some Possible Implications

29. The tendency for actual inflation to have undershot the predictions of quantitative models in recent years—even when heterodox anti-inflation measures are explicitly taken into account—raises the question of whether more fundamental changes in the inflation process have occurred. The most obvious candidate for triggering such change is the shift to a stability-oriented macroeconomic policy regime in the run-up to euro adoption. Some structural reforms may also have played a role.

30. Euro-area entry may affect the way inflationary shocks are propagated through the economy, including through changes in the formation of inflation and exchange rate expectations, wage behavior, and increased price competition related to enhanced product and capital market integration. As outlined below, tentative signs of change appear in all three areas.

31. The principal reason that model-based projections overshot actual inflation in 2000 appears to be that exchange rate movements, associated foremost with the depreciation of the euro (and thus the drachma), have not fed through to consumer prices to the same extent as in the past. The literature on exchange rate pass-through as well as the experience of several countries during the 1990s suggests that the extent of exchange rate pass-through may be muted by a number of factors, notably:[15]

Persistence of exchange rate shock: if businesses and workers perceive a given exchange rate change to be temporary, they are less likely to adjust prices and wages than if they believe it to be permanent;

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[15] For a review of the literature on exchange rate pass-through, see Goldberg and Knetter (1997).

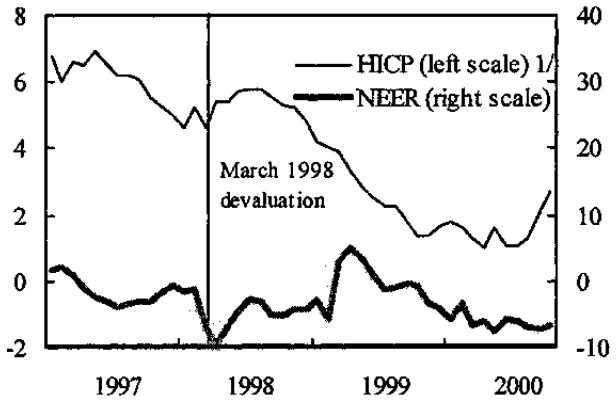
Credibility of monetary policy: if the central bank succeeds in keeping inflation expectations at bay, second-round effects on wages and prices are less likely to occur;

Market structure: when price competition is intense, foreign producers may find it difficult to pass on higher foreign costs; and

Cyclical conditions: weak demand makes it harder for importers and retailers to pass on higher costs to their customers.

32. In Greece, several of these factors may have been working to reduce the exchange rate pass-through and could continue to do so in future. Historically, depreciations of the drachma were typically not reversed and the drachma has shown a strong trend depreciation throughout much of the last three decades against most major currencies. By contrast, price and wage setters may have been less inclined to view the recent euro weakness as lasting. Thus, whereas, for example, the response of Greek core inflation (as measured by the HICP excluding energy and seasonal food) to the March 1998 devaluation was almost immediate (see figure), core inflation responded relatively late to the euro-induced effective depreciation over the last two years (a sizable fraction of the inflation rise in late 2000 was due to the unwinding of indirect tax cuts that had previously lowered the inflation rate). In addition, the anti-inflation mandate of the European Central Bank has kept inflation expectations in the area low, as gauged, for example, from yields on nominal versus index-linked bonds (where available), as well as from representative economic forecasts. Low inflation expectations are crucial in limiting second-round effects. Mostly, these changes would be expected to slow down the exchange rate impact but not to reduce the long-run effect if the exchange rate were to stay at a depreciated level.

Exchange Rate Depreciation and Core Inflation
(In percent, year-on-year)



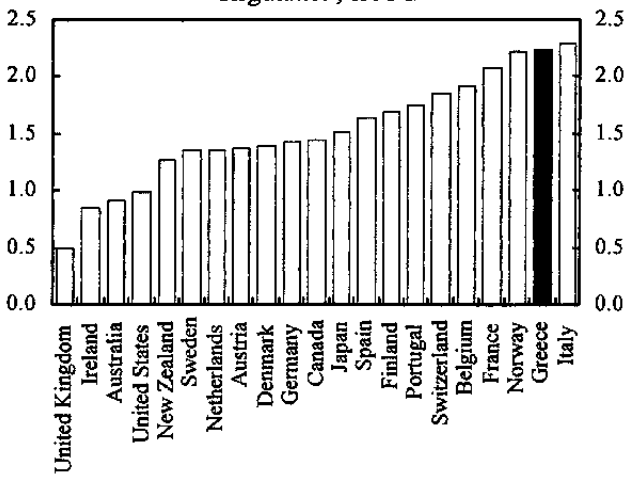
1/ Excluding energy and fresh food.

33. The tendency for Greek inflation to have undershot expectations in recent years has also been related to exceptional wage moderation, at least by past Greek standards, as trade unions explicitly supported the country's EMU aspirations. To the extent that this presented a break from past behavior—as captured in the empirical models of Sections B and C—this contributed to the model-based overestimation of inflation in some cases. Looking ahead, it remains to be seen whether wage behavior will change on a sustainable basis, as discussed in more detail in the staff report and Chapter III.

34. Fundamental changes in labor market structures could become part of a broader theme of structural reform with important implications for price behavior. Structural reform

of product markets has the potential to lower price pressure directly—a channel most vividly demonstrated by the impact of liberalization on telecommunications and, in some of Greece's EU partners, on electricity prices. More broadly, enhanced competition could set off significant efficiency gains and reduce price pressures throughout the economy. A recent OECD study (Nicoletti and others, 1999) argued that Greece had one of the most burdensome administrative and regulatory business environments among advanced economies (see figure). Progress in product market reform has hitherto lagged behind other countries, but telecommunications liberalization has now caught up with Greece's EU partners, competition policy has been strengthened in the course of 2000, and new initiatives are being considered in a broad range of areas. While product market reforms probably have played a limited role in explaining the model-based inflation overshooting so far, the recent and prospective measures could, if enacted in full, enhance the growth potential and reduce price pressures substantially in the years to come (see the staff report on the 2000 Article IV consultation, in particular Box 3, for a review of product market reform).

Summary Indicators of Product Market Regulation, 1998 1/



1/ Higher numbers indicate more restrictive regulations.

E. Inflation Prospects in the Light of Other Euro-Area Entrants' Experience

35. The experience of those first-round euro-area entrants that were also at a relatively advanced stage of the cycle when they experienced significant euro-related monetary easing—notably Ireland, Portugal, and Spain—may hold lessons for Greece. In all three countries, the resulting demand impetus spurred inflationary pressure, in some cases substantially (see Table 6). Price pressure has intensified not least for nontradables, implying that euro depreciation is not the main culprit behind the acceleration in inflation. Although Greece differs in important respects from this group of countries—especially because of the private sector's large interest income from government bonds, which may reduce the demand effect of interest rate reductions—these experiences highlight

Table 6. Inflation in Selected Euro Countries

	Core Inflation			Average GDP Growth
	Dec. 1998	Dec. 1999	Dec. 2000	1996-2000
	(HICP excluding energy and seasonal food)			
Ireland	2.1	3.6	3.9	9.2
Portugal	2.0	2.2	3.1	3.4
Spain	1.6	2.3	3.3	3.5
Greece	4.7	1.7	3.2	3.3
Euro area	1.2	1.0	1.6	2.5

Sources: Eurostat; and IMF, WEO database.

potential risks in Greece. Presumably, the full effects of recent monetary easing—much more substantial for Greece than for any first-round EMU entrant—have not yet played out. Moreover, Greece could be more exposed than other euro countries in one important respect: Greece is the only country where backward-looking wage indexation remains in force (although the current two-year wage agreements did not provide for indexation of wages with respect to inflation in 2000). Formal indexation clauses significantly raise the risk of second-round effects of import price increases.

36. In practice, staff and other forecasters' inflation projections are based on a combination of recent indicators, quantitative economic models, and qualitative judgments. Staff's central forecast for inflation is predicated on improvements in the inflation process relative to past behavioral patterns. However, unless the euro appreciates or oil prices fall more than assumed, lagged effects of the external shocks that hit the Greek economy in 2000 are likely to exert considerable upward pressure on prices in 2001. Moreover, indications have surfaced of substantial wage drift and there are signs that the social partners' resolve in sustaining wage moderation could be waning. Finally, the inflation catch-up clause in collective wage agreements threatens to be triggered with effect on wages in 2002.

Table 7. Inflation Forecasts
(Period average; in percent)

	Model-Based		Official and Consensus Forecasts			
	Markup Model 1/	VAR Model 1/	Authorities 2/	OECD 2/	Consensus Forecast 1/	Staff 3/
2000	3.1	3.1	2.7	2.9	3.1	2.9
2001	4.2	4.4	2.3	2.7	3.0	3.4
2002	3.8	4.7	2.2	2.5	2.5	3.3

Sources: Ministry of National Economy, *Stability and Growth Program*; OECD, *Annual Review: Greece 2000*; and Consensus Forecast.

1/ CPI.
2/ Private consumption deflator.
3/ HICP.

37. In the absence of accelerated structural reform and consensus on wage restraint to improve competitiveness, unit labor cost growth and inflation are projected to exceed the euro-area average in 2001–02 by a margin somewhat above estimated Balassa-Samuelson effects. On the other hand, if potential output is shifting to a higher trajectory than assumed by staff on account of structural reform and access to finance at low euro rates that boost capital formation, the economy may be better able to sustain rising demand without accompanying inflation pressure. If risks of higher wage increases can be contained, inflation could end up below the staff's projection for 2001 of an average HICP increase of 3.4 percent (well above the approximately 2 percent projected for the euro area).

Unit Root Tests and Johansen Tests for Cointegration

Unit Root Tests

Augmented Dickey-Fuller (ADF(4)) Test Statistics

Null order	*p*	*ulc*	*pm*
I(1)	-1.6	-2.9	-3.2
I(2)	-1.1	-1.6	-2.4
I(3)	-5.9**	-6.6**	-6.8**

Note: ** indicates rejection at 1 percent MacKinnon critical value.

Tests for Number of Cointegrating Vectors

(Johansen Maximum Likelihood test)

Based on trace of the stochastic matrix

Hypothesized No. of Cointegrating Relations	Eigenvalue	Likelihood Ratio	1 Percent Critical Value
None	0.72	118.2**	76.1
At most 1	0.27	35.8	54.5
At most 2	0.17	15.8	35.6
At most 3	0.04	3.5	20.0

Note: Test indicates 1 cointegrating equation at 1percent significance.

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II. Monetary Union Membership and Greece's External Current Account[16]

A. Introduction

38. Amid buoyant domestic spending in the run-up to joining the euro area, Greece's current account deficit widened sharply over the past two years to the second-highest share of GDP among euro-area countries. Notwithstanding sizable receipts from the EU, staff estimates the current account deficit (including capital transfers) to reach 7 percent of GDP in 2000, up from 3 percent of GDP in 1998. With its current account in deficit for more than two decades, rough estimates put Greece's international investment position at -35 percent to -40 percent of GDP.

39. This chapter analyzes the extent to which the widening in Greece's external current account deficit can be ascribed to factors directly related to euro membership. Current account positions have deteriorated sharply also in some first-round euro-area entrants that experienced a large decline in interest rates on euro entry and an accelerated catching up to the income level of euro-area partners (notably Portugal and Spain). The chapter reviews in particular to what extent euro entry—widely seen in Greece to herald a period of more rapid economic growth—has contributed to buoyant consumption and investment through a reduction in the risk premia incorporated in interest rates. Access to finance at euro-area rates can be expected to raise the capital-output ratio as well as productivity per worker in the economy in a sustained manner. On the other hand, the external deficit might also reflect underlying weaknesses in Greece's competitiveness, which have been brought to the fore by a domestic spending spree fueled by monetary easing. Even when driven by individually optimizing private sector actions, large current account deficits can entail macroeconomic risks—especially if domestic spending is based on overly optimistic expectations and economic growth exceeds short-term macroeconomic "speed limits."

40. The chapter reviews recent developments in Greece's current account balance and competitiveness (Section B), and recalls why the current account balance of individual euro-area countries remains relevant to policy-makers after national currencies have been relinquished in EMU (Section C). Euro entry may affect the external deficit through a number of channels (outlined in Section D), and an attempt at quantifying the most important effects is made with the use of the Fund's macroeconomic model MULTIMOD (Section E). The chapter concludes that even after the dissipation of temporary factors, sizable current account deficits are likely to persist, reinforcing the need for major structural reforms that benefit competitiveness and real exchange rate adjustment relative to euro-area partners (Section F).

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[16] This chapter was prepared by Mads Kieler.

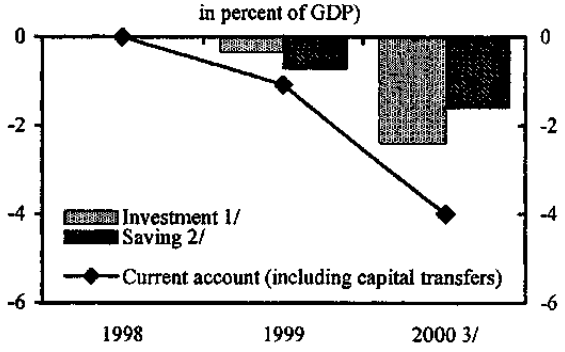
B. Recent Developments in Greece's Current Account

41. Greece's current account (including capital transfers) has been in deficit for more than two decades, according to settlements-based statistics. Long-standing features of the Greek external accounts include an extraordinarily large deficit on goods trade (in the two-digit percent of GDP range) as well as sizable net factor income payments being offset by very substantial surpluses on the services balance as well as net transfers from the EU. Exports depend heavily on tourism and shipping revenues, whereas manufactured products make up the bulk of imports.

42. Since the pace of economic growth started accelerating in the mid-1990s, the current account imbalance has swollen substantially. The deficit increased from 2½ percent of GDP in 1995 to 4 percent of GDP in 1999 before attaining, according to staff estimates, 7 percent of GDP in 2000. At this level, the current account deficit is one of the highest among advanced economies.[17] Chiefly as a result of stronger demand growth than among Greece's trading partners, the trade deficit worsened from some 12½ percent of GDP in 1995 to almost 19 percent of GDP in 2000. Against the background of historically low oil prices in 1998–99, a worsening oil balance exacerbated the current account deterioration in 2000 (by about 1¼ percent of GDP). In a longer time perspective, however, net oil imports were only moderately larger in 2000, as a share of GDP, than in most years.

43. The prime driver of increased deficits in recent years has been brisk private consumption and investment in response to low interest rates and rising business and consumer confidence. In particular, demand for import-intensive capital equipment and consumer durables, including automobiles, has surged. For instance, car registrations rose almost by one half in 1999, and by an estimated 15 percent in 2000, edged on by cuts in car taxes in September 1999. From a savings-investment perspective, both higher investment and reduced national saving (notwithstanding increased government saving) contributed significantly to the deterioration in the current account deficit since 1998 (see Figure 1). Although it is not possible to obtain an estimate of the share of investment taking place in internationally exposed sectors, the substantial rise in public investment (and housing) entails, at best, indirect gains in export capacity.

Figure 1. External Current Account and the Role of Saving and Investment
(Cumulative change since 1998; in percent of GDP)



1/ Negative number indicates increase in investment.
2/ Includes statistical discrepancy between settlements- and national accounts-based current account ratios.
3/ Fund staff projection.

[17] Owing to a substantial discrepancy between settlements- and customs-based data, the actual size of the deficit is surrounded by larger statistical uncertainty than in most other countries.

Figure 2a. Real Effective Exchange Rate
(1990=100)

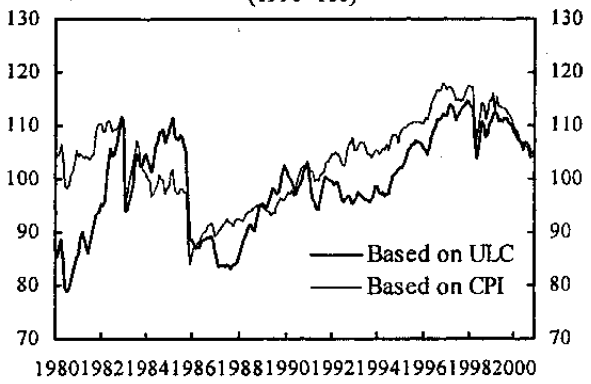
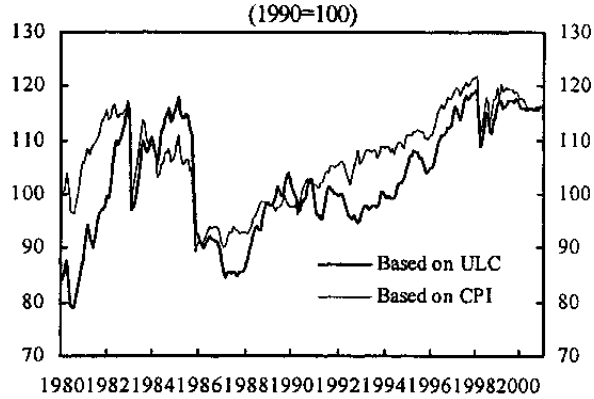


Figure 2b. Real Effective Rate vs. Euro Area
(1990=100)



44. A protracted period of real exchange rate appreciation was brought to a halt by the devaluation of the drachma before its entry into the European Exchange Rate Mechanism in March 1998 (see Figure 2a). Since its peak immediately prior to that event, the real effective exchange rate has depreciated by about 7 percent (based on manufacturing unit labor costs). Much of the improvement in cost competitiveness owes to the euro's slide against other international currencies in 1999–2000. Measured against euro-area partners, more than half of the gain in competitiveness achieved at the time of the 1998 devaluation has been eaten away by higher cost increases in Greece than in the euro-area average (Figure 2b). In addition, the 3 percent revaluation of the Greek drachma's central parity against the euro in January 2000 reduced the subsequent depreciation of the drachma toward its conversion rate in the course of 2000.

45. Greece's export performance over the last two decades has been relatively lackluster, especially in view of the country's aspirations for catching up in terms of living standards. The tendency toward real exchange rate appreciation since 1985 has been associated with a protracted decline in export market shares for goods. The arrest of this decline since 1996 and the better export performance for services in recent years may indicate that the long slide has come to a halt (see Figure 3). Export performance in the last two years has been helped by euro depreciation, and by the opening up of new trade opportunities in the Balkans.

Figure 3. Export Market Share
(1995 = 100)

46. The degree to which increased spending on durables and capital goods has been satisfied by imports and the rather unimpressive export performance (not withstanding recent improvements) are suggestive that underlying weaknesses in Greece's international competitiveness linger on. These factors are corroborated by generally moderate inflows of foreign direct investment into Greece (at around ½ percent of GDP in recent years).

C. Role of the Current Account Inside Economic and Monetary Union

47. In the context of surveillance of other euro-area countries, staff analysis has suggested that current account positions of individual euro-area members remain a useful, though less proximate, indicator of macroeconomic imbalances—owing, in particular, to the relatively low cross-country mobility of households (which links external debt repayment closely to national income), the absence of a supranational tax and expenditure system, and relatively limited cross-country portfolio diversification.[18] The limited openness of some euro-area countries (compared with individual regions in other currency areas) also implies that the consequences of a given shift in domestic spending may be concentrated on domestic output and employment.

48. Large external deficits may be of concern for policy-makers even when current account positions are driven predominantly by private-sector borrowing and investment decisions, as is the case in Greece. If these decisions turn out to have been based on overly optimistic expectations, incorrect information, or distorted incentives, households (and firms) will eventually have to revise downward their spending—perhaps substantially—to repay their debts. With domestic interest rate and exchange rate adjustment no longer available instruments in monetary union, such changes in domestic demand cannot be cushioned by a currency depreciation that improves net exports. Thus, if and when a large shift in domestic spending takes place and real exchange rate adjustment becomes both necessary and desirable, achieving it is likely to require a more protracted period of adjustment in the EMU regime.

49. At the same time, sustained deficits may be easier to finance inside a monetary union, as shifts in foreigners' willingness to lend are less likely to occur in the absence of currency depreciation risk. The more liquid euro market (compared with the earlier capital markets in individual countries) should facilitate the financing of sizable external imbalances. Nonetheless, experience in other capital markets—including the U. S. bond market—suggests that abrupt liquidity tightening in connection with major and sudden shifts in market sentiment cannot be ruled out even within single-currency areas.

D. Channels Through Which Euro Membership may Affect the Current Account

50. Access to capital at euro-area rates in a deep and liquid financial market is a major potential benefit of joining EMU for countries hoping for a rapid catching up in living standards. In standard intertemporal models of the current account, a deficit occurs if "permanent income" shifts above actual income and current investment needs rise above their "permanent" level. This situation can occur, for example, in the face of an unexpected

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[18] See International Monetary Fund (2000); and Decressin and Disyatat (2000).

improvement in productivity and a reduction in real interest rates. In this context, euro participation may affect Greece's saving-investment balance through two key channels:[19]

First, reduced interest rates and better access to finance in the deep euro-area capital market are likely to stimulate capital formation as well as consumer spending on, especially, durables and housing. Lower interest rates owe to the abolition of currency risk and the reduction in other risk premia (including inflation and credit risk premia) in the stability-oriented macroeconomic policy regime in EMU.

Second, euro participation may act as a catalyst for structural reform and intensified competitive pressures, both of which could raise potential output. Improved economic opportunities would spur investment as well as consumer spending.

Seen from the trade side, these changes could result in a surge in imports of capital and consumer goods, whereas increased productivity and nonprice competitiveness on account of higher investment and some types of structural reform could facilitate exports in the longer term. Since the extent to which EMU participation encourages structural reform is difficult to predict, the first of these channels is the more tangible one—and it is the main focus of this chapter.

51. Capital market integration affects saving and investment chiefly by a reduction in those risk premia that tended to raise interest rates and real return requirements in Greece in the past (see appendix). If required returns on Greek assets were relatively high—principally owing to risk premia, although administrative barriers may also have played a role—then their removal should result in a net capital inflow. As EMU entry became first a possibility and then a certainty, expected returns on Greek financial assets aligned with those abroad. Falling interest rates shifted the cost of capital below the marginal revenue product of capital, thus boosting investment. As long as rates of return on newly installed real capital remain higher than the cost of capital in the euro area, and national saving does not rise commensurate to the higher investment, higher capital inflows and current account deficits will occur. In the medium term, as the higher (export) capacity comes on stream and potential output catches up, the current account deficit should be expected to subside.

E. Simulating a Risk Premium Shock Using MULTIMOD

52. While exchange risk premia are very difficult to pin down empirically, it seems likely that most of the reduction in the spread of Greek interest rates over euro-area (or German) rates in recent years reflected the gradual elimination of depreciation expectations—only a relatively small part reflected a reduction in risk premia per se. Subject to substantial uncertainty, this premium is tentatively judged to have been, on average, in the range of 1–2 percentage points (for details, see appendix).

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[19] A third channel is the influence on government saving-investment balances of the fiscal framework in EMU.

53. The potential effects and time profile of a decline in the exchange risk premium have been simulated using the Fund's MULTIMOD, calibrated to Greek data. Table 1 shows the path of the current account as well as its main determinants—from the perspectives of saving and investment as well as foreign trade—following a decline in the risk premium by 1 percentage point, phased in over three years. The effects of differently sized shocks to the risk premium can be approximated by scaling the results accordingly.

54. Elimination of the risk premium raises investment, as lower capital costs lead to a higher desired capital stock. Consumption is boosted through a wealth effect, as asset prices rise and (higher) future incomes are discounted at a lower rate. Moreover, consumption is brought forward in time as the interest rate falls. Higher spending boosts imports. The real exchange rate appreciates in the short and medium term, as a result of increased pressure on domestic resource utilization, and this in turn restrains exports.

Table 1. Decline in Risk Premium: Simulated Effects 1/
(Deviations from baseline; percent of GDP unless otherwise indicated)

	Year 1	Year 2	Average Years 3-7
Current account balance	-0.9	-1.1	-0.5
Saving and Investment			
Private investment	0.4	0.9	1.0
Private saving	-1.3	-1.2	-0.6
Government balance	0.8	1.0	1.2
Foreign trade			
Real imports (percent)	3.4	4.3	4.4
Real exports (percent)	-0.1	-0.2	-0.4
Real exchange rate (percent)	0.2	0.3	0.8
Potential output			
Potential output (percent)	0.1	0.2	0.6
Real capital stock (percent)	0.2	0.6	2.0

1/ Simulated impact of a 1 percentage point reduction in the risk premium, phased in over three years, using MULTIMOD.

55. With a 1 percentage point decline in the risk premium, the current account deficit is simulated to widen by about 1 percentage point of GDP in the short run, and by about half as much in the medium term. An improvement of the government balance (on account of higher growth) counterbalances the initial sizable deterioration in the private sector saving-investment balance. If less of the fiscal windfalls were allocated for debt reduction, the short-run current account worsening and real exchange rate appreciation would be more pronounced. In either case, the current account deterioration initially overshoots its medium-run equilibrium, as firms and consumers attempt to close the gap between their actual and desired stocks of capital and consumption, respectively. After the initial overshooting subsides, the current account balance still deteriorates by about ½ percent of GDP relative to the baseline in the medium term.

F. Cross-Country Perspective and Concluding Remarks

56. Greece is not the only euro-area country to have experienced a substantial worsening in its current account balance in recent years, although the size of the deficit and the speed of its deterioration has been second only to Portugal (see Table 2). In contrast to Greece (and Portugal), other countries experiencing catching up in terms of productivity, notably Ireland and Spain, enjoyed neutral or positive current account positions prior to EMU, and current deficits remain relatively moderate there. All these four countries experienced a sizable decline in interest rates upon euro entry. Indications that macroeconomic speed limits may have been approached or exceeded in some cases are visible, among other things, in rising core inflation, output levels at or above estimated potential (except in Spain) and a general tendency toward real exchange rate appreciation relative to the euro-area average. Per capita income and productivity are lowest in Greece and Portugal, suggesting that the potential for catching up in terms of living standards and capital per worker is highest there.

Table 2. Current Account Movements in Selected Euro Countries

	GDP Growth Annual Average (Percent)	External Current Account Balance 1/ (In percent of GDP)		
	1996-2000	1998	2000	Change
Ireland	9.2	0.9	-0.6	-1.5
Portugal	3.4	-4.9	-9.0	-4.1
Spain	3.5	-0.5	-3.5	-3.0
Euro area	2.5	0.7	0.0	-0.7
Memorandum:				
Greece	3.3	-3.0	-7.0	-4.0

Source: IMF, WEO database.
1/ Including capital transfers.

57. On the basis of the quantification performed in this chapter, the reduction in interest rates and risk premia associated with euro entry would indeed be expected to lead to considerable shifts in saving, investment, and the current account balance. However, the observed change in the current account deficit in the last few years is larger than can be attributed to interest rate convergence in EMU, possibly reflecting more optimistic assessments of future income prospects. The simulations indicate that the current account deficit could remain somewhat above historically "normal" levels in coming years.[20] The size of this imbalance causes, however, some apprehension about Greek competitiveness—concerns that would intensify should the euro appreciate markedly. As discussed in the staff report, this has potential implications for future wage growth in Greece. Moreover, it adds urgency to structural reforms that strengthen competitiveness and raise the supply of skilled labor—benefiting efficiency in production as well as the range and quality of Greek export products.

[20] Although one's view of the "normal" deficit may be informed by the macroeconomic balance approach (see Isard and Faruquee, 1998), that approach implicitly assumes constant exchange risk premia.

Capital Market Integration and Risk Premia

58. Throughout the 1980s and 1990s, Greek interest rates at both the long and short ends of the maturity spectrum exceeded their counterparts in Germany by a large margin.[21] For assets with identical characteristics in terms of default risk, taxation, and so on, and in the absence of capital controls, the interest spread may be decomposed into two elements: first, the expected depreciation of the drachma; and second, an exchange risk premium proper. Here, the expected exchange rate should be thought of as the mean of a probability distribution of the future exchange rate, while the exchange risk premium arises because risk-averse investors are not indifferent to the *shape* of this probability distribution. If, for instance, an asymmetric distribution has a nonnegligible probability of a large negative outcome, risk-averse investors will demand compensation in the form of a higher mean.[22]

59. Thus, to the extent that investors are risk averse, the expected future spot rate can differ from the forward exchange rate (assuming for convenience that a forward market exists) by a premium that compensates for the perceived riskiness of holding Greek assets:

$$f_t = E_t(s_{t+k}) + rp_t, \qquad (1)$$

where $s_t = log(S_t)$ is the logarithm of the price of deutsche mark (DM) measured in drachma at time t; $f_t = log(F_t)$ is the log of the forward value of S_t for a contract expiring k periods ahead; E_t represents the expectation conditional on information available to the market at time t; and rp_t is the risk premium for an asset of maturity k.

60. Assuming that the conditions for risk-free arbitrage between the spot and forward exchange markets exist, the ratio of the forward to the spot exchange rate will equal the interest differential between assets in local currencies, which may be written in log-form:

$$f_t - s_t = (i_t - i^*_t), \qquad (2)$$

where i_t is the k-period domestic interest rate; and i^*_t is the corresponding foreign interest rate. Combining these two equations yields:

$$(i_t - i^*_t) = E_t(s_{t+k}) - s_t + rp_t, \qquad (3)$$

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[21] Germany serves as the benchmark country, given its anchor role in the pre-EMU European Monetary System. Implicitly, the euro is assumed to have characteristics similar to those of the deutsche mark.

[22] In line with Markowitz's (1959) definition of risk premia. For a survey of recent evidence pertaining to exchange risk premia, see Engel (1996).

61. Equation (3) contains two unobservables, namely the risk premium and the expected rate of depreciation. To operationalize the concept, it is necessary to add an assumption of rational expectations in exchange markets. In this case, future realizations of s_t will equal the value expected at time t plus a white-noise error term (ε_{t+k}) that is uncorrelated with all information known at time t:

$$s_{t+k} = E_t(s_{t+k}) + \varepsilon_{t+k}, \tag{4}$$

62. Substituting this expression into equation (3) and rearranging gives:

$$(i_t - i^*_t) = E_t(s_{t+k}) - s_t + rp_t + \varepsilon_{t+k},$$

$$\Downarrow$$

$$rp_t = (i_t - i^*_t) - \Delta s^e_{t+k} - \varepsilon_{t+k}. \tag{5}$$

63. Under the stated assumptions—which include perfect capital mobility and rational exchange rate expectations—the mean risk premium over long periods would correspond to the mean interest differential less the mean currency depreciation. The mean expectational error would, in sufficiently long samples, be close to zero as a result of the law of large numbers.

64. It is instructive to consider the risk premium from the respective points of view of foreign and domestic investors. Foreign investors require a risk premium to compensate for a small probability of large negative events (drachma depreciation). Greek investors may accept a lower expected return on foreign currency holdings because they act as an inflation hedge in the case of large drachma depreciation.[23]

65. The table below shows the mean interest differentials for three-month money market rates and rates of appreciation for 13 EU currencies against the DM since 1985 and before the onset of EMU. Currency depreciation has tended to offset interest rate spreads in a consistent manner: the correlation coefficient is close to -1. The excess return, defined as the interest rate differential minus the rate of appreciation, varies from close to zero in the Netherlands and Austria, whose currencies were closely linked to the DM, to some 2–2½ percentage points in Greece and Portugal in the 1985–98 sample.

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[23] More precisely, asset pricing models typically imply a risk premium where the return on an asset covaries positively with some benchmark (such as the return on the market portfolio, or the aggregate marginal rate of substitution in consumption) that makes risk undiversifiable (see Engel, 1996). The foreign exchange risk premium depends on the relative riskiness, in this sense, of domestic and foreign nominal assets. Nondiversifiable risk does appear higher in emerging markets, which historically included Greece (see Hwang and Satchell, 1999).

66. Assuming that expectational errors were zero on average, the excess returns would represent average risk premia over the period. However, the means are very imprecisely measured over short samples and the possibility exists that the ex post excess returns reflects market expectations of "large" events that did not occur (or occurred to an unusual extent) over the sample period (the "peso problem").[24] This phenomenon probably accounts for a number of characteristics in the data, including a negative excess return relative to Germany in one country.

EU Countries: Mean Appreciation and Interest Differentials relative to DM; Pre-EMU 1/
(In percent; annual rate; 1985-98)

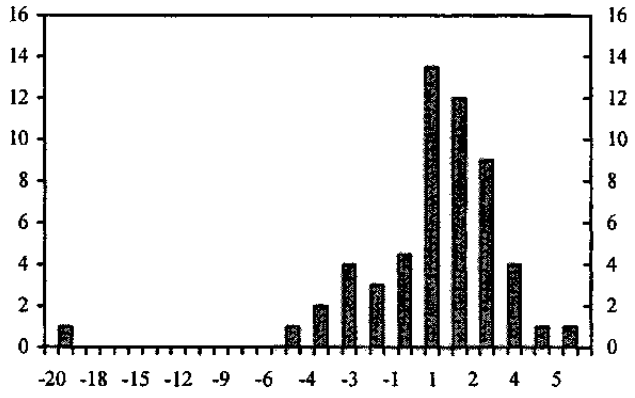
	Mean Appreciation vs. DM	Mean Interest Rate Differential	Mean Excess Return
Austria	0.0	0.2	0.2
Belgium	-0.2	1.2	1.1
Denmark	-0.4	2.4	2.0
Finland	-2.9	3.4	0.6
France	-0.7	1.8	1.1
Greece	**-10.5**	**12.3**	**1.9**
Ireland	-1.7	3.4	1.7
Italy	-3.5	5.1	1.6
Netherlands	0.0	0.2	0.2
Portugal	-4.8	7.2	2.4
Spain	-3.1	5.3	2.1
Sweden	-4.0	3.7	-0.3
United Kingdom	-2.4	3.6	1.3
Average	-2.6	3.8	1.2
Correlation coefficient 2/		-0.97	

Sources: OECD and Fund staff.
1/ Three-month money market rates. Means of quarterly data.
2/ Correlation between mean appreciation and mean interest differential.

67. The ex post distribution of Greek excess returns over the 1985–98 sample includes an instance of a large negative event for foreign investors, and is suggestive of the distributional shape that prompts investors to exert a risk premium (see figure).

68. The mean excess return of around 2 percent ex post should probably be interpreted as an upper limit of the size of the risk premium on drachma assets prior to EMU entry. It is reasonable to assume that Greece had acquired increased currency credibility on its own account after the disinflation process started in the early 1990s and especially after macroeconomic stability became a priority goal in the mid-1990s. For this reason, a range of 1–2 percentage points is assumed for the risk premium in Chapter II.

Distribution of Excess Returns on GRD vs. DM, 1985-98
(Quarterly returns at annualized rate; in percent)



[24] See, for instance, Krasker (1980).

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III. Greece's Labor Market—Grappling with High Unemployment[25]

A. Introduction

69. With Greece's successful accession to the euro area, attention has shifted to achieving a real convergence of living standards in Greece with those in its partner economies. In this respect, and in comparison with other lesser advanced peripheral euro-area economies, Greece has made only limited progress. One reason for this has been the inadequate contribution from labor in the growth process. While the unemployment rate has fallen for the last few years in the euro area, it has been rising steadily for the last half decade in Greece, and now exceeds the former by a wide margin. The focus of this paper is to explore the reasons behind the poor labor market performance in Greece, and to discuss briefly remedial policies.

70. This chapter's main findings are as follows. While over the last two decades Greece has generated employment at a rate in excess of the euro-area average (although not so for the second half of the 1990s), even faster labor force growth in Greece has resulted in a substantial increase in the unemployment rate, in contrast to declining rates in many partner countries. Developments in Greece reflected an interaction between "shocks" to the labor market and Greece's particular institutional setting (see Blanchard, 1998). The shocks included declining agricultural sector employment, rising female participation rates, and immigration, as well as industrial restructuring and a halt to rapid growth in public employment. Greece's labor market structures and institutions are comparatively rigid, with high relative minimum wages, strict employment protection legislation, and shortcomings in the educational system. These interactions have resulted in increasing unemployment with lengthening duration, especially among women and the young. The authorities have responded to these developments with some reforms that have been in general useful, but fail to address some of the key structural weaknesses in the labor market. The paper concludes with a review of additional reform options.

71. The chapter is organized as follows. Section B examines Greek labor market developments from an international perspective, followed by a review of Greek labor market institutions (Section C), identifying similarities and differences with other, mainly European, economies. Section D discusses the interaction of economic shocks and institutions in accounting for past labor market developments, making use of measures for determining structural labor supply and demand. Section E reviews the Greek authorities' policy responses to date, and concludes by discussing additional measures that may be needed to achieve a major reduction in unemployment, and to facilitate the convergence of real living standards.

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[25] This chapter was prepared by Mark Lutz.

B. Labor Market Developments

72. Greece's current economic expansion has entered its eighth year, with rates of growth exceeding those in the euro area for the last five (Figure 1).[26] But despite this generally favorable development, employment growth in Greece in the current expansion has lagged that in the euro area.[27] More troubling, while the euro-area unemployment rate fell for the last three years, to below 9 percent by end-2000, Greece's unemployment rate rose steadily throughout the previous decade, to 11.9 percent in 1999 (data for 2000 are not available).[28]

73. When viewed from a longer perspective, employment in Greece over the last two decades has risen by more than in the euro area on average, and has recorded one of the highest growth rates among EU economies (Figure 2).[29] But the expansion of the labor force over this period has been even larger, resulting in an increasing unemployment rate. The labor force's growth itself reflected a number of factors. While the growth rate of the population, and of the domestic working-age population in particular has been falling, it was temporarily supplemented by sizable net immigration in the late 1980s and early 1990s, including by ethnic Greeks from the Black Sea basin (Figure 3). With the waning of this factor, however, the growth of the working-age population approached zero by the end of the 1990s. The second major factor influencing labor market growth was a slowly rising labor participation rate, with an increasing female rate more than offsetting a previously declining, and now largely constant, male rate (Figure 4). However, as in other euro-Mediterranean economies, the female participation rate remains well below the euro-area

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[26] Portugal, Ireland, and Spain are the other European Union (EU) recipient countries of Economic and Social Cohesion funds, intended to promote economic development and facilitate the convergence of real living standards to EU averages. Italy was included in Figure 1 and in other cross-country comparisons as a euro-Mediterranean economy with many features similar to Greece.

[27] Although Greece is now a euro-area member, euro-area aggregate data including Greece are generally not yet available. Thus, throughout this paper, euro-area data refer to those comprising the original 11 members.

[28] Greece's labor data contain a number of significant shortcomings. Among these, labor force survey data have been available on an internationally comparable basis only since 1998, and thus data in prior years are not fully comparable, while data for 2000 are not yet available. Manufacturing sector earnings, productivity, and unit labor cost data are not available after 1998, and economy-wide average earnings are not available.

[29] The euro-area data are affected by German unification in 1991.

average.[30] The youth (aged 15–24 years) participation rate in 1999, at 36.4 percent, is also well below the EU average of 46.6 percent, although a review of enrollment rates suggests that this pattern is not explained by an unusually large fraction of the cohort participating in education.

74. A number of notable changes in employment patterns have emerged in the past two decades. Agricultural sector employment has been steadily declining over the period, with the drop averaging about 1 percent of total employment a year over the last three years; nevertheless, the sector still accounted for 17 percent of total employment in 1999 (Figure 5). Industry's relative employment share remained constant at about 20 percent until the early 1990s, when long-delayed restructuring occurred, with a resulting decline in the share to about 16 percent in 1999. In contrast, the public sector's employment share rose by 3½ percentage points to slightly above 18 percent in 1991, in part as the government attempted to improve labor market conditions directly by employing increasing numbers in the general government, as well as through expansion of public enterprise hiring. Thereafter, attempts to improve the public finances (with an eye to meeting the Maastricht criteria) led the government to impose in 1996 in a 1-for-5 general government hiring rule (i.e., one hire for five departures); this rule did not apply to education, healthcare, and defense. In addition, protracted attempts to aid "ailing enterprises," some of which had been nationalized in the wake of the 1970s oil price shocks, were wound up, resulting in the closure of numerous firms, while other overstaffed state-owned enterprises and banks, especially those facing prospective privatization, limited new hiring. These efforts have severely limited traditional employment sources for many, especially those with tertiary education.[31]

75. The share of self employment has steadily declined in recent decades, but still accounts for more than 40 percent of total employment, a figure much higher than in most other euro-area economies (although the share is also high in Italy).[32] As a result, the average enterprise size in Greece, at 1.9 individuals, is far smaller than in the EU (7.2, see OECD, 1998a). The use of part-time employment in Greece remains limited, despite the progressive lifting of restrictions on its use in the 1990s, accounting for only 6 percent of

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[30] The participation rate in Greece of females aged 25–64 was 50 percent in 1998, similar to Spain (51 percent) and Italy (47 percent), but well below the euro-area average of 63 percent (OECD 2000b).

[31] Nevertheless, the general government continues to account for 20 percent of all dependent employment, and, as discussed below, plays an important role in the wage-setting process.

[32] This pattern persists even when the agricultural sector is excluded. Greece's nonagricultural self-employment was 27 percent (excluding owner-managers of incorporated businesses) of nonagricultural civilian employment in 1997, compared with a simple average of 11.9 percent among OECD economies, and 14.5 percent on average for EU economies (OECD, 2000b, Table 5.1).

employment in 1999, half the EU average rate. The share of females in part-time employment, about 10 percent of total female employment in 1999, was almost three times the male share. In addition, most part-time work may be "involuntary," as a recent survey indicated that 70 percent of Greek part-time workers in Greece would prefer full-time employment (European Commission, 2000c). Temporary workers on fixed-term contracts constituted 7½ percent of total employment and 13 percent of dependent employment, similar to the EU average, with many seasonal workers (including those in the tourist sector) hired on such contracts.

76. Greece has been among the unfortunate group of economies experiencing a rising structural unemployment rate in the 1990s, with only two other OECD countries estimated to have higher rates (OECD *Analytical Database*). In addition, the composition of unemployment displays a number of features indicative of a poorly functioning labor market. Unemployment duration steadily worsened until the mid-1990s, with the majority of unemployed having lacked jobs for more than one year, worse than the EU average (Figure 6, and compared with only 8 percent of total unemployed in the United States). The majority of the unemployed have no previous employment experience, a rate 2½ times that in the EU and three times the euro-area rate, reflecting the extreme difficulties facing particularly the young and women. In fact, the male youth (15–24 years) unemployment rate is almost 25 percent, while for females the youth rate exceeds 40 percent (Figure 4).

77. Another indication of Greece's poor labor market performance is the absence of the well-known pattern of unemployment rates declining among cohorts with higher levels of educational attainment. Rather, Greek unemployment rates display a "hump" pattern, with higher rates for women aged 25–64 with upper secondary educations compared with those with less than upper secondary educations (Table 1). Among men of the same age group, the unemployment rate increased steadily with rising educational levels, with the exception of those with academic tertiary-level educations or beyond. This pattern is even more pronounced among youth aged 15–29, with unemployment rates among those with tertiary educations double the rates of those with less than secondary educations, and triple those among all OECD economies on average (Table 2). Among the explanations for this pattern is the continued high share of agricultural employment in Greece, providing employment opportunities to those with lower educational attainment. But one would expect that the pattern would be less pronounced for youth, as fewer individuals are entering this declining sector. Thus, reasons behind this humped unemployment rate pattern may rather be due to a poorly performing educational system and to labor market segmentation between "insiders" and "outsiders" (discussed further below).

78. The regional dimension of unemployment is of less importance in Greece than in some other EU economies. Unemployment rates generally tend to be lower in the islands (ranging from 8.1 percent of the labor force on Crete to 11.6 percent in the Southern Aegean in 1999, with a simple average of 9.8 percent) than on the mainland (from 7.8 percent in the Peloponnese to 14.6 percent in Western Macedonia, with an average of 12.3 percent). Greek regional unemployment rate disparities are generally lower than in other EU economies, as the coefficient of variation, at 24.7 in 1997, was less than those in 7 other countries, while

higher than in 5 other countries (with the coefficients of variations ranging from 4.1 in Ireland to 61 in Italy, OECD 2000b).[33] The coefficient of variation fell to 18.3 in 1999, although as the regrettable result of relatively larger increases in unemployment rates in those regions that had previously had relatively low rates. Higher unemployment rates also tend to be more of an urban phenomenon, with a rate of 13.7 percent in urban areas in 1999, compared with 10.1 percent in semi-urban areas, and only 7.4 percent in rural areas.

C. Labor Market Institutions

79. Greece's labor market institutions have undergone extensive changes in the past two decades. While the wage formation system has been broadly liberalized, it remains rather centralized, with the government maintaining a large, although generally indirect, role in the private-sector wage formation process. Moreover, a legacy of previous governments' more direct influence on wage formation, namely a relatively compressed wage structure, continues to influence labor market outcomes, especially when combined with a sizable increase in labor taxation, to the detriment of new labor market entrants' and the less-skilled's employment prospects. Greece also has among the most strict employment protection legislation among OECD economies. While this could have beneficial effects regarding in-work training, and there is little evidence internationally that this directly raises the unemployment rate, there is evidence that it is associated with reduced labor market flows and longer unemployment spells, and that the costs of employment protection afforded to prime-age males is borne by prime-age females, the youth, and older workers. Greece has a very limited unemployment benefit system, which minimizes the negative labor market incentives that have been found to have been important in increasing unemployment levels and duration in other EU economies. However, Greece also has had relatively limited active labor market programs, lending little support to those attempting the transition from education to employment, or in retraining workers. Attention must also be paid to other social and economic aspects affecting the labor market, including product market competition, entrepreneurship, innovation and technology, and the educational system. Unfortunately, Greece is found to have extensive product market regulations, stifling red tape, a barely nascent "new economy," and weaknesses in its educational system.

Wage formation

80. Prior to the early 1990 reforms, the government was actively involved in the wage formation process. Following the fall of the military junta in 1974, and in reaction to wage suppression that had occurred under that regime, subsequent governments effectively imposed sizable increases in the minimum wage that exceeded productivity growth. In addition, wage increases in both the public and private sectors in the 1980s were determined under an automatic indexation system linked to inflation, but with less than proportional

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[33] Data for Luxembourg are not available, and Denmark consists of a single region in the data.

indexation for higher incomes. However, this system was overridden at times (in response both to economic considerations, such as the adjustment program in 1986–87, as well as to the electoral cycle). In addition to creating wide swings in real wages, this intervention resulted in a pattern in which the ratio of minimum wages to average earnings was relatively high, and relative wages were compressed (Figure 7).[34]

81. The regressive automatic wage indexation system was abolished in 1991 (although a system for compensating private sector workers for higher-than-expected inflation now exists). The collective bargaining system was also decentralized and broadened. Greece now has a multi-tiered system of collective agreements, with the broader agreements, beginning with the national collective agreement between labor and employers concerning the private sector minimum wage, setting effective floors for subsequent sectoral or enterprise agreements. As a result, some measures indicate that wage compression has been somewhat mitigated in the 1990s (Figure 8).

Tax wedge

82. The role of taxes on the level of unemployment is somewhat controversial (Nickell, 1997).[35] A comparison of the tax wedge in Greece with its EU and euro-area

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[34] While there are no data on economy-wide average earnings in Greece, various measures of the ratio of minimum to average wages have been constructed. The OECD (Table 2.3, 1998b) provides a ratio of 51.4 percent in comparison with mean average manufacturing wages, higher than a simple average of 46.5 percent for all available countries, but lower than the 56.7 percent for reporting EU economies. However, the national collective agreement provides for higher minimum wages for workers with more experience or who are married, which is not captured in the ratio above. The OECD (1996) estimates that this raises the ratio of minimum to average wages for blue collar workers by some 10 percentage points. Dolado (1996) includes an estimate of 62 percent, compared with a simple average of 52 percent for the EU. He also estimates that 20 percent of workers have wages at or near the minimum, while this share in other countries is all in single digits except for France and Luxembourg (at 11 percent). Further evidence of a compression of wages is found in a recent Eurostat news release, stating that while the share of low-wage workers was 17 percent in Greece, compared with an EU average of 15 percent, the share of them so classified because of low pay for full-time employment was 73 percent, far above the 37 percent EU average (Eurostat 2000).

[35] If capital is internationally mobile, then the tax burden would be expected to be borne by labor, with any increase in employer-paid taxes eventually resulting an offsetting drop in wages. There is, however, one case in which this shifting is not possible even with mobile capital—when employees receive legally mandated minimum wages. A somewhat dated study ruled out any long-run impact of the total tax burden on employment (OECD, 1990, Annex 6A). More recently, Nickell (1997) found that an increase in the overall tax burden may raise unemployment and reduce labor supply, but the estimated coefficient values were

(continued)

partners indicates that the total wedge is almost identical to its partners' average wedge, and had changed little in the mid-1990s (Table 3).[36] It is, however, higher than rates in other lesser-advanced partners (Ireland, Portugal, and Spain), and significantly higher than those, for example, in the United States. From a broader historical perspective, the total tax wedge (the sum of effective average labor and consumption tax rates) has increased markedly, with higher labor as well as consumption taxes (Figure 9). This reflects increased payroll taxes in the context of the 1990–92 social security reforms, personal income tax bracket creep from a failure to adjust tax brackets fully for inflation, and the introduction of a value-added tax in 1987 (with an increase in the basic rate to 18 percent in 1998).[37] While the effects of bracket creep most likely have had little impact on those earning minimum wages (which fall into the zero-tax bracket), the boost in payroll taxes could have had deleterious effects on labor demand, especially for the unskilled and new labor market entrants.[38]

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relatively small (requiring a 10 percentage point fall in the total tax burden to reduce unemployment by about 25 percent and increase labor supply by about 2 percent). Daveri and Tabellini (2000), using data on 14 countries for 1965–95, found strong support for the positive effect of labor taxes on unemployment. Elmeskov, Martin and Scarpetta (1998), using a more recent data set (1983–95), also found a significantly positive impact of the tax wedge on the unemployment rate, suggesting that an observed reduction in the OECD average tax wedge of 7 percentage points during the 1983–95 period may have contributed to a reduction in the structural unemployment rate by about 0.7 percentage points.

[36] This is somewhat surprising, given the sizable increase in government revenues in Greece's fiscal consolidation, but may be in part a statistical artifact. Under the old, ESA79-based, national accounts (the basis for Table 3 and Figure 9), the sum of direct and indirect taxes and social insurance contributions totaled 32.8 percent of GDP in 1994 and 35 percent in 1998, an increase of 2.2 percentage points. Under the new, ESA95-based, national accounts, the totaled increased from 33.5 percent of GDP in 1995 (the earliest year available) to 37.4 percent in 1998, a 3.9 percentage point increase, compared with a 1.6 percentage point ESA79-based increase over the same period. The sum is estimated to have increased by a further 2.7 percentage points over 1998–2000.

[37] Although, as discussed below, the government has recently reduced personal and payroll taxes, and intends to undertake fundamental tax reform in the next three years.

[38] The OECD also argues that the structure of the present tax system in Greece promotes self-employment, largely through lower effective social insurance contribution rates, provides incentives to work in the untaxed underground economy, at least until a few years before retirement, and discourages secondary earners from entering the labor market on a part-time basis (OECD, forthcoming).

Employment protection

83. Employment protection legislation (EPL) in Greece is among the strictest from an international perspective, with only Portugal and Turkey considered to have stricter systems (Tables 4–7). It is interesting to note that on the basis of these summary indicators, Greece's system has not materially changed since the late 1980s. In contrast, ten other economies liberalized their systems, especially Sweden, Denmark, Italy, and Germany, and mostly regarding temporary employment.[39] It is also notable that among the regional groupings, employment protection remains clearly the strictest in Southern European economies, despite the liberalization efforts in Portugal, Italy, and Spain.[40] In examining the composition of the summary indicator, Greece's EPL strictness for regular employment is about average, the sixteenth strictest of 27 economies. It has the same relative ranking regarding its regulation of collective dismissals. With regard to the regulations regarding temporary employment, however, Greece's were among the strictest. Temporary work agencies were, until late 1998, illegal.

84. The economic impact of strict EPL, especially for the unemployment rate, is mixed.[41] As intended, it reduces the separation rate from employment into unemployment, but will also reduce the flow out of unemployment into work (which should apply to new school leavers as well), as firms are cautious about new hiring (Nickell 1997). This appears to be broadly consistent with the Greek case, which has the lowest rates of inflow and outflow from those unemployed among OECD members, as well as one of the lowest shares of dismissed workers in total unemployment (OECD 1996). Information regarding the degree to which EPL is a binding constraint in Greece is unclear, but it appears to be related to the business cycle, although EPL would not apply to Greece's large share of self-employed (and clearly, not to the underground economy either).[42] It has been suggested that EPL, by

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[39] Greece's recent liberalization efforts are discussed below.

[40] Although it must be remembered that Southern Europe also has the highest rate of self-employment, whom must presumably have the most labor flexibility (Nickell 1997).

[41] See OECD (1999b) Annex 2.C for a detailed summary of findings from selected studies, as well as Blanchard and Wolfers (2000).

[42] In a 1994 survey, when Greece had just emerged from recession, fully 80 percent of employers considered the strictness of hiring/firing practices to be important or very important, the highest share among all reporting countries (Scarpetta 1998). In more recent surveys, however, and following six years of economic expansion, industrial employers thought that severance payments and legal procedures were less important as potential constraints to output response to a demand stimulus than the average EU or euro-area respondents, while the responses for retail trade employers were similar to the averages (European Commission, 2000a; 2000c).

reinforcing job security, may enhance productivity performance, as workers are more willing to help in improving production processes, and as long-term employment relations may make employers more willing to provide training (Scarpetta, 1998). Unfortunately, these potential benefits have largely not materialized in Greece. Until recently, the level of factor productivity was largely stagnant (Lutz, 1998; and Figure 7). In addition, Greece has the lowest participation rate in career- or job-related training among OECD economies (OECD, 1999c). Strict EPL has been found also to be related to lower short-term unemployment and greater long-term unemployment, a situation borne out in Greece (Figure 6). But the overall effect on the level of unemployment is unclear, as the fewer flows into unemployment are potentially offset by longer durations.

Unemployment benefits

85. In contrast to the strict legislation protecting the employment positions of traditionally prime-age males in Greece, the level of assistance provided to the unemployed is quite limited. The average net replacement rate in Greece is roughly one-half of the average production worker's net income, compared with 65–75 percent on average for the EU and euro area (Table 8). In addition, the duration of unemployment benefits, totaling 12 months for most workers, is among the less generous.[43] Accumulated empirical evidence suggests a clear relationship between the generosity of unemployment benefits (both in level and duration) and unemployment (Scarpetta, 1996; Nickell, 1997; Nickell and Layard, 1997; Elmeskov, Martin, and Scarpetta, 1998; Blanchard and Wolfers, 2000). Thus, it would appear that the deleterious effect for job-search incentives from overly generous benefits is largely absent in Greece.

Active labor market policies

86. As with unemployment benefits, the level of assistance provided to those seeking to obtain or return to employment is limited in Greece. Greece is among the lowest spenders in the EU and euro area on active labor market programs (ALMPs), with considerably lower expenditures in all areas except for youth measures (Table 9).[44] Similarly, the macroeconometric evidence regarding ALMPs generally suggests that such policies are effective in reducing the overall unemployment rate, and especially the long-term unemployment rate (Nickell, 1997; Nickell and Layard, 1997; Blanchard and

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[43] Unemployment assistance in Greece, available to those who exhaust or are not eligible for unemployment benefits, is even less generous, amounting to a one-time payment of 13 daily unemployment benefit payments.

[44] Greece has to some degree shifted the costs of work for the disabled onto the private sector by requiring large industrial firms (those with more than 50 employees) to hire up to 8 percent of their labor force from the socially underprivileged (veterans and the handicapped), compared with an EU average of 3 percent (OECD, 1996).

Wolfers, 2000).[45] It would thus appear that there are considerable opportunities to reduce unemployment through targeted measures.

Other influences

87. In addition to labor market institutions, it has become widely recognized that other social and economic factors have significant influences on labor market behavior. Included among those are the degree of product market competition, the scope for entrepreneurship, the government's and private sector's involvement in innovation and technological activities, and the quality of a nation's education and training infrastructure. As the first two topics are covered in the staff report (Box 3), and the third topic in Chapter IV, little additional will be said here.

88. Greece's educational system has been challenged to adapt to a rapidly changing economic and social environment, lest the skills obtained by recent graduates become misaligned with those demanded by employers, resulting in protracted spells of unemployment among new labor market entrants. Greece's eighth grade math achievement scores are significantly below OECD, EU, and euro-area averages. From an international perspective, the educational attainment of Greece's working age population is quite bifurcated, as those aged 25–64 with only lower secondary educations accounted for 54 percent of the labor force in 1998, compared with a 38 percent simple average for OECD economies.[46] In contrast, the share of the population with tertiary-type A (i.e., academic-oriented collegiate educations) and advanced degrees was 11.3 percent, close to the 14.1 percent average. The gap in the percentage of the population aged 25–34 that has attained at least upper secondary educations compared with the OECD average has narrowed significantly, although the percentage of 17-year-olds participating in secondary education still lags the average.

89. Several aspects of secondary and tertiary-level education in Greece suggest the potential for labor market mismatches. Fifty-seven percent of those aged 20 are enrolled in tertiary education, compared with an OECD average 25 percent enrollment rate. This reflects

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[45] Elmeskov, Martin, and Scarpetta (1998) found mixed results regarding the effect of ALMPs on the structural unemployment rate. However, when Sweden is excluded from their panel data set, as its extremely large spending on ALMPs renders it an outlier, the statistical significance and estimated coefficient for this policy measure increases sharply.

[46] All references in this paragraph are to OECD 2000a, unless otherwise noted.

the high social status afforded to university graduates.[47] As a result, "[secondary education] no longer functions as an independent and self-contained school, but has been transformed into a preparatory level, like a waiting vestibule, for the universities" (OECD 1997, p. 37). In contrast, the share of students involved in pre- and vocational programs is half the OECD average. Recalling the "hump-shaped" unemployment pattern in Greece, this is suggestive of a possible relative shortage of vocationally trained employees. Greece's public expenditures on education, at 3.5 percent of GDP, lags significantly behind the 4.8 percent OECD average. In contrast, the level of private expenditures, at 1.4 percent of GDP, exceeds the average, despite the minimal role of pre-tertiary private educational institutions (as well as the constitutional monopoly on public university-level educational institutions), reflecting in part expenditures on "cramming schools" (*frontisteria*) for those preparing for university entrance examinations. The public monopoly on university education, as well as severe overcrowding at the tertiary level (with student/teacher ratios almost twice the OECD average, in part reflecting the second longest average duration of tertiary education at six years compared with a four-year average), has resulted in Greece being among the countries with the largest proportion of students studying abroad. It also appears that the formation of educational-employment linkages is seriously lacking in Greece. It has—along with Italy, Portugal, and Turkey—the lowest share of young students who are simultaneously employed (at about ¾ percent for 15–19 year olds compared with a 14½ percent OECD country average). This lack of familiarity with working life requirements appears to be correlated with subsequent spells of youth unemployment (Figure 10).[48] Thus, it would appear that the present educational system, which progressively became geared toward producing generalist university graduates destined for public sector employment, is not well-suited for meeting today's private sector labor demand.

D. The Interaction of Economic Shocks and Institutions

90. Greece's high unemployment rate has resulted from employment growth failing to absorb a rapidly growing labor force. What are the forces that have hindered the creation of more employment? This section analyzes structural demand and supply side factors that have influenced labor market developments.

91. How far do real wage developments go toward explaining the observed patterns of unemployment? Until the mid-1990s, business sector real wages were broadly constant in

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[47] According to the Greek authorities' self-assessment of the social and educational structure, "...the existence of a free education at all levels and also other factors have favored the orientation of secondary students of all social classes towards higher education. So great demands for higher education have been created, which have been reinforced by the high social status and social privileges university graduates are enjoying" (OECD 1997).

[48] The regression coefficient is –2.2, with a *t*-statistic of 2.6; however, when Spain, Greece, France, and Italy are excluded, the coefficient is no longer significant.

Greece, while they had generally increased in the other economies considered (Portugal, Spain, Italy and the euro area, Figure 11).[49] Subsequently, Greek real wages grew rapidly, such that the increase during the 1990s exceeded that in the euro-area average (recall, though, that the levels of real wages in Greece, expressed in a common currency, and productivity are still well below euro-area averages). Greece's real wages increased in line with those in the euro area in the 1980s, and both had broadly similar unemployment rate developments. Greece experienced wide swings in the real wage in the 1990s; in contrast, while the unemployment rate rose steadily, euro-area real wages, with the exception of a dip in 1991 (reflecting German reunification), continued their upward drift, while the unemployment rate initially rose further before it eventually began to decline. Thus, it would seem that factors beyond real wage developments (which here have implicitly been assumed to be shifts in labor supply) have accounted for contrasting developments in Greece and the euro area in the 1990s and some other countries in Southern Europe.

92. Clearly real wage growth can be the result of other factors, such as productivity growth, or changes in labor demand, which could result in different real wage/unemployment rate patterns. In order to examine more fully the relative roles of underlying, or structural, labor demand and supply shifts, this paper uses the framework in Blanchard (1998), in which he explores the effects that shifts in these schedules on relative factor prices, factor income shares, and labor/capital ratios. For simplicity, the analysis is conducted in a static framework, examining shifts of the labor supply or demand curves, although it can easily be applied to a growing economy if one thinks of shifts in the supply and demand schedules relative to their movements along a balanced growth path.

93. The *labor demand* schedule provides for the standard inverse relationship between real wages and the amount of labor demanded, except the wage is expressed in Harrod-neutral (i.e., labor-augmenting) efficiency-adjusted terms.[50] The demand curve can shift from changes, for example, in union power, which may alter the amount of featherbedding that they are able to impose, or from movements in technology that are biased either toward or against capital. The shifts in the labor demand curve over time are given by:

$$\Delta L_t^d = \Delta[\log(w_t / a_t) + \frac{1}{\sigma}\log(\frac{a_t n_t}{y_t})] \quad (1)$$

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[49] All data in this section are from the OECD's business sector database, included in its *Analytical Database*. It should be noted that they create capital stock data, and wage compensation for the self-employed is assumed to equal average compensation for wage earners, in determining capital and labor income shares.

[50] See the appendix for the derivation of the labor demand schedule and construction of the index of labor-augmenting technological progress.

94. Conveniently, for $\sigma = 1$, when a CES-type production function simplifies to a Cobb-Douglas functional form (where σ is the constant elasticity of substitution), the evolution of labor demand is given by shifts in the natural logarithm of the labor share of income.

95. *Labor supply* is proposed to be a positive relation between the wage (in efficiency units) and the employment (which, for a fixed labor force, is equivalent to a negative relationship with the unemployment rate).[51] Real wages are able to grow at the rate of labor-augmenting technological change with no alteration in unemployment (while for a growing economy, the schedule would be shifting out over time along a balanced growth path to maintain the unemployment rate/real effective wage rate ratio). The relationship can be expressed as:

$$w/a = -\beta U + Z, \quad (2)$$

where U stands for the unemployment rate. Changes in Z can be thought of as shifts of the supply function. Among the possible factors responsible for this are changes in wage bargaining structures, unemployment benefits, and EPL. An increase in Z suggests that workers demand a higher efficiency-adjusted wage for a given level of unemployment (alternatively, an increase in the level of unemployment, if considered to be of "outsiders" that have no influence on wage-setting behavior, would result in a leftward shift in the labor supply schedule).[52] The following expression characterizes the evolution of labor supply L^s over time:

$$\Delta L_t^s = -\Delta Z_t = -\Delta[\frac{w_t}{a_t} + \beta U_t] \quad (1)$$

96. Construction of both the labor demand and supply curves requires a time series for the real efficiency wage (Figure 12).[53] In all three countries considered for which data are available, real wages increased by 15–20 percent during the last two decades, although they dipped in Greece in the early 1990s in the context of the government's medium-term adjustment program to tackle growing domestic and external imbalances, and the beginning of enterprise restructuring. In marked contrast to developments in Italy and Spain, where the effective real wage declined over this period, it increased in Greece. This was the result of Greece's relatively poor pace of technological improvement, averaging only ⅔ of 1 percent per year, compared with 1½ percent in Italy and Spain.

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[51] See Blanchflower and Oswald (1995).

[52] See Decressin (2000) for a fuller discussion of the motivation for the labor supply function.

[53] Capital stock data are not available for Portugal and the euro area, precluding the construction of effective real wages, and deviations in labor demand and supply schedules.

97. The calculations suggest that labor demand shifted downward in all the countries considered (Figure 13).[54] This is consistent with either a reduction in union's relative power (for example, a drop in featherbedding), or a technological bias toward capital.[55] These motivations have observationally equivalent results in this framework. For a given capital stock, the declining demand for labor initially reduces the effective wage and increases unemployment. Adjustment costs (including EPL) may make this a protracted process. The reduction in employment raises the profit rate and the capital share, with the former in turn inducing capital accumulation. The increasing capital/labor ratio boosts labor's marginal product and increases employment. As a first-order approximation, the process ends with employment and effective wages returning to their initial levels, while the labor/capital ratio is permanently lower. Given an unchanged profit/wage ratio, but a lower labor/capital ratio, capital's income share also permanently widens.

98. In examining developments regarding capital's income shares and labor/capital ratios, it would appear that the demand shift story goes a long way toward explaining developments in Italy (Decressin, 2000) but only partly in Greece and Spain (Figure 14). Italy's capital income share has risen fairly steadily and its labor/capital ratio fell steadily. While Greece's and Spain's' labor/capital ratios fell as well, Greece's capital income share has changed the least over the last two decades. Moreover, it has been broadly constant, or even declining, since 1994. Spain's capital income share rose sharply in the 1980s, when its labor demand was falling sharply, but it also has been somewhat more stable in the 1990s than has Italy's, and its labor/capital ratio fell more dramatically than in the other economies.

99. There have also been sizable labor supply shifts in Spain and, to a lesser extent, in Greece, as measured by the Blanchard framework (Figure 15). In contrast to a reduction in demand for labor having a temporary, albeit potentially protracted, impact on effective real wages and unemployment, a shift in the supply of labor permanently raises unemployment. As the capital stock and technology are fixed initially, the declining labor supply results first in an increase in the real effective wage and an offsetting decline in profits and capital's income share. The change in relative factor prices induces a reduction in employment and a partial reduction in the wage and rebound in profits and capital's income share. The decline in capital induces a backward shift in the labor demand schedule, with the results discussed above. In the end (and assuming for simplicity a unitary elasticity of substitution), unemployment is higher and the capital stock is lower, while the labor/capital ratio and the wage and profit rate are unaffected.

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[54] Recall that this is a relative concept. Labor demand actually increased over the period, but not as rapidly as would occur along a balanced growth path, which would have left the employment/real effective wage relationship unchanged.

[55] A third possibility is that this reflects higher monopoly power in product markets, which would seem unlikely given the adoption of the EU Single Market, and moves to deregulate markets and increase competition.

100. Without pushing the analysis too far, it is possible to see the effects of shifts in both labor demand and supply schedules in Greece's recent economic history. First, the sharp increases in minimum wages in the early 1980s, which were partly echoed in general wage increases, acted to shift the labor supply schedule leftward. This reduced capital's income share and boosted unemployment. The latter was kept from further increasing, as discussed earlier, in part through direct government hiring and additional public enterprise employment. This, combined with other direct intervention in economic activity (including price and credit controls), and a strong political business cycle, resulted in stop-go macroeconomic policies, with rising labor demand in the early 1980s followed by reduced demand in the latter half of the decade. The short-lived mid-1980s adjustment program is reflected in a small drop in real wages in the 1986–87, before rebounding again for the remainder of the decade. Demekas and Kontolemis (1996) have argued that the government worsened labor market behavior in the 1980s, as the expansion in the number of relatively desirable life-time government jobs and an increase in public/private relative wages depressed private sector employment, boosted workers' reservation wages, thereby contributing to the rise in unemployment.

101. The 1990s have seen a marked leftward shift in the labor demand schedule, as industry initiated restructuring efforts and the government began reducing public enterprise employment. At the same time, the supply schedule initially shifted rightward, as labor accepted lower wages for reasons of macroeconomic stability as well as in response to reforms in the labor market bargaining system. While these two shifting schedules should unambiguously reduce the effective wage, the impact on unemployment is ambiguous. In the event, the labor market was confronted with a resumed increase in female participation rates (Figure 4) and the economy absorbed large immigrant inflows. In retrospect, the fall in real wages, while necessary, was insufficient to price in the additional potential employees into jobs. Subsequently, real wage losses have been more than recouped, with gains again outpacing resumed technological progress. This is reflected in a leftward shift in the labor supply schedule by a cumulative 12 percent over 1991–99, with real effective wages rising in the face of increasing unemployment.

102. Why have real wages failed to adjust sufficiently for the labor market to employ the growing labor force? A number of possible, and possibly interrelated, reasons exist. First, and despite sizable short-run fluctuations, real wages have been found to be rather rigid in Greece (Halikias and Sobczak, 1998). This pattern is reinforced by the existence of private sector inflation catch-up clauses. It also is reinforced by the pattern of wage setting in Greece. The government maintains an influence over general wage developments, given its role as employer of 20 percent of all dependent employees. Moreover, wage increases for civil servants are announced with the annual budget, prior to the private sector agreements, and are considered to set a floor for the national collective minimum wage agreement. Greece's wage bargaining system, with the national minimum wage agreement followed by narrower agreements at the industry and possibly enterprise levels, generally results in wage drift, with better performing industries and enterprises offering higher awards. Calmfors and Driffill (1988) have stressed that the relationship between the centralization of wage bargaining and wage outcomes is "humped," with either highly centralized or completely

decentralized bargaining systems generating the best results regarding structural unemployment.[56] This is because the former internalizes economy-wide labor market pressures, while the latter results in atomistic agreements, each of which is too small to affect other agreements, or to have any economy-wide wage or employment effects. Greece, as in many other EU economies, has a system somewhere in the middle, where each industry-wide agreement is large enough to influence overall employment and wage levels, while at the same time there are enough separate agreements that it is difficult to coordinate them. Finally, it is curious why the national minimum wage agreement, one that is both centralized and coordinated, has not been flexible enough to respond to the growing unemployment rate. It would appear that Greece faces severe labor market segmentation, where wages are set to protect employment prospects of prime-age male workers (the insiders), with little attention is given to those who have yet to establish job histories (youth), have low skills, or hold nontraditional employment arrangements (largely female part-time workers).

E. Reform Efforts and Potential Extensions

103. Greece's labor market problems, especially when contrasted with the euro area's improving unemployment picture, are glaring. The government has adopted reforms to address a number of weaknesses. While for the most part they are steps in the right direction, they may be insufficient by themselves to significantly improve the labor market's functioning, as they fail to address some of the key structural weaknesses discussed above.

104. The government adopted a law in 1998 to legalize the large number of illegal immigrants. By mid-2000, 380,000 residency permits ("white cards") had been requested and 223,000 employment permits ("green cards") had been asked for (OECD, forthcoming). One requirement for obtaining a green card was joining the social security system, which, given the relative youthfulness of economic immigrants, should improve the pension system's financial footing.[57]

105. As part of an agreement between social partners in November 1997 on a medium-term strategy for reforming the labor market, the government adopted a law in August 1998, containing five main innovations: a calculation of working time over longer periods to reduce overtime and facilitate seasonal employment needs; "opt-out" options from sectoral and enterprise-level wage pacts (while imposing the national collective minimum wage increase) in pre-determined geographic areas with high unemployment or industrial decline; the promotion of part-time employment by elimination of barriers to its use; the authorization of private job placement agencies; and the regulation of informal forms of employment (e.g.,

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[56] Elmeskov, Martin, and Scarpetta (1998) find econometric support for this as well.

[57] According to some estimates, the number of economic immigrants may total some 650,000 individuals (Bank of Greece, 2000).

piecework). The results of these efforts to date have been limited.[58] This was in part due to lags in implementing decrees and directives until 1999. In addition, the measure allowing for the annualization of working hours was little used, as the law as adopted required enterprise level collective agreements (which do not exist for most small enterprises, and which predominate in Greece), rather than by the initial proposal to have a unilateral employers' decision.

106. In the context of annual budgets, the government has adopted a number of tax measures intended to reduce hiring costs for employers and increase take-home pay for some workers. In September 1999 it established tax incentives for new personnel recruited between mid-November 1999 and end-December 2000, with 50 percent of employers' social insurance contributions being deducted for a two-year period from net income (and thus reducing the corporate income tax base) for those hiring firms that did not have redundancies over the same period. The budget also increased unemployment benefits by 10 percent, and provided free medical care to all registered unemployed. In the spring of 2000, the government took over financial responsibility for employee-paid pension contributions for minimum wage recipients, equivalent to 6⅔ percent of earnings, and boosting their disposable incomes by 8 percent. It was estimated that some 470,000 individuals would be affected by this measure, including some part-time workers. The 2001 budget contained an indexation of the personal income tax brackets of 5 percent, and a reduction in the top marginal tax rate of 2½ percentage points (to 42½ percent), while a similar reduction in the top rate was announced for 2002. The government has also begun efforts to fundamentally reform the Greek tax system, broadening tax bases and reducing rates, to be implemented in three years.

107. The government has bolstered its ALMPs in the last few years, and has begun to address weaknesses in the educational system. The Ministry of Labor is reorganizing the public employment service (PES), with a business plan under preparation. The PES had opened 49 employment promotion centers by late 2000, with a doubling of this number anticipated by 2006. These centers use an individual counseling approach in helping to provide employment. While private employment offices have been legalized since the 1998 reforms, the first one opened only in November 2000, and its scope was limited to a list of prescribed occupations, the result of strong union opposition. Turning to ALMPs, some 54,000 subsidized employment positions had been created in the first nine months of 2000 (against an annual target of 75,000, equivalent to some 1.7 percent of the labor force), while other employment programs (including those for freelances and unemployed graduates) found places for a further 23,000 individuals. It also intended to create 75,000 new training positions. In addition, a system for monitoring and evaluating programs was under preparation, an activity urgently needed to assess the strengths and weaknesses of the various programs, and to facilitate continued improvements. The Ministry of Education and Religion

[58] See OECD (1998d) for a more detailed discussion of these measures and their shortcomings.

adopted in 1998 educational reforms intended, inter alia, to raise the status of technical and vocational education, improve guidance and counseling services, encourage closer links between the educational system and the labor market, and expand the number of tertiary education positions (while retaining the public monopoly).

108. The new government, elected in the spring of 2000, stated that increasing employment was one of its top priorities. New reform proposals to improve labor market flexibility were discussed with social partners, but faced strong resistance from both employers and unions. Nevertheless, parliament adopted in late December 2000 a package of measures intended to boost employment, reduce the use of overtime, ease firing restrictions, and reduce long-term unemployment. Specifically the package includes a reduction in the maximum workweek from 48 hours to 43 hours, with the amount of overtime worked at the employers' discretion reduced from 8 hours to 3 hours, and with a shift in its remuneration premium from 25 percent to 50 percent, and an increase in the fine for "illegal" overtime from 100 percent to 150 percent; alternately, an incentive was provided to annualize working hours (allowing for more working hours during peak periods but without overtime premia, offset by fewer hours worked during slack periods) by reducing the average workweek to 38 hours, which would require employee approval; reducing labor costs by cutting the employer-paid social security contributions by 2 percentage points for those with monthly earnings of less than Dr 200,000 (available from April 1, 2001 through 2003); efforts to boost part-time employment by increasing the minimum wage for those working fewer than four hours a day by 7.5 percent; and having the public employment service pay for up to one year monthly benefits equivalent to Dr 30,000 to previously long-term unemployed who are hired part-time for at least four hours daily; an easing of firing restrictions for medium-size firms (while tightening them for small firms);[59] the state paying the social insurance contributions of the long-term unemployed close to retirement age; reducing the retirement age for those having worked in arduous and unhealthy occupations; and the state providing a rent subsidy for up to two years for the long-term unemployed.

109. While these laws go some way in improving labor market flexibility, they have a number of shortcomings. For example, the first measure allowing for a profit tax credit for new hires was only for a limited time period and was not of use to firms without profits (presumably including new firms starting up). Second, the possibilities to introduce more working time flexibility was obtained, but only at the expense of rising labor costs, either directly through higher overtime premia, or indirectly through a reduction in the number of hours worked (from on average 40 a week to 38) without overtime payments. Third, the reforms in firing rules eliminates the much-discussed "kink" that existed previously, but is now in fact tighter than before for small firms, and has not changed for the largest enterprises.

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[59] Previously, firms with 20-49 employees were able to fire up to 5 employees a month, while firms with 50–200 employees could fire only 2 percent of their workforce a month. Now all firms up to 200 employees can fire no more than 4 employees a month.

110. In addition, the recent initiatives fail to address some of the key structural weaknesses described above, and therefore are unlikely to achieve a major reduction in unemployment. Notably absent are measures addressing the root causes of exceptionally high unemployment rate among new labor market entrants—an area where a comprehensive strategy, involving steps by the social partners as well as the state, could be considered (and as was recommended in the staff report). Increased wage differentiation for first-time job seekers (half of all unemployed) could be a useful additional measure to help reduce employer costs for those with initially low productivity levels. While the debate on the effects of minimum wages on employment is heated, a review of recent work and independent estimates by the OECD suggests that higher minimum wages adversely affect teenage employment (OECD 1998b).[60] There are valid concerns that the income derived from subminimum wages would not provide an adequate living standard. Even if this were the case, it would be possible to design a tax-based supplemental income scheme, similar to the earned income tax credit system in place in the United States.[61]

111. Another reason that the labor market has been incapable of employing the rapidly growing labor force is due to the real wage rigidity resulting from the wage bargaining system. With euro-area participation, expectations regarding generally low and stable inflation should spread, and accordingly the need for the inflation catch-up clause could disappear. The multi-tiered wage-setting process also appears to impart an upward bias to wages, and consideration could be given to scrapping the industry-wide tier of bargaining. Measures could also be found to allow smaller firms to reach "opt-out" agreements in high unemployment/declining industry areas.

112. The recent reforms to the firing restrictions were at best marginal, and for smaller firms, retrograde. Given the economy's present cyclical position, the restrictions do not appear to be binding, although they still influence the hiring decisions of some employers. Nevertheless, they still have adverse influences on more marginal labor market participants. Thus, further liberalization could be considered.

113. The authorities are making inroads in improving their ALMPs. However, the amount of spending on these programs remains well below international averages, and the bulk of job placement and training activities remains under the purview of the state. Emphasis could be

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[60] Neumark and Washer (1999) reach similar conclusions. In fact, when allowing for interactions with labor market institutions (labor standards, EPLs, and ALMPs), they find that the minimum wage has among the largest negative influences on youth and teenage employment rates in Greece, although they caution that with wide variations in the institutional structures of the economies in their data set, the common coefficient estimates do not provide reliable estimates of minimum wage effects for each country.

[61] In addition, the bulk of school leavers continue to live with their parents until well into their 20s (Bowers, Sonnet, and Bardone, 2000).

shifted from subsidized employment positions to training programs. The latter would benefit from comprehensive input by social partners to ensure their relevance to labor market needs.

114. The potential benefits from the proposed educational reforms should not be underestimated. In light of the authorities' candid self-assessment (OECD 1997) and reviewers' comments and recommendations, the 1998 educational reform program, when implemented, should improve the efficiency and economic relevance of the educational system.[62] In particular, restructuring the secondary education system (especially for technical and vocational education) should help establish closer links with the labor market. In addition, large benefits would derive from measures to facilitate life-long learning and meet evolving labor market needs.

115. Greece's labor market structure reflects both economic and political developments. While all agree that reforms are necessary to improve its functioning, almost all reforms would result in at least transitional hardships for particular segments of society. Thus, recent theoretical and empirical analyses of successful labor market reforms stress the need for a broad package of comprehensive reforms, which may help to compensate losers from individual policy measures and help make reforms more politically acceptable (Coe and Snower, 1997; Orszag and Snower, 1998; and Elmeskov, Martin, and Scarpetta, 1998).

[62] See also OECD 1998c for a follow-up on steps taken subsequent to the Education Review, and Hellenic Republic (2000) for a review of recent steps.

Table 1. Unemployment Rates by Level of Educational Attainment and Gender for Populations 25 to 64 and 30 to 44 Years of Age (1998)

		Ages 25-64					Ages 30-44				
		Below Upper Secondary	Upper Secondary and Post-secondary Nontertiary Education	Tertiary-Type B	Tertiary-Type A and Advanced Research	All Levels of Education	Below Upper Secondary	Upper Secondary and Post-Secondary Nontertiary Education	Tertiary-Type B	Tertiary-Type A and Advanced Research Programmes	All Levels of Education
Greece 1/	Men	4.5	5.8	6.8	4.6	5.0	4.7	4.4	4.0	2.7	4.2
	Women	10.1	15.1	11.2	9.9	11.7	13.3	13.5	6.6	6.7	11.7
Ireland 2/	Men	11.7	4.2	2.5	2.9	7.4	13.0	3.5	2.1	2.3	7.3
	Women	11.4	4.8	3.0	3.9	6.5	12.2	5.0	2.4	4.3	6.5
Italy	Men	8.2	6.4	3/	4.8	7.1	8.2	5.0	3/	4.1	6.4
	Women	16.4	11.7	3/	9.5	13.3	19.7	10.2	3/	7.6	13.1
Portugal	Men	3.3	3.3	3.1	1.6	3.2	2.9	3.7	6.7	0.4	2.9
	Women	5.7	5.4	1.0	4.2	5.3	6.3	4.7	0.8	2.9	5.4
Spain	Men	12.6	9.9	8.4	8.6	11.3	13.6	8.6	6.3	6.2	10.9
	Women	25.6	22.7	23.9	17.0	23.0	29.5	22.7	22.9	14.2	23.8
OECD country mean	Men	8.9	5.3	4.3	3.3	5.7	9.8	4.9	3.9	2.7	5.4
	Women	10.0	7.6	5.2	4.6	7.2	12.2	7.6	5.3	4.1	7.6

Source: OECD (2000a).

1/ Year of reference, 1997.
2/ Tertiary type B includes some post-secondary graduates.
3/ Included in tertiary-type A.

Table 2. Youth Unemployment Rates by Level of Educational Attainment and Age Group (1998)

	Below Upper Secondary Education			Upper Secondary and Post-Secondary Nontertiary Education			Tertiary-Type B		Tertiary-Type A and Advanced Research Programmes		All Levels of Education		
	15-19	20-24	25-29	15-19	20-24	25-29	20-24	25-29	20-24	25-29	15-19	20-24	25-29
Greece 1/	29.0	20.5	13.0	54.7	33.9	16.2	33.0	21.5	40.9	22.8	39.6	30.3	16.8
Ireland	16.9	22.3	15.1	10.8	7.4	4.6	5.4	3.5	5.4	3.1	14.3	10.3	6.9
Italy	38.8	28.8	18.9	42.5	32.9	18.6	2/	2/	35.0	27.0	39.8	31.3	19.5
Portugal	13.9	7.8	5.1	14.7	9.7	5.1	2.2	2.5	6.1	8.1	13.9	8.0	5.3
Spain	40.9	29.4	24.6	42.5	32.2	21.9	31.7	19.5	43.6	28.6	41.2	31.9	24.3
OECD country mean	22.1	18.9	15.2	20.9	13.6	9.0	10.8	7.1	13.8	7.7	20.2	13.8	9.2

Source: OECD (2000a).

1/ Year of reference, 1997.
2/ Included in tertiary-type A.

Table 3. Tax Wedge and Effective Tax Rates on Employed Labor, 1998 1/

	Tax Wedge 2/		Employers' SSC 3/		Employees' SSC 3/		Income Taxes 4/		Consumption Effective Tax Rate 5/	
	1998	Change 94-98	1998	Change 94-98	1998	Change 94-98	1998	Change 94-98	1998	Change 94-98
Greece	53.4	1.0	17.7	-0.6	20.2	0.0	4.0	1.0	19.8	1.3
Austria	57.0	1.7	14.1	0.7	17.4	0.1	10.9	1.2	25.3	0.3
Belgium	56.6	0.2	20.6	-0.3	10.2	-0.2	14.6	0.4	20.5	0.4
Denmark	57.9	0.8	0.9	0.0	4.1	-0.4	32.5	-0.6	32.5	2.4
Finland	57.3	-1.3	21.7	-4.2	4.4	-0.2	16.3	1.4	26.0	1.8
France	56.5	0.1	22.0	-1.8	12.6	-1.3	8.1	2.4	24.1	1.2
Germany	53.4	0.2	18.7	1.1	16.1	1.1	7.6	-1.2	19.0	-1.0
Ireland	39.7	-0.6	5.4	-0.4	3.7	-0.7	10.4	-1.4	24.9	1.6
Italy	53.4	2.4	22.7	0.4	6.6	-0.8	9.6	-0.1	23.6	4.6
Luxembourg	46.4	n.a.	8.9	n.a.	7.9	n.a.	7.9	n.a.	28.8	n.a.
Netherlands	50.8	-0.5	6.3	1.0	23.3	-0.7	7.6	-2.0	21.7	1.5
Portugal	47.5	2.4	15.8	0.6	10.5	0.4	6.6	0.4	21.8	2.0
Spain	44.6	0.8	20.8	0.3	4.5	-0.6	7.6	0.0	17.4	1.6
Sweden	61.7	5.2	20.3	-1.7	5.7	2.8	21.3	3.3	27.5	3.5
United Kingdom	39.7	1.4	7.8	-0.1	5.8	0.0	11.2	1.0	19.9	0.9
Euro-11	53.3	0.6	19.7	0.2	12.3	-0.5	8.7	0.1	21.5	1.1
Euro-15	51.2	0.4	16.9	-0.4	11.1	-0.5	9.8	0.5	21.5	1.1
Japan	32.1	1.4	10.2	1.5	7.8	1.3	4.1	-1.2	12.9	0.1
United States	31.9	0.9	8.0	-0.2	6.6	-0.1	10.3	1.8	9.2	-0.6

Source: European Commission (1999).

1/ All tax rates have been calculated on the labor of wage and salary earners, thus excluding the self-employed.

2/ Tax wedge = (1 - (1 - (SSC + income taxes)/100)*(1 - consumption effective tax rate/100))*100.

3/ SSC = social security contributions: payroll taxes are included in employees' SSC; both rates are related to gross labor costs.

4/ Income tax = personal income tax*(gross labor costs - SSC)*100/gross labor costs.

5/ Consumption effective tax rate = indirect taxes*100/(private consumption + public consumption - gross labor costs of public sector employees).

Table 4. Summary Indicators of the Strictness of Employment Protection Legislation 1/

	Regular Employment		Temporary Employment		Collective Dismissals	Overall EPL Strictness Version 2/		Version 3/
	Late 1980s	Late 1990s	Late 1980s	Late 1990s	Late 1990s	Late 1980s	Late 1990s	Late 1990s
Central and Western Europe								
Austria	2.6	2.6	1.8	1.8	3.3	2.2	2.2	2.3
Belgium	1.5	1.5	4.6	2.8	4.1	3.1	2.1	2.5
France	2.3	2.3	3.1	3.6	2.1	2.7	3.0	2.8
Germany	2.7	2.8	3.8	2.3	3.1	3.2	2.5	2.6
Ireland	1.6	1.6	0.3	0.3	2.1	0.9	0.9	1.1
Netherlands	3.1	3.1	2.4	1.2	2.8	2.7	2.1	2.2
Switzerland	1.2	1.2	0.9	0.9	3.9	1.0	1.0	1.5
United Kingdom	0.8	0.8	0.3	0.3	2.9	0.5	0.5	0.9
Southern Europe								
Greece	2.5	2.4	4.8	4.8	3.3	3.6	3.6	3.5
Italy	2.8	2.8	5.4	3.8	4.1	4.1	3.3	3.4
Portugal	4.8	4.3	3.4	3.0	3.6	4.1	3.7	3.7
Spain	3.9	2.6	3.5	3.5	3.1	3.7	3.1	3.1
Turkey	...	2.6	...	4.9	2.4	...	3.8	3.5
Nordic countries								
Denmark	1.6	1.6	2.6	0.9	3.1	2.1	1.2	1.5
Finland	2.7	2.1	1.9	1.9	2.4	2.3	2.0	2.1
Norway	2.4	2.4	3.5	2.8	2.8	3.0	2.6	2.6
Sweden	2.8	2.8	4.1	1.6	4.5	3.5	2.2	2.6
Transition economies								
Czech Republic	...	2.8	...	0.5	4.3	...	1.7	2.1
Hungary	...	2.1	...	0.6	3.4	...	1.4	1.7
Poland	...	2.2	...	1.0	3.9	...	1.6	2.0
North America								
Canada	0.9	0.9	0.3	0.3	3.4	0.6	0.6	1.1
Mexico	...	2.3	...	...	3.8	...	...	...
United States	0.2	0.2	0.3	0.3	2.9	0.2	0.2	0.7
Asia and Oceania								
Australia	1.0	1.0	0.9	0.9	2.6	0.9	0.9	1.2
Japan	2.7	2.7	...	2.1	1.5	...	2.4	2.3
Korea	...	3.2	...	2.1	1.9	...	2.6	2.5
New Zealand	...	1.7	...	0.4	0.4	...	1.0	0.9

Source: OECD (1999c).

1/ Higher values represent stricter regulations.

2/ Average of indicators for regular contracts and temporary contracts.

3/ Weighted average of indicators for regular contracts, temporary contracts, and collective dismissals.

Table 5. Indicators of the Strictness of Employment Protection for Regular Employment 1/

	Regular Procedural Inconveniences		Notice and Severance Pay for No-fault Individual Dismissals		Difficulty of Dismissal		Overall Strictness of Protection Against Dismissals	
	Late 1980s	Late 1990s	Late 1980s	Late 1990s	Late 1980s	Late 1990s	Late 1980s	Late 1990s
Central and Western Europe								
Austria	2.5	2.5	2.0	2.0	3.3	3.3	2.6	2.6
Belgium	0.5	0.5	2.3	2.3	1.8	1.8	1.5	1.5
France	2.5	2.8	1.5	1.5	2.8	2.8	2.3	2.3
Germany	3.5	3.5	1.0	1.3	3.5	3.5	2.7	2.8
Ireland	2.0	2.0	0.8	0.8	2.0	2.0	1.6	1.6
Netherlands	5.5	5.0	1.0	1.0	2.8	3.3	3.1	3.1
Switzerland	0.5	0.5	1.5	1.5	1.5	1.5	1.2	1.2
United Kingdom	1.0	1.0	1.1	1.1	0.3	0.3	0.8	0.8
Southern Europe								
Greece	2.0	2.0	2.4	2.2	3.3	3.0	2.5	2.4
Italy	1.5	1.5	2.9	2.9	4.0	4.0	2.8	2.8
Portugal	4.0	3.5	5.0	5.0	5.5	4.5	4.8	4.3
Spain	4.8	2.0	3.1	2.6	3.8	3.3	3.9	2.6
Turkey	2.0	2.0	...	3.4	...	2.5	...	2.6
Nordic countries								
Denmark	0.5	0.5	2.0	1.9	2.3	2.3	1.6	1.6
Finland	4.8	2.8	1.9	1.4	1.5	2.3	2.7	2.1
Norway	1.5	1.5	1.1	1.1	4.5	4.5	2.4	2.4
Sweden	3.0	3.0	1.7	1.6	3.8	3.8	2.8	2.8
Transition economies								
Czech Republic	...	2.5	...	2.7	...	3.3	...	2.8
Hungary	...	2.0	...	1.8	...	2.5	...	2.1
Poland	...	3.0	...	1.4	...	2.3	...	2.2
North America								
Canada	0.0	0.0	0.8	0.8	2.0	2.0	0.9	0.9
Mexico	...	1.0	...	2.1	...	3.7	...	2.3
United States	0.0	0.0	0.0	0.0	0.5	0.5	0.2	0.2
Asia and Oceania								
Australia	0.5	0.5	1.0	1.0	1.5	1.5	1.0	1.0
Japan	2.0	2.0	1.8	1.8	4.3	4.3	2.7	2.7
Korea	...	3.8	...	1.8	...	4.0	...	3.2
New Zealand	1.3	1.3	...	1.4	...	2.3	...	1.7

Source: OECD (1999c).

1/ The summary scores can range from 0 to 6 with higher values representing stricter regulation.

Table 6. Regulation of Temporary Employment 1/

	Fixed-term Contract		Temporary Agencies (TWAs)		Overall Structures of Regulation	
	Late 1980s	Late 1990s	Late 1980s	Late 1990s	Late 1980s	Late 1990s
Central and Western Europe						
Austria	1.8	1.8	1.8	1.8	1.8	1.8
Belgium	5.3	2.0	4.0	3.5	4.6	2.8
France	3.5	4.0	2.6	3.3	3.1	3.6
Germany	3.5	1.8	4.0	2.8	3.8	2.3
Ireland	0.0	0.0	0.5	0.5	0.3	0.3
Netherlands	1.5	0.8	3.3	1.6	2.4	1.2
Switzerland	1.3	1.3	0.5	0.5	0.9	0.9
United Kingdom	0.0	0.0	0.5	0.5	0.3	0.3
Southern Europe						
Greece	4.0	4.0	5.5	5.5	4.8	4.8
Italy	5.3	4.3	5.5	3.3	5.4	3.8
Portugal	2.3	2.3	4.5	3.8	3.4	3.0
Spain	1.5	3.0	5.5	4.0	3.5	3.5
Turkey	...	4.3	5.5	5.5	...	4.9
Nordic countries						
Denmark	1.3	1.3	4.0	0.5	2.6	0.9
Finland	3.3	3.3	0.5	0.5	1.9	1.9
Norway	3.3	3.3	3.8	2.3	3.5	2.8
Sweden	2.7	1.8	5.5	1.5	4.1	1.6
Transition economies						
Czech Republic	...	0.5	5.5	0.5	...	0.5
Hungary	...	0.8	5.5	0.5	...	0.6
Poland	...	1.0	5.5	1.0	...	1.0
North America						
Canada	0.0	0.0	0.5	0.5	0.3	0.3
Mexico	...	2.5	...	...	...	...
United States	0.0	0.0	0.5	0.5	0.3	0.3
Asia and Oceania						
Australia	1.3	1.3	0.5	0.5	0.9	0.0
Japan	...	1.5	...	2.8	...	2.1
Korea	...	1.5	5.5	2.6	...	2.1
New Zealand	...	0.3	...	0.5	...	0.4

Source: OECD (1999c).

1/ Higher values represent stricter regulation.

Table 7. Regulation of Collective Dismissal, Late 1990s

(Requirements over and above those applying to individual dismissal)

	Definition of Collective Dismissal 1/	Additional Notification Requirements 2/	Additional Involved (in days) 3/	Other Special Costs to Employers 4/	Overall Structures Relative to Individual Dismissals 5/
Central and Western Europe					
Austria	4	1	21	1	3.3
Belgium	3	2	44	1	4.1
France	3	0	22	1	2.1
Germany	3	1	28	1	3.1
Ireland	3	1	18	0	2.1
Netherlands	2	1	30	1	2.8
Switzerland	3	2	29	1	3.9
United Kingdom	2	1.5	57	0	2.9
Southern Europe					
Greece	4	1	19	1	3.3
Italy	4	1.5	44	1	4.1
Portugal	4	0.5	65	1	3.6
Spain	3	1	29	1	3.1
Turkey	3	1	29	0	2.4
Nordic countries					
Denmark	3	2	29	0	3.1
Finland	3	1	32	0	2.4
Norway	3	1.5	28	0	2.8
Sweden	4	2	113	0	4.5
Transition economies					
Czech Republic	4	2	83	0	4.3
Hungary	3	2	47	0	3.4
Poland	3	1	32	2	3.9
North America					
Canada	1	2	111	0	3.4
Mexico	4	2	0	1	3.8
United States	1	2	59	0	2.9
Asia and Oceania					
Australia	3	2	0	0	2.6
Japan	2	1	0	0	1.5
Korea	3	1	0	0	1.9
New Zealand	0	0.5	0	0	0.4

Source: OECD (1999c).

1/ The score is 0 if there are no special regulations on collective dismissal; 1 if regulations apply from 50 dismissals upward;. 2 if they apply from 20 onward; 3 if they start at 10 dismissals; and 3 if regulations start to apply at below 10 dismissals.

2/ There can be notification requirements to employee representatives/works councils, and to government authorities such as public employment offices. Countries are scored according to whether there are additional notification requirements on top of those requirements applying to individual redundancy dismissal. The score is 0 if there are no additional requirements: 1 if one more actor; and 2 if two more actors need to be notified.

3/ This column lists delays required on top of delays before the start of notice for economic redundancy listed under Table 5. Averages are taken if separate delays apply to different types of situations.

4/ This column refers to whether there are additional severance pay requirements in case of collective dismissal and whether social compensation plans (detailing measures for redeployment, retraining, outplacement or severance pay) are obligatory or common practice. The score is 2 if both requirements apply.

5/ The summary scores can range from 0 to 6, with higher values representing stricter regulation.

Table 8. Net Replacement Rates of the Unemployed, 1997 1/

	2/3 of APW wage level 2/				APW wage level 2/			
	1st month		60th month 3/		1st month		60th month 3/	
	1997	Change 1995-97	1997	Change 1995-97	1997	Change 1995-97	1997	Change 1995-97
Greece	51	...	2	...	47	...	1	...
Austria	66	1	63	1	63	1	60	-1
Belgium	79	0	85	-1	60	0	65	7
Denmark	92	1	92	10	69	1	69	6
Finland	83	-4	93	-2	71	-4	77	-4
France	84	-2	57	0	74	-2	33	-2
Germany	76	2	78	-7	73	1	69	3
Ireland	61	1	61	1	48	-1	48	-1
Italy	43	2	9	2	44	3	7	2
Luxembourg	83	-4	73	-1	84	-4	62	-3
Netherlands	90	3	90	-2	81	2	72	0
Portugal	86	-2	3	0	78	0	2	0
Spain	74	2	47	-2	73	-2	33	-2
Sweden	79	-1	95	-5	74	-4	76	-6
United Kingdom	81	0	85	1	58	-2	61	-2
Euro-11	73	0	58	-4	68	0	48	0
Euro-15	74	0	63	-4	66	-1	50	-2
Japan	66	-4	69	0	57	-4	47	-4
United States	56	0	30	1	59	0	22	-1

Source: European Commission (1999).

1/ Net replacement rate for each category are the averages of the net replacement rates for three family types: single person, couple without children, and couple with two children.

2/ APW = average production worker.

3/ The 60th month's net replacement rate includes possible topping up of social assistance in addition to unemployment benefits whereas the 1st month's rate includes the unemployment benefit alone.

4/ Weighted by nominal GDP; EU-15 in 1995 excluding Greece.

Table 9. Benefit Duration and Job Availability Requirements

	Unemployment Insurance 1997 Months 1/	Unemployment Assistance 1997 Months 1/	Job Availability Requirement Index 2/
Greece	12 3/	no limit	...
Austria	12 4/	no limit	2.3
Belgium	no limit 3/	...	3.2
Denmark	12 4/	no limit	2.8
Finland	23 4/	no limit	2.8
France	60 3/4/	no limit	2.8
Germany	12 4/	no limit	2.6
Ireland	15	no limit	1.8
Italy	12	...	...
Luxembourg	12	...	4.0
Netherlands	60 3/4/	24	3.7
Portugal	30 4/	10	2.9
Spain	24 3/	6	...
Sweden	10 4/	5	3.8
United Kingdom	6	no limit	2.6

Source: European Commission (1999).

1/ For a 40-year old single worker with a long employment history.

2/ The index is a weighted average of points from 1 to 5 dedicated to eight categories of job availability criteria. Five points are given to the maximum strictness.

3/ Depends on the length of the employment history.

4/ Depends on the age of the worker becoming unemployed.

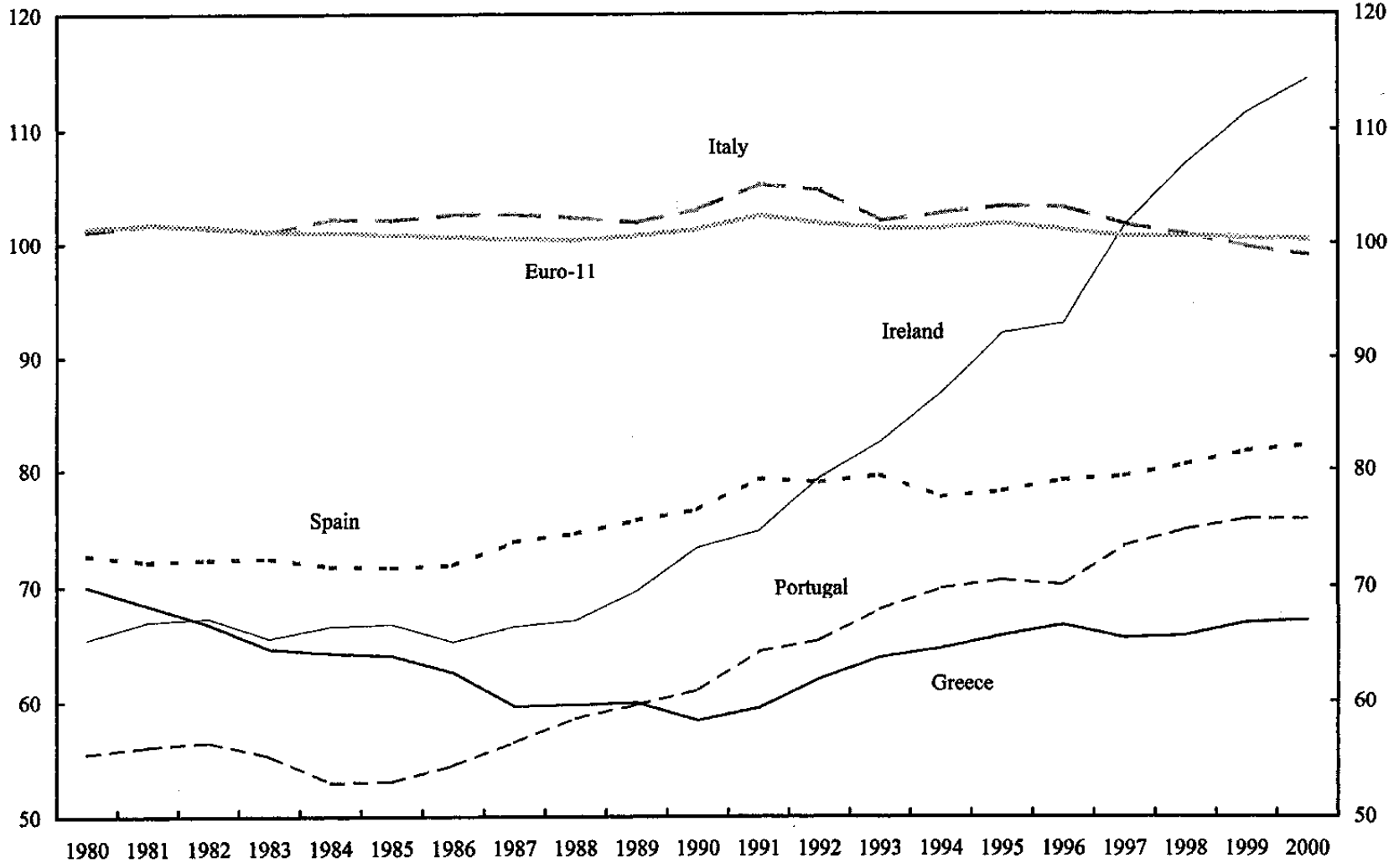
Table 10. Greece: Public Expenditures on Active Labor Market Programs, International Comparisons
(in percent of GDP)

	Austria 1998	Belgium 1997	Denmark 1998	Finland 1998	France 1997	Germany 1998	Greece 1997	Ireland 1996	Italy 1996	Luxembourg 1997	Netherlands 1998	Portugal 1997	Spain 1998	Sweden 1998	U.K. 1997-98	EU11 1/	EU15 1/
1. Public employment services and administration	0.13	0.19	0.14	0.13	0.16	0.23	0.12	0.24	0.04	0.03	0.40	0.11	0.07	0.30	0.16	0.16	0.16
2. Labor market training	0.15	0.29	1.07	0.41	0.35	0.34	0.06	0.21	0.01	0.01	0.22	0.28	0.21	0.48	0.07	0.23	0.28
a) for unemployed and those at risk	0.13	0.17	0.73	0.39	0.31	0.34	...	0.14	0.00	0.01	0.22	0.08	0.10	0.47	0.06	0.17	0.23
b) for employed adults	0.02	0.12	0.34	0.02	0.04	0.00	...	0.08	0.01	0.00	0.00	0.20	0.11	0.01	0.01	0.05	0.07
3. Youth measures	0.04	0.01	0.08	0.16	0.26	0.07	0.10	0.24	0.42	0.14	0.05	...	0.07	0.03	0.12	0.15	0.13
a) for unemployed and disadvantaged	0.04	0.00	0.08	0.06	0.07	0.06	0.02	0.11	0.04	0.09	0.00	...	0.07	0.03	0.00	0.05	0.05
b) for apprenticeship and general training	0.01	0.01	0.00	0.11	0.19	0.01	0.07	0.13	0.38	0.05	0.05	0.16	0.00	0.00	0.12	0.10	0.09
4. Subsidized employment	0.07	0.68	0.30	0.42	0.52	0.39	0.06	0.88	0.61	0.07	0.50	0.09	0.35	0.58	0.00	0.42	0.37
a) reg. private sector	0.03	0.16	0.03	0.10	0.32	0.03	0.04	0.24	0.56	0.07	0.08	0.01	0.24	0.15	0.00	0.17	0.14
b) unemployment starting enterprises	0.01	0.00	0.04	0.03	0.00	0.03	0.02	0.02	0.00	0.00	0.00	0.02	0.03	0.09	0.00	0.01	0.02
c) direct job creation	0.03	0.51	0.23	0.29	0.20	0.32	0.00	0.63	0.04	0.00	0.42	0.06	0.07	0.35	0.00	0.23	0.21
5. Measures for the disabled	0.05	0.13	0.30	0.11	0.08	0.25	0.01	0.08	0.00	0.04	0.58	0.03	0.02	0.62	0.02	0.12	0.15
a) vocational rehabilitation	0.02	0.03	0.30	0.06	0.02	0.10	...	0.08	0.00	0.00	0.00	0.02	0.00	0.04	0.00	0.03	0.05
b) work for the disabled	0.03	0.10	0.00	0.05	0.06	0.15	...	0.00	0.00	0.04	0.58	0.01	0.02	0.58	0.02	0.09	0.12
6. Unemployment compensation	1.16	2.06	1.86	2.35	1.50	2.29	0.50	2.29	0.68	0.42	3.14	0.72	1.64	1.91	0.82	1.66	1.56
7. Early retirement for labor market reasons	0.05	0.60	1.88	0.45	0.35	0.00	0.00	0.13	0.20	0.25	0.00	0.15	N/A	0.00	0.00	0.22	0.29
Total	1.66	3.96	5.63	4.03	3.22	3.56	0.85	4.07	1.96	0.97	4.90	...	2.36	3.93	1.19	3.07	3.02
Active measures (1-5)	0.44	1.29	1.89	1.23	1.37	1.27	0.35	1.66	1.08	0.30	1.76	...	0.72	2.01	0.37	1.11	1.12
Passive measures (6-7)	1.22	2.67	3.74	2.79	1.85	2.29	0.50	2.42	0.88	0.67	3.14	0.87	1.64	1.91	0.82	1.86	1.83

Sources: OECD (1999c); and Fund staff calculations.

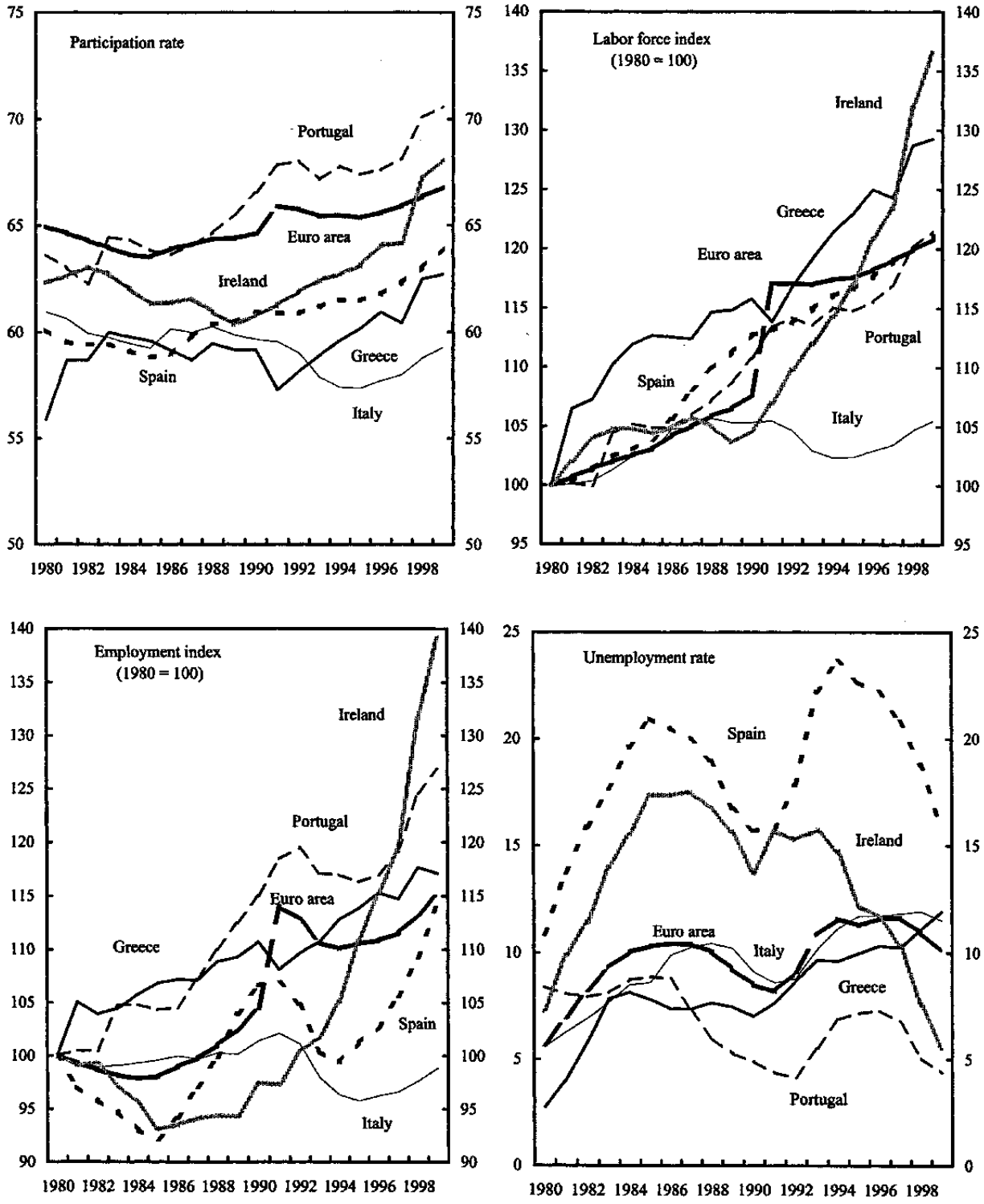
1/ Unweighted averages.

Figure 1. Per Capita GDP at Current Prices
(Purchasing Power Standard, EU 15 = 100)



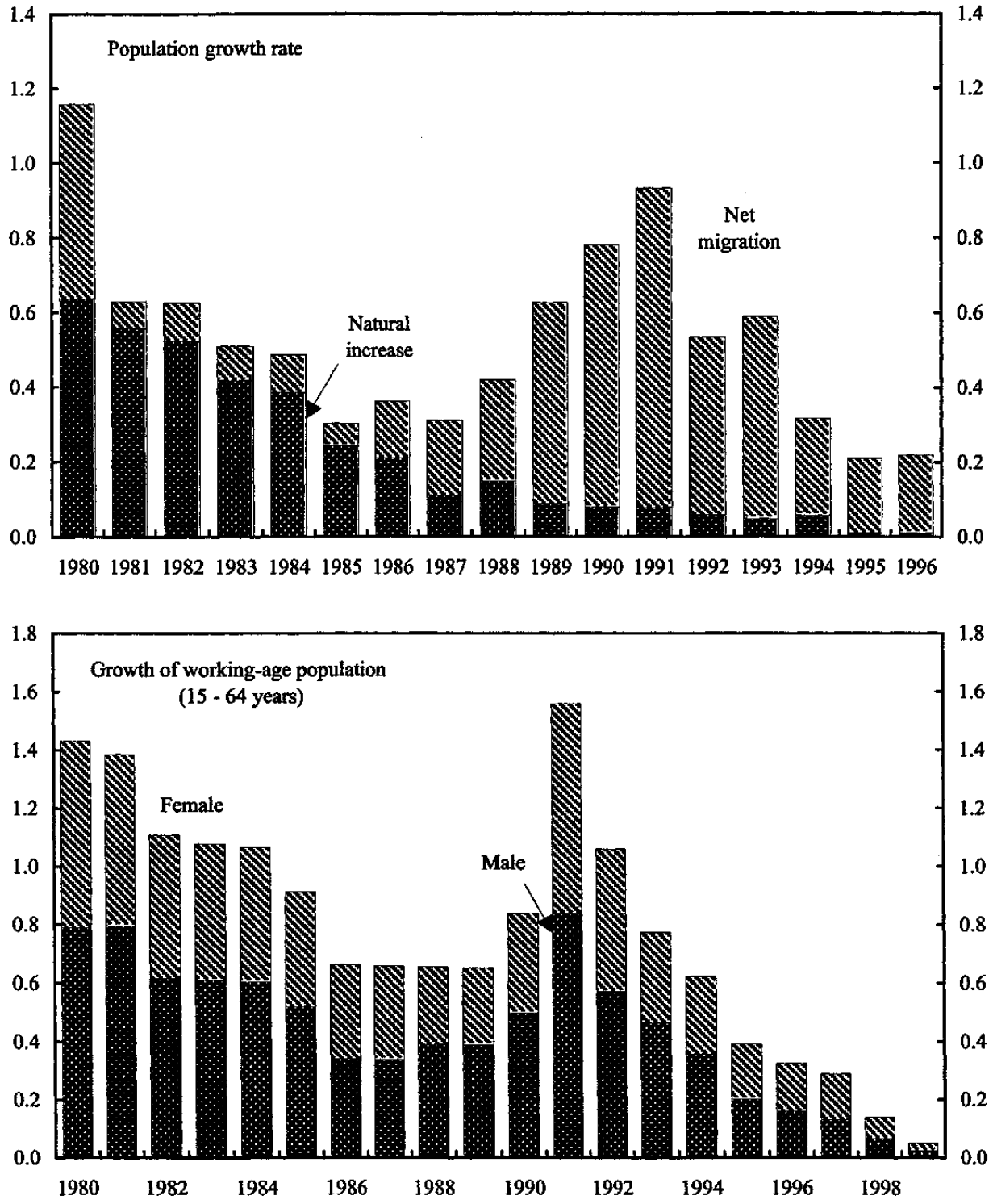
Source: European Commission (2000a).

Figure 2. Labor Market Developments, International Comparisons



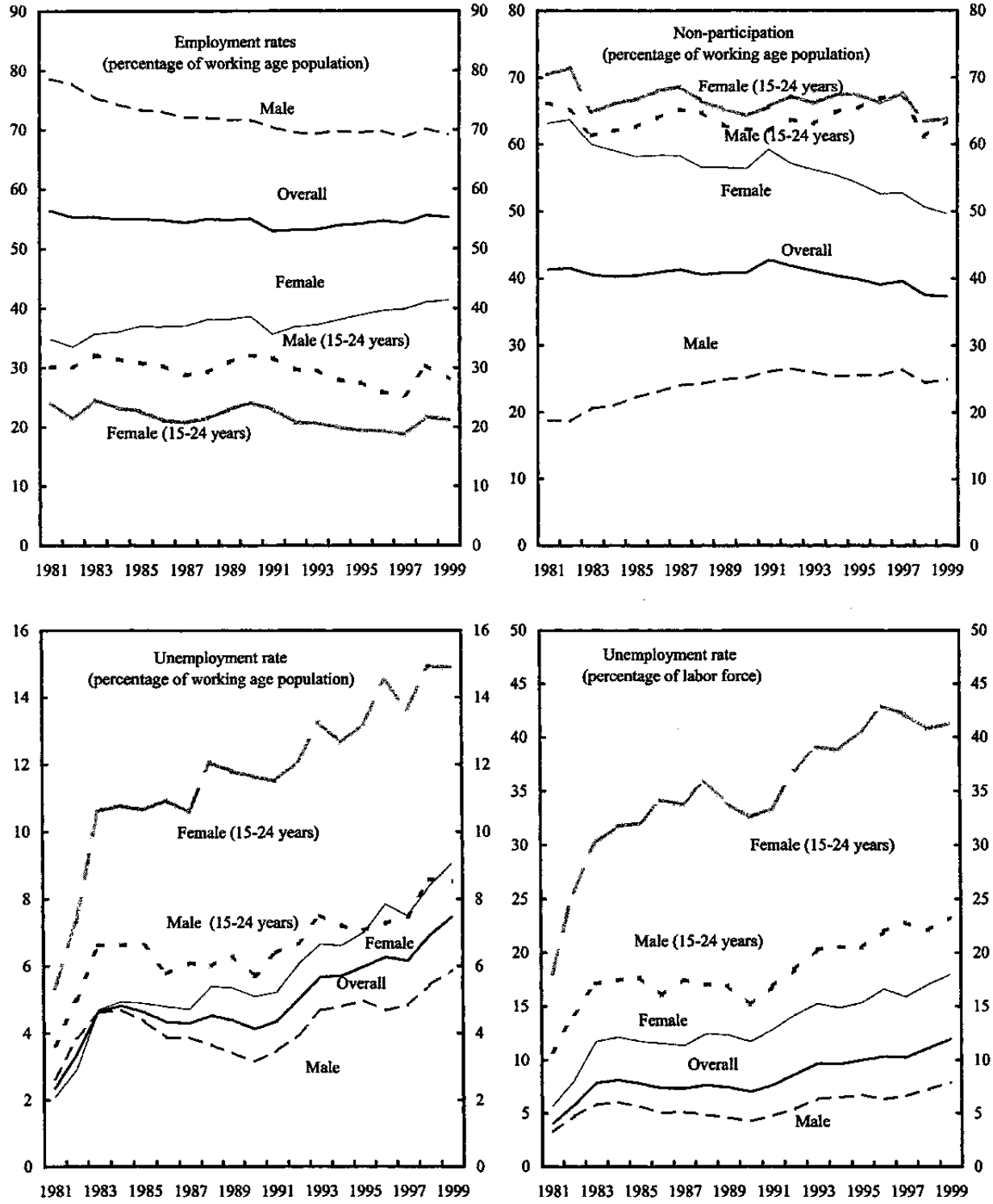
Sources: National Statistical Service of Greece; OECD *Analytical Database*; and Fund staff calculations.

Figure 3. Greece: Population Growth Rates



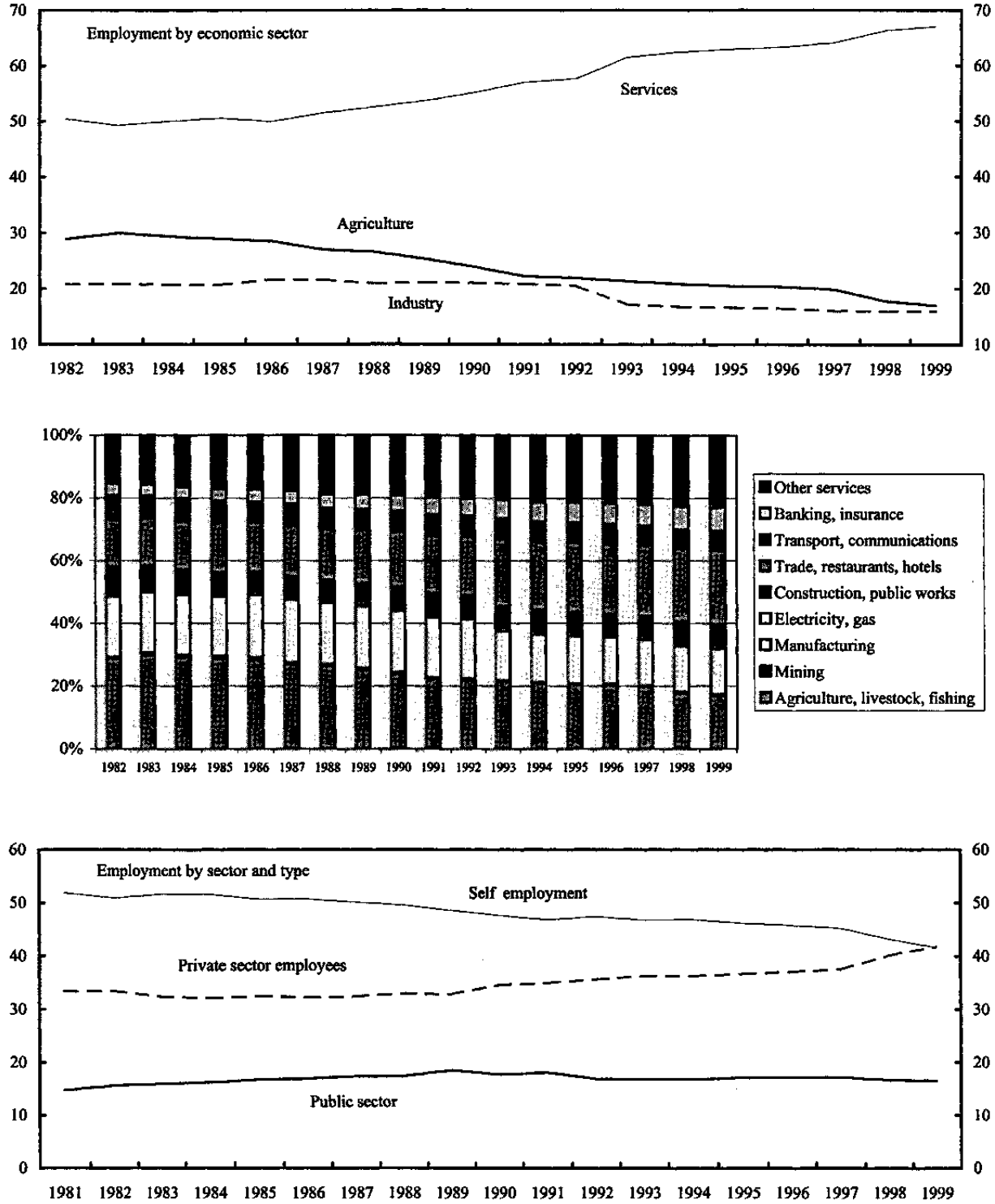
Source: OECD (1999b).

Figure 4. Greece: Employment, Nonparticipation and Unemployment Rates



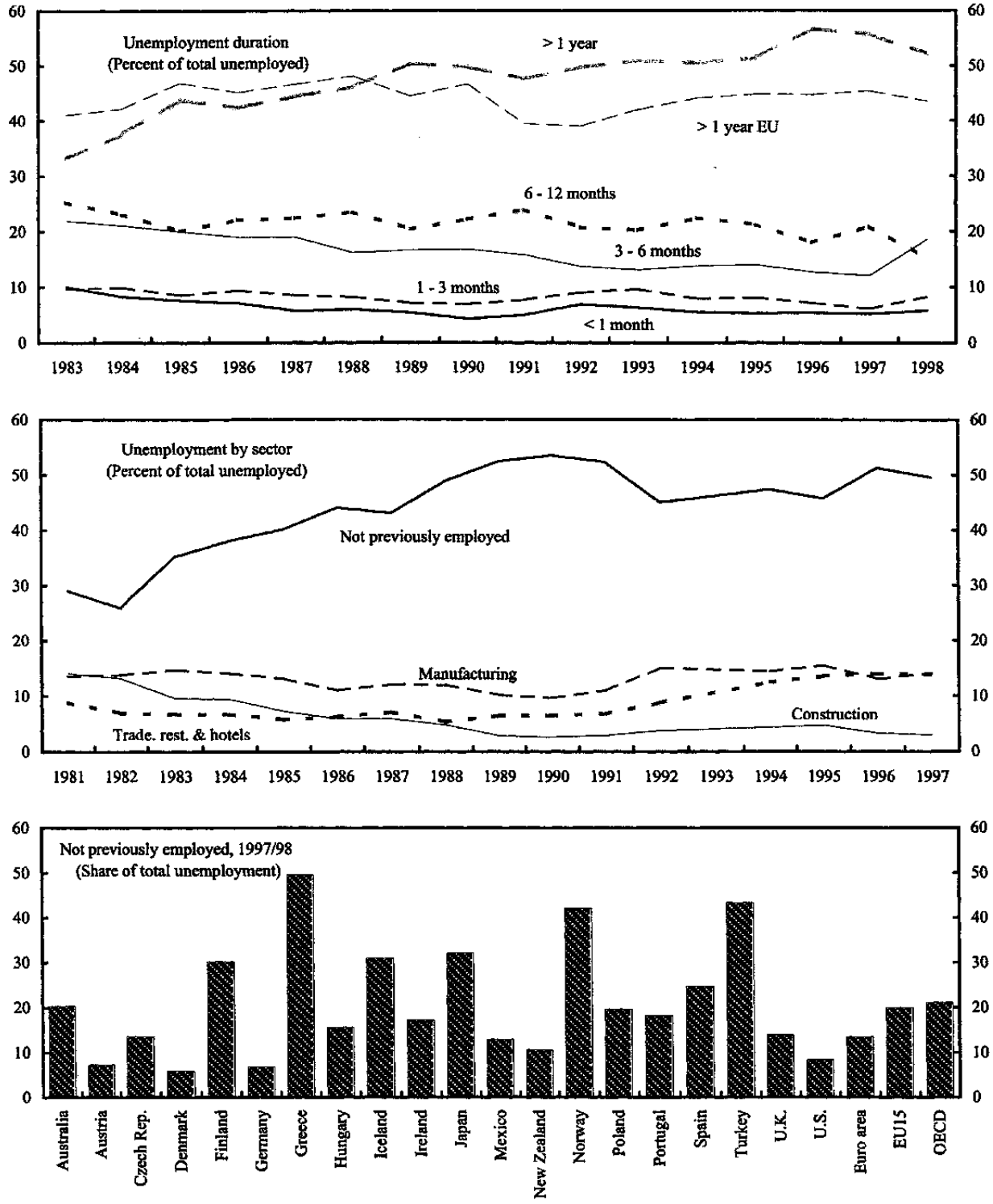
Sources: National Statistical Service of Greece; and Fund staff calculations.

Figure 5. Greece: Employment Shares



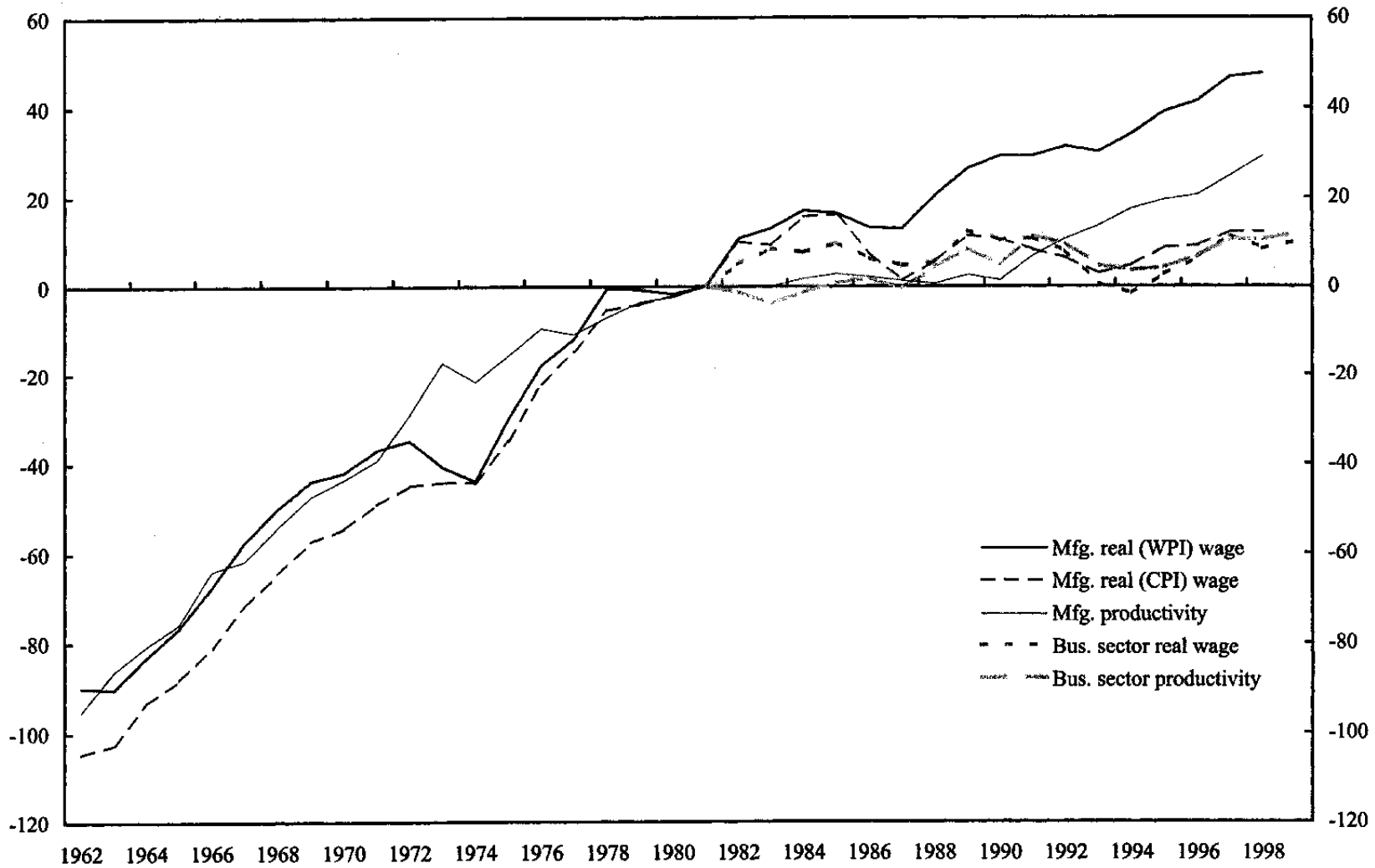
Sources: National Statistical Service of Greece; and Fund staff calculations.

Figure 6. Greece: Unemployment Characteristics



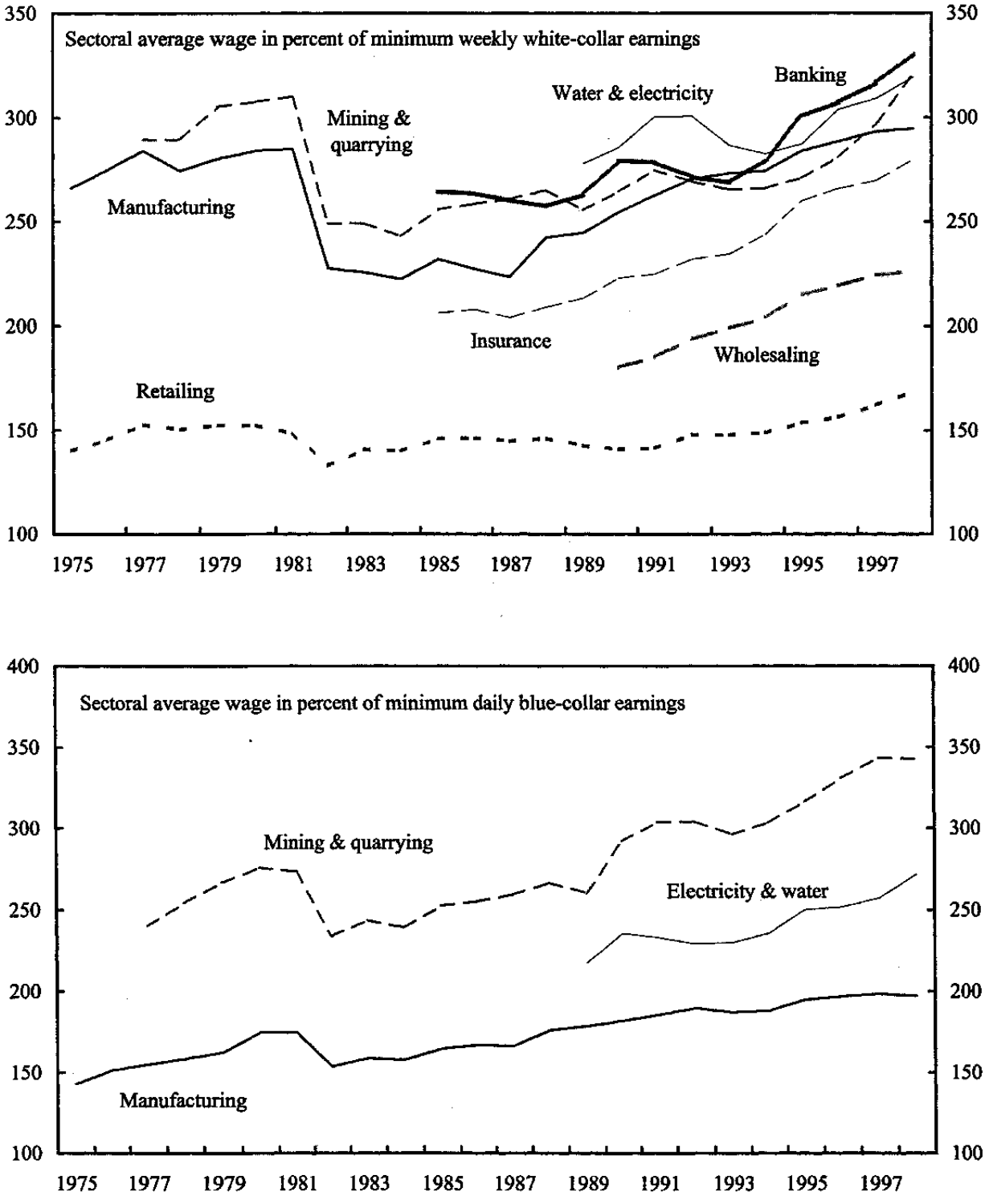
Sources: International Labor Office (1999), and *Labor Statistics Database*; OECD (1999b); and Fund staff calculations.

Figure 7. Greece: Real Wages and Productivity
(Natural logs, ln(1981) = 0)



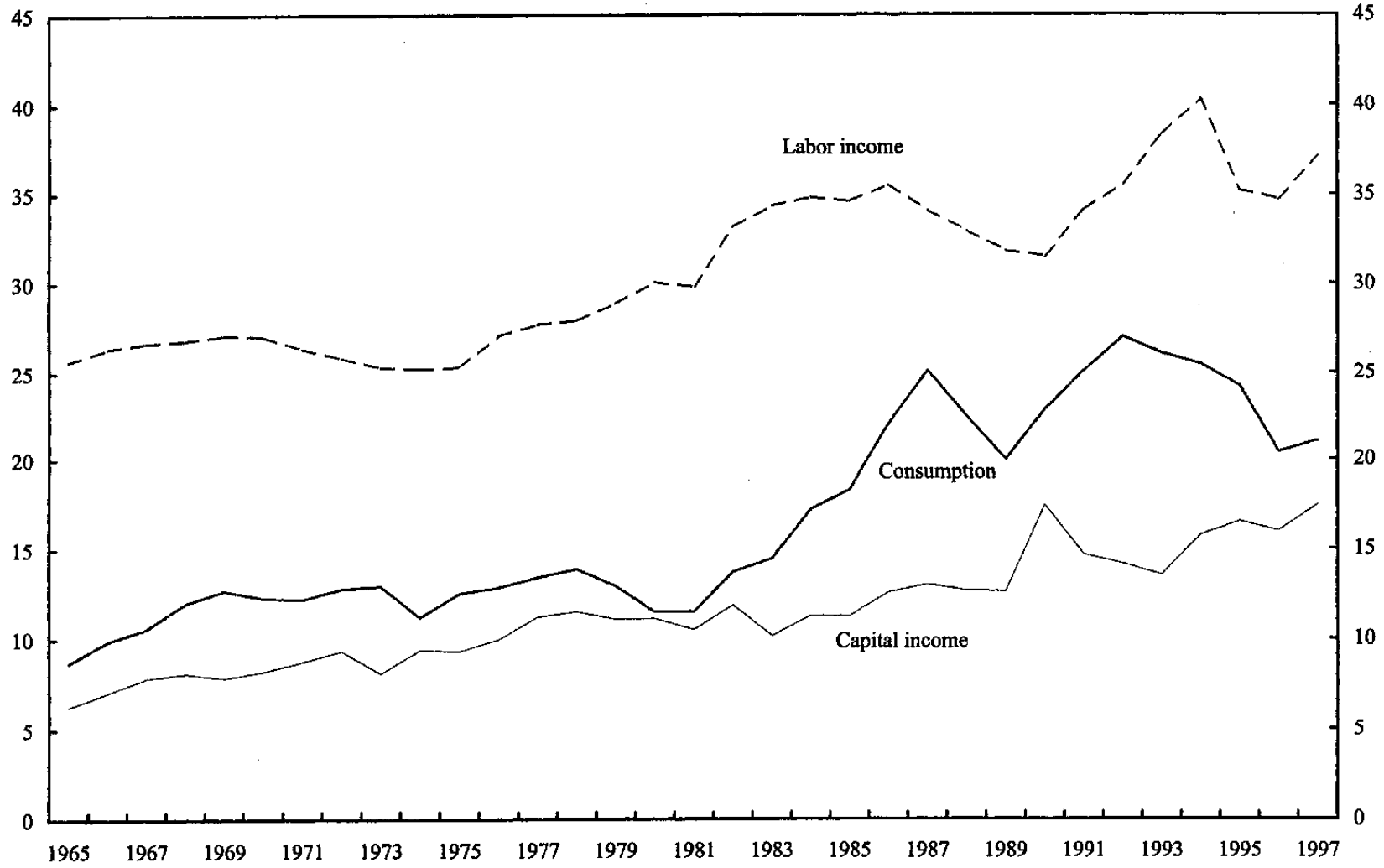
Sources: Bank of Greece (1998); National Statistical Service of Greece; OECD *Analytical Database*; and Fund staff calculations.

Figure 8. Greece: Wage Dispersion



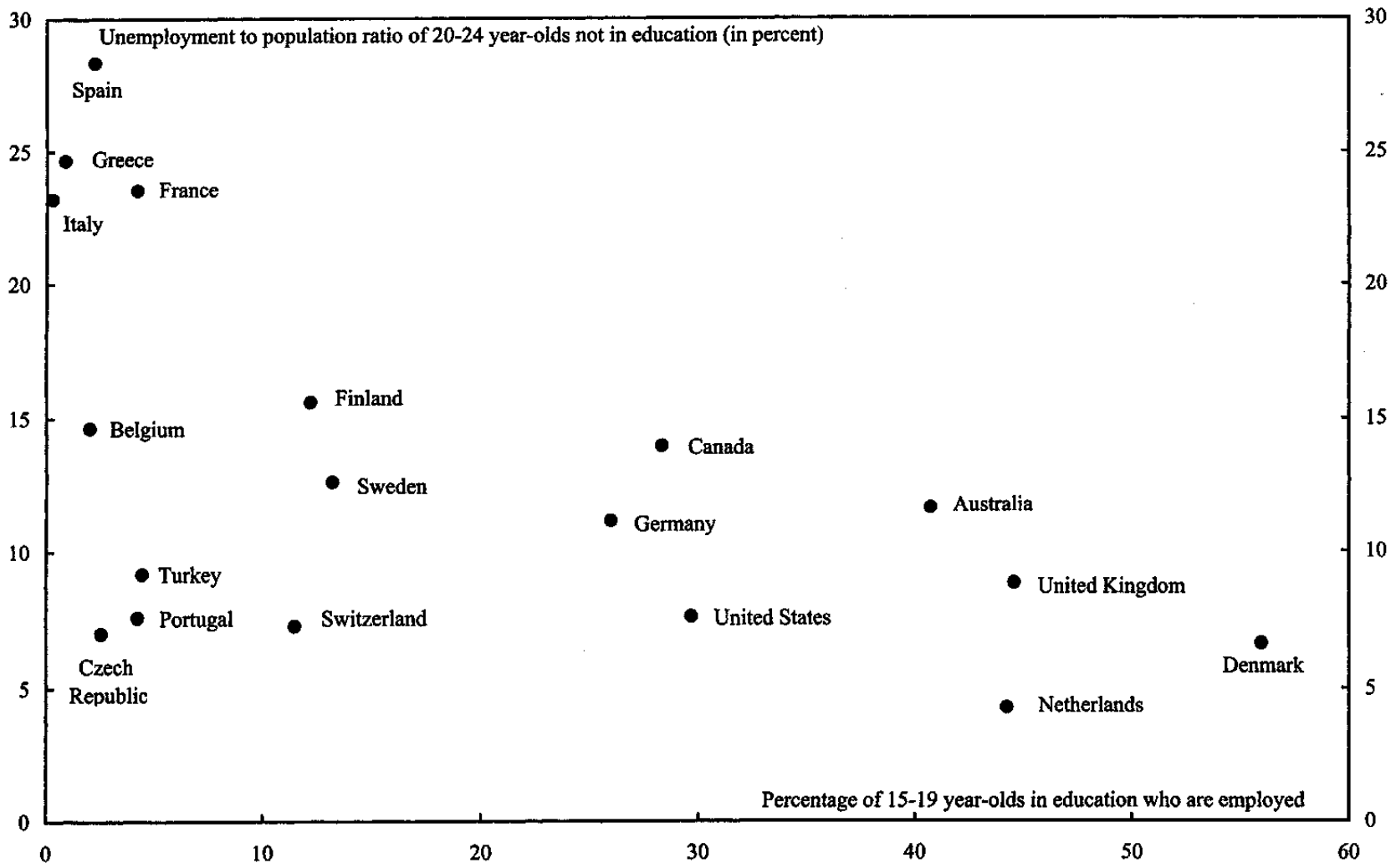
Sources: Bank of Greece; National Statistical Service of Greece; and Fund staff calculations.

Figure 9. Greece: Effective Average Tax Rates
(In percent)



Source: Lutz (1997).

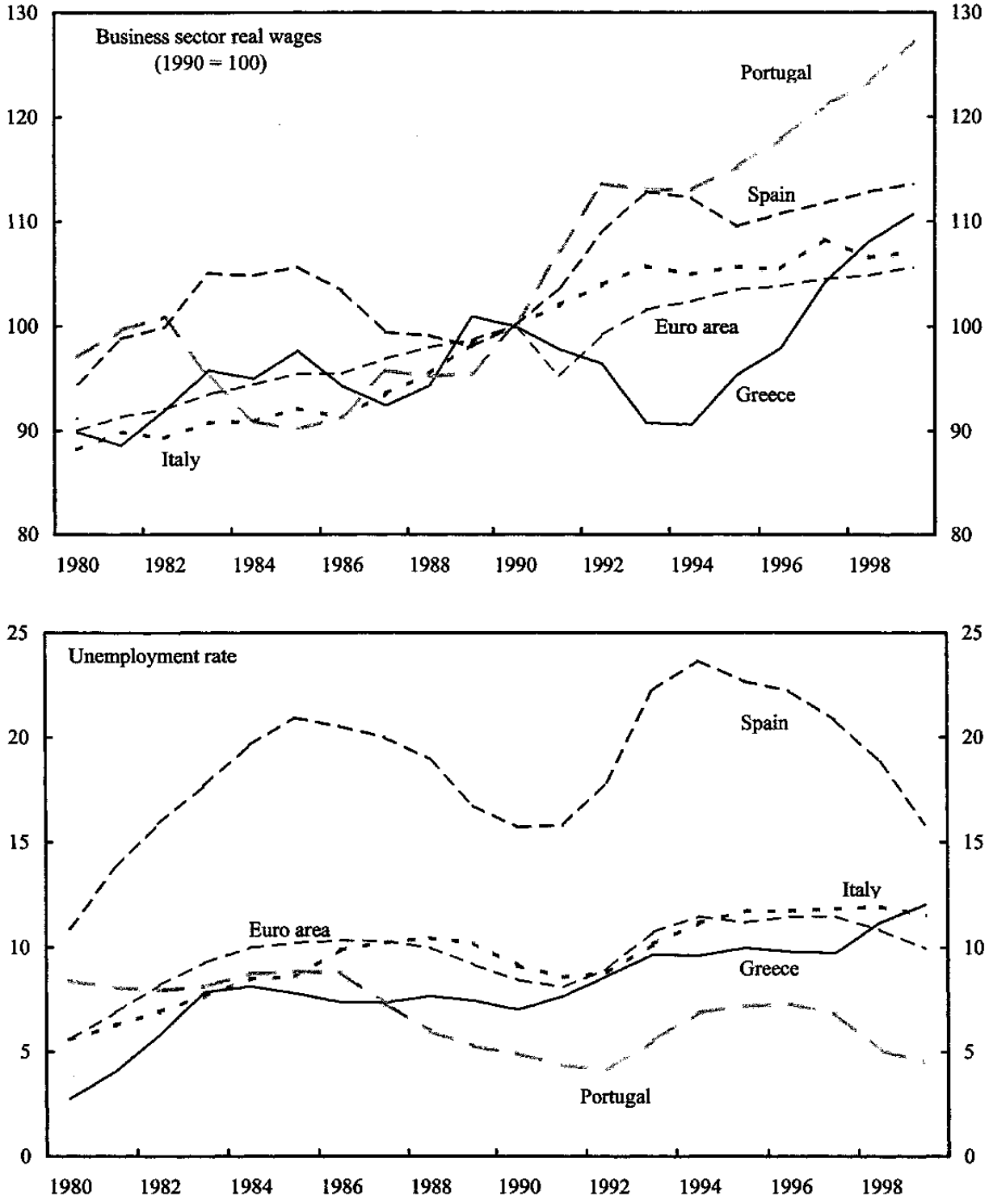
Figure 10. Percentage of 15-19 year-olds in Education who are Employed and Unemployment to Population Ratio of 20-24 year-olds not in Education, 1998 1/



Sources: OECD (2000a); and Fund staff calculations.

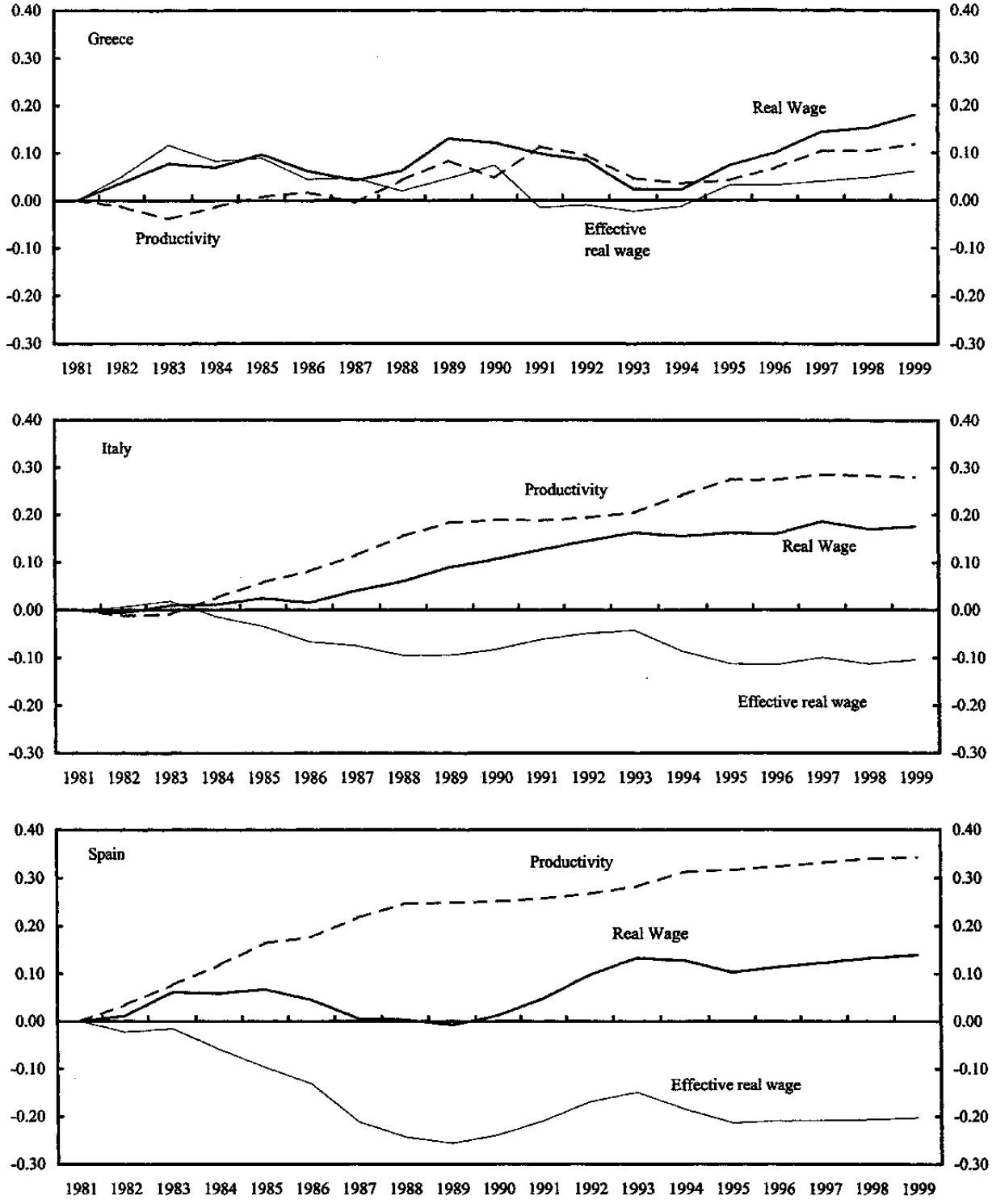
1/ Data for Denmark, Greece and the United States are for 1997.

Figure 11. Real Wages and Unemployment



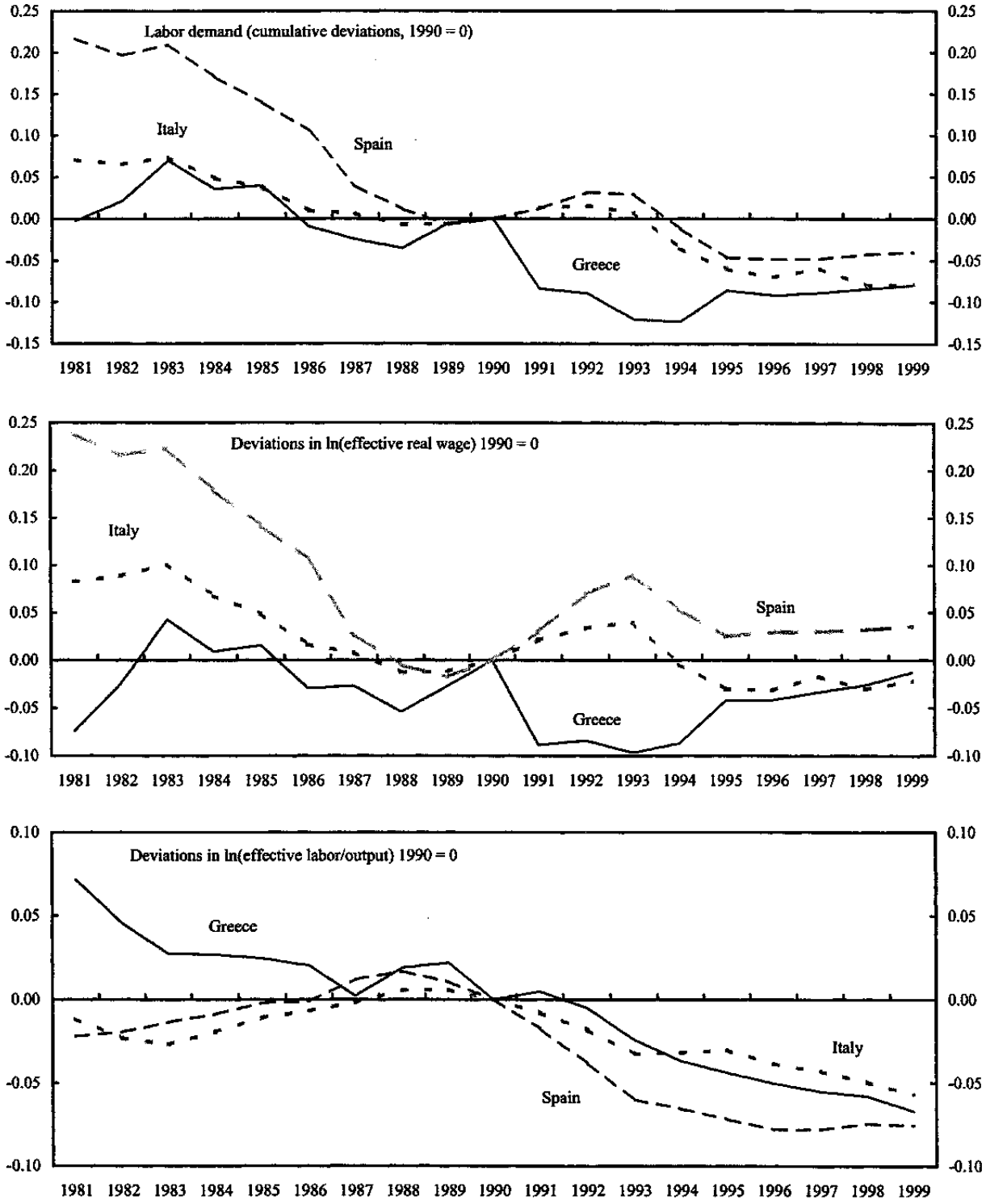
Sources: OECD *Analytical Database*; and Fund staff calculations.

Figure 12. Real Wages, Productivity, and Effective Real Wages
(Natural logs, ln(1981) = 0)



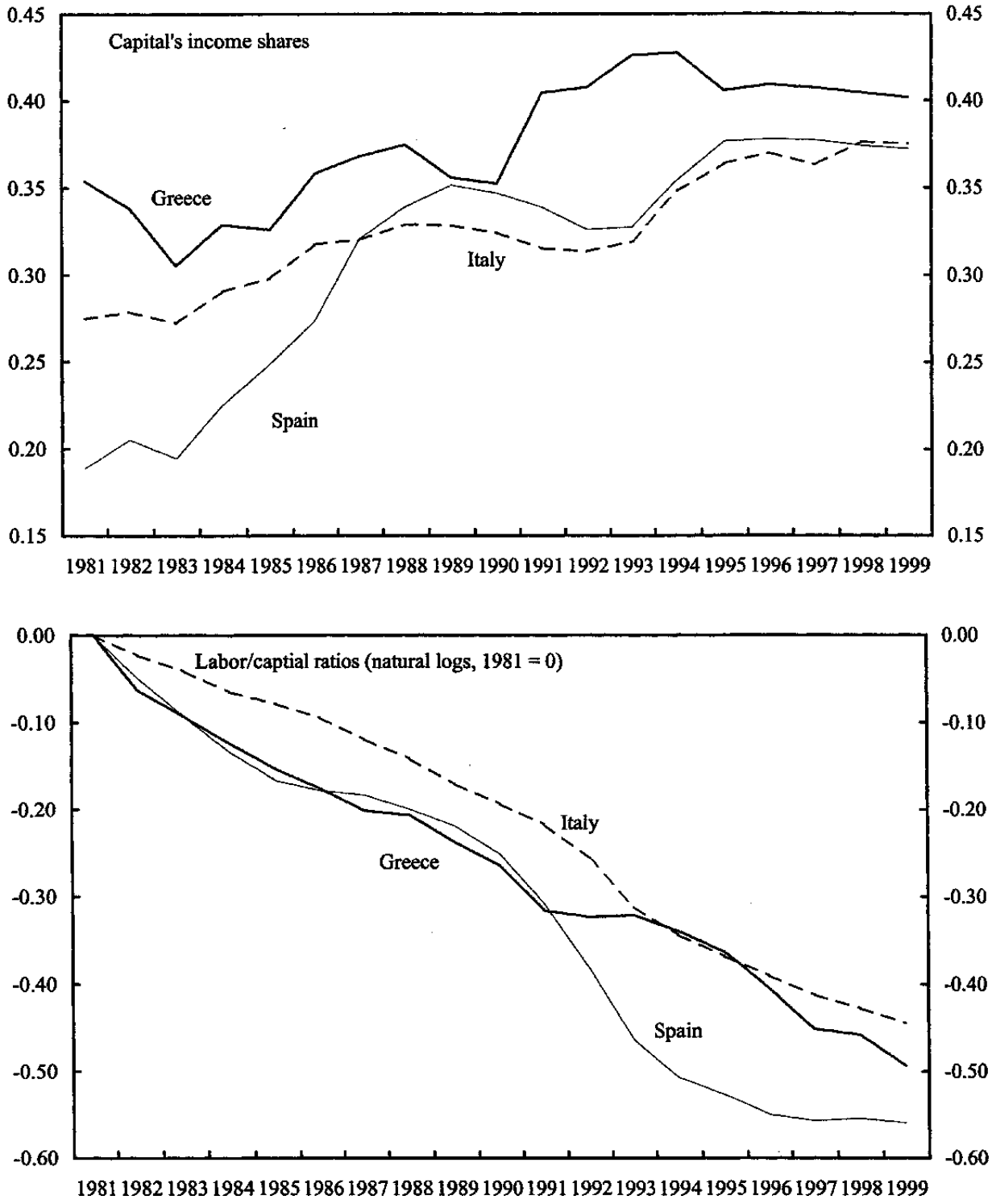
Sources: OECD *Analytical Database*; and Fund staff calculations.

Figure 13. Labor Demand Developments



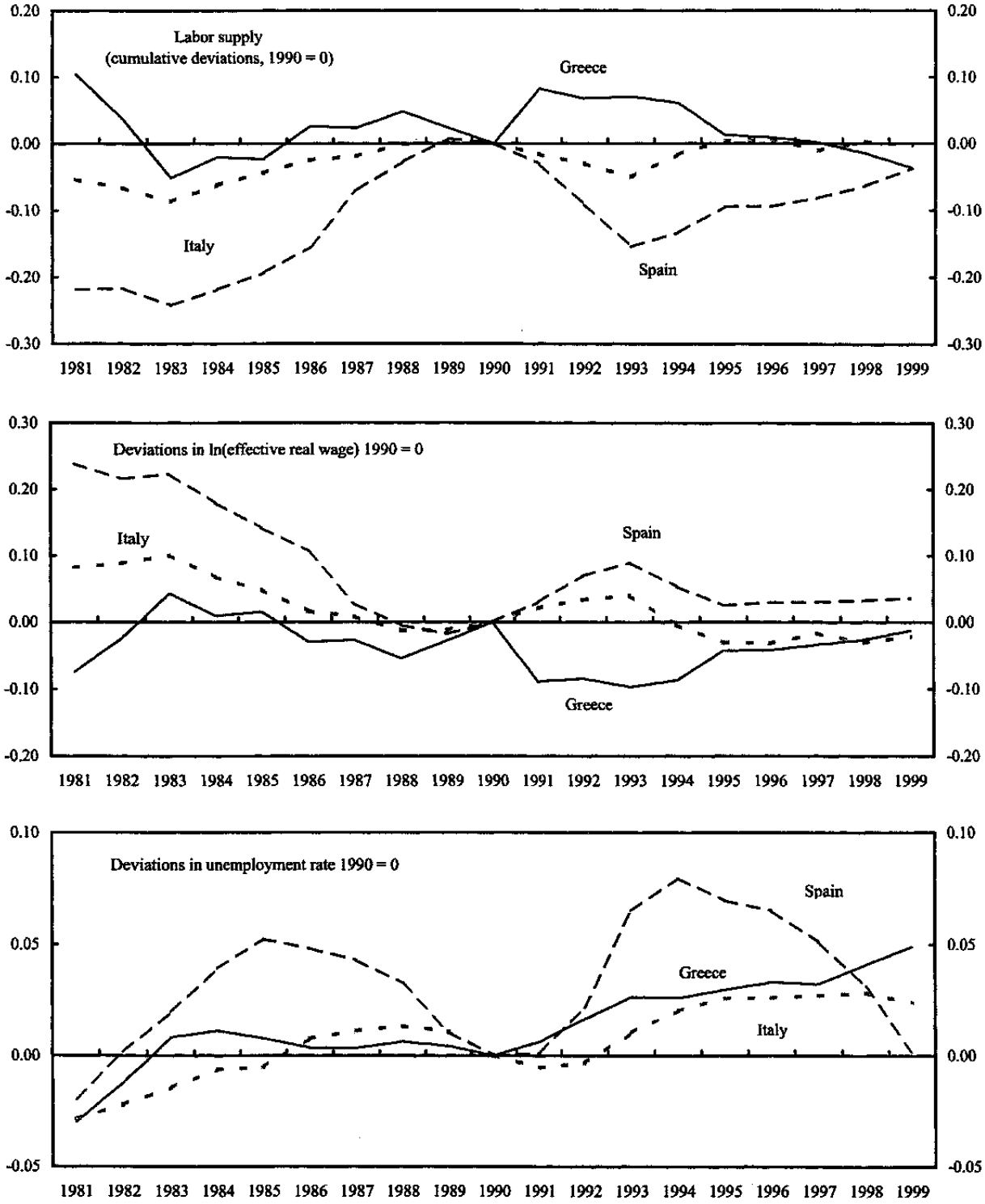
Sources: OECD *Analytical Database*; and Fund staff calculations.

Figure 14. Capital's Income Shares and Labor/Capital Ratios



Sources: OECD *Analytical Database*; and Fund staff calculations.

Figure 15. Labor Supply Developments



Sources: OECD *Analytical Database*; and Fund staff calculations.

Derivation of the Demand Schedule

116. This appendix derives the structural labor demand schedule of Blanchard (1998).

117. Assume that production is characterized by a constant-returns-to-scale CES-type production function with Harrod-neutral technological progress:

$$y = A[\alpha(an)^{\frac{\sigma-1}{\sigma}} + (1-\alpha)k^{\frac{\sigma-1}{\sigma}}]^{\frac{\sigma}{\sigma-1}}, \quad (1)$$

where n stands for labor, a is an index of the level of technology, k is capital, and σ is the constant elasticity of substitution between "effective" labor (an) and capital.[63] The standard first-order condition for employment is given by:

$$\frac{\partial y}{\partial n} = (1+\mu)\frac{w}{a}, \quad (2)$$

where w/a is the real effective wage. The first-order condition has been augmented by μ, to allow for imperfections in the goods and/or labor markets, such as a monopoly markup, allowing firms to charge more than marginal cost, for positive values of μ, or labor market featherbedding, for negative values of μ. Take natural logarithms of (2) and rearrange to find:

$$\log(1+\mu) = \text{constant} + \log\alpha - \log(w/a) - \frac{1}{\sigma}\log(\frac{an}{y}). \quad (3)$$

118. This expression, for given values of μ and α, provides a negative relationship between the real effective wage and the employment level (abstracting from business-cycle variations in output). The demand curve can shift from changes in μ (say, the result of changes in union power), or from shifts in α (say, a technology-driven shift in labor demand). The shifts in the labor demand curve over time is given by:

$$\Delta L_t^d = \Delta[\log(w_t/a_t) + \frac{1}{\sigma}\log(\frac{a_t n_t}{y_t})]. \quad (4)$$

119. Conveniently, for $\sigma = 1$, the evolution of labor demand is given by changes in the natural logarithm of the labor share of income.

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[63] The index of labor-augmenting (i.e., Harrod-neutral) technological progress a is obtained as the Solow residual scaled by the share of labor in business sector income α. Its change is expressed as $\Delta a = (\Delta\ln(y) - \alpha\Delta\ln(n) - (1-\alpha)\Delta\ln(k))/\alpha$. Then Δa is cumulated annually (arbitrarily setting 1990 = 1) to obtain the index a.

α is derived as $\alpha = wn/y$, where the real wage is obtained by deflating employee compensation by the business sector GDP deflator.

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IV. The New Economy in Greece[64]

A. Introduction

120. The new economy is at a relatively early stage of development in Greece compared with most industrial countries, but growing rapidly. On most indicators, the sector is still relatively small and has, accordingly, not played a substantial role in the economic expansion in Greece since the mid-1990s. However, the rapid expansion that is underway, in particular in information technology (IT) applications, and an ambitious medium-term plan to promote IT could in time allow the Greek economy to reap some of the benefits ascribed to the new economy—most visible so far in the United States (see, for example, Eriksson and Adahl, 2000; but also Gordon, 1999). As envisaged more broadly for the EU area, the expansion of the new economy is to foster competition, job creation, and productivity growth (Special European Council, 2000). Securing these benefits poses major policy challenges which, as discussed in the staff report, form part of a broader structural reform agenda in Greece.

121. This short chapter reviews the current status of the new economy in Section B, comparing developments in Greece with those in other advanced economies. Pertinent policy initiatives are discussed in Section C.

B. The IT Sector in Greece

122. The IT sector in Greece is small compared with other industrial countries, but growing rapidly in recent years (Tables 1–3).[65] The number of personal computers (PC) per 100 people was 5 in 1998—almost double compared with 1994. This was still low compared with more than 8 in Portugal, more than 17 in Italy, and an average of 24 in the OECD countries and 23 in the euro area in 1998. The U.S. economy was ahead, with almost 46 PCs per 100 people. However, according to the Greek authorities' estimates, the number of PCs in Greece tripled during 2000. Expenditures for IT products in Greece were slightly more than 4 percent of GDP in 2000, which was essentially unchanged from 1997 and well below the average of 7 percent in the OECD countries and 7.8 percent in the United States in 1997. High-technology exports as a percent of total manufacturing exports in Greece increased from somewhat above 3 percent in 1994 to more than 7 percent in 1998. However, this was considerably less than the euro-area average of more than 17 percent in 1998, and well below 33 percent in the United States.

123. Internet use indicators also show a relatively large gap between Greece and other industrial countries. The number of Internet users in Greece was estimated at slightly more than 2 percent of the population in 1999, which was near the number of Internet users in

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[64] This chapter was prepared by Athanasios Vamvakidis.

[65] For a review of the new economy in selected other European countries, see L. Kodres (2000; 2001); and Estevão and Levy (2000).

Portugal, but below the average of 17 percent in the OECD countries, and the 28 percent rate in the United States. However, according to recent estimates, the number of Internet users in Greece amounted to 5–8 percent of the population in 2000.

124. On mobile phone use, another broadly used IT indicator, Greece compares well with other industrial countries. The percentage of people with a mobile phone in Greece was more than 19 percent in 1998, compared with an average 23 percent in the euro area, 22 percent in the OECD countries, and 25 percent in the United States. According to more recent estimates, the number of mobile phone owners in Greece more than doubled in 2000, reaching 39 percent of the population.[66]

125. The cost of IT product use in Greece was higher than in other industrial countries during most of the 1990s, but recent trends show that convergence is underway. Telecommunication services, especially for fixed lines, were more expensive in Greece than in most OECD countries until the liberalization of the sector in the late 1990s. As a result, Internet access costs used to be higher in Greece, particularly for rural areas because of long distance calling charges. The tax rate on telecommunication services in Greece was 18 percent in 1999, broadly similar to the tax rate in euro-area countries and only slightly higher than a weighted average of 17 percent in the OECD countries, but significantly above the 10 percent tax rate in the United States. The average price of 20 hours of Internet access in the period 1995–2000 was $60 in Greece, compared with an average of $50 in the OECD countries and $32 in the United States, in PPP-adjusted values (Coppel, 2000; and OECD, 2000a). Internet access costs in Greece fell in 2000, to close to the euro-area levels, but were still higher than U.S. access costs. Looking ahead, further price declines are expected with the recent deregulation of the fixed-line telecom market and the opening up of the local loop.

126. The use of IT in the Greek public sector is still limited. IT application in public administration is at an early stage, with fewer than one-sixth of civil servants using a computer. Most of the state organizations do not have Web sites. The use of IT in the education system is also still limited, with 51 students per PC in secondary education in 2000, and only 5 percent of schools connected to the Web.

127. Recent evidence points to more widespread use of IT in the private sector. According to a recent survey by the Federation of Greek Industries, about 86 percent of surveyed Greek companies said they used new IT technologies.

C. Policy Issues: Promoting the New Economy in Greece

128. The Greek government has recently adopted an ambitious plan to promote the new economy in Greece. The plan sets medium-term targets for IT applications in public administration, education, and health care, and development of new IT companies in the private sector. It supports job creation in IT and its applications, and IT training of the labor

[66] Private sector estimates (Strategic International, Greece).

force. Moreover, it intends to facilitate new company creation in IT by simplifying bureaucratic procedures and increasing venture capital financing.

129. There is vast room for expanding IT applications in the public sector of Greece, as noted above. The authorities intend to use IT to improve the quality of services offered to citizens by the public administration at the central and local levels, and to increase communication within and between government departments by electronically linking central and local governments. Their goal is to use the Internet for public sector transactions with the public, hoping to offer a range of basic services online by 2003. A system for filing taxes through the Internet is expected to be ready during 2001. Taxpayers who file their taxes electronically in 2001 will get tax exemptions as high as 5 percent. In the health care sector, the authorities intend to establish links of professionals and managers to a network for exchanging of information on prevention, diagnosis, and treatment, and to link electronically regional and local health centers. They also plan to develop systems for secure and confidential access to networked patient information.

130. Education has a key role in the authorities' plan to upgrade IT use and applications from currently low levels. Although there are university departments specialized in computer science, employers have complained repeatedly about the small number of graduates with IT skills and the limited existence of links between the education system and the labor market, which has resulted in an oversupply of graduates in some sectors and an undersupply in others. A number of small private schools teaching IT courses, not recognized as universities by the Greek state, do not seem to have covered this gap. As a result, some IT companies end up importing skilled workers.

131. According to the authorities' plan, the education system is to undergo a far-reaching reform to increase IT applications. The plan includes increased spending for PCs, networks, software, and training. The authorities objectives are for all Greek schools to have Internet access, and for all universities and research institutes to have fast Internet access and upgraded academic networks by the end of 2001. All secondary school graduates are to be digitally literate by the end of 2003, while the number of PCs is to be increased to 1 per 10 students by the end of 2004. Moreover, the target is to train all teachers in the use of Internet and multimedia sources by the end of 2002, and to hire over 2,800 new IT teachers by the end of 2001—with teachers specialized in IT to participate in a continuous education program. Finally, the Ministry of Development and the Ministry of Education will promote partnerships between the private sector and higher education in IT research, development, and applications.

132. Increasing IT training of the labor force is also underway—aimed at improving job matching with the skills required in the new economy. In this context, special attention is also focused on developing IT skills in labor force segments characterized by high unemployment rates, such as women, the young, and the socially disadvantaged. The government's program includes the development of special training packages and multimedia material in Greek. And a campaign is underway to get Greek employees accredited in IT skills based on standardized tests, while the unemployed are receiving complete funding to

take such tests. IT training will also be supported by combining training and employment promotion actions and by encouraging the acquisition of working experience in IT firms through short-term internships.

133. Important steps are also underway—or planned for the near future—to simplify the business environment and the process of starting a new company. Barriers to entrepreneurship may have retarded the new economy in Greece, as heavy bureaucratic procedures make it difficult and time-consuming to start a new business. According to a recent study, a business start-up in Greece has to go through a multitude of bureaucratic procedures, which typically take 53 days and cost well in excess of $5,000 (Djankov, 2000); by comparison, the corresponding start-up in the United States, for example, takes about 7 days, and a cost less than $300. In addition, cumbersome and lengthy bankruptcy procedures severely hamper the exit of firms in Greece. Such distortions retard private sector development in general, but are particularly harmful for the more dynamic economic sectors such as IT. As one step to improve transparency, rules and regulations governing many business activities are being collated for easier access, using an Internet interactive guide. And the number of certificates for starting a company is to be reduced sharply in the near term. Furthermore, the Ministry of Development is setting up one-stop shops. By mid-2001, 5 one-stop shops will be established as pilot projects and, based on their success, additional ones would be set up in different regions of the country, sharply reducing the time required to complete to start a new company.

134. In addition, the authorities are also addressing selected standardization and regulation issues for the new economy, and especially for some Internet-related activities. In this context, rules are to be introduced facilitating electronic transactions while safeguarding privacy concerns. In coordination with other EU countries, the government may propose new regulations on e-commerce taxation and electronic signatures. Moreover, it will also provide incentives to promote the use of IT in small- and medium-sized enterprises (SMEs).

135. Limited financing has been another major obstacle for the new economy in Greece. Venture capital financing was only 0.02 percent of GDP in 1998, compared with an average of 0.12 percent in OECD countries. Furthermore, venture capital in Greece has been focused on companies that were relatively close to initial public offerings. And while the Athens Stock Exchange provided sizable financing to established market participants in recent years (notwithstanding the sharp price correction in 2000), it has not been an important financing source for startup companies. The introduction of a new stock exchange, NEXA, in January of 2001 was expected to facilitate IT-business financing and, as of the end of 2000, seven applications had been submitted for funding through NEXA. Moreover, some IT financing will be facilitated under the third community support framework. The funding (a €2.5 billion initiative, with 25 percent private sector participation) includes IT application and training support—covering education, culture, public administration, e-business skills, and telecommunications, which the authorities expect to create about 14,000 new jobs.

Table 1. New Economy Indicators

(Per 1,000 people, except when indicated otherwise)

Indicators	1994	1995	1996	1997	1998
Personal computers					
Greece	28.8	33.5	35.3	44.7	51.9
Euro area	114.4	139.5	163.7	187.7	228.9
United States	297.4	328.1	363.9	406.9	458.6
Internet hosts (per 10,000 people)					
Greece	3.4	7.4	16.0	18.8	38.1
Euro area	19.0	43.3	68.4	82.9	122.3
United States	122.1	230.4	381.3	441.8	975.0
Mobile phones					
Greece	16.0	26.1	52.5	89.1	194.1
Euro area	26.6	43.5	75.8	131.3	230.1
United States	92.6	128.4	165.9	206.5	256.0
Hi-tech exports (percent of manufacturing exports)					
Greece	3.3	5.3	5.5	5.3	7.3
Euro area	13.8	14.3	14.4	15.4	17.3
United States	30.8	30.2	30.5	31.5	33.0

Source: World Bank (2000).

Table 2. New Economy Indicators for Selected Countries

(1999, except when indicated otherwise)

Indicators	Greece	Portugal	Italy	Spain	United States	OECD
IT expenditures (percent of GDP) 1/	4.0	5.0	4.3	4.2	7.8	7.0
Hardware	0.4	0.8	0.6	0.7	1.7	1.4
IT services and software	0.6	0.9	1.3	1.1	3.3	2.5
Telecommunications	3.0	3.3	2.4	2.4	2.8	3.1
Hi-tech exports (percent of manufacturing exports) 2/	7.3	3.9	7.9	6.6	33.0	15.0
PCs per 100 people 2/	5.2	8.1	17.3	14.5	45.9	24.0
Internet users (percent of population)	2.2	2.5	3.7	5.0	28.3	17.0
Price of 20 hours of Internet access (in U.S. dollar PPP) 3/	60	72	52	86	32	50
Mobile phones per 100 people 2/	19.5	31.4	35.8	17.7	25.3	22.4
Tax rate on the use of local telecommunication services 4/	18.0	17.0	20.0	16.0	10.0	17.0
Business-funded R&D (percent of GDP) 2/	0.1	0.1	0.6	0.4	2.1	1.5
Venture capital investment (percent of GDP) 2/	0.02	0.05	0.05	0.04	0.16	0.12

Sources: OECD (2000b); OECD (2000c); and World Bank (2000).

1/ Data are for 1997.
2/ Data are for 1998.
3/ Average for the period 1995–2000. GDP weighted average for OECD.
4/ GDP weighted average for OECD.

Table 3. Greece: Selected IT Indicators in 2000 and Medium-Term Targets

Indicators	2000	2006
Internet users (percent of population)	5–8 1/	50
Number of pupils per PC	51	10
Schools connected to internet (percent)	5	100
PCs per 100 civil servants	15	50
Health centers connected (percent)	0	100
SMEs in e-commerce (percent)		15
IT expenditures (percent of GDP)	4.1	6.2

Source: Greece, Prime Minister's office.

1/ The estimate of 8 percent for internet users in 2000 is from OTE.

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V. The Greek Banking Sector at the Time of EMU Entry: Recent Developments and Challenges Ahead[67]

A. Introduction

136. This chapter examines the key issues facing the Greek banking sector, against the background of its recent performance and a rapidly evolving market and regulatory environment. The chapter builds on earlier Fund staff work on the financial sector in Greece and focuses in particular on recent developments, and on opportunities and challenges emanating from monetary union.[68]

137. The Greek banking system is in the process of far-reaching restructuring. During the 1980s, the system was heavily regulated and was primarily serving an inefficient public sector. Interest rates for nonpreferential private sector borrowing were high, which kept private investment at a relatively low level and retarded private sector development. This changed after the deregulation and liberalization of the banking sector in the 1990s, which freed bank lending from many layers of state interference, revitalizing competition, flexibility, and efficiency. Greek banks have been lending increasingly to the private sector, with consumer lending one of the fastest growing sectors in recent years. The narrowing of spreads and growing competition from nonbank financial institutions have pushed banks to look for alternative revenue sources to help boost their noninterest income. Consolidation and privatization have created larger and more cost-conscious financial groups. Profitability has increased and banks have expanded into new financial services. Furthermore, supervision has improved and prudential regulation has been strengthened according to EU directives.

138. However, as this chapter reports, the Greek banking system faces evolving challenges, particularly after Greece's EMU entry in January 2001. Despite recent privatization, the state still controls, directly or indirectly, a large part of the banking system. Even though the financial strength of the Greek banking sector improved after liberalization, it is still below that of other EU countries. Bank capitalization increased markedly in recent years and almost all Greek banks fulfill the 8 percent minimum capital adequacy ratio, but the ratio of nonperforming loans (NPLs) is relatively high, despite rapid improvement since the mid-1990s. Furthermore, provisioning for nonperforming loans is relatively low, despite its growth in recent years. Bank profitability has improved in recent years, but partly because of temporary events (capital gains from stock and bond holdings). Furthermore, Greek banks have not been very successful in reducing costs and are still lagging behind other EU countries, particularly in controlling personnel expenses.

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[67] This chapter was prepared by Athanasios Vamvakidis.

[68] For earlier staff work on the financial sector in Greece, see Demekas and others (1993); and Hardy (1997).

139. This chapter concludes that to reach best industry practices, Greek banks have to further strengthen performance, and improve risk management and internal control practices. Room remains for further progress in reducing operating costs and the still high NPL ratios, and it is important to increase provisioning for nonperforming loans. Supervisors also face new challenges in a liberalized and rapidly changing banking sector, with evolving financial services—at a time when credit growth rates are already high. The Greek banking sector is generally considered to be well prepared to deal with these challenges, and most performance indicators have strengthened in recent years. However, strong reliance on high interest margins in the past and rising competition, particularly after Greece's entry into the euro area, heighten the urgency for Greek banks to further strengthen their performance.

140. The rest of the chapter is structured as follows: Section B compares the banking system before and after liberalization and discusses the recent consolidation and privatization process and how it has changed the structure of the banking system in Greece; Section C briefly discusses recent credit market developments in the Greek economy; Section D examines the present health and recent performance of Greek banks; Section E highlights the main elements of the new regulatory and supervisory framework of the Greek banking system and the EU directives it is based on; and Section F concludes.

B. The Banking Sector in Greece Before and After Liberalization

141. Before the beginning of liberalization in 1987, the banking sector in Greece was heavily regulated and state interference in its business was the norm. Bank credit was often used to finance large fiscal deficits, and to provide loans to state enterprises and to sectors that the government considered of national interest. Commercial banks were required to invest three-fourths of their deposits to finance preferential activities, a large part of which had to be placed in treasury bills (40 percent of their deposits).[69] The sector was subject to strict branching regulations, asset holding restrictions, and legal barriers to developing new financial products. The National Bank of Greece and the Commercial Bank, both large state-owned banks, dominated the banking sector. The management of state banks was appointed by the government and changed frequently, while the hiring of new staff burgeoned before elections. Provisioning for loan losses was low compared with international standards, primarily because the government used to guarantee a big portion of the loans granted by state banks, and tax deductions by banks for provisions could not exceed 1 percent of average loans outstanding each year.

142. These strict regulations had created a rigid banking system and distorted market incentives. Banks could not maximize profits, and because of limited competition, they did not have to be cost conscious or to adopt advanced technologies. Loans to specific sectors and to state enterprises had very low or even negative real interest rates, while non-preferential borrowers paid much higher rates. The interest rate spread for private sector

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[69] Armagou (1999).

loans was among the highest in the OECD countries, fluctuating within a range of 9–12 percent, while depositors were earning negative real interest rates.[70] Strict foreign exchange controls resulted in a large black market for foreign exchange.

143. The far-reaching liberalization of the Greek banking system started in 1987 and accelerated in the 1990s.[71] Interest rates on loans were liberalized in 1987, and on deposits in 1989. Rules forcing banks to invest in treasury bills and lend to state enterprises and preferential sectors were abolished in 1993. Controls on international flows of long-term capital were liberalized in 1993, and for all other capital account transactions, in 1994. Furthermore, during the 1990s, supervision improved and prudential regulation was strengthened to meet the EU directives on bank supervision (see Section E below).

144. Banks are authorized to be involved in all types of banking activities, and need no approval from the Bank of Greece for standard operations. Competition has increased and domestic banks are expanding to wholesale banking, an area serviced primarily by foreign banks in the past. Moreover, nonbank financial institutions are moving into traditional banking activities. Higher competition among banks and nonbank financial institutions has stimulated productivity and sophistication in the Greek financial system. Furthermore, liberalization has led to substantially reduced interest rate spreads, closer to the euro-area levels.[72]

145. Based on most available indicators, the banking sector's performance has improved substantially since liberalization (see Table 1 and Section D). For the five largest banks, profitability (measured as net profits over total assets) more than doubled in the first half of the 1990s compared with the 1980s, while staff expenses as a percent of gross profits declined by more than 40 percent. Remarkably, profitability was higher and staff expenses lower in private banks than in banks under state control for the whole period from 1960 until the mid-1990s.

146. Privatization has facilitated consolidation in the Greek banking sector (Table 2). Consolidation and privatization in the Greek banking sector started late compared with other countries in the euro area. Consolidation was initially limited primarily to large private banks purchasing smaller state banks in an effort to increase their size and improve their domestic market position, ahead of Greece's participation in EMU. Other driving forces behind consolidation included cost efficiency and efforts to expand clientele in new financial

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[70] Armagou (1999).

[71] For a chronology of the major financial liberalization measures during 1991–93, see Demekas and others (1993).

[72] According to IFS data, the interest rate spread in Greece declined from more than 8 percent at the beginning of 1998 to below 5 percent by the end of 2000. The euro-area average spread at the end of 2000 was more than 3 percent.

services. To date, the government has privatized the Bank of Central Greece, CretaBank, General Hellenic Bank, Macedonia Thrace Bank, and Ionian Bank.[73] It is also gradually selling parts of its stake in larger state banks such as Commercial Bank and the Agricultural Bank of Greece.[74]

147. Consolidation and privatization have created larger financial groups. Increased concentration created five such groups (in addition to the Agricultural Bank of Greece, which is the third largest bank by asset size), accounting for 95 percent of commercial bank assets in Greece in 2000, compared with 77 percent in 1998 (Table 3).[75] At the end of 1999 there were 16 Greek commercial banks and 13 cooperative banks, compared with 20 and 5, respectively, four years ago (Table 4).[76] According to a recent survey, 6 Greek credit institutions were among the largest 150 in Europe, based on Tier-1 capital in 1999.[77]

148. Despite recent consolidation and privatization, state-controlled banks remain an important feature of the Greek banking system. Although the number of directly or indirectly controlled (for example, through pension funds) state commercial banks was reduced from 8 in 1995 to only 2 in 2000 (4, including the Agricultural Bank and the Post Office Fund, which are considered specialized banks), these banks are among the largest in Greece. Together, the National Bank of Greece and the Commercial Bank of Greece held roughly half of commercial bank assets, loans, and deposits in 2000. Even though most state ownership of these banks is indirect, the state has in the past appointed their management. However, the government announced recently that management in these banks would be

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[73] In 1999, Ionian Bank, the third largest state bank, was bought by Alpha Bank (the state sold its 51 percent stake for $900 million).

[74] The Agricultural Bank of Greece, a large state credit institution, held its first stock market flotation in December 2000, as part of a privatization program for 13 percent of its shares, which included attracting a strategic investor. This bank and the Post Office Fund—also state-controlled—are considered special credit institutions.

[75] The National Bank of Greece is the largest and oldest bank; Alpha Bank is the second largest bank and the largest private bank; Commercial Bank is the third largest bank and the second largest bank in which the state has a stake; EFG Eurobank is the fourth largest bank and second largest private bank; and finally, Piraeus Bank Group is the fifth largest bank.

[76] Cooperative banks used to be specialized in mortgages, consumer loans, and retail deposits, but they are now offering as many banking services as commercial banks. Their members, which are their only clients, have 1 to 5 shares of ownership. Despite their recent increase in number, they represent only 0.5 percent of total assets in the banking system.

[77] The survey was conducted by the magazine *The Banker*. The 6 banks and their rankings are the following: National Bank (64th), Alpha Bank (66th), Commercial Bank (80th), Post Office Fund (90th), Agriculture Bank (96th) and ErgoBank (127th).

appointed by shareholders in the future, which would substantially reduce state control in the banking sector.[78]

149. Large foreign financial groups have recently expressed interest in the Greek market and some have formed strategic alliances with Greek banks. At the end of 1999, 22 foreign banks operated in Greece, with almost 12 percent of total assets in the banking sector, which is a small increase from 10 percent 10 years ago (FitchIBCA (2000). So far, they have primarily specialized in asset and portfolio management, credit cards, mutual funds, derivatives, insurance, and investment banking. Greek banks can benefit from the expertise and experience of foreign banks in risk management, international markets, and new financial products and services by forming strategic alliances. Some of these alliances have created new companies specializing in specific financial services.[79]

C. Recent Credit Market Developments

150. With the lifting of earlier restrictions, Greek banks have shifted their lending more and more toward the private sector. They are free to design their credit allocation subject only to prudential rules by the Bank of Greece. Furthermore, fiscal tightening in recent years has significantly reduced the government's borrowing requirements. Private sector credit growth was almost 17 percent on average in the last five years, and accelerated to almost 28 percent in September 2000, and the outstanding stock amounted to 58 percent of GDP (Table 5). According to the most recent available data (August 2000), 68 percent of private sector credit from commercial banks is short-term lending and about 34 percent is denominated in foreign currency, compared with 70 percent and 23 percent, respectively, in 1995. Foreign-currency-denominated credit grew by 23 percent in 1999 and by 32 percent in August of 2000 (most of it in U.S. dollars, yen, and euros; see Table 6), primarily to take advantage of lower interest rates before the convergence of Greek interest rates to the euro-area levels.

151. Consumer lending, an undeveloped segment of the credit market in Greece until recently, has been one of the fastest-growing sectors. It increased by 31 percent in 1999 and

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[78] This is, however, subject to the parliament's approval.

[79] EFG Eurobank and Deutsche Bank formed a strategic alliance in 1998 (the strengthening of their position allowed them to successfully bid for Ergobank); Piraeus Bank and Bank of Tokyo-Mitsubishi started a cooperative alliance in merchant banking in 1999; Commercial Bank formed a strategic alliance with Crédit Agricole of France in 2000, selling 6.7 percent of its capital (the two banks created a new insurance company together and they started close collaboration in investment banking services); Banco Comercial Português, a Portuguese bank and one of the latest banks to enter the Greek market, recently introduced a joint venture with the Interamerican group, a Greek financial/insurance group, planning to compete directly with local banks in retail banking.

almost 27 percent in August of 2000, reaching 11 percent of total commercial bank lending. The introduction of credit controls by the Bank of Greece for the period from April 1999 to March 2000 did not succeed in slowing down credit expansion.[80] Credit card and auto loans are the fastest-growing consumer loan areas, albeit from very low starting positions. Other fast-growing segments of the credit market include housing, trade and industry.

152. Credit growth may accelerate further in the period ahead. Earlier euro-area entrants experienced rapid credit expansion to households and enterprises.[81] Domestic credit as a percent of GDP was 75 percent in Greece in 1999, compared with 132 percent on average in the euro area. The banking sector in Greece is still small compared with the banking sectors in other EU countries. The ratio of credit institutions' assets to GDP in Greece was about 134 percent in 1999 and is the lowest in the EU (the EU weighted average was about 244 percent).[82] The reduction in reserve requirements from 12 percent to 2 percent in 2001 and the decline of interest rates to euro-area levels at the beginning of the same year should lead to more credit expansion.[83]

D. The Health and Recent Performance of the Banking Sector in Greece

153. The financial strength of Greek banks is considered adequate, but below that of other EU countries. According to Moody's ratings of bank financial strength, the Greek banking sector is rated at D to D+ (D stands for adequate), which is the lowest in the EU area (Table 7). Based on individual bank ratings, 2 Greek banks have a C rating of financial strength (C stands for good), while the Agricultural Bank has a rating of E+ (E stands for very weak) and all other banks have a D or D+ rating (Table 8).

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[80] The Bank of Greece introduced credit controls in April 1999, in the form of nonremunerated deposits for an amount equivalent to credit growth above specified rates. The credit controls were removed in March 2000.

[81] For Portugal's credit developments after euro entry, see Box 2 in International Monetary Fund (2000).

[82] Fitch IBCA (2000).

[83] The Bank of Greece reduced reserve requirements from 12 percent to the euro-area's 2 percent in 2001. The freed-up reserves were converted into blocked interest-bearing deposits, and will be released gradually by mid-2002 (10 percent in January 2001, 30 percent in July 2001, 30 percent in January 2002 and the remaining 30 percent in July 2002).

154. Bank capitalization grew markedly in recent years (Tables 9 and 10). Almost all Greek banks fulfill the 8 percent minimum capital adequacy ratio (CAR).[84] The average CAR for the Greek banking sector was 18.2 percent in 1999, a considerable increase from 12 percent in 1998, primarily because of an impressive stock market performance, as well as reflecting banks' new share issues.[85] The Tier-1 capital ratio increased in 1999 to 17.7 percent, from 12 percent in the previous year, while the equity to total assets ratio reached almost 10 percent in 1999, compared with almost 6 percent in 1998. International comparisons show that Greek banks do not seem to lag in capital adequacy. The capital-to-assets ratio in Greek commercial banks was 5.1 percent in 1997 (the latest available cross-country comparison), which was higher than that in Germany, the Netherlands, and the United Kingdom, but lower than in Portugal and Spain (Table 11).[86]

155. However, the Greek banking sector still has a high ratio of nonperforming loans, despite improvements since the mid-1990s. The ratio of nonperforming loans to total loans (NPL ratio) actually increased in 1999, reaching 14.7 percent, compared with 13.6 percent in 1998.[87, 88] Even though this is an improvement compared with a ratio of 19 percent in 1996, it is still relatively high; for example, the NPL ratio in Portugal was 3 percent in 1999 (International Monetary Fund, 2000). To some extent, this reflects the situation at the Agricultural Bank, which is in the process of cleaning up its portfolio. However, even excluding the Agricultural Bank, the NPL ratio was still 10.7 percent in 1999, and thus relatively high by international standards.[89]

156. Provisioning for NPLs has improved in recent years, but is still low compared with other industrial countries. Provisioning in the six largest Greek commercial banks was almost 4 percent of total loans in 1999, or 27 percent of NPLs, compared with more than 3 percent

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[84] The CAR is calculated based on the "Own Funds Directive" and the "Solvency Ratio Directive" of the EU Council, which adopted the risk-based capital guidelines of the Basel Committee. Only the Agricultural Bank did not fulfill the minimum capital adequacy ratio in the past, but its performance has recently improved under new management.

[85] The Greek stock index surged by 102 percent in 1999, while the banking share index increased by 76 percent. The market capitalization of banks jumped by 132 percent in 1999.

[86] International comparisons are based on OECD (1999)

[87] The NPL ratio in Greece includes all loans with any kind of arrears for more than three months, consistent with the practice in many other industrial countries.

[88] The Bank of Greece has argued that the increase in NPLs during 1999 could be partly explained by banks cleaning up their portfolios and recognizing more NPLs.

[89] Although the Bank of Greece collects data for the NPL ratios of all Greek banks, these data are not publicly available.

and almost 17 percent in 1996, respectively. This is considerably lower than in other EU countries (for example, provisioning over nonperforming loans are more than 100 in Portugal). Capital adequacy is considerably lower when the large number of NPLs not covered by provisions is taken into account. Subtracting these NPLs not covered by provisions from equity brings the equity/total assets ratio for the 6 largest Greek banks to 5.6 percent from 10.1 percent in 1999. However, this is a considerable improvement from 1.8 percent in 1998, or from negative ratios in earlier years.[90]

157. The reasons for the high NPL ratio in Greece are partly related to the way the sector was organized before its relatively recent reform. Government interference in lending policies during the 1980s, requiring lending to specific sectors and to frequently troubled state companies, resulted in a large number of bad loans. In addition, inadequate procedures for monitoring troubled loans and overreliance on borrowers' collateral rather than cash flows to approve loans harmed the banks' portfolios.

158. Greek banks are in the process of significantly upgrading their risk management and credit approval systems and procedures, following the Bank of Greece's new rules. The recent deregulation and liberalization of the banking sector, higher competition at the domestic and European levels, and new sophisticated financial instruments make it essential for banks to employ advanced risk management systems. The Bank of Greece, following EU directives, introduced in 1998 requirements for all commercial banks to set up an internal control system, an audit committee, and an internal supervision unit for credit risk management, which will report directly to management. Greek banks are currently implementing these requirements. Furthermore, large banks have started implementing value-at-risk models.

159. Bank profitability improved markedly in 1999. For the commercial banking sector, average net income before provisions more than doubled as a share of average assets, to almost 4 percent. Return on assets (ROA) exceeded 3 percent, compared with 1.2 percent in the previous year, and return on equity (ROE) increased to 37 percent from 22 percent during the same period. Data for individual commercial banks show that almost all banks experienced a sizable improvement in their profitability in 1999 (Table 12). Cross-country comparisons of bank profitability in 1997 show that the ratio of net income over total assets of the Greek banking sector was comparable to that of other European countries.

160. However, the improvement in bank profitability in 1999 stemmed partly from temporary events that are unlikely to be repeated in the future. Banks' holdings of stocks delivered large capital gains in 1999, after the impressive performance of the Greek stock market during that year. Net profit from financial operations more than tripled in 1999.

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[90] Excluding the Agricultural Bank of Greece, provisions were 34 percent of nonperforming loans in 1999, while capital net of nonperforming loans not covered by provisions were 7.2 percent (compared with a capital/assets ratio of 10 percent).

Significant capital gains were also realized from government bond holdings, as interest rates declined to converge to the EMU interest rates.[91] The temporary nature of some of the 1999 profits was illustrated by more recent developments. In 2000, the stock market experienced a sharp correction. [92] And while capital gains from bond holdings continued during 2000, they had largely ended by 2001, with the convergence of Greek to euro-area interest rates.

161. Reflecting the waning of some of the temporary factors, bank profitability declined in the first half of 2000—although it was still higher than in 1998. The average ROA of the Greek commercial banks declined to 2 percent in the first half of 2000, while the average ROE declined to 23 percent in the same period. All the commercial banks in Greece experienced a decline in profitability by mid-2000. After the adoption of the euro, revenues from foreign exchange transactions will decline, although the elimination of the exchange rate risk vis-à-vis the euro-area countries is expected to reduce hedging costs.

162. The narrowing of spreads and increasing competition from nonbank financial institutions have pushed banks to look for alternative revenue sources. Interest income as a share of average assets declined from more than 12 percent in the first half of the 1990s to 9 percent in 1999. This decline is not large, given the recent fall in interest rates, because of fast credit growth in recent years, including credit for segments with relatively high interest rates (e.g., consumer loans). Noninterest income, such as from trading and commissions, increased to 3 percent of average assets in 1999, and despite a decline to 2.3 percent during the first half of 2000, it remains higher than in earlier years (Table 13). High demand for consumer loans and the introduction of new financial products has helped banks to diversify their revenue sources. Nonbank financial institutions—such as mutual funds, pension funds, and insurance companies—are capturing a growing share of the market, and as a response, banks have been trying to enter new areas of financial services. For example, investment in mutual funds increased from about 9 percent of GDP in 1995, to 26 percent in 2000. Their number reached 233 mutual funds in 2000, compared with only 40 just two years before, managed by 31 companies, most of them banks.[93] Most banks are now offering a wide range of financial products and services, such as asset and portfolio management, credit cards,

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[91] Capital gains from stock and bond holdings are a part of a bank's profits only after they are realized.

[92] The Greek stock index plunged by 39 percent in 2000, while the banking share index declined by more than 28 percent.

[93] A recent law (2278/99) describes the legal and operational framework for mutual funds.

mutual funds, derivatives, insurance, and investment banking.[94] Banks have also started expanding their expertise in brokerage services, security underwriting, and mergers and acquisitions.

163. Despite recent efforts, Greek banks have not been very successful in reducing costs and are still lagging behind other EU countries. This raises concerns, particularly because the recent increase in bank profitability may reflect temporary factors, as discussed, and bank competition is expected to intensify in the future. Based on comparisons for 1997, the operating expense ratio in Greece was among the highest in the EU. Recent efforts to cut expenditures have not resulted in a break from the past, and the ratio of operating expenses to average assets actually rose in 1999 (although preliminary estimates show a small decline in 2000; Table 14).

164. Personal expenses are particularly high relative to such expenses in other EU countries. The number of bank employees per branch was 23 in 1999, compared with the EU average of 20, but has been declining (it was 32 in 1992). High personnel costs reflect in part relatively rigid Greek labor regulations (see also Chapter III), which has been the main obstacle to cutting employment, particularly in state banks, which have a higher number of bank employees per branch than private banks.

E. The Regulatory and Supervisory Framework of the Greek Banking System

165. Three main institutions supervise the financial system in Greece, with some coordination in overlapping areas of responsibility. The Bank of Greece supervises credit institutions; the Capital Markets Committee (CMC) supervises investment banking, fund management, securities, and brokerage; and an insurance supervision committee under the Ministry of Development supervises insurance companies. The three supervisory authorities coordinate to deal with cases of overlap. The Bank of Greece coordination with the CMC has been relatively close and is based on a formal agreement of responsibilities and exchange of information. The two supervisors meet—on an ad hoc, not a regular, basis—to discuss issues of regulation and supervision and to exchange information. Coordination of the Bank of Greece and the CMC with the Ministry of Development on insurance supervision is less frequent and less formal. The responsibility for competition issues in the banking sector lies not with the Bank of Greece but with the Competition Committee, an independent authority. In cases of mergers or acquisitions, the Bank of Greece coordinates closely with the Competition Committee, since the competition policy framework is based on broad principles that apply to all industries.

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[94] Particularly on credit cards, recent expansion has been encouraging, but Greece still lags behind other EU countries. Around 25 percent of the workers in Greece have a credit card, compared with 60 percent on average in the EU.

166. The Bank of Greece's regulation of the banking sector is based in part on relevant EU Council directives. These directives include issues related to monetary policy, liquidity, foreign exchange positions, capital adequacy, profitability, and large exposures. The EU Council's main directives on regulation of credit institutions that have been adopted so far by Greece include the Own Funds Directive (adopted in 1992), which defines a bank's capital for purposes of determining solvency; the Solvency Ratio Directive (adopted in 1992); the Large Exposures Directive (adopted in 1993), covering supervision and monitoring of large exposures of credit institutions; the Second Consolidated Supervision Directive (adopted in 1995), which is on the supervision of credit institutions on a consolidated basis; and the Capital Adequacy Directive (adopted in 1996). Greece has also implemented EU directives on money laundering.

167. New regulations have tightened the rules to start a new bank and increased capital adequacy requirements. The minimum capital adequacy ratio is 8 percent (10 percent for cooperatives). A banking license by the Bank of Greece requires compliance with the EU Council's First and Second Directives on the Authorization of Credit Institutions. However, banks do not need prior Bank of Greece authorization to establish subsidiaries, open branches, expand geographically, and operate in foreign currencies, in contrast to just a few years ago. The Bank of Greece needs only to be notified and be assured that the minimum initial capital requirements are met before such changes and operations take place.

168. The Bank of Greece introduced stricter provisioning rules in 1999. Under the new regime, banks are required to stop recording interest after a loan has not been serviced for six months. As before, banks have to make 1 percent general provisions on all loans—a stricter requirement than in many other countries. Additional provisions need to be made for loans that have not been serviced for more than three months. These provisions start at 10 percent and reach 50 percent, according to how long the loan has not been serviced, regardless of the collateral value.[95, 96] Consumer loans have higher provisioning ratios (by a factor of 1.3), while housing loans have lower ratios. Deficiencies in provisioning are subtracted from capital adequacy ratio calculations by the Bank of Greece.

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[95] In addition to provisioning 1 percent for all loans, banks have to provision 10 percent for loans that have not been serviced for 3 to 6 months, 25 percent if this period is 6 to 12 months, and between 40 to 50 percent if it is more than a year (bad loans). According to the existing Greek law, a bad loan is a loan for which interest and/or principal has not been paid for a year, regardless of the existence or value of collateral, which is considerably longer than in some other countries (for example, 90 days in the United States).

[96] Even though these ratios are lower than in some other EU countries (for example, they reach 100 percent in Portugal (see Decressin and Mauro,1998)), the Bank of Greece officials have argued that they are justified by their supervision experience in the past.

169. Banks are required to monitor and control large exposures to clients and to notify the Bank of Greece immediately of any excessive concentration of exposures. The Large Exposures Act of the Bank of Greece adopted the Large Exposures Directive of the EU Council. The value of each large exposure should not exceed 40 percent of a bank's own funds, while total large exposures should not exceed 800 percent of the bank's own funds. If these limits are exceeded, then the bank needs to hold additional own funds.

170. The Bank of Greece has also set limits on equity participation by banks. An approval by the Bank of Greece is required for holding more than 10 percent (directly or indirectly) of the equity of financial, insurance, real estate, and data processing companies. Holdings in other companies cannot be more than 15 percent of a bank's own funds per company, or 60 percent of a bank's own funds in aggregate. Furthermore, according to EU regulations adopted by Greek law, new and significant holdings must be reported to the Greek Competition Commission. Finally, the Athens Stock Exchange should be notified when ownership thresholds for listed companies are crossed.

171. Following EU directives, a deposit guarantee fund was established in Greece, and started operating in September 1995. The level of coverage is €20,000 per depositor and per credit institution, which is the minimum in the relevant EU directive. The fund is administered jointly by the Bank of Greece and the Hellenic Banking Association, with the participation of the Ministry of Finance. It is funded from annual contributions of the participating banks, according to the amount of their eligible deposits.

172. The introduction of new regulations was further intensified ahead of EMU entry, particularly in the area of risk management. New regulations require internal control systems in credit institutions and set up the principles for their operation. All credit institutions are required to have an internal audit division. Banks with assets above Dr 300 billion (about $750 million) are required to have special risk management and supervision units, independent from other activities and reporting directly to management or the board. These banks are also required to have an independent audit committee, in addition to the internal audit division. Recent regulations also specify the rules for calculating capital requirements for market risks, and allow banks to develop internal risk evaluation and management models after approval by the Bank of Greece. Most banks are still working to fulfill these requirements, while the Bank of Greece is monitoring progress.

173. Bank of Greece supervision has been strengthened to meet the new challenges of the banking system. All credit institutions operating in Greece are required to provide the Bank of Greece with a semiannual report on profitability and exposure to banking risks, monthly data relating to open currency positions, a semiannual report on loan loss reserves, and a general annual audit report. In addition, banks have to submit reports on the status of their internal control system. Since 1993, all credit institutions operating in Greece are also required to provide the Bank of Greece with quarterly information on overall liquidity, but there are no specific liquidity requirements. The Bank of Greece can impose sanctions if the new regulatory framework is violated by a credit institution, consisting of a compulsory

deposit equal to 40 percent of the amount of violation in a non-interest-bearing account of the Bank of Greece for a year or a fine as high as Dr 300 million.

174. Some of the main outstanding issues on bank supervision include issues that are also outstanding at the EU level (Belaisch and others, 2000). Capital adequacy regulation is expected to be strengthened further in 2001, following the recommendations of the Basel Committee on Banking Supervision. The new regulation is expected to improve the rules for determining capital requirements for credit risk and to impose new rules for capital requirements for investment portfolio risk and operational risk for banks. Financial conglomerate supervision rules are expected at the EU level during 2001, and the Bank of Greece plans to swiftly adopt them. Derivatives were introduced only recently in the Greek financial sector, and are not widely used; they are limited to relatively simple products. The market is expected to become more active, however, which will create new challenges for the Bank of Greece's supervisors.[97] Public disclosure could be enhanced in Greek banks, for example, for NPLs and risk management practices, as recommended by the Basel Committee on Banking Supervision. Closer coordination among the three supervisors of the financial sector in Greece, through regular meetings and formal exchange of information, and strengthening the independence of the CMC and the insurance supervisors are also issues the authorities are currently considering.

175. Despite recent improvements, some deficiencies in data collection remain. The Hellenic Bank association has a subsidiary that collects data on bad checks and bad creditors, but no data base is currently able to supply a complete credit history for each individual. The Bank of Greece collects credit data but only for very large borrowers. Monitoring begins when exposure reaches Dr 1 billion and continues until the loan is reduced to less than Dr 200 million.

F. Conclusions

176. The Greek banking system changed profoundly after its liberalization during the last decade, and the process of far-reaching restructuring is continuing. The state control of the banking system has been declining and privatization has facilitated consolidation. With rising competition, interest rate spreads have narrowed, pushing banks to diversify their revenue sources. At the same time, credit to the private sector has expanded rapidly, and the regulatory framework has been reformed according to the EU Council's Directives. Banks have raised new capital, reaching capital adequacy ratios well above the minimum

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[97] The Athens Derivatives Exchange (ADEX) opened for trading on August 27, 1999. The products offered by ADEX include Athens Stock Exchange (ASE)-20 index futures and options, ASE Mid-40 index futures, futures on the 10-year Hellenic Republic bond and stock repos, and reverse stock repos on main Greek stocks. The product range will expand with the introduction of ASE Mid-40 index and stock options in early 2001. The total value of trading reached Dr 283.3 billion in October 2000.

requirement. Furthermore, profitability has increased considerably in recent years and banks are currently upgrading their risk management systems.

177. Looking forward, the task is to address the remaining weaknesses, as well as the evolving challenges that will accompany increased competition after euro-area entry. Recent rapid credit growth underlines the urgency for faster upgrading of risk management and loan approval systems. The ratio of nonperforming loans of the Greek banking sector and operating costs, especially for personnel, remain considerably higher than in other EU countries. And provisioning for nonperforming loans is low, despite recent progress. The state still controls a large, albeit declining, part of the banking system. Bank supervision has a key role to play in safeguarding the evolving Greek banking system, particularly since Greek banks will take on more risks as credit to the private sector and the use of new financial instruments expand rapidly.

Table 1. Greece: Historical Data for Profitability and Staff Expense Ratios of the Five Larger Greek Commercial Banks, 1960-96

(In percent)

	Net Profits/Total Assets				Net Profits/Average Shareholder's Equity				Staff Expenses/Gross Profits			
	1960-69	1970-79	1980-89	1990-96	1960-69	1970-79	1980-89	1990-96	1960-69	1970-79	1980-89	1990-96
National Bank of Greece 1/	0.66	0.59	0.21	0.35	16.33	15.25	8.44	12.84	56.14	57.63	73.62	65.07
Commercial Bank of Greece 2/	0.66	0.35	0.48	1.38	16.12	6.27	14.23	23.32	55.89	65.29	64.34	51.59
Ionian Bank 2/	0.14	0.21	0.65	1.26	3.62	6.12	19.41	25.13	74.43	69.21	53.96	42.41
Alpha Bank 3/	1.10	0.46	0.52	2.34	25.96	19.06	25.07	48.14	...	64.12	62.48	29.58
Ergo Bank 3/	...	...	1.89	4.02	...	...	56.91	68.79	...	...	39.18	19.94

Source: 1960-96: Armagou (1999).

1/ Under state control.
2/ Private until 1974 and under state control in 1974-1996.
3/ Private bank.

Table 2. Greece: Mergers and Acquisitions in Greece in the 1990s

Year	Buyer	Acquired
1991	Group of investors	Piraeus Bank
1993	Hanwha First Investment	Bank of Athens
1996	Eurobank	Interbank
1997	National Mortgage Bank	National Housing Bank
	Piraeus Bank	Chase Manhattan (branch network in Greece)
1998	Piraeus Bank	Macedonia-Thrace Bank, Credit Lyonnais Greece, Xiosbank
	Eurobank	Bank of Athens, Cretabank
	Egnatia Bank	Bank of Central Greece
	National Bank	National Mortgage Bank
1999	Piraeus Bank	National Westminster (branch network in Greece)
	Alpha Credit Bank	Ionian Bank
	Telesis Brokerage Firm	Dorian Bank
	Eurobank	Ergobank

Source: Bank of Greece.

Table 3. Greece: Market Share of Greek Commercial Banks 1/
(In percent)

	Market Share in Total Assets			Market Share in Total Loans			Market Share in Total Deposits		
	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00
National Bank of Greece	42.8	37.1	37.4	34.3	32.2	33.1	45.5	40.4	40.8
Alpha Bank	21.8	22.5	23.3	22.6	25.8	22.8	20.4	21.6	20.9
Alpha Credit Bank	15.1	16.9	...	17.0	20.9	17.2	13.7	15.3	20.9
Ionian Bank 2/	6.7	5.7	...	5.7	4.9	...	6.7	6.3	...
Commercial Bank of Greece	12.0	13.0	13.0	15.0	14.2	15.1	11.8	12.7	12.4
Pireaus Group	6.5	8.7	8.3	6.9	7.8	7.9	6.0	6.9	7.6
Pireaus Bank	2.4	4.4	...	2.6	4.0	3.5	2.0	3.0	7.6
Macedonia Thrace Bank 3/	2.3	2.4	...	2.5	2.2	2.5	2.2	2.2	...
Xios Bank 3/	1.8	1.9	...	1.7	1.6	1.9	1.8	1.7	...
EFG-Eurobank-Ergasias	12.1	13.6	13.0	14.5	13.4	13.9	11.6	13.4	13.4
EFG Eurobank	4.6	7.4	...	5.0	6.2	13.9	4.2	7.0	13.4
Creta Bank 4/	1.4	...	...	2.1	...	...	1.3	...	...
Ergo Bank 5/	6.1	6.2	...	7.4	7.2	...	6.1	6.3	...
Egnatia Goup	1.5	1.5	1.4	2.2	2.2	2.4	1.5	1.4	1.4
General Hellenic Bank	1.9	1.9	1.8	2.6	2.5	2.8	1.9	1.9	1.9
Bank of Attica	0.7	1.0	1.1	1.2	1.0	1.2	0.7	0.9	0.9
Popular Bank	0.7	0.8	0.8	0.8	0.9	0.8	0.7	0.8	0.7
Memorandum item:									
Larger five banks	76.9	78.8	95.0	73.9	77.5	92.8	77.2	78.4	95.1

Source: National Bank of Greece.

1/ Excluding the Agricultural Bank of Greece and the Post Office Fund.
2/ Absorbed by Alpha Credit Bank in October of 1999.
3/ Absorbed by Pireaus Group during the first half of 2000.
4/ Absorbed by EFG Eurobank in October of 1999.
5/ Absorbed by EFG Eurobank in July of 2000.

Table 4. Greece: Bank Ownership

	1995	1999
Commercial banks	42	38
State controlled	8	4
Private	12	12
Foreign	22	22
Cooperative banks	5	13
State controlled	0	0
Private	5	13
Special credit institutions	9	6
State controlled	8	5
Private	1	1
Total	56	57
State controlled	16	9
Private	18	26
Foreign	22	22

Source: Bank of Greece.

Table 5. Greece: Credit to the Private Sector, 1995-2000 1/

(In billions of drachmas)

	1995	1996	1997	1998	1999	2000 2/
Credit to private sector						
Total credit to private sector	8,328.0	9,676.1	11,145.8	12,817.7	14,636.6	17,914.6
Change in percent	22.0	17.0	15.3	15.0	14.2	27.6
In percent of GDP	30.6	32.3	33.7	35.7	38.4	58.5
Credit to private sector from commercial banks	5,934.2	7,158.7	8,452.3	9,846.4	11,263.3	14,226.3
Change in percent	26.7	21.4	18.2	16.5	14.4	31.4
In percent of GDP	21.8	23.9	25.5	27.4	29.5	46.5
Credit to private sector from specialized credit institutions	2,393.8	2,517.4	2,693.5	2,971.3	3,373.4	3,688.4
Change in percent	11.9	6.1	7.0	10.3	13.5	14.6
In percent of GDP	8.8	8.4	8.1	8.3	8.8	12.1
Commercial bank credit to private sector by economic activity						
Industry and mining	1,512.0	1,734.9	1,799.1	1,712.7	1,963.3	2,146.0
Change in percent	21.9	17.6	4.1	5.2	14.6	16.3
Small scale industry	593.8	644.4	711.8	792.7	824.5	829.8
Change in percent	17.9	8.5	10.5	11.4	7.0	5.3
Trade	1,516.2	1,814.0	2,236.9	2,856.5	3,043.6	3,821.4
Change in percent	28.2	19.6	23.3	19.7	6.5	27.4
Housing	829.4	1,070.1	1,310.7	1,553.2	1,971.1	2,379.7
Change in percent	12.9	29.0	22.5	18.5	26.9	30.3
Consumer credit	407.3	548.2	699.1	955.0	1,251.4	1,530.3
Change in percent	80.3	34.6	27.5	36.7	31.0	26.8
Other	1,075.6	1,347.1	1,694.8	1,976.3	2,209.4	2,985.8
Change in percent	34.9	25.2	25.8	16.6	11.8	43.7
Commercial bank credit to private sector by maturity						
Short-term lending	4,139.2	4,957.8	5,765.0	6,707.7	7,586.2	9,321.0
Change in percent	28.1	20.8	16.4	16.4	13.1	28.9
Long-term lending	1,795.0	2,200.8	2,687.3	3,138.7	3,677.1	4,372.0
Change in percent	23.4	22.6	22.1	16.8	17.2	24.4
Commercial bank credit to private sector by currency						
Lending in drachmas	4,583.5	4,988.7	5,870.0	6,907.8	7,654.4	8,962.7
Change in percent	18.4	9.8	17.8	17.7	10.8	24.9
Lending in foreign currency	1,350.7	2,170.0	2,582.3	2,938.6	3,608.9	4,730.3
Change in percent	66.1	60.7	19.0	13.8	22.8	32.4

Source: Bank of Greece.

1/ Changes are during the last 12 months.

2/ Up to September 2000 for total credit and up to August 2000 for commercial bank credit.

Table 6. Foreign Currency Position of Greek Commercial Banks, 1996-2000
(In billions of Greek drachma)

	USD	DEM	FRF	GBP	CHF	BEF	NLG	ITL	JPY	EUR	Other	Total
1996 1/												
Net	47.2	84.8	7.0	31.9	-5.7	8.0	-0.4	9.6	-70.2	-67.8	58.4	102.7
Claims	5,036.0	1,934.2	229.9	1,089.0	197.3	76.1	89.9	152.0	1,694.8	794.8	919.7	12,213.7
Obligations	4,988.8	1,849.5	222.9	1,057.2	203.0	68.1	90.3	142.4	1,765.1	862.6	861.3	12,111.1
1997												
Net	-22.8	78.5	0.8	5.3	-24.3	8.0	-0.7	9.2	24.2	-359.5	73.2	-208.0
Claims	7,684.1	1,906.0	313.6	458.3	454.5	67.0	84.1	231.4	3,266.3	1,008.5	1,123.9	16,597.8
Obligations	7,706.9	1,827.4	312.8	453.0	478.8	58.9	84.8	222.1	3,242.1	1,368.0	1,050.7	16,805.8
1998												
Net	-108.8	73.3	0.7	19.8	-52.5	6.5	0.5	11.9	-371.8	-219.7	55.1	-584.9
Claims	7,522.8	2,504.3	149.9	1,771.5	528.2	58.4	92.6	56.2	4,432.3	755.5	683.9	18,555.7
Obligations	7,631.7	2,431.0	149.2	1,751.7	580.7	51.9	92.1	44.3	4,804.1	975.2	628.8	19,140.6
1999												
Net	-162.8	...	...	23.2	-67.5	...	...	...	-361.6	12.9	-46.2	-602.0
Claims	6,799.5	...	...	2,412.4	670.3	...	...	...	5,172.4	4,017.7	650.9	19,723.1
Obligations	6,962.2	...	...	2,389.2	737.8	...	...	...	5,534.0	4,004.8	697.1	20,325.1
2000												
Net	241.2	...	...	-4.9	-38.4	...	...	...	-194.0	14.4	61.6	79.8
Claims	8,993.9	...	...	3,326.3	967.4	...	...	...	6,421.5	4,748.0	713.3	25,170.4
Obligations	8,752.7	...	...	3,331.2	1,005.8	...	...	...	6,615.5	4,733.6	651.8	25,090.6

Source: Bank of Greece.

1/ All data are for December 31, except for 2000, which are June 30.

Table 7. Average Bank Financial Strength Ratings for Selected Countries, January 2000

Country	Rating
Australia	C
Austria	C
Denmark	C to C+
Finland	D+ to C
France	C
Germany	C to C+
Greece	D to D+
Ireland	C
Italy	C
Japan	D
Norway	D+ to C
Portugal	C
Sweden	C+ to B
United Kingdom	C+
United States	C+

Source: Moody's Banking System Outlook.

Note: B = strong, C = good, D = adequate, and E = very weak.

Table 8. Greece: Credit Ratings of Selected Banks, January 2000

	Bank Deposit Obligation 1/	Bank Financial Strength 1/	Long-term 2/	Short-term 2/
Agricultural Bank of Greece	Baa1/P-2	E+	...	...
Alpha Bank	A3/P-2	D+	A-	F2
Bank of Attica	Ba 1/NP	D	...	...
Commercial Bank of Greece	Baa1/P-2	D+	BBB+	F2
EFG Eurobank	A3/P-2	C	A-	F2
Ergobank	A3/P-2	C	...	...
National Bank of Greece	A3/P-2	D+	A-	F2
Piraeus Bank	Baa3/P-3	D	BBB	F3

1/ Moody's Banking System Outlook.
2/ FitchIBCA.

Table 9. Greece: Commercial Banks Balance Sheet,1992-1999

	1992	1993	1994	1995	1996	1997	1998	1999
				(In millions of Greek drachmas)				
Cash and balance with Central Bank	2,155,478	2,490,771	2,837,652	3,725,158	3,522,883	4,188,914	4,265,729	5,559,073
Interbank deposits	796,507	1,101,032	1,706,498	1,940,254	2,109,612	3,191,877	3,008,787	3,306,874
Loans	2,939,091	3,358,861	3,858,319	4,787,221	6,262,746	7,561,125	10,239,452	12,919,429
Securities	4,441,205	5,156,477	5,489,608	5,943,486	6,502,602	7,730,960	9,447,198	12,195,103
Of which: treasury bills	766,113	234,529	339,189	418,056	120,035	258,817	105,459	100,603
bonds	3,194,076	4,356,727	4,380,005	4,768,553	5,408,790	6,722,599	8,215,247	10,256,874
shares and participations	481,016	565,221	770,414	756,877	973,777	749,544	1,126,492	1,837,626
Other assets	1,782,388	2,018,667	1,438,616	663,144	1,467,686	1,030,301	1,268,724	1,335,069
Total assets	12,114,669	14,125,808	15,330,693	17,059,263	19,865,529	23,703,177	28,229,890	35,315,548
Average assets	11,180,991	13,124,486	14,726,912	16,050,121	18,663,828	21,784,353	27,224,415	31,772,741
Capital and reserves	558,540	642,884	746,500	826,338	888,234	1,208,981	1,688,075	3,491,412
Borrowing from Central Bank	25,045	26,399	22,354	248,032	140,586	697,526	663,274	846,176
Interbank deposits	265,597	395,454	940,169	1,516,995	1,224,518	1,651,046	1,107,967	1,878,052
Nonbank deposits	9,432,922	11,093,788	11,519,309	12,534,764	14,942,536	18,688,768	21,970,247	23,899,059
Bonds	119,125	120,122	120,096	120,077	103,217	86,205	170,435	80,810
Other liabilities	1,713,440	1,847,161	1,982,265	1,813,057	2,566,438	1,370,651	2,629,892	5,120,039
				(In percent of average assets)				
Cash and balance with Central Bank	19.28	18.98	19.27	23.21	18.88	19.23	15.67	17.50
Interbank deposits	7.12	8.39	11.59	12.09	11.30	14.65	11.05	10.41
Loans	26.29	25.59	26.20	29.83	33.56	34.71	37.61	40.66
Securities	39.72	39.29	37.28	37.03	34.84	35.49	34.70	38.38
Of which: treasury bills	6.85	1.79	2.30	2.60	0.64	1.19	0.39	0.32
bonds	28.57	33.20	29.74	29.71	28.98	30.86	30.18	32.28
shares and participations	4.30	4.31	5.23	4.72	5.22	3.44	4.14	5.78
Other assets	15.94	15.38	9.77	4.13	7.86	4.73	4.66	4.20
Capital and reserves	5.00	4.90	5.07	5.15	4.76	5.55	6.20	10.99
Borrowing from Central Bank	0.22	0.20	0.15	1.55	0.75	3.20	2.44	2.66
Interbank deposits	2.38	3.01	6.38	9.45	6.56	7.58	4.07	5.91
Nonbank deposits	84.37	84.53	78.22	78.10	80.06	85.79	80.70	75.22
Bonds	1.07	0.92	0.82	0.75	0.55	0.40	0.63	0.25
Other liabilities	15.32	14.07	13.46	11.30	13.75	6.29	9.66	16.11

Source: Bank of Greece.

Table 10. Greece: Commercial Banks Income Statement, 1992-2000
(In percent of average total assets)

	1992	1993	1994	1995	1996	1997	1998	1999	2000 1/
Interest income	12.82	12.11	12.37	10.98	10.32	9.42	9.64	9.11	...
Interest expenses	11.22	10.54	11.01	8.88	8.33	7.17	7.22	6.41	...
Net interest income	1.60	1.57	1.36	2.09	1.98	2.25	2.42	2.70	2.49
Net noninterest income	2.19	2.18	2.85	2.15	1.22	2.21	1.92	3.74	2.31
Fees and commissions receivable	1.18	1.18	1.53	1.26	1.23	1.12	0.97	1.31	...
Fees and commissions payable	0.01	0.04	0.05	0.07	0.07	0.10	0.10	0.08	...
Net profit on financial operations	0.72	0.70	0.83	0.47	0.74	0.77	0.65	2.31	...
Other income	0.30	0.33	0.54	0.49	0.31	0.41	0.41	0.20	...
Gross income	3.79	3.75	4.22	4.24	4.20	4.46	4.34	6.44	4.80
Operating expenses	2.31	2.35	2.51	2.73	2.87	2.82	2.57	2.68	2.48
Staff costs	1.65	1.63	1.76	1.90	1.97	1.87	1.68	1.64	1.62
Property costs	0.17	0.16	0.17	0.21	0.22	0.23	0.23	0.25	...
Other	0.49	0.56	0.57	0.62	0.67	0.73	0.66	0.80	...
Net income	1.47	1.40	1.71	1.52	1.33	1.64	1.77	3.76	2.32
Net provisions	0.32	0.34	0.39	0.26	0.55	0.65	0.57	0.72	0.29
Profit before tax (ROA)	1.15	1.06	1.31	1.26	0.79	0.99	1.20	3.04	2.03
Tax	0.38	0.35	0.37	0.36	0.30	0.30	0.45	0.63	...
Profit after tax	0.78	0.71	0.94	0.90	0.49	0.70	0.75	2.41	
Distributed profit	0.38	0.41	0.50	0.51	0.27	0.40	0.51	0.73	...
Retained profit	0.40	0.29	0.44	0.39	0.22	0.30	0.24	1.68	...
Memorandum items:									
Nonperforming loans as percentage of total loans	...	...	...	...	19.00	16.50	13.60	14.70 2/	...
Provisions as percentage of total loans 3/	...	...	...	...	3.20	3.58	3.36	3.96	...
Provisions as percentage of nonperforming loans 3/	...	...	...	...	16.90	21.69	24.71	26.95	...
Profit before tax as percent of average own funds (ROE)	25.14	23.10	27.91	25.56	17.16	20.62	21.85	37.25	23.00
Liquid assets as percentage of total assets 4/	30.69	27.09	31.85	35.66	28.96	32.23	26.14	25.39	...
Capital adequacy ratio	13.12	13.49	14.11	12.91	10.39	11.09	11.96	18.23	...
Tier 1 ratio 5/	12.72	13.28	13.36	12.22	8.95	10.28	12.11	17.74	...
Equity as percentage of total assets	4.61	4.55	4.87	4.84	4.47	5.10	5.98	9.89	...
Equity plus provisions minus nonperforming loans in percent of total assets 3/	...	...	...	...	-1.52	-0.14	1.78	5.63	
Distributed profit as percentage of average assets	0.38	0.41	0.50	0.51	0.27	0.40	0.51	0.73	...
Retained profit as percentage of average assets	0.40	0.29	0.44	0.39	0.22	0.30	0.24	1.68	...
Staff cost per employee	4.98	5.71	6.56	7.55	8.56	9.34	9.86	11.11	...
Gross income per employee	11.41	13.11	15.69	16.89	18.19	22.30	25.47	43.68	...
Average total assets per employee	301.42	349.63	372.19	398.06	433.32	500.04	586.46	678.66	...
Average total assets per branch	9,688.90	10,937.07	11,838.35	10,925.88	11,672.19	12,183.40	13,293.17	15,349.15	...

Sources: Bank of Greece for 1992-99, National Bank of Greece for 2000.

1/ June 2000.
2/ The nonperforming loans ratio in 1999 was 10.7 percent excluding the Agricultural Bank of Greece.
3/ Only for the six largest Greek banks.
4/ Liquid assets are defined as cash and balance with the Central Bank plus interbank deposits plus treasury bills.
5/ Defined as tier 1 capital over risk-weighted assets.

Table 11. Commercial Banks in Greece and Selected European Countries, 1997

	Greece	Portugal	Germany	Netherlands 1/	Spain	United Kingdom
Net interest income						
In percent of assets	2.07	1.88	1.57	1.63	2.01	1.97
In percent of operating income	50.54	68.13	68.97	60.43	64.82	61.21
Net trading income						
In percent of operating income	17.32	11.87	3.94	8.39	13.63	8.02
Pretax and preprovision income						
In percent of assets	1.51	1.09	0.76	0.83	1.14	1.26
Net income						
In percent of assets	0.64	0.58	0.27	0.48	0.63	0.75
Cost to income ratio	63.20	60.37	66.64	69.21	63.26	60.89
Operating expenses						
In percent of assets	2.59	1.67	1.52	1.86	1.96	1.96
Share of personnel in operating expenses	66.28	54.98	56.35	53.24	62.86	53.38
Net income per employee (in US$ thousands)	12.35	21.79	19.30	42.80	24.61	34.44
Assets per branch (in US$ millions)	47.25	54.75	222.95	153.11	31.19	161.69
Assets (in US$ billions)	83.87	225.62	1,567.35	1,076.63	546.79	1,882.59
Average assets (in US$ billion)	77.08	211.89	1,487.92	971.07	530.65	1,780.64
Capital to asset ratio	5.10	8.13	4.84	4.29	8.12	4.12
Branches	1,775.00	4,121.00	7,030.00	7,032.00	17,530.00	11,643.00
Per million inhabitants	169.10	414.38	85.66	450.57	445.80	197.31
Employees	43,600	60,000	216,000	120,400	139,000	412,100

Source: OECD, (1999).

1/ All banks.

Table 12. Greece: Profitability Ratios of Greek Commercial Banks
(In percent)

	Return on Equity (before tax)			Return on Assets (before tax)			Net Interest Margin			Operating Cost/Total Income		
	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00
National Bank of Greece	27.90	38.40	39.10	1.07	1.82	2.09	1.90	2.25	2.15	57.90	49.40	48.70
Alpha Bank	18.60	33.70	21.80	1.16	2.61	1.69	2.33	2.05	1.82	56.60	43.30	52.30
Alpha Credit Bank	30.80	31.00	23.50	2.35	2.84	1.91	2.53	1.98	2.06	46.10	35.90	52.30
Ionian Bank 1/	-29.80	50.10	...	-1.08	2.01	...	1.97	2.25	...	82.50	60.90	...
Commercial Bank of Greece	15.50	79.00	16.80	0.95	7.85	2.07	2.70	3.33	3.49	74.80	57.50	55.10
Pireaus Group	17.60	18.80	15.10	1.45	3.20	2.41	2.67	2.44	2.44	63.20	43.20	50.10
Pireaus Bank	21.90	20.50	20.30	2.75	4.57	3.18	2.44	1.95	3.21	48.70	32.40	50.10
Macedonia Thrace Bank 2/	0.00	9.10	...	0.00	1.42	...	2.32	2.25	...	82.40	63.00	...
Xios Bank 2/	36.50	31.60	...	1.86	2.89	...	3.43	3.59	...	60.30	45.90	...
EFG-Eurobank-Ergasias	22.30	27.60	20.60	2.11	3.16	2.42	3.08	3.50	3.54	47.60	36.10	49.00
EFG Eurobank	4.50	14.10	26.30	0.54	1.90	3.12	1.39	2.98	4.56	67.20	41.90	49.00
Creta Bank 3/	-7.70	...	...	-0.81	...	...	2.07	...	...	87.10	...	...
Ergo Bank 4/	50.70	49.20	...	3.92	4.73	...	4.52	4.37	...	34.10	29.50	...
Egnatia Goup	1.20	12.00	23.60	0.11	1.47	3.35	2.83	2.77	3.50	89.10	71.80	54.00
General Hellenic Bank	15.60	26.00	4.60	0.90	1.76	0.40	3.60	3.48	3.27	83.50	70.10	88.90
Bank of Attica	17.10	21.20	14.80	1.80	2.66	1.91	5.13	4.09	2.89	71.40	58.80	61.40
Popular Bank	13.10	12.00	...	0.59	0.93	...	2.10	2.09	...	69.80	58.60	...
Total Greek Commercial Banks	21.20	37.30	23.00	1.20	3.03	2.03	2.33	2.46	2.49	60.40	47.10	51.80

Source: National Bank of Greece.

1/ Absorbed by Alpha Credit Bank in October of 1999.
2/ Absorbed by Pireaus Group during the first half of 2000.
3/ Absorbed by EFG Eurobank in October of 1999.
4/ Absorbed by EFG Eurobank in July of 2000.

Table 13. Greece: Income Analysis of Greek Commercial Banks, 1998-2000
(In percent)

	Interest Income/Average Assets			Noninterest Income/Average Assets			Commission Income/Average Assets			Trading Income/Average Assets			Other Noninterest Income/Average Assets			Total Income/Average Assets		
	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00
National Bank of Greece	1.9	2.25	2.15	1.50	2.10	2.06	0.83	0.94	0.71	0.46	0.99	1.11	0.20	0.17	0.24	3.40	4.34	4.22
Alpha Bank	2.33	2.05	1.82	2.15	3.56	2.82	0.90	1.25	1.10	0.88	1.93	1.12	0.38	0.39	0.60	4.49	5.61	4.64
Alpha Credit Bank	2.53	1.98	2.06	2.35	3.48	3.20	0.92	1.11	1.25	0.97	1.92	1.27	0.46	0.45	0.68	4.88	5.46	5.26
Ionian Bank 1/	1.97	2.25	...	1.78	3.77	...	0.86	1.59	...	0.69	1.95	...	0.22	0.23		3.75	6.03	
Commercial Bank of Greece	2.7	3.33	3.49	2.40	2.87	1.86	1.35	1.48	1.00	0.83	1.22	0.41	0.21	0.17	0.45	5.10	6.20	5.35
Piraeus Group	2.67	2.44	2.44	2.87	3.87	2.52	1.75	2.00	0.78	0.89	1.64	0.65	0.22	0.23	1.09	5.54	6.31	4.95
Piraeus Bank	2.44	1.95	3.21	3.89	5.29	3.32	1.97	2.21	1.02	1.48	2.71	0.86	0.43	0.37	1.43	6.33	7.24	6.53
Macedonia Thrace Bank 2/	2.32	2.25	...	2.49	2.95	...	1.67	1.91	...	0.65	0.89	...	0.17	0.15	...	4.81	5.20	...
Xios Bank 2/	3.43	3.59	...	2.17	2.39	...	1.60	1.72	...	0.52	0.57	...	0.05	0.09	...	5.60	5.98	...
EFG-Eurobank-Ergasias	3.08	3.5	3.54	2.17	4.66	2.24	1.39	1.84	1.41	0.56	2.39	-0.02	0.22	0.42	0.84	5.25	8.16	5.78
EFG Eurobank	1.39	2.98	4.56	1.70	6.19	2.88	0.61	1.54	1.82	0.95	4.12	-0.02	0.14	0.53	1.09	3.09	9.17	7.45
Creta Bank 3/	2.07	...	...	3.28	...	...	2.23	...	...	0.81	...	...	0.25	...	...	5.35	...	...
Ergo Bank 4/	4.52	4.37	...	2.27	3.62	...	1.71	2.33	...	0.28	0.94	...	0.28	0.35	...	6.79	7.99	...
Egnatia Gonp	2.83	2.77	3.5	2.58	3.41	4.53	1.48	1.73	1.52	0.85	1.41	1.14	0.25	0.27	1.86	5.42	6.18	8.03
General Hellenic Bank	3.6	3.48	3.27	2.83	3.70	2.28	2.05	2.39	1.76	0.62	1.18	0.41	0.16	0.13	0.11	6.43	7.18	5.55
Bank of Attica	5.13	4.09	2.89	3.82	3.91	3.16	2.09	1.83	1.59	1.40	1.91	0.88	0.34	0.17	0.68	8.95	8.00	6.05
Popular Bank	2.1	2.09	...	0.66	1.26	0.00	0.52	0.57	0.00	0.02	0.06	0.00	0.12	0.63	0.00	2.76	3.36	0.00
Total Greek Commercial Banks	2.33	2.46	2.49	1.95	3.04	2.31	1.06	1.32	0.97	0.64	1.47	0.81	0.25	0.26	0.53	4.27	5.61	4.80

Source: National Bank of Greece.

1/ Absorbed by Alpha Credit Bank in October of 1999.
2/ Absorbed by Piraeus Group during the first half of 2000.
3/ Absorbed by EFG Eurobank in October of 1999.
4/ Absorbed by EFG Eurobank in July of 2000.

Table 14. Greece: Cost Analysis of Greek Commercial Banks,1998-2000
(In percent)

	Staff Expenses/Average Assets			Other Expenses/Average Assets			Depreciation/Average Assets			Operating Expenses/Average Assets			Provisions/Average Assets			Total Expenses/Average Assets		
	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00	1998	1999	Jun-00
National Bank of Greece	1.44	1.52	1.42	0.42	0.47	0.47	0.11	0.16	0.17	1.97	2.15	2.06	0.47	0.49	0.22	2.44	2.64	2.28
Alpha Bank	1.46	1.42	1.39	0.72	0.72	0.75	0.36	0.29	0.29	2.54	2.43	2.43	0.84	0.57	0.57	3.38	3.00	3.00
Alpha Credit Bank	1.18	1.04	1.57	0.72	0.67	0.85	0.35	0.25	0.33	2.25	1.96	2.75	0.38	0.68	0.65	2.63	2.64	3.40
Ionian Bank 1/	1.98	2.42	...	0.72	0.85	...	0.38	0.40	...	3.09	3.67	...	1.71	0.27	...	4.80	3.94	...
Commercial Bank of Greece	2.76	2.46	2.13	0.79	0.88	0.62	0.27	0.23	0.19	3.82	3.57	2.95	0.35	0.36	0.33	4.17	3.92	3.28
Piraeus Group	1.81	1.32	1.25	1.25	1.06	0.91	0.44	0.34	0.32	3.50	2.72	2.48	0.66	0.39	0.55	4.16	3.11	3.03
Piraeus Bank	1.45	0.94	1.65	1.31	1.11	1.21	0.32	0.29	0.42	3.08	2.34	3.27	0.50	0.32	0.73	3.58	2.66	4.00
Macedonia Thrace Bank 2/	2.34	1.96	...	1.06	0.89	...	0.56	0.43	...	3.96	3.28	...	0.99	0.51	...	4.95	3.79	...
Xios Bank 2/	1.52	1.23	...	1.44	1.20	...	0.42	0.32	...	3.37	2.74	...	0.40	0.37	...	3.77	3.11	...
EFG-Eurobank-Ergasias	1.47	1.45	1.51	0.80	1.17	1.02	0.23	0.32	0.30	2.50	2.94	2.83	0.53	0.65	0.55	3.03	3.59	3.39
EFG Eurobank	1.06	1.70	1.94	0.80	1.64	1.32	0.22	0.50	0.39	2.08	3.84	3.65	0.29	0.44	0.71	2.37	4.28	4.36
Creta Bank 3/	2.99	...	...	1.21	...	...	0.45	...	...	4.66	...	...	1.01	...	...	5.67		
Ergo Bank 4/	1.41	1.35	...	0.72	0.84	...	0.18	0.17	...	2.31	2.36	...	0.59	0.91	...	2.90	3.27	...
Egnatia Goup	2.81	2.36	2.29	1.55	1.65	1.52	0.46	0.42	0.52	4.83	4.43	4.34	0.46	0.45	0.35	5.29	4.88	4.69
General Hellenic Bank	3.41	2.89	2.95	1.49	1.56	1.42	0.48	0.59	0.57	5.37	5.03	4.93	0.30	0.50	0.24	5.67	4.54	5.18
Bank of Attica	4.22	2.99	2.38	1.81	1.48	1.14	0.36	0.23	0.19	6.39	4.70	3.71	0.66	0.65	0.45	7.05	5.35	4.16
Popular Bank	0.86	0.92	0.00	0.81	0.79	0.00	0.26	0.26	0.00	1.93	1.97	0.00	0.24	0.43	0.00	2.17	2.40	0.00
Total Greek Commercial Banks	1.69	1.64	1.62	0.66	0.76	0.62	0.23	0.24	0.24	2.58	2.64	2.48	0.55	0.51	0.39	3.13	3.15	2.87

Source: National Bank of Greece.

1/ Absorbed by Alpha Credit Bank in October of 1999.
2/ Absorbed by Pireaus Group during the first half of 2000.
3/ Absorbed by EFG Eurobank in October of 1999.
4/ Absorbed by EFG Eurobank in July of 2000.

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Table 1. Greece: Aggregate Demand 1/

(At constant prices of the previous year)

	1994	1995	1996	1997	1998	1999 Prel.
			(Percentage changes)			
Gross domestic product at market prices	2.0	2.1	2.4	3.5	3.1	3.4
Consumption	1.5	3.1	2.1	2.8	2.8	2.4
Private	2.0	2.7	2.4	2.8	3.1	2.9
Government	-1.1	5.6	0.9	3.0	1.7	-0.1
Gross fixed capital formation	-1.0	7.8	8.4	7.8	11.8	7.3
Private 2/	-0.1	5.8	9.7	7.3	12.1	5.8
Public 3/	-4.0	14.3	2.0	10.4	10.5	14.7
Construction	-4.3	1.7	1.8	7.4	6.5	9.0
Equipment 4/	-0.3	8.4	19.7	8.3	19.5	5.0
Change in stocks (in percent of GDP)	0.1	0.7	0.4	0.2	0.4	-0.1
Total domestic demand	1.2	3.9	3.3	3.6	4.7	2.9
Foreign balance (in percent of GDP)	-10.9	-13.4	-8.3	-8.3	-10.1	-9.6
Exports of goods and NFS	6.6	0.5	3.5	18.2	5.9	6.5
Imports of goods and NFS	1.3	9.2	7.0	13.9	11.3	3.9
			(Contributions to growth)			
Gross domestic product at market prices	2.0	2.1	2.4	3.5	3.1	3.4
Consumption	1.3	2.8	1.9	2.5	2.5	2.1
Private	1.5	2.0	1.7	2.0	2.2	2.1
Government	-0.2	0.8	0.1	0.5	0.2	0.0
Gross fixed capital formation	-0.6	0.8	1.6	1.5	2.4	1.6
Private 2/	-0.3	0.3	1.5	1.2	2.1	1.1
Public 3/	-0.2	0.5	0.1	0.3	0.4	0.5
Change in stocks	0.5	0.6	0.0	-0.1	0.2	-0.5
Total domestic demand	1.3	4.2	3.5	3.9	5.1	3.2
Foreign balance	0.7	-2.1	-1.1	-0.4	-2.0	0.2
Exports of goods and NFS	1.0	0.1	0.6	3.2	1.2	1.4
Imports of goods and NFS	-0.3	-2.2	-1.7	-3.6	-3.3	-1.2

Sources: Ministry of National Economy; and Fund staff calculations.

1/ Data for 1994-95 are based on ESA79, while data for later years are based on ESA95, and thus are not strictly comparable.

2/ ESA95-based data for 1996 and beyond includes data for public enterprises.

3/ ESA95-based data for 1996 and beyond includes data for the general government only.

4/ ESA95-based data for 1996 and beyond also includes other investment expenditures.

Table 2. Greece: Aggregate Demand 1/

	1994	1995	1996	1997	1998	1999 Prel.
	(In billions of drachmas; at current prices)					
Gross domestic product at market prices	23,983.4	27,235.2	29,935.1	33,103.8	35,872.5	38,147.2
Consumption	21,357.5	24,075.7	26,398.8	28,924.8	31,247.7	32,859.1
Private	18,012.1	19,901.6	22,050.8	23,905.9	25,742.1	27,124.7
Government	3,345.4	4,174.1	4,348.0	5,018.9	5,505.6	5,734.4
Gross domestic investment	4,479.1	5,151.7	5,924.6	6,676.9	7,865.8	8,499.2
Gross fixed capital formation	4,453.3	5,066.0	5,829.1	6,612.4	7,758.3	8,566.7
Private 2/	3,335.5	4,201.3	4,878.9	5,484.6	6,454.0	7,015.0
Public 3/	1,117.8	864.7	950.2	1,127.8	1,304.3	1,551.7
Change in stocks	25.8	85.7	95.5	64.5	107.5	-67.5
Total domestic demand	25,836.6	29,227.4	32,323.4	35,601.7	39,113.5	41,358.3
Foreign balance	-1,853.2	-1,992.2	-2,388.3	-2,497.9	-3,241.0	-3,211.1
Exports of goods and NFS	3,904.0	4,800.2	5,245.6	6,432.0	7,123.4	7,690.7
Imports of goods and NFS	5,757.2	6,792.4	7,633.9	8,929.9	10,364.4	10,901.8
Net factor income from abroad	212.1	861.7	835.2	761.9	815.0	1,009.9
GNP at market prices	24,195.5	28,096.9	30,770.3	33,865.7	36,687.5	39,157.1
Depreciation	2,117.2	2,469.2	2,737.4	2,952.5	3,205.7	3,328.3
NNP at market prices	22,078.3	25,627.7	28,032.9	30,913.2	33,481.8	35,828.8
Indirect taxes less subsidies	2,596.3	2,809.4	3,278.2	3,828.3	4,223.8	4,745.1
NNP at factor cost	19,482.0	22,818.3	24,754.7	27,084.9	29,258.0	31,083.7
			(In percent of GDP)			
Consumption	89.1	88.4	88.2	87.4	87.1	86.1
Private	75.1	73.1	73.7	72.2	71.8	71.1
Gross fixed capital formation	18.6	18.6	19.5	20.0	21.6	22.5
Private 2/	13.9	15.4	16.3	16.6	18.0	18.4
Foreign balance	-7.7	-7.3	-8.0	-7.5	-9.0	-8.4
Exports of goods and NFS	16.3	17.6	17.5	19.4	19.9	20.2
Imports of goods and NFS	24.0	24.9	25.5	27.0	28.9	28.6

Source: Ministry of National Economy.

1/ Data for 1994 are based on ESA79, while data for later years are based on ESA95, and thus are not strictly comparable.

2/ ESA95-based data for 1995 and beyond includes data for public enterprises.

3/ ESA95-based data for 1995 and beyond includes data for the general government only.

Table 3. Greece: Private Sector Income Account 1/2/

(In billions of drachmas; at current prices; percentage changes in parentheses)

	1994	1995	1996	1997	1998	1999 Prel.
Compensation of employees	7,635.5	8,875.5	9,600.2	10,922.1	12,269.6	13,011.8
	(12.9)	(16.2)	(8.2)	(13.8)	(12.3)	(6.0)
Nonlabor income, net	14,314.0	15,772.6	17,041.2	17,291.7	18,371.6	19,541.3
	(15.5)	(10.2)	(8.0)	(1.5)	(6.2)	(6.4)
Current transfers received	4,624.7	4,998.0	5,447.9	6,118.8	6,616.4	6,993.7
	(15.0)	(8.1)	(9.0)	(12.3)	(8.1)	(5.7)
Direct taxes	1,643.6	2,022.3	2,129.4	2,579.0	3,420.3	4,016.0
	(34.9)	(23.0)	(5.3)	(21.1)	(32.6)	(17.4)
Current transfers paid	2,950.0	3,424.0	3,863.8	4,406.6	4,845.0	5,218.6
	(15.4)	(16.1)	(12.8)	(14.0)	(9.9)	(7.7)
Disposable income	21,980.6	24,199.8	26,096.1	27,347.0	28,992.3	30,312.2
	(13.3)	(10.1)	(7.8)	(4.8)	(6.0)	(4.6)
Private consumption	18,012.1	19,901.6	22,050.8	23,905.9	25,742.1	27,124.7
Private saving	3,968.5	4,298.2	4,045.3	3,441.1	3,250.2	3,187.5
Private saving rate	18.1	17.8	15.5	12.6	11.2	10.5

Source: Ministry of National Economy.

1/ Including public enterprises.

2/ Data for 1994 are based on ESA79, while data for later years are based on ESA95, and thus are not strictly comparable.

Table 4. Greece: Saving-Investment Balance 1/

	1994	1995	1996	1997	1998	1999 Prel.
			In billions of drachma)			
Gross domestic investment	4,479.1	5,151.7	5,924.6	6,676.9	7,865.8	8,499.2
Gross fixed capital formation	4,453.3	5,066.0	5,829.1	6,612.4	7,758.3	8,566.7
Change in stocks	25.8	85.7	95.5	64.5	107.5	-67.5
Total saving	4,479.3	5,151.7	5,924.6	6,676.9	7,865.8	8,499.2
Gross private saving	3,968.5	4,298.2	4,045.3	3,441.1	3,250.2	3,187.5
Net government saving 2/	-1,720.9	-1,859.8	-1,569.2	-493.8	3.4	758.2
Depreciation	2,117.2	2,469.2	2,737.4	2,952.5	3,205.7	3,328.3
Foreign saving 3/	114.5	244.1	711.1	777.1	1,406.5	1,225.2
			(In percent of GDP)			
Gross domestic investment	18.7	18.9	19.8	20.2	21.9	22.3
Gross fixed capital formation	18.6	18.6	19.5	20.0	21.6	22.5
Change in stocks	0.1	0.3	0.3	0.2	0.3	-0.2
Total saving	18.7	18.9	19.8	20.2	21.9	22.3
Gross private saving	16.5	15.8	13.5	10.4	9.1	8.4
Net government saving	-7.2	-6.8	-5.2	-1.5	0.0	2.0
Depreciation	8.8	9.1	9.1	8.9	8.9	8.7
Foreign saving	0.5	0.9	2.4	2.3	3.9	3.2
Memorandum items:						
Government current revenue 2/	8,769.4	9,921.6	11,050.5	12,838.3	14,396.6	16,067.8
(in percent of GDP)	36.6	36.4	36.9	38.8	40.1	42.1
Government current expenditure 2/	10,490.3	11,781.4	12,619.7	13,332.1	14,393.2	15,309.6
(in percent of GDP)	43.7	43.3	42.2	40.3	40.1	40.1
Gross national saving	4,576.9	5,769.3	6,048.7	6,661.7	7,274.3	8,283.9
(in percent of GDP)	19.1	21.2	20.2	20.1	20.3	21.7

Sources: Ministry of National Economy; and Fund staff calculations.

1/ Data for 1994 are based on ESA79, while data for later years are based on ESA95, and thus are not strictly comparable.
2/ On a national accounts basis; government statistics refer to the general government.
3/ Current account deficit.

Table 5. Greece: Agricultural Production

(In thousands of tons)

	1994	1995	1996	1997	1998	1999 Prov.
Soft wheat	838	758	630	654	612	621
Hard wheat	1,581	1,384	1,132	1,407	1,300	1,400
Maize	1,814	1,520	1,800	2,000	2,000	1,850
Alfalfa	1,428	1,396	1,266	1,237	1,232	1,232
Leaf tobacco 1/	129	120	126	123	123	123
Cotton (industrial)	1,180	1,250	962	1,059	1,170	1,320
Tomatoes for processing	1,100	1,130	1,162	1,167	1,226	1,226
Sugar beet	2,420	2,600	2,352	3,095	1,970	2,160
Olive oil	330	330	337	400	473	350
Lemons	141	140	161	162	143	135
Oranges	875	820	979	965	801	1,040
Apples	321	323	335	292	332	336
Peaches	1,173	745	897	268	500	1,002
Meat, total	522	510	525	522	493	493
Milk, total	1,853	1,834	1,786	1,821	1,821	1,838

Sources: Ministry of National Economy; and National Statistical Service of Greece.

1/ Oriental, burley, and Virginia varieties.

Table 6. Greece: Manufacturing Production

(Percentage changes)

	Weight in Index (1980)	1994	1995	1996	1997	1998	1999
Total	100.0	1.1	2.1	0.6	1.0	3.4	0.5
Consumer goods	60.5	2.5	0.5	0.7	-0.6	2.8	-0.5
Consumer durable goods	5.5	-0.2	-1.5	2.4	6.7	24.2	10.1
Capital goods	34.0	-1.5	6.5	0.1	4.3	2.0	0.9
Foodstuffs	11.9	-1.1	2.0	-0.1	-3.3	3.9	2.6
Beverages	3.7	7.8	3.9	-6.0	-2.1	4.9	0.0
Tobacco	2.3	15.7	10.9	-1.2	-0.8	-5.1	0.6
Textiles	16.1	-0.5	-5.4	-4.6	1.4	-0.8	-7.2
Clothing and footwear	6.1	-11.8	-9.8	-12.0	-3.1	-13.1	-3.4
Wood and cork	2.2	-9.0	17.0	-1.9	-11.6	-8.3	-10.8
Furniture	1.2	2.4	-4.7	-0.2	-0.1	-3.4	16.0
Paper	1.9	6.9	3.7	-5.0	-4.8	-3.3	-7.6
Printing and publishing	2.6	-2.4	-0.7	8.4	-7.5	-4.4	-6.0
Leather products	0.8	-4.3	-8.3	-7.1	-11.8	-14.9	-16.2
Rubber and plastics	3.9	9.4	-12.6	1.1	-0.4	9.7	8.8
Chemicals	7.8	2.0	10.8	7.9	2.0	10.3	1.8
Petroleum and coal production	2.8	12.3	4.3	7.0	-0.6	2.0	-4.2
Nonmetallic minerals	8.6	3.0	1.8	7.1	2.2	2.5	0.3
Basic metallurgy	6.5	4.9	4.8	-3.7	10.2	2.4	-2.0
Manufactured metal goods	6.4	-2.1	4.6	-1.5	8.2	-1.9	-0.9
Nonelectrical machinery and appliances	1.9	1.1	20.5	2.9	11.1	2.2	9.8
Electrical machinery and appliances	4.7	-1.5	3.0	6.7	12.7	22.9	5.4
Transport equipment	8.0	-8.7	4.6	-1.1	-3.0	5.1	4.9
Other	0.6	-11.1	14.2	79.8	-2.4	-44.2	8.6
Memorandum item:							
Capacity utilization in manufacturing 1/	n.a.	74.9	76.6	75.2	74.2	75.5	76.0

Sources: National Statistical Service of Greece, *Monthly Statistical Bulletin*; Ministry of National Economy; and IOBE.

1/ Estimate by IOBE.

Table 7. Greece: Price Developments

(Average percentage changes over preceding period, except as indicated)

		Weights 1/	1994	1995	1996	1997	1998	1999
Wholesale prices	...	100	9.1	7.9	6.2	3.3	3.9	2.1
Final products for home consumption	...	82	9.0	7.3	6.0	3.4	4.0	2.7
Domestic industrial products	...	47	8.1	7.9	8.2	4.0	2.8	3.7
Domestic primary products	...	7	16.5	7.7	4.4	4.1	7.5	3.4
Imported final products	...	27	8.9	6.3	2.4	2.1	5.5	0.5
Exported products	...	19	9.2	10.5	7.1	2.9	3.0	-0.1
Consumer prices	100	100	10.9	8.9	8.2	5.5	4.8	2.6
Food and nonalcoholic beverages	33	21	13.3	8.5	7.0	4.1	4.4	2.4
Housing	11	14	9.8	9.7	9.2	2.8	3.2	1.3
Clothing and footwear	14	11	10.1	9.5	9.3	6.9	5.7	4.0
Consumer durables	8	8	8.4	9.0	6.7	6.2	5.6	2.9
Transport 2/	n.a.	14	5.6	3.1	5.6	5.3	2.9	-1.4
Communications	n.a.	2	n.a.	21.5	10.2	4.7	1.6	-3.5
Health	n.a.	6	n.a.	8.4	9.1	4.3	3.9	4.8
Education	n.a.	3	n.a.	12.7	9.3	8.1	5.5	3.6
Other goods and services 3/	20	22	12.5	10.8	9.6	7.7	6.6	4.7
Consumer prices (EU harmonized HICP)	n.a.	n.a.	...	...	7.9	5.4	4.5	2.1
GDP deflator, at market prices	n.a.	n.a.	11.3	9.8	7.4	6.8	5.2	2.9
Import prices 4/	n.a.	n.a.	5.7	6.8	5.0	2.7	4.2	1.2
Private consumption deflator	n.a.	n.a.	11.0	8.6	8.2	5.5	4.5	2.4
Memorandum items:								
End-year increase								
Wholesale prices	n.a.	n.a.	10.3	6.6	3.9	3.5	2.9	5.6
Consumer prices	n.a.	n.a.	10.7	7.9	7.3	4.7	3.9	2.7
Consumer prices (HICP)	n.a.	n.a.	...	...	6.9	4.5	3.7	2.3

Sources: Bank of Greece, *Annual Report* (various issues), *Monthly Statistical Bulletin*, and *Bulletin of Conjunctural Indicators*.

1/ Weights are based on 1990 for the wholesale price index and 1988 for the consumer price index prior to 1995, and based on 1994 for data for 1995-98.

2/ For 1994, the category included transport and communications.

2/ This category includes alcoholic beverages, tobacco, health and personal care, and education and recreation, along with other goods and services.

3/ For 1994, this category includes alcoholic beverages, tobacco, health and personal care, and education and recreation, along with other goods and services. For 1995 and afterwards, this category includes alcoholic beverages, tobacco, recreation and culture, hotels, cafes and resturaunts, and other goods and services.

4/ Implicit import deflator for goods and services.

Table 8. Greece: Implicit Price Deflators 1/

(Percentage changes)

	1994	1995	1996	1997	1998	1999 Prel.
Gross domestic product (at market prices)	11.3	9.8	7.4	6.8	5.2	2.9
Consumption	10.8	9.8	7.4	6.6	5.1	2.7
Private	11.0	8.8	8.2	5.5	4.5	2.4
Government	10.1	18.2	3.2	12.1	7.9	4.3
Gross fixed capital formation	7.4	7.3	6.2	5.3	4.9	2.9
Private 2/	7.1	7.2	5.8	4.8	5.0	2.7
Public 3/	8.1	7.6	7.8	7.5	4.7	3.7
Exports of goods and nonfactor services	9.2	8.5	5.6	3.8	4.5	1.4
Imports of goods and nonfactor services	5.8	6.8	5.0	2.7	4.2	1.2
Terms of trade	3.2	1.6	0.5	1.0	0.3	0.1

Source: Ministry of National Economy.

1/ Data for 1994-95 are based on ESA79, while data for later years are based on ESA95, and thus are not strictly comparable.

2/ ESA95-based data for 1995 and beyond includes data for public enterprises.

3/ ESA95-based data for 1995 and beyond includes data for the general government only.

Table 9. Greece: Cost-Push Indicators of Inflation 1/

(Percentage changes)

	1994	1995	1996	1997	1998	1999 Prel.
Unit labor costs	12.1	11.6	5.9	9.3	6.4	0.6
Gross operating surplus 2/	11.3	7.9	7.5	4.9	3.6	0.6
Net indirect taxes 2/	9.3	11.7	14.0	12.8	7.1	8.7
Import prices	5.6	6.7	5.0	2.7	4.2	1.2
Deflator of total expenditure	10.3	9.0	7.0	6.2	4.7	1.4
Contributions to changes in the deflator of total expenditure						
Unit labor costs	3.1	3.1	1.5	2.5	1.7	0.2
Gross operating surplus 2/	5.3	3.6	3.5	2.2	1.6	0.3
Net indirect taxes 2/	0.7	1.0	0.9	1.0	0.5	0.7
Import prices	1.1	1.3	1.0	0.6	1.0	0.3
Deflator of total expenditure	10.3	9.0	7.0	6.2	4.7	1.4
Memorandum items:						
Implicit GDP deflator	11.3	9.8	7.4	6.8	5.2	2.9
Implicit demand deflator	10.3	9.4	7.1	6.3	4.9	2.7

Source: Ministry of National Economy.

1/ Data for 1994-95 are based on ESA79, while data for later years are based on ESA95, and thus are not strictly comparable.

2/ Per unit of output.

Table 10. Greece: Labor Force, Employment, and Unemployment

(In thousands, unless otherwise noted)

	1994	1995	1996	1997	1998	1999
Labor force	4,193	4,248	4,318	4,294	4,447	4,466
In urban and semi-urban areas	3,151	3,218	3,277	3,277	3,438	3,482
In rural areas	1,043	1,031	1,041	1,018	1,009	984
Employment	3,790	3,824	3,872	3,854	3,952	3,933
By region:						
In urban and semi- urban areas	2,791	2,844	2,885	2,950	3,006	3,023
In rural areas	998	980	987	967	946	910
By gender:						
Female	1,337	1,372	1,402	1,415	1,460	1,472
Male	2,452	2,452	2,470	2,439	2,493	2,461
Unemployment	404	425	446	440	494	533
Female	233	249	279	267	300	322
Male	170	176	167	173	195	210
Youth (under 25 years)	155	157	168	162	177	176
Long term	210	223	260	251	...	...
Unemployment rates 1/						
(In percent)						
Total 2/	9.6	10.0	10.3	10.3	11.1	11.9
Youth unemployment 2/	29.1	29.8	32.2	32.2	30.9	32.0
Registered unemployment 3/	7.2	7.1	7.5	7.9	9.9	...
Memorandum items:						
Labor force participation rate 4/	59.6	60.1	60.9	60.4	62.5	62.7
Male	74.6	74.5	74.5	73.6	75.6	75.1
Female	44.6	45.9	47.4	47.3	49.4	50.4

Source: National Statistical Service of Greece.

1/ Period average.
2/ Based on the annual labor force survey by the National Statistical Service of Greece.
3/ By the Labor Force Employment Organization (OAED).
4/ 15-64 years.

Table 11. Greece: Employment in Selected Sectors

(In thousands)

	1994	1995	1996	1997	1998	1999
Manufacturing	577.2	577.4	575.3	558.6	577.9	567.8
Construction	260.7	251.9	251.6	249.0	282.3	270.8
Public sector enterprises and organizations	160.3	161.7	161.0	158.5	156.5	...
Banks	55.9	58.1	59.8	60.5	61.7	...
Government 1/	306.4	313.1	320.2	323.4	326.4	334.1

Sources: Ministry of National Economy; National Statistical Service of Greece; and Union of Banks.

1/ Permanent and temporary employees of the central administration, and other budgetary organizations.

Table 12. Greece: Wages and Salaries in the Nonagricultural Sector

(Percentage changes over previous period)

	1994	1995	1996	1997	1998	1999 Est.
Nominal wages and salaries:						
All sectors						
Wage bill 1/	12.9	15.3	8.8	13.6	10.3	6.8
Average earnings 2/	13.0	11.9	11.5	10.5	6.3	4.5
Manufacturing 3/						
Wages (per hour)	13.1	13.2	8.6	8.9	4.7	4.4
Salaries (per month)	13.0	13.2	9.4	9.8	5.9	...
Retail trade salaries (per month)	13.3	12.8	9.7	12.0	9.6	...
Civil service average earnings	9.4	12.3	14.9	13.5	9.2	3.5
Business sector average earnings 5/	12.9	11.2	8.8	8.8	5.8	4.4
Minimum wages and salaries						
Wages (per day)	12.6	9.4	7.8	8.0	5.4	3.5
Salaries (per month)	12.6	9.3	7.8	8.0	5.3	3.5
Memorandum items:						
Consumer prices (national, average)	10.9	8.9	8.2	5.5	4.8	2.6
Real wages and salaries						
All sectors						
Wage bill 1/	1.8	5.9	0.6	7.7	5.2	4.1
Average earnings	1.9	2.8	3.0	4.7	1.4	1.9

Sources: Bank of Greece; and National Statistical Service of Greece.

1/ National accounts basis (ESA).

2/ Bank of Greece estimates; differences in rates of change between wage bill and average earnings are due not only to changes in employment, but also to statistical discrepancies.

3/ Gross remuneration (including overtime) in establishments with 10 or more employees.

4/ Preliminary estimates (Bank of Greece).

5/ All sectors excluding the civil service, public enterprises, and banking.

Table 13. Greece: Employment, Productivity, and Unit Labor Costs in Manufacturing

(Annual percentage changes)

	1994	1995	1996	1997	1998	1999
Production	1.1	2.1	0.6	1.0	3.4	0.7
Employment	-3.0	0.1	-0.6	-3.2	-0.9	...
Hours worked per employee 1/	0.1	0.1	0.2	-0.1	0.1	...
Productivity 2/	3.9	2.0	1.1	4.4	4.4	1.9
Hourly wages	13.1	13.2	8.6	9.4	4.7	4.4
Unit labor costs	8.7	11.0	7.5	4.4	0.2	2.5
Including impact of social security contributions 3/	8.7	11.3	7.7	4.4	0.2	2.5

Sources: Bank of Greece; and National Statistical Service of Greece.

1/ For wage earners.
2/ Production per man-hour.
3/ Estimates (Bank of Greece).

Table 14. Greece: Collective Labor Agreements, Compulsory Arbitration and Impact of Labor Disputes

	Number of Collective Agreements	Number of Arbitration Decisions	Number of Man-Hours Lost to Labor Disputes (In millions)		
			Total	Private Sector	Public Enterprises and Banks
1980	220	299	20.5	...	...
1981	233	330	5.3	...	...
1982	284	232	7.9	...	...
1983	57	80	3.0	...	...
1984	252	264	2.7	...	...
1985	175	167	7.7	5.5	2.2
1986	44	82	8.8	5.6	3.2
1987	76	84	16.4	10.8	5.5
1988	210	83	5.6	3.4	2.2
1989	276	111	8.9	5.5	3.4
1990	195	106	20.4	10.4	10.1
1991	287	87	5.8	3.8	2.1
1992	171	32 1/	7.1	2.7	4.3
1993	280	30	3.5	2.3	1.2
1994	287	37	1.9	1.0	0.8
1995	239	33	0.7	0.6	0.1
1996	385	43	1.6	1.3	0.3
1997	286	52	1.5	1.1	0.4
1998	292	58	1.5	0.8	0.7
1999	226	51	...	...	...

Sources: Bank of Greece; and Ministry of Labor.

1/ Starting in 1992, arbitration decisions are not issued by courts, but by the newly established (under Law 1876/90) Organization for Mediation and Arbitration.

Table 15. Greece: Summary of Central Government Finances 1/

	1994	1995	1996	1997	1998	1999	2000		2001
							Budget	Prov.	Budget
				(In billions of drachmas)					
Central government revenue	6,940	7,786	8,811	10,005	11,205	12,409	13,096	13,745	14,835
Tax revenue	5,235	5,968	6,616	7,601	8,840	9,897	9,936	10,890	11,769
Direct	1,773	2,133	2,316	2,767	3,591	4,044	3,690	4,527	4,879
Indirect	3,462	3,835	4,300	4,834	5,248	5,854	6,246	6,363	6,890
Nontax revenue	1,705	1,818	2,195	2,404	2,366	2,512	3,160	2,855	3,066
Investment budget	310	345	568	719	914	1,010	1,160	1,200	1,305
Of which: EU	288	322	552	698	891	977	1,130	1,130	1,250
SAGAP 2/	768	730	859	819	793	806	981	895	930
Other	627	760	768	866	659	696	1,019	760	831
Central government expenditure	9,827	10,571	11,701	12,509	13,331	14,332	15,001	15,410	16,290
Ordinary budget	8,251	8,880	9,747	10,064	10,661	11,276	11,620	11,995	12,580
Of which: Expenditure for Nat. account base reporting				83	80				
Of which: Interest paid	3,340	3,356	3,501	3,216	3,234	3,303	3,220	3,400	3,310
Investment budget	807	962	1,095	1,626	1,877	2,250	2,400	2,520	2,780
Of which: Acquisition of shares of Pub. Enterpr. (-)	...	...	...	420	482	480	670	640	630
SAGAP 2/	768	730	859	819	793	806	981	895	930
Central government primary expenditure	6,487	7,215	8,200	8,790	9,535	10,549	11,111	11,370	12,350
Of which: Current primary expenditure	5,680	6,253	7,105	7,667	8,220	8,779	9,381	9,490	10,200
Central government balance (budget presentation)	-2,887	-2,785	-2,890	-2,001	-1,564	-1,444	-1,235	-1,025	-825
Of which: Central government primary balance	453	571	611	1,132	1,590	1,860	1,985	2,375	2,485
Capitalized interest	119	211	179	33	27	...	...	...	...
Central government balance (Fund presentation)	-3,006	-2,996	-3,069	-2,034	-1,591	-1,444	-1,235	-1,025	-825
Of which: Central government primary balance	453	571	611	1,132	1,590	1,860	1,985	2,375	2,485
Memorandum item:									
GDP	24,295	27,235	29,935	33,104	35,873	38,147	40,487	40,900	44,180
				(In percent of GDP)					
Central government revenue	28.6	28.6	29.4	30.2	31.2	32.5	32.3	33.6	33.6
Tax revenue	21.5	21.9	22.1	23.0	24.6	25.9	24.5	26.6	26.6
Direct	7.3	7.8	7.7	8.4	10.0	10.6	9.1	11.1	11.0
Indirect	14.2	14.1	14.4	14.6	14.6	15.3	15.4	15.6	15.6
Nontax revenue	7.0	6.7	7.3	7.3	6.6	6.6	7.8	7.0	6.9
Investment budget	1.3	1.3	1.9	2.2	2.5	2.6	2.9	2.9	3.0
Of which: EU	1.2	1.2	1.8	2.1	2.5	2.6	2.8	2.8	2.8
SAGAP 2/	3.2	2.7	2.9	2.5	2.2	2.1	2.4	2.2	2.1
Other	2.6	2.8	2.6	2.6	1.8	1.8	2.5	1.9	1.9
Central government expenditure	40.4	38.8	39.1	37.8	37.2	37.6	37.1	37.7	36.9
Ordinary budget	34.0	32.6	32.6	30.4	29.7	29.6	28.7	29.3	28.5
Of which: Interest paid	13.7	12.3	11.7	9.7	9.0	8.7	8.0	8.3	7.5
Investment budget	3.3	3.5	3.7	4.9	5.2	5.9	5.9	6.2	6.3
SAGAP 2/	3.2	2.7	2.9	2.5	2.2	2.1	2.4	2.2	2.1
Central government primary expenditure	26.7	26.5	27.4	26.6	26.6	27.7	27.4	27.8	28.0
Of which: Current primary expenditure	23.4	23.0	23.7	23.2	22.9	23.0	23.2	23.2	23.1
Central government balance (budget presentation)	-11.9	-10.2	-9.7	-6.0	-4.4	-3.8	-3.1	-2.5	-1.9
Of which: Central government primary balance	1.9	2.1	2.0	3.4	4.4	4.9	4.9	5.8	5.6
Capitalized interest	0.5	0.8	0.6	0.1	0.1	0.0	0.0	0.0	0.0
Central government balance (Fund presentation)	-12.4	-11.0	-10.3	-6.1	-4.4	-3.8	-3.1	-2.5	-1.9
Of which: Central goverment primary balance	1.9	2.1	2.0	3.4	4.4	4.9	4.9	5.8	5.6

Sources: Ministry of Finance; and Bank of Greece.

1/ Data not directly comparable to those on a national accounts basis in Tables 22 and 23.

2/ Special Account for Guarantees of Agricultural Products.

Table 16. Greece: Ordinary Budget Revenue

(In billions of drachmas)

	1994	1995	1996	1997	1998	1999	2000 Estimates	2001 Budget
Total ordinary budget revenue	5,861.8	6,727.8	7,384.0	8,467.3	9,498.4	10,592.9	11,650.0	12,600.0
Tax revenue	5,235.0	5,967.6	6,615.9	7,600.9	8,839.7	9,897.3	10,890.2	11,769.3
Direct taxes	1,773.5	2,132.7	2,316.0	2,767.0	3,591.3	4,043.5	4,527.0	4,879.0
Personal income tax	671.8	861.0	1,018.9	1,297.5	1,587.0	1,825.3	1,780.0	1,890.0
Corporate income tax	365.5	459.7	522.1	641.7	1,018.3	1,136.7	1,550.0	1,740.0
Property tax	76.5	80.0	78.9	123.8	133.4	126.6	146.5	158.5
Interest tax and other special income taxes	333.6	335.1	345.4	361.0	449.5	484.4	485.0	480.0
In favor of third parties	3.4	2.2	2.1	1.4	1.8	2.8	1.5	1.0
Other	322.7	394.7	348.6	341.6	401.3	467.7	564.0	609.5
Direct tax arrears	178.2	224.2	151.4	120.0	149.2	205.7	282.0	310.0
Extraordinary direct taxes (incl. on property)	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0
Other	144.5	170.5	197.2	221.6	252.1	261.8	281.9	299.5
Indirect taxes	3,461.5	3,834.9	4,299.9	4,833.9	5,248.4	5,853.8	6,363.2	6,890.3
Consumption taxes	1,310.9	1,460.0	1,637.0	1,767.0	1,856.1	1,909.0	1,895.0	2,020.0
On imports (non-EU after 1993)	72.9	43.5	44.8	68.6	64.9	105.1	69.5	85.0
Cars	28.2	18.6	25.3	35.7	39.2	75.8	59.5	57.0
Other imports	44.7	24.9	19.5	32.9	25.7	29.3	10.0	28.0
On domestic goods	1,238.0	1,416.5	1,592.2	1,698.4	1,791.2	1,803.9	1,825.5	1,935.0
Hydrocarbon fuels	688.0	739.4	820.8	822.7	824.7	770.0	738.5	787.0
Tobacco	333.6	371.8	405.4	458.0	512.7	557.4	608.0	645.0
Alcohol, etc.	39.7	43.3	59.0	75.1	73.8	80.2	89.8	102.3
Road duties	39.3	76.0	80.4	97.8	90.8	126.9	130.0	141.0
Other	137.4	186.0	226.6	244.8	289.2	269.4	259.2	259.7
Turnover tax (FKE)	27.3	31.6	39.3	39.9	45.0	36.6	50.0	55.0
Other	110.1	154.4	187.3	204.9	244.2	232.8	209.2	204.7
Transaction taxes	2,034.4	2,262.2	2,545.0	2,923.6	3,251.0	3,778.6	4,276.0	4,663.0
VAT	1,717.7	1,933.0	2,154.0	2,448.6	2,723.3	2,987.5	3,380.0	3,730.0
On imports (non-EU after 1993)	236.4	222.1	239.4	302.6	326.3	358.7	440.0	470.0
On domestic goods	1,481.3	1,710.9	1,914.6	2,146.0	2,397.0	2,628.8	2,940.0	3,260.0
Other	316.7	329.2	391.0	475.0	527.7	791.1	896.0	933.0
Capital transfers	93.7	93.7	107.2	163.0	172.9	422.4	509.6	570.2
Special banking transactions tax	47.5	41.2	49.2	47.7	46.5	62.8	65.0	16.0
Stamp duty	175.3	193.7	217.5	257.5	292.5	288.9	301.0	321.8
Other	0.2	0.6	17.1	6.8	15.8	17.0	20.5	25.0
Other indirect taxes	116.2	112.7	117.9	143.3	141.3	166.2	192.2	207.3
Indirect tax arrears	39.0	30.0	28.1	43.2	28.3	46.9	60.5	66.5
For EU	47.6	50.8	50.4	57.5	64.2	67.9	74.2	79.3
Other	29.6	31.9	39.4	42.6	48.8	51.4	57.5	61.5
Nontax revenue	626.8	760.2	768.1	866.4	658.7	695.6	759.8	830.7
Capital receipts	243.9	422.9	366.0	404.7	378.2	400.9	442.0	465.0
Receipts from EU	141.7	86.0	88.1	44.5	34.0	46.3	47.6	58.2
Other	241.2	251.3	314.0	417.2	246.5	248.4	270.2	307.5

Source: Ministry of Finance.

Table 17. Greece: Ordinary Budget Revenue

(In percent of GDP)

	1994	1995	1996	1997	1998	1999	2000 Estimates	2001 Budget
Total ordinary budget revenue	24.1	24.7	24.7	25.6	26.5	27.8	28.5	28.5
Tax revenue	21.5	21.9	22.1	23.0	24.6	25.9	26.6	26.6
Direct taxes	7.3	7.8	7.7	8.4	10.0	10.6	11.1	11.0
Personal income tax	2.8	3.2	3.4	3.9	4.4	4.8	4.4	4.3
Corporate income tax	1.5	1.7	1.7	1.9	2.8	3.0	3.8	3.9
Property tax	0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.4
Interest tax and other special income taxes	1.4	1.2	1.2	1.1	1.3	1.3	1.2	1.1
In favor of third parties	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.3	1.4	1.2	1.0	1.1	1.2	1.4	1.4
Direct tax arrears	0.7	0.8	0.5	0.4	0.4	0.5	0.7	0.7
Extraordinary direct taxes (incl. on property)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Indirect taxes	14.2	14.1	14.4	14.6	14.6	15.3	15.6	15.6
Consumption taxes	5.4	5.4	5.5	5.3	5.2	5.0	4.6	4.6
On imports (non-EU after 1993)	0.3	0.2	0.1	0.2	0.2	0.3	0.2	0.2
Cars	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
Other imports	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1
On domestic goods	5.1	5.2	5.3	5.1	5.0	4.7	4.5	4.4
Hydrocarbon fuels	2.8	2.7	2.7	2.5	2.3	2.0	1.8	1.8
Tobacco	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
Alcohol, etc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Road duties	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other	0.6	0.7	0.8	0.7	0.8	0.7	0.6	0.6
Turnover tax (FKE)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other	0.5	0.6	0.6	0.6	0.7	0.6	0.5	0.5
Transaction taxes	8.4	8.3	8.6	8.8	9.1	9.9	10.5	10.6
VAT	7.1	7.1	7.2	7.4	7.6	7.8	8.3	8.4
On imports (non-EU after 1993)	1.0	0.8	0.8	0.9	0.9	0.9	1.1	1.1
On domestic goods	6.1	6.3	6.4	6.5	6.7	6.9	7.2	7.4
Other	1.3	1.2	1.3	1.4	1.5	2.1	2.2	2.1
Capital transfers	0.4	0.3	0.4	0.5	0.5	1.1	1.2	1.3
Special banking transactions tax	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.0
Stamp duty	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.7
Other	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1
Other indirect taxes	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Indirect tax arrears	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2
For EU	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nontax revenue	2.6	2.8	2.6	2.6	1.8	1.8	1.9	1.9

Source: Ministry of Finance.

Table 18. Greece: Ordinary Budget Expenditures

	1994	1995	1996	1997	1998	1999	2000		2001
							Budget	Prov.	Budget
					(In billions of drachmas)				
Total ordinary budget expenditure (budget presentation)	8,251	8,880	9,747	10,064	10,661	11,276	11,620	11,995	12,580
Personnel outlays	2,269	2,623	3,055	3,513	3,840	4,113	4,272	4,442	4,687
Wages, salaries, and allowances	1,600	1,879	2,218	2,601	2,809	2,969	3,174	3,266	3,469
Of which: allowances paid from off-budget account	...	60	81	...	...	...	...	...	...
Pensions	546	604	676	740	861	926	935	973	1,017
Medical care	123	141	161	172	169	217	163	203	202
Interest payments (budget presentation) 1/	3,340	3,356	3,501	3,216	3,234	3,303	3,220	3,400	3,310
Central government (incl. charges)	3,162	3,205	3,400	3,106	3,132	3,201	3,110	3,280	3,180
On military debt	177	151	101	110	102	102	110	120	130
Restitution of revenue to third parties	345	456	470	585	740	831	818	839	933
Payments to EU	309	312	355	377	452	435	440	490	538
Tax refunds	213	236	306	291	270	300	320	294	324
Interest subsidies	6	19	20	21	2	...	2	1	2
Agricultural subsidies	28	73	93	126	100	97	108	122	118
Grants	1,115	1,221	1,379	1,369	1,424	1,508	1,649	1,659	1,809
Social security funds	694	747	805	883	887	941	1,048	1,050	1,115
Transport	54	61	60	53	50	66	70	60	60
Other	367	413	514	433	487	502	531	549	635
Other	484	486	469	567	599	690	677	747	757
Guarantees	76	39	2	2	2	2	1	1	1
Other consumer expenditures	408	447	467	565	597	688	676	746	756
Reserve	0	0	0	0	0	0	114	...	102
Investment expenditures	144	158	179	0	...	...	...	...	...
					(In percent of GDP)				
Total ordinary budget expenditure (budget presentation)	34.0	32.6	32.6	30.4	29.7	29.6	28.7	29.3	28.5
Personnel outlays	9.3	9.6	10.2	10.6	10.7	10.8	10.5	10.9	10.6
Wages, salaries, and allowances	6.6	6.9	7.4	7.9	7.8	7.8	7.8	8.0	7.9
Pensions	2.2	2.2	2.3	2.2	2.4	2.4	2.3	2.4	2.3
Medical care	0.5	0.5	0.5	0.5	0.5	0.6	0.4	0.5	0.5
Interest payments (budget presentation) 1/	13.7	12.3	11.7	9.7	9.0	8.7	8.0	8.3	7.5
Central government (incl. charges)	13.0	11.8	11.4	9.4	8.7	8.4	7.7	8.0	7.2
On military debt	0.7	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Restitution of revenue to third parties	1.4	1.7	1.6	1.8	2.1	2.2	2.0	2.1	2.1
Payments to EU	1.3	1.1	1.2	1.1	1.3	1.1	1.1	1.2	1.2
Tax refunds	0.9	0.9	1.0	0.9	0.8	0.8	0.8	0.7	0.7
Interest subsidies	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Agricultural subsidies	0.1	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3
Grants	4.6	4.5	4.6	4.1	4.0	4.0	4.1	4.1	4.1
Social security funds	2.9	2.7	2.7	2.7	2.5	2.5	2.6	2.6	2.5
Transport	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1
Other	1.5	1.5	1.7	1.3	1.4	1.3	1.3	1.3	1.4
Other	2.0	1.8	1.6	1.7	1.7	1.8	1.7	1.8	1.7
Guarantees	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other consumer expenditures	1.7	1.6	1.6	1.7	1.7	1.8	1.7	1.8	1.7
Reserve	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2
Investment expenditures	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Memorandum items:									
Capitalized and accrued interest (in billions of drachma) 2/	119	211	179	33	27	...	...	...	...
Capitalized and accrued interest (in percent of GDP) 2/	0.5	0.8	0.6	0.1	0.1	0.0	0.0	0.0	0.0

Source: Ministry of Finance.

1/ Does not include capitalized and accrued interest.
2/ Bank of Greece data.

Table 19. Greece: Investment Budget Expenditure by Sector

(In billions of drachmas)

	1994	1995	1996	1997	1998	1999	2000 Prov.	2001 Budget
Public investment program								
Communications	0	1	0	0	0	5	7	2
Agriculture	9	7	12	89	104	155	169	183
Forestry and fishing	20	16	16	20	19	21	27	33
Land reclamation	47	32	27	29	25	35	60	45
Industry, energy, and handicrafts	76	78	132	273	281	262	200	276
Transportation (excluding railways)	142	176	209	312	325	411	553	618
Railways	24	23	32	113	170	131	164	140
Tourism, museums, and monuments	19	31	24	56	49	65	63	68
Education	101	106	92	120	159	244	276	325
Housing	8	27	18	49	77	61	49	50
Health and welfare	27	20	26	40	47	71	116	125
Water supply and sewerage	58	45	36	41	54	46	26	28
Public administration	11	15	17	15	31	48	106	77
Research, technology, and technical cooperation	6	23	11	24	26	31	52	51
Prefectural and border-aid projects	205	271	275	267	289	376	492	512
Special projects	23	65	128	104	142	138	64	67
Miscellaneous (including amortization and interest payments)	34	26	40	75	79	150	96	169
Reserve	0	0	0	0	0	0	0	11
Total 1/	807	962	1,095	1,626	1,877	2,250	2,520	2,780
(In percent of GDP)	3.3	3.5	3.7	7.0	5.2	5.9	6.2	6.3

Source: Ministry of Finance.

1/ Does not include Dr 48.5 billion paid to the Greek Telecommunication Organization against loan from the European Investment Bank, and Dr 19 billion for increase of Olympic Airways share capital in 1995.

Table 20. Greece: Budget Transfers from and to the European Union

(In billions of drachmas)

	1994	1995	1996	1997	1998	1999	2000		2001
							Budget	Prov.	Budget
Receipts	1,419	1,404	1,763	1,672	1,832	1,982	2,426	2,325	2,263
Ordinary budget	141	86	88	48	33	46	63	48	58
Investment budget	288	322	552	698	891	977	1,130	1,130	1,250
Special account for agricultural guarantees	768	730	859	819	793	806	981	895	930
Budget of third parties	222	267	265	107	115	153	252	252	25
Payments	309	312	355	377	455	435	440	490	538
Custom duties, etc.	38	44	45	50	61	68	58	67	74
GDP or VAT-based contributions	221	234	271	301	360	366	350	391	433
Other	50	34	39	26	34	1	32	32	31
Net receipts	1,111	1,093	1,408	1,295	1,377	1,547	1,986	1,835	1,725
(as percent of GDP)	4.6	4.0	4.7	3.9	3.8	4.1	4.9	4.5	3.9

Source: Ministry of Finance.

Table 21. Greece: Central Government Expenditure, Functional Classification

(Accrual basis)

	1994	1995	1996	1997	1998	1999	2000		2001	1994	1995	1996	1997	1998	1999	2000		2001
						Prov.	Budget	Prov.	Budget						Prov.	Budget	Prov.	Budget
	(In billions of drachma)									(In percent of total)								
Defense	694	781	803	941	1,018	1,053	1,122	1,186	1,259	5.6	5.8	5.2	5.8	6.0	5.9	5.9	6.1	6.3
Of which: debt servicing 1/	221	230	180	188	183	180	200	235	267	1.8	1.7	1.2	1.2	1.1	1.0	1.1	1.2	1.3
Education	748	862	963	1,128	1,217	1,402	1,433	1,440	1,528	6.0	6.4	6.2	7.0	7.2	7.9	7.5	7.4	7.6
Health, social welfare, and insurance	1,420	1,558	1,714	2,051	2,229	2,194	2,352	2,424	2,607	11.4	11.5	11.0	12.7	13.2	12.4	12.4	12.4	13.0
Agriculture	1,030	1,011	1,190	1,166	1,242	1,256	1,503	1,416	1,464	8.3	7.5	7.7	7.2	7.3	7.1	7.9	7.2	7.3
Debt service	5,766	6,110	7,139	6,650	6,619	6,528	7,062	7,314	6,849	46.2	45.1	46.0	41.2	39.1	36.8	37.1	37.4	34.1
Interest payments 1/ 2/	3,239	3,337	3,501	3,060	3,078	3,123	3,020	3,165	3,043	26.0	24.6	22.6	19.0	18.2	17.6	15.9	16.2	15.1
Domestic 1/ 2/	2,953	2,974	3,117	2,656	2,580	2,659	2,570	2,607	2,577	23.7	21.9	20.1	16.5	15.2	15.0	13.5	13.3	12.8
External	286	363	384	404	498	464	450	558	467	2.3	2.7	2.5	2.5	2.9	2.6	2.4	2.9	2.3
Amortization	2,527	2,773	3,639	3,589	3,542	3,405	4,042	4,149	3,806	20.3	20.5	23.4	22.3	20.9	19.2	21.2	21.2	18.9
Domestic	1,897	2,039	2,864	2,415	2,087	2,262	2,702	2,331	2,746	15.2	15.0	18.5	15.0	12.3	12.8	14.2	11.9	13.7
External	517	585	516	903	1,055	745	1,042	1,169	645	4.1	4.3	3.3	5.6	6.2	4.2	5.5	6.0	3.2
Military Dept.	113	149	259	272	400	398	299	650	415	0.9	1.1	1.7	1.7	2.4	2.2	1.6	3.3	2.1
Other expenditures	2,817	3,233	3,711	4,195	4,602	5,304	5,570	5,779	6,389	22.6	23.8	23.9	26.0	27.2	29.9	29.2	29.5	31.8
Total expenditures	12,474	13,556	15,519	16,131	16,926	17,737	19,043	19,559	20,096	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum item:																		
Total, excluding amortization	9,947	10,783	11,880	12,542	13,385	14,332	15,001	15,410	16,290	79.7	79.5	76.6	77.7	79.1	80.8	78.8	78.8	81.1

Source: Ministry of Finance.

1/ Including military debt service.
2/ Including capitalized interest.

Table 22. Greece: Summary of General Government Finances 1/

(In billions of drachmas)

	1995	1996	1997	1998	1999
Central government					
Current revenue	6,909.8	7,521.8	8,779.4	9,909.0	11,092.2
Of which: Tax revenue	6,263.0	6,896.1	7,978.2	9,302.7	10,523.1
Current expenditure	9,528.5	9,978.6	10,358.0	11,129.7	11,706.5
Public consumption	2,953.6	2,945.0	3,480.4	3,800.9	3,932.4
Interest	3,462.1	3,564.9	3,144.1	3,202.8	3,308.7
Net capital spending	822.8	672.2	659.2	607.8	1,124.7
Overall balance	-3,441.5	-3,129.0	-2,237.8	-1,828.5	-1,739.0
Primary balance	20.6	435.9	906.3	1,374.3	1,569.7
Social security funds					
Current revenue (including state transfers)	4,526.0	5,104.7	5,792.8	6,288.6	6,840.8
Of which: Contributions	2,728.1	3,090.1	3,444.6	3,807.3	4,252.4
Current expenditure	3,993.8	4,488.9	5,008.8	5,480.8	5,997.1
Of which: Interest	1.0	6.5	10.1	10.9	11.5
Net capital spending	-57.1	-182.9	-17.0	-2.1	-54.9
Overall balance	589.3	798.7	801.0	809.9	898.6
Primary balance	590.3	805.2	811.1	820.8	910.1
Local authorities					
Current revenue (including state transfers)	346.6	411.5	456.5	527.8	622.1
Current expenditure	273.5	321.0	357.9	398.8	432.6
Of which: Interest	8.4	9.8	9.5	11.1	12.0
Net capital spending	51.9	72.1	78.0	109.7	167.1
Overall balance	21.2	18.4	20.6	19.4	22.3
Primary balance	29.6	28.2	30.1	30.5	34.3
Public funds					
Current revenue (including state transfers)	346.4	440.0	503.4	563.6	625.1
Current expenditure	192.6	258.6	301.3	276.6	285.5
Of which: Interest	0.0	9.8	13.6	15.2	12.0
Net capital spending	89.4	95.9	122.5	171.2	193.5
Overall balance	64.3	85.6	79.6	115.8	146.0
Primary balance	64.3	95.4	93.2	131.0	158.0
Consolidated general government					
Current revenue	9,928.8	11,050.4	12,839.2	14,397.2	16,068.6
Current expenditure	11,788.5	12,619.5	13,333.0	14,393.9	15,310.3
Primary	8,751.3	9,465.7	10,601.7	11,587.9	12,429.4
Interest	3,037.2	3,153.8	2,731.3	2,806.0	2,880.9
Net capital spending	906.9	657.1	842.7	886.5	1,430.5
General government saving	-1,859.7	-1,569.1	-493.8	3.2	758.3
Overall balance	-2,766.7	-2,226.2	-1,336.5	-883.3	-672.1
Primary balance	270.5	927.6	1,394.7	1,922.7	2,208.7

Source: Ministry of National Economy.

1/ Data on a national accounts basis; central government accounts not directly comparable to those compiled by the Ministry of Finance.

Table 23. Greece: Summary of General Government Finances 1/

(In percent of GDP)

	1995	1996	1997	1998	1999
Central government					
Current revenue	25.4	25.1	26.5	27.6	29.1
Of which: Tax revenue	23.0	23.0	24.1	25.9	27.6
Current expenditure	35.0	33.3	31.3	31.0	30.7
Public consumption	10.8	9.8	10.5	10.6	10.3
Interest	12.7	11.9	9.5	8.9	8.7
Net capital spending	3.0	2.2	2.0	1.7	2.9
Overall balance	-12.6	-10.5	-6.8	-5.1	-4.6
Primary balance	0.1	1.5	2.7	3.8	4.1
Social security funds					
Current revenue (including state transfers)	16.6	17.1	17.5	17.5	17.9
Of which: Contributions	10.0	10.3	10.4	10.6	11.1
Current expenditure	14.7	15.0	15.1	15.3	15.7
Of which: Interest	0.0	0.0	0.0	0.0	0.0
Net capital spending	-0.2	-0.6	-0.1	0.0	-0.1
Overall balance	2.2	2.7	2.4	2.3	2.4
Primary balance	2.2	2.7	2.5	2.3	2.4
Local authorities					
Current revenue (including state transfers)	1.3	1.4	1.4	1.5	1.6
Current expenditure	1.0	1.1	1.1	1.1	1.1
Of which: Interest	0.0	0.0	0.0	0.0	0.0
Net capital spending	0.2	0.2	0.2	0.3	0.4
Overall balance	0.1	0.1	0.1	0.1	0.1
Primary balance	0.1	0.1	0.1	0.1	0.1
Public funds					
Current revenue (including state transfers)	1.3	1.5	1.5	1.6	1.6
Current expenditure	0.7	0.9	0.9	0.8	0.7
Of which: Interest	0.0	0.0	0.0	0.0	0.0
Net capital spending	0.3	0.3	0.4	0.5	0.5
Overall balance	0.2	0.3	0.2	0.3	0.4
Primary balance	0.2	0.3	0.3	0.4	0.4
Consolidated general government					
Current revenue	36.5	36.9	38.8	40.1	42.1
Current expenditure	43.3	42.2	40.3	40.1	40.1
Primary	32.1	31.6	32.0	32.3	32.6
Interest	11.2	10.5	8.3	7.8	7.6
Net capital spending	3.3	2.2	2.5	2.5	3.7
General government saving	-6.8	-5.2	-1.5	0.0	2.0
Overall balance	-10.2	-7.4	-4.0	-2.5	-1.8
Primary balance	1.0	3.1	4.2	5.4	5.8

Source: Ministry of National Economy.

1/ Data on a national accounts basis; central government accounts not directly comparable to those compiled by the Ministry of Finance.

Table 24. Greece: Public Entities Balance 1/

(In billions of drachmas)

	1994	1995	1996	1997	1998	1999	2000		2001
							Budget	Prov.	Budget
Operating income	1,497.4	1,714.5	1,905.4	2,141.0	2,614.4	2,894.5	3,109.8	3,136.9	3,382.9
Operating expenses	2,163.7	2,427.1	2,707.0	3,132.7	3,329.4	3,751.0	4,186.5	4,203.6	4,521.3
Operating balance	-666.3	-712.6	-801.6	-991.6	-715.0	-856.5	-1,076.7	-1,066.7	-1,138.3
(In percent of GDP)	-2.9	-2.8	-2.7	-3.0	-2.0	-2.2	-2.6	-2.6	-2.6
Workers' Housing Organization (OEK)	51.1	64.0	67.7	73.1	80.8	75.7	132.5	132.5	133.2
Social Insurance Organization (IKA)	-292.3	-332.0	-384.1	-490.2	-340.8	-442.7	-562.8	-562.7	-650.8
Workers' Fund (EE)	1.6	-1.2	1.3	-3.3	2.0	3.0	2.8	2.8	2.8
Labor Force Employment Organization (OAED)	-28.2	-30.2	-11.0	-61.7	-14.1	-37.9	-104.2	-86.4	-56.0
Farmers' Social Insurance Organization (OGA)	-303.0	-314.8	-360.9	-379.3	-332.6	-287.9	-381.0	-387.7	-395.7
National Welfare Organization (EOP)	-8.3	-9.5	-9.8	-12.2	-11.3	-10.0	-12.1	-11.0	-11.4
Seaman's Insurance Fund (NAT-KAAN)	-87.2	-91.4	-104.8	-118.0	-127.2	-156.7	-151.9	-154.1	-160.5
Investment expenditures 2/	41.7	46.8	47.1	46.8	108.0	112.4	119.7	141.2	139.3
Other expenditures	39.0	44.0	49.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating and investment balance	-747.0	-803.4	-897.7	-944.9	-607.0	-744.1	-956.9	-925.5	-999.0
(In percent of GDP)	-3.2	-3.1	-3.0	-2.9	-1.7	-2.0	-2.3	-2.3	-2.3
Less:									
State contributions									
Ordinary budget	632.6	641.6	720.5	753.4	741.5	771.3	861.4	854.4	884.5
Investment budget	92.0	89.0	80.2	142.1	111.7	164.0	248.6	219.7	216.1
Depreciation and special resources	31.0	46.9	47.1	41.7	44.7	80.3	91.4	87.4	3.0
Net borrowing requirement	-8.5	25.9	49.8	101.1	-74.8	-46.7	-3.6	46.4	174.0
Workers' Housing Organization (OEK)	-22.1	-38.8	-41.2	-46.3	13.7	-17.8	-79.1	-79.1	-77.5
Social Insurance Organization (IKA)	30.8	78.2	120.1	188.0	47.6	156.5	248.8	250.7	316.2
Workers' Fund (EE)	-1.3	-0.7	-0.5	3.9	-1.7	-0.9	-0.6	-0.6	-0.6
Labor Force Employment Organization (OAED)	-47.3	-41.9	-64.7	-42.7	-77.7	-84.4	-90.4	-79.2	7.9
Farmers' Social Insurance Organization (OGA)	-17.1	-24.0	-22.2	-24.9	-58.0	-102.5	-91.3	-56.1	-80.6
National Welfare Organization (EOP)	0.0	1.5	1.4	-1.4	-0.1	-0.8	1.0	0.5	1.4
Seaman's Insurance Fund (NAT-KAAN)	48.4	51.6	56.9	24.5	1.5	3.2	8.1	10.1	7.3
Memorandum item:									
Interest payments	59.6	52.8	32.4	34.8	8.6	16.2	20.1	19.4	20.0
Of which: Social Insurance Organization (IKA)	50.0	50.0	30.0	33.0	7.2	16.0	20.0	19.4	20.0

Source: Ministry of National Economy.

1/ Covers seven major public entities.
2/ Excluding amortization payments.

Table 25. Greece: Public Enterprise Balance 1/

(In billions of drachmas)

	1994	1995	1996	1997	1998	1999	2000		2001
							Budget	Prov.	Budget
Operating revenue	2,728.3	2,971.0	3,368.6	3,568.2	3,915.7	4,262.3	4,633.1	5,449.8	5,862.7
Operating expenditures 2/	2,630.9	2,757.6	3,098.9	3,391.5	3,727.9	4,037.7	4,300.6	5,131.2	5,434.3
Of which:									
Wages and salaries	770.7	839.2	942.5	1,043.9	1,066.2	1,096.4	1,171.3	1,161.4	1,200.5
Fuel	160.9	174.1	213.0	164.1	186.1	201.2	250.9	330.3	371.4
Interest payments	186.5	179.5	179.9	200.3	249.0	237.2	205.2	182.0	217.8
Depreciation	322.7	296.4	318.7	388.4	484.9	445.0	550.5	468.0	584.6
Other	1,190.1	1,268.4	1,444.7	1,594.9	1,741.8	2,057.9	2,122.6	2,989.5	3,059.9
Operating balance 3/	97.4	213.4	269.7	176.7	187.8	224.6	332.5	318.6	428.5
(In percent of GDP)	0.4	0.8	0.9	0.5	0.5	0.6	0.8	0.8	1.0
Investment expenditures 4/	720.1	855.7	1,052.1	1,316.7	1,574.8	1,648.0	2,156.2	1,933.3	2,382.9
Other need of funds	308.7	287.7	166.9	313.7	306.1	328.9	419.4	315.5	345.9
Operating and investment deficit	931.4	930.0	949.3	1,453.7	1,693.1	1,752.4	2,243.0	1,930.2	2,300.3
(In percent of GDP)	3.9	3.5	3.2	4.4	4.7	4.6	5.5	4.7	5.2
Less:									
State contributions:									
Ordinary budget	24.4	34.0	38.1	-10.7	-14.7	28.2	23.8	-27.0	34.0
Investment budget, etc.	310.5	360.2	470.5	383.4	403.2	454.9	615.8	636.4	791.0
Depreciation and special resources	581.7	432.7	562.5	1,044.9	1,131.5	1,245.4	1,070.2	1,202.6	1,389.6
Net borrowing requirement 3/ 4/	14.7	103.1	-121.8	36.1	173.0	23.9	533.2	118.2	85.7
Of which:									
Public Power Corporation	-23.8	-16.4	58.8	93.8	70.0	2.1	110.5	85.8	80.1
Hellenic Telecommunications Organization	37.5	36.9	-264.6	-205.8	73.7	73.7	203.4	22.5	-45.0
Greek Railways	33.1	75.6	58.0	77.4	86.1	-31.2	153.6	63.0	122.5
Olympic Airways	-14.6	-34.9	-25.8	13.9	-58.2	3.2	23.8	66.4	-34.7
Athens Urban Transport Organization	33.6	20.7	44.8	54.4	81.3	57.7	74.9	54.6	54.2
Hellenic Aerospace Industry	11.1	10.1	0.1	7.3	11.6	-11.6	-0.8	-12.3	-15.9
Greek Post Office	16.5	41.9	53.8	37.3	36.1	8.9	-9.2	-19.8	-23.7
Athens Water and Sewerage	-10.0	-10.5	-10.3	-11.8	-22.0	-28.9	-2.0	-26.5	-17.0
Other	-68.7	-20.3	-36.6	-30.5	-105.6	-50.1	-21.0	-115.5	-34.8

Source: Ministry of National Economy.

1/ Covers 46 major public enterprises.
2/ Breakdown into components are estimates.
3/ Surplus (+) or deficit (-).
4/ Excluding amortization payments.

Table 26. Greece: Operating Balance of Selected Public Enterprises

(In billions of drachmas)

	1994	1995	1996	1997	1998	1999	2000		2001
							Budget	Prov.	Budget
Public enterprises									
Public Power Corporation	9.3	59.1	80.3	27.2	14.3	29.6	45.8	13.4	71.5
State Oil Refinery	10.0	7.4	17.2	10.5	0.0	0.0	0.0	0.0	0.0
State Petroleum Industry	19.2	6.7	12.0	5.4	0.0	0.0	0.0	0.0	0.0
Hellenic Petroleum 1/	0.0	0.0	0.0	0.0	34.1	60.0	59.4	80.2	72.8
Institute for Geological and Mining Research	-5.4	-6.2	-7.0	-8.4	-8.1	-8.4	-8.2	-8.3	-8.4
National Organization of Greek Handicrafts	-2.8	0.4	-3.0	-3.6	-4.3	-4.1	-4.3	-6.1	-4.4
Hellenic Telecommunications Organization	176.1	203.7	250.3	300.1	278.7	278.7	311.3	300.0	300.0
Greek State Railways	-80.6	-84.1	-110.6	-148.9	-139.5	-137.9	-133.0	-119.0	-125.0
Olympic Airways	0.9	6.5	11.2	-6.9	1.6	-10.8	8.3	-47.6	2.7
Greek Post Office	-16.9	-18.6	-14.0	-25.2	-16.9	2.2	1.5	6.6	7.3
Athens Urban Transport Organization 2/	-53.0	-66.1	-78.9	-94.7	-94.3	-90.0	-85.3	-85.2	-83.2
National Broadcasting Corporation	-14.5	-4.3	-5.6	-2.3	2.8	2.2	-4.2	5.2	8.0
National Tourism Organization	-4.7	-5.4	-4.2	-4.1	-3.3	-2.1	-3.1	-2.9	-2.5
Piraeus Port Authority	3.2	6.2	3.9	2.6	9.5	6.8	8.6	5.7	4.8
Athens Water and Sewerage	-1.0	-1.2	9.3	9.3	17.4	22.0	23.0	37.9	52.0
Hellenic Aerospace Industry	1.0	0.5	-3.6	-2.5	-6.9	-3.5	2.3	1.1	8.5
Other public enterprises 3/	56.6	108.9	112.3	118.1	102.8	79.8	110.5	137.6	124.3
Total public enterprises	97.4	213.4	269.7	176.7	187.8	224.6	332.5	318.6	428.5

Sources: Ministry of Finance; and Ministry of National Economy.

1/ Includes (since 1/1/1998) former State Petroleum Industry (DEP) S.A., Hellenic Aspropyrgos Refinery S.A., Exploration and Exploitation of Hydrocarbons (DEP-EKY) S.A. and EKO Refinery and Chemicals Co. S.A.

2/ Including Thermic Buses Corporation (since June 1994), Athens Piraeus Trolley Buses, and Athens Piraeus Electric Railways.

3/ Thirty-one additional public enterprises.

Table 27. Greece: Financing of the PSBR

(In billions of drachmas)

	1994	1995	1996	1997	1998	1999	1999 1/	2000 1/ Prov.
Central government balance (cash basis)	-2,976	-2,994	-3,856	-2,595	-2,271	-1,988	-1,060	-1,715
Petroleum and other account balance	-45	-55	-14	-25	-79	-71	396	460
Public entity balance	516	546	647	345	529	635	451	445
General government balance	-2,505	-2,503	-3,223	-2,275	-1,821	1,424	-213	-810
Public enterprise balance	-205	1	-83	133	-141	-71	23	34
Public sector borrowing requirement	-2,710	-2,502	-3,306	-2,142	-1,962	-1,495	-190	-776
Financing								
Domestic	2,420	2,038	3,013	1,002	96	-1,237	-1,509	-1,493
Bank	798	-50	-100	352	-63	1,089	-554	-435
Bank of Greece 2/	14	-438	-152	227	218	121	-1,092	-1,030
Treasury bills and bonds purchased by banks and specialized credit institutions	451	327	-166	95	-674	1,102	1,085	1,517
Loans and advances from banks and specialized credit institutions	74	-23	39	-5	366	-134	-547	-922
Capitalized interest	259	84	179	35	27	0	0	0
Nonbank 3/	1,622	2,088	3,113	650	159	-2,326	-955	-1,058
Foreign	290	464	293	1,140	1,866	2,732	1,699	2,269
Net foreign borrowing by central government	184	298	181	1,296	142	191	-8	281
Net foreign borrowing by public entities and enterprises	2	-44	-39	-187	-126	236	97	3
Net foreign borrowing for oil imports	0	0	0	0	0	0	0	0
Net investment in government paper by nonresidents	60	-118	-209	31	1,850	2,305	1,610	1,985
Net investment in government paper by domestic banks (in foreign exchange)	44	328	360	0	0	0	0	0
Memorandum items:								
Percent of PSBR (cash basis) financed by								
banking system	30	-2	-3	16	-3	72	-291	-56
Of which: Bank of Greece	1	-18	-5	11	11	8	-575	-133
Nonbank public	60	84	94	30	8	-156	-503	-136
External financing	11	19	9	54	95	184	894	292

Source: Bank of Greece.

1/ January–September.

2/ Including treasury bills and bonds held by the Bank of Greece, as well as changes in the balance of the petroleum account through 1992.

3/ Including money market funds' holdings of government bonds.

Table 28. Greece: Gross General Government Debt

(In billions of drachmas; end of period)

	1994	1995	1996	1997	1998	1999 Prov.
Central administration	27,168	30,970	35,291	38,058	40,614	42,669
Drachma-denominated	17,646	21,189	27,315	27,690	29,411	30,720
Treasury bills	7,533	8,422	10,012	6,800	5,322	3,078
Bonds	3,380	5,939	9,772	15,242	18,803	23,481
Bonds for debt consolidation and restructuring, share capital increases, etc.	5,179	5,291	4,736	4,170	3,844	2,785
Bank of Greece	1,367	1,331	1,295	1,259	1,223	1,161
Short term 1/	977	977	977	977	977	949
Long term	390	354	318	282	246	212
Other	187	206	205	219	219	215
Of which: Participation in international institutions	182	201	201	214	214	215
Foreign currency-denominated	9,522	9,781	9,271	10,368	11,203	11,949
Foreign currency-linked bonds	1,879	1,574	239	151	3	3
External	5,388	5,672	6,377	7,453	8,319	8,943
Bank of Greece 2/	2,255	2,535	2,655	2,764	2,881	3,003
Armed forces	924	1,012	955	982	938	1,345
Drachma-denominated	82	92	99	105	108	94
Foreign currency-denominated	842	920	856	877	830	1,251
Of which: External	842	920	856	877	830	1,251
Central government	28,092	31,982	36,246	39,040	41,552	44,014
In percent of GDP	117	119	122	118	116	115
Drachma-denominated	17,728	21,281	26,119	27,795	29,519	30,814
Foreign currency-denominated	10,364	10,701	10,127	11,245	12,033	13,200
Foreign currency-linked bonds	1,879	1,574	239	151	3	3
External	6,230	6,592	7,233	8,330	9,149	10,194
Bank of Greece 2/	2,255	2,535	2,655	2,764	2,881	3,003
Local authorities	87	93	121	124	131	130
Drachma-denominated	79	83	114	124	131	130
Foreign currency-denominated	8	7	7	0	0	0
Of which: External	8	7	7	0	0	0
Social security funds	221	242	191	171	146	145
Drachma-denominated	221	242	191	171	146	145
Foreign currency denominated	0	0	0	0	0	0
Other	96	93	90	87	83	91
Intergovernmental debt	2,091	2,608	3,123	3,366	3,863	4,262
General government (Maastricht definition)	26,223	29,603	33,324	35,842	37,834	39,903
In percent of GDP)	109.3	110.1	112.2	108.3	105.5	104.6
Drachma-denominated	15,937	18,998	23,190	24,597	25,801	26,703
Foreign currency-denominated	10,372	10,708	10,134	11,245	12,033	13,200
Foreign currency-linked bonds	1,879	1,574	239	151	3	3
External	6,238	6,599	7,240	8,330	9,149	10,194
Bank of Greece	2,255	2,535	2,655	2,764	2,881	3,003

Sources: Ministry of Finance; and Bank of Greece.

1/ Replaced by long-term bonds at end-1993.

2/ Bonds issued in 1993 to cover valuation differences.

Table 29. Greece: Monetary Program and Outturn 1/

(End of period)

	1995		1996		1997		1998		1999 2/	
	Program	Outturn	Program	Outturn	Program	Outturn	Program	Outturn	Program	Outturn
					(Annual percentage changes)					
Broad money (M3)	7–9	10.3	6–9	9.3	6–9	9.6	6–9	8.9	...	...
Of which:										
Currency in circulation	...	10.4	...	4.2	...	12.4	...	2.1	...	...
Private sector deposits	...	15.0	...	13.9	...	9.2	...	1.6	...	...
M4	11–13	8.2 2/	9–12	12.0	8–11	-1.6	...	3.2	...	...
M4N 3/	...	13.0	...	15.3	...	7.8	...	9.8	7–9	
Domestic credit (net) 4/	6–8	7.9	5–7	5.9	4–6	9.7	4–6	9.4	7–9	12.2
Private sector 5/	...	22.0	...	17.0	...	15.3	...	15.0	...	14.2
Public sector 4/	...	2.4 6/	...	1.0	...	7.1	...	7.1	...	...
Drachma/ECU	3.0	3.0	broadly stable	1.0	stable	1.7	broadly stable	5.4	...	0.1
Nominal GDP	9.5	12.1	9.9	9.9	10.4	10.6	...	8.4	...	6.3
CPI	7.0	7.9	5.0	7.3	4.5	4.7	less than 2 percent by end-1999	3.9	...	2.7
					(In billions of drachmas)					
Broad money (M3) 4/	1,200–1,400	1,625	1,040–1,540	1,625	1,150–1,700	1,821	...	1,863	...	...
Domestic credit (net)	...	1,917	...	1,607	...	2,969	...	3,412	...	...
Private sector	...	1,503	...	1,414	...	1,477	...	1,690	...	...
Public sector	...	414	...	193	...	1,492	...	1,722	...	...
Sales of government debt to the nonbank public	...	2,088	...	3,113	...	650	...	160	...	...

Source: Bank of Greece.

1/ The definition of net domestic credit and credit to the public sector in the monetary program is different from that in the monetary survey; it includes borrowing by the public sector directly from abroad, as well as capitalized interest. Also, for all credit aggregates the data do not reflect the exchange of government-guaranteed credit for government bonds.

2/ M4 was revised to include secondary market transactions from 1995 on.

3/ Beginning in 1999, the Bank of Greece started to rely, inter alia, on a new liquidity indicator, M4N, to provide information on the determinants of inflation. M4N, which includes M4 (currency in circulation, residents' drachma deposits, repos, bank certificates, and treasury bills), in addition to residents' foreign exchange depostis and money market mutual fund shares, is regarded as a more appropriate gauge of the conditions and stance of monetary policy. The expected growth rates of M4N and domestic credit are not intermediate monetary policy targets, but rather indicative projections.

4/ Percentage changes in credit to the public sector and net domestic credit are calculated as the flows during the year excluding valuation adjustments over the stock of debt outstanding at the end of the previous year.

5/ Excluding Securities

6/ NDC to the public sector in 1995 is affected by the inclusion of secondary-market sales of government paper from bank portfolios to the nonbank public.

Table 30. Greece: Monetary Survey 1/

(In billions of drachmas; end of period)

	1994	1995	1996	1997	1998	1999
Net domestic credit	20,121.7	22,414.0	24,140.6	26,445.1	28,438.9	33,680.2
Private sector 2/	7,536.4	9,157.0	10,391.0	11,923.9	13,746.1	17,761.3
Net public sector 3/	12,585.3	13,257.0	13,749.6	14,521.1	14,692.8	15,918.9
Central government 4/	12,131.5	12,783.4	13,414.8	14,271.0	14,203.5	15,824.7
Public enterprises	405.6	449.8	498.0	527.8	795.1	629.7
Public entities	48.2	23.8	-164.0	-277.7	-305.8	-535.5
Net foreign assets (short-term)	1,499.7	1,479.2	3,138.7	293.4	-1,088.8	776.2
Foreign deposits	4,439.0	4,999.1	5,258.9	8,263.4	10,910.3	10,220.1
Foreign assets	5,938.7	6,478.3	8,397.6	8,556.7	9,821.5	10,996.4
Other items (net assets)	-5,866.0	-6,512.8	-8,274.0	-5,912.1	-4,580.5	-6,582.0
Of which:						
Long-term foreign currency liabilities	6,211.0	7,272.6	7,931.4	6,170.4	4,911.6	5,850.8
Long-term foreign currency claims on government	3,294.5	2,750.2	2,129.6	1,578.8	1,082.8	1,029.4
Broad money (M3) 5/	15,755.5	17,380.4	19,005.2	20,826.3	22,770.1	27,874.4
Narrow money (M1) 5/	2,793.5	3,149.0	3,548.0	4,003.0	4,512.5	6,093.3
Currency in circulation	1,687.7	1,863.6	1,941.4	2,182.7	2,205.9	2,702.0
Private sight deposits	1,105.8	1,285.4	1,606.6	1,820.3	2,306.6	3,391.2
Quasi money	11,805.7	13,564.6	15,308.3	16,654.7	16,505.0	17,937.4
Private savings deposits	8,811.5	10,445.4	12,201.7	13,335.3	13,781.4	15,002.2
Private time deposits	2,994.2	3,119.2	3,106.6	3,319.3	2,723.6	2,935.2
Bank bonds	838.4	570.8	59.8	126.7	163.6	78.7
Repos	317.8	96.0	89.2	41.9	1,588.9	3,765.0
Memorandum items: 5/						
M1 plus public sector sight deposits	3,299.4	3,718.1	4,295.8	4,817.7	5,242.8	7,127.7
M3 plus public sector deposits	16,665.0	18,746.6	20,515.0	22,218.6	23,966.5	29,158.5
M3 plus foreign exchange deposits	20,194.4	22,379.5	24,264.1	29,089.6	33,680.4	38,094.7
M4, total drachma financial assets	21,149.4	22,889.6	25,636.4	25,233.3	26,111.4	29,191.2
M4N, broader liquidity indicator	21,987.1	24,852.0	28,649.3	30,883.0	33,921.0	35,801.2

Source: Bank of Greece.

1/ Revised data not comparable to previous years, due to a change in the reporting system. Data reflect the exchange of government-guaranteed credit for government bonds. Also, net credit to the central government in 1994–95 includes capitalized interest on government bonds held by commercial banks.

2/ Includes securities and loans in foreign currency.

3/ Excluding long-term loans in foreign currency by the Bank of Greece.

4/ Net domestic credit to the central government now includes Bank of Greece foreign exchange differences.

5/ The monetary aggregates are defined as follows: narrow money (M1) is currency plus private sight deposits (excluding blocked deposits); broad money (M3) is M1 plus time and savings deposits, bank bonds, and repurchase agreements; total drachma financial assets (M4) is M3 plus private sector holdings of T-bills and government bonds of maturity up to one year. M4N is M4 plus foreign exchange deposits and holdings of money market mutual funds.

Table 31. Greece: Growth of Money and Credit Aggregates 1/

(In percent per annum; end of period)

	1994	1995	1996	1997	1998	1999
Money						
Currency in circulation	11.6	10.4	4.2	12.4	1.1	22.5
M1, narrow money	25.6	12.7	12.7	12.8	12.7	35.0
M3, broad money	8.8	10.3	9.3	9.6	9.3	22.4
M3 plus foreign exchange deposits	8.6	10.8	8.4	19.8	15.8	13.1
Foreign currency deposits	7.8	12.6	5.2	57.1	132.0	-6.3
M4, drachma liquidity indicator	13.9	8.2	12.0	-1.6	3.5	11.8
M4N, broader liquidity indicator	13.7	13.0	15.3	7.8	9.8	5.5
Credit 2/						
Net domestic credit	8.7	9.6	8.3	11.4	...	...
Credit to private sector 3/	13.8	22.0	17.0	15.3	15.0	14.2
Net credit to public sector	6.7	4.8	4.5	9.7	...	...
Of which: Credit to central government	2.4	5.4	0.5	4.3	...	...

Sources: Bank of Greece; and Fund staff calculations.

1/ Figures include capitalized interest on government bonds held by commercial banks. Data also reflect the exchange of government-guaranteed credit for government bonds.

2/ Excluding long-term loans to government in foreign currency by the Bank of Greece.

3/ Including securities and loans in foreign currency.

Table 32. Greece: Growth of Bank Credit to the Private Sector

(End of period)

	1994	1995	1996	1997	1998	1999	2000 1/	
							In billions of drachmas	In percent
Total private sector	13.8	22.0	17.0	15.3	15.0	14.2	17,915.0	100.0
Agriculture	7.0	14.6	5.5	2.8	0.9	9.2	1,275.0	7.1
Manufacturing and mining	11.7	14.4	10.9	5.4	6.1	11.6	3,852.0	21.5
Of which:								
Industry and mining	12.2	13.8	11.7	4.1	4.7	14.2	2,989.0	16.7
Short and medium term	14.5	19.5	20.0	6.0	5.0	14.8	2,406.0	13.4
Long term	7.2	0.4	-11.6	-3.0	3.2	12.1	583.0	3.3
Small-scale industries	9.8	16.5	7.9	10.1	11.0	3.8	863.0	4.8
Trade	18.1	28.7	19.3	22.6	20.5	5.7	4,129.0	23.0
Housing	11.5	19.4	27.5	23.8	21.2	25.5	3,573.0	20.0
Other	21.6	38.0	24.3	23.0	22.5	18.2	5,087.0	28.4
Of which: Consumer credit	65.2	83.4	35.8	27.3	36.8	31.5	1,646.0	9.2

Source: Bank of Greece.

1/ September; provisional data.

Table 33. Greece: Short-term Interest Rates

(In percent)

	Interbank Rates		Deposit Rates		Short-Term Bank Lending Rate			Inflation
	(End of month) (Overnight)	(Monthly average)	One-month term deposits (End of month)	on 12-month term deposits (End of month)	(Monthly average) Total	Enterprises	Households	(12-month change in CPI)
1997								
January	12.4	12.4	11.2	11.3	19.9	...	...	6.8
February	11.9	12.1	10.8	10.3	19.6	...	...	6.5
March	10.4	11.7	10.1	10.1	19.3	...	...	6.0
April	10.5	10.8	9.7	9.7	19.0	...	...	5.9
May	10.9	10.6	9.5	9.6	18.7	...	...	5.4
June	11.0	11.7	10.0	9.6	18.3	...	...	5.6
July	11.5	11.7	10.3	9.6	18.2	...	...	5.4
August	11.4	11.6	10.2	9.6	18.2	...	...	5.6
September	11.3	11.0	10.0	9.5	18.4	...	...	4.9
October	131.7	16.9	17.1	9.5	18.2	...	...	4.7
November	11.1	23.7	12.7	11.3	20.1	...	...	5.2
December	10.8	11.0	11.2	11.2	19.1	...	...	4.7
1998								
January	11.7	15.1	12.7	11.2	19.5	...	...	4.4
February	12.8	13.0	12.8	11.3	19.8	...	...	4.3
March	10.3	13.2	11.2	11.0	19.3	...	...	4.6
April	13.8	11.9	11.2	10.5	18.7	...	...	5.3
May	11.6	11.9	10.9	10.5	18.5	...	...	5.3
June	11.2	13.4	11.1	10.7	18.6	...	...	5.2
July	11.9	12.3	11.0	10.7	18.3	...	...	5.1
August	12.3	12.4	11.4	10.7	18.2	...	...	5.0
September	11.9	11.7	11.2	10.8	18.2	...	...	5.2
October	12.0	11.9	10.6	10.6	18.0	...	...	4.7
November	12.3	12.3	10.5	10.4	18.0	...	...	4.2
December	10.8	11.9	10.4	10.0	17.6	...	...	3.9
1999								
January	10.9	11.4	10.2	9.7	...	15.6	20.3	3.7
February	10.1	10.2	9.4	9.3	...	14.7	20.4	3.7
March	10.2	10.2	9.2	9.2	...	14.8	20.5	3.4
April	10.2	10.2	9.1	8.9	...	14.9	20.3	2.8
May	10.8	10.4	9.1	8.5	...	14.9	20.5	2.4
June	...	10.4	...	8.5	...	15.2	20.4	2.1
July	...	10.3	...	8.4	...	15.0	20.3	2.1
August	...	10.3	...	8.4	...	15.1	20.4	2.0
September	...	10.3	...	8.4	...	15.0	20.5	2.0
October	...	10.6	...	8.4	...	15.0	20.6	2.2
November	...	10.8	...	8.4	...	15.2	20.5	2.6
December	...	9.8	...	8.1	...	14.6	20.3	2.7
2000								
January	...	9.4	...	7.7	...	14.1	19.9	2.6
February	...	9.2	...	7.0	...	13.7	19.7	2.9
March	...	9.1	...	6.6	...	13.5	19.2	3.1
April	...	8.5	...	6.3	...	12.8	18.5	2.6
May	...	8.7	...	6.2	...	12.6	17.9	2.9
June	...	8.4	...	6.2	...	12.5	17.8	2.5
July	...	8.0	...	6.0	...	12.2	15.9	2.7
August	...	8.3	...	6.0	...	12.1	15.5	3.0
September	...	7.9	...	5.8	...	11.8	15.1	3.1
October	...	7.8	...	5.6	...	11.3	15.0	4.0
November	...	7.6	...	5.4	...	11.1	14.9	4.2
December	...	6.2	...	4.8	...	10.1	14.7	3.9

Source: Bank of Greece.

Table 34. Greece: Official Interest Rates

(In percent)

Date of Change	Discount Rate	Overnight Deposit Facility		14-day Refinancing Rate	Lombard Rate	Overdraft Rate on Banks' Current Account with the Bank of Greece
		First Tier	Second Tier			
1995						
3/31	20.5	...	...	...	24.0	28.0
7/27	19.5	...	...	...	23.0	27.0
8/25	18.5	...	...	...	22.0	27.0
12/18	18.0	...	...	...	21.5	27.0
1996						
4/22	17.5	...	...	...	21.0	26.0
12/18	16.5	...	...	...	21.0	25.0
1997						
2/17	15.5	...	...	...	20.0	25.0
3/28	15.5	11.9	9.9	...	20.0	25.0
5/13	14.5	11.9	9.9	...	19.0	24.0
7/25	14.5	11.6	9.6	...	19.0	24.0
8/18	14.5	11.3	9.6	...	19.0	24.0
10/8	14.5	10.9	9.6	...	19.0	24.0
10/31	14.5	10.9	9.6	...	19.0	24.0 1/
1998						
1/7	14.5	10.9	9.6	12.8	19.0	24.0 1/
1/9	14.5	10.9	9.6	12.8	23.0	24.0 1/
1/14	14.5	10.9	9.6	20.0	23.0	24.0 1/
1/21	14.5	10.9	9.6	19.0	23.0	24.0 1/
2/4	14.5	10.9	9.6	18.0	23.0	24.0 1/
2/11	14.5	10.9	9.6	17.5	23.0	24.0 1/
2/18	14.5	10.9	9.6	17.0	23.0	24.0 1/
3/4	14.5	10.9	9.6	16.8	23.0	24.0 1/
3/18	14.5	10.9	9.6	16.0	23.0	24.0 1/
3/26	14.5	10.9	9.6	15.5	23.0	24.0 1/
3/31	14.5	10.9	9.6	15.5	19.0	22.0 1/
4/1	14.5	10.9	9.6	15.3	19.0	22.0
4/8	14.5	10.9	9.6	15.0	19.0	22.0
4/10	2/	10.9	9.6	15.0	19.0	22.0
4/15	...	10.9	9.6	14.8	19.0	22.0
4/22	...	10.9	9.6	14.3	19.0	22.0
4/23	...	11.5	9.8	14.3	19.0	22.0
5/20	...	11.5	9.8	14.0	19.0	22.0
6/3	...	11.5	9.8	13.8	19.0	22.0
7/8	...	11.9	9.8	13.0	19.0	22.0
8/5	...	11.9	9.8	13.0	16.0	22.0
10/14	...	11.9	9.8	12.8	16.0	22.0
12/10	...	11.6	9.8	12.3	15.5	22.0
1999						
1/14	...	11.5	9.8	12.0	13.5	20.0
10/21	...	11.0	9.3	11.5	13.0	20.0
12/16	...	10.3	9.0	10.8	12.3	20.0
12/27	...	10.3	9.0	10.8	11.5	20.0
2000						
1/27	...	9.5	8.5	9.8	11.0	20.0
3/9	...	8.8	8.0	9.3	10.3	20.0
4/20	...	8.0	7.5	8.8	9.5	3/
6/29	...	7.3	4/	8.3	9.0	...
9/6	...	6.5	...	7.5	8.3	...
11/15	...	6.0	...	7.0	7.8	...
11/29	...	5.5	...	6.5	7.3	...
12/13	...	4.8	...	5.8	6.5	...
12/27	...	3.8	...	4.8	5.8	...

Source: Bank of Greece.

1/ Additional interest was charged on new debit balances or an increments in existing ones at the rate of 0.4 percent per day as from October 31, 1997, and was 0.2 percent per day as from December 29, 1997. As from March 31, 1997, the above surcharge has been abolished.
2/ This credit facility was abolished on April 10, 1998.
3/ Effective March 10, 2000, debit balances on credit institutions' current accounts are covered by th e Lombard facility, in compliance with the provisions of the HERMES Payments System.
4/ Effective June 29, 2000, the second tier of the deposit ficility has been abolished, and from now on the interest rates concerns the single account of the deposit facility.

Table 35. Greece: Bank Interest Rates

(End of period; in percent per annum)

	1994	1995	1996				1997				1998				1999				2000			
			I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Lending rates																						
Bank of Greece																						
Rediscount rate	20.5	18.0	18.0	17.5	17.5	16.5	15.5	14.5	14.5	14.5	14.5 1/	...	...	...	...	...	...	...	...	...	...	...
Lombard facility	24.0	21.5	21.5	21.0	21.0	21.0	20.0	19.0	19.0	19.0	19.0	19.0	16.0	15.5	13.5	13.5	13.5	11.5	10.3	9.0	8.3	5.8
Maximum penalty rate	30.0	27.0	27.0	26.0	26.0	25.0	25.0	24.0	24.0	24.0	22.0	22.0	22.0	22.0	20.0 2/	...	...	...	...	...	...	...
Commercial banks																						
Short term	26.4	21.1	21.2	21.2	20.6	20.2	19.3	18.3	18.4	19.1	19.3	18.6	18.2	17.6 3/	14.8	15.2	15.0	14.6	13.5	12.5	11.8	10.1
Long term	25.4	19.5	19.5	18.8	18.8	18.7	17.2	16.0	16.3	17.5	16.7	16.6	16.9	16.0 3/	13.7	12.9	13.5	13.2	13.0	11.6	11.4	9.8
Deposit rates																						
Time deposits																						
- 1 month	16.7	14.2	13.0	13.1	12.2	12.1	10.1	10.0	10.0	11.2	11.2	11.1	11.2	10.4	...	...	...	...	...	...	...	...
- 3 months	17.7	14.3	13.7	13.9	12.8	12.6	10.6	10.3	10.4	13.2	11.6	11.8	12.2	10.5	...	...	...	...	...	...	...	...
- 12 months	18.6	14.9	14.7	14.4	13.3	12.9	10.1	9.6	9.5	11.2	10.9	10.6	10.7	10.1	9.2	8.5	8.4	8.1	6.6	6.2	5.8	4.8
Interbank rates (overnight)	17.0	14.1	13.8	14.1	13.8	12.6	10.4	11.0	11.3	10.8	10.3	11.2	11.9	10.8	10.2	10.3	10.2	9.4	8.8	8.2	8.0	6.0

Source: Bank of Greece.

1/ This credit facility has been abolished from April 10, 1998.
2/ This was merged with the Lombard facility from March 10, 2000.
3/ Up do December 1998, the average rate regarded all short- or long-term credit categories to enterprises and households.

Table 36. Greece: Interest Rates on Government Paper

(End of period, in percent per annum)

	Treasury Bill Yield			Government Drachma Bonds						Inflation
	3-month	6-month	12-month	2-year savings certificates	3-year 1/	5-year 1/	7-year 1/	10-year 1/	15-year 1/	20-year 1/	(12-month change in CPI)
1997											
January	9.8	10.1	10.9	...	10.2	...	...	...	...	...	6.8
February	9.4	9.7	10.5	...	...	...	...	...	...	...	6.5
March	9.2	9.5	10.3	...	10.1	9.6	9.1	...	...	...	6.0
April	9.2	...	10.3	...	...	...	...	...	...	...	5.9
May	8.5	8.8	9.6	...	...	...	...	...	...	...	5.4
June	...	...	9.6	...	9.6	9.2	9.0	8.9	...	...	5.6
July	...	...	9.6	...	...	9.6	9.5	9.3	...	...	5.4
August	8.4	8.7	9.5	...	...	...	...	...	...	...	5.6
September	...	...	9.5	...	...	9.7	9.7	9.1	...	...	4.9
October	...	...	11.3	...	10.0	10.1	9.7	9.2	...	...	4.7
November	13.3	...	11.2	...	...	...	...	...	...	...	5.2
December	12.9	12.7	11.4	...	...	...	...	...	...	...	4.7
1998											
January	13.9	13.8	12.4	...	...	...	...	...	...	...	4.4
February	13.1	...	12.7	...	...	...	...	...	...	...	4.3
March	12.8	...	10.8	...	...	...	...	7.9	...	...	4.6
April	10.7	...	11.1	...	...	8.6	8.6	...	...	...	5.3
May	10.8	11.3	11.3	...	9.7	...	...	7.8	7.7	...	5.3
June	11.8	11.9	11.7	...	10.0	9.0	8.4	...	...	...	5.2
July	11.5	11.7	11.5	...	...	...	...	7.9	7.4	...	5.1
August	...	11.5	13.2	10.8	9.9	...	7.8	...	...	...	5.0
September	...	12.3	11.6	...	...	...	...	8.3	...	...	5.2
October	12.6	12.6	11.0	10.8	...	...	...	...	...	...	4.7
November	...	...	10.5	10.3	9.4	8.8	...	7.8	7.3	...	4.2
December	11.1	10.5	10.3	10.0	...	...	8.3	7.2	...	...	3.9
1999											
January	...	...	9.5	10.0	7.6	6.8	...	6.1	6.3	...	3.7
February	9.5	9.5	9.2	9.2	...	...	5.9	...	...	...	3.7
March	8.9	8.7	8.8	9.0	7.1	...	...	6.0	6.3	...	3.4
April	...	...	8.7	8.6	...	6.3	6.1	...	...	...	2.8
May	...	...	8.7	8.6	6.5	...	...	5.7	5.9	...	2.4
June	9.4	9.0	8.7	8.6	...	6.1	...	...	...	...	2.1
July	...	...	8.9	8.6	7.3	...	...	6.4	6.5	...	2.1
August	9.8	9.9	8.8	...	...	7.3	...	...	...	...	2.0
September	...	...	8.8	8.6	7.3	...	...	6.8	6.7	...	2.0
October	...	...	8.7	8.6	...	7.1	7.5	6.9	...	...	2.2
November	...	...	9.1	8.6	7.6	...	6.8	6.4	7.3	...	2.6
December	9.2	9.1	8.6	8.2	...	6.4	...	...	...	...	2.7
2000											
January	...	...	...	...	...	6.4	...	6.6	...	6.8	2.6
February	...	...	...	...	6.4	...	...	6.4	...	...	2.9
March	8.5	7.8	6.7	6.9	...	6.0	...	...	...	6.5	3.1
April	...	...	6.4	...	6.0	...	...	6.1	...	...	2.6
May	...	...	6.4	...	...	6.4	...	...	...	6.4	2.9
June	8.1	7.5	6.4	...	6.1	...	...	6.0	...	...	2.5
July	...	...	6.2	...	...	6.1	...	...	...	6.3	2.7
August	...	...	...	...	6.1	...	...	6.0	...	...	3.0
September	6.7	5.8	6.4	...	...	6.0	...	...	...	6.4	3.0
October	...	...	...	...	...	...	...	6.0	...	...	...
November	5.7	...	5.3	...	...	...	...	...	...	6.3	4.2
December	...	4.6	4.6	...	5.1	...	...	5.8	...	...	3.9

Sources: Bank of Greece; and IMF, *International Financial Statistics*.

1/ Tender rate at issue, which may vary from the coupon rate.

Table 37. Greece: Exchange Rates

(Percentage changes) 1/

	1995	1996	1997	1998	1999	2000
Rate of Greek drachma against:						
U.S. dollar, period average	4.7	-3.8	-11.8	-7.6	-3.3	-16.4
End of period	1.3	-4.0	-12.6	0.0	-14.0	-10.2
Euro (ECU), period average	-4.1	-0.6	-2.3	-6.9	1.7	-3.2
End of period	-3.0	-1.0	-1.7	-5.4	-0.1	-3.0
DM, period average	-7.5	1.1	1.6	-5.9	0.9	-3.2
End of period	-6.3	4.1	0.7	-6.0	0.9	-3.0
Nominal effective exchange rate						
Bank of Greece index 2/	-3.5	-1.1	-1.9	-5.9	-0.9	-6.2
IFS	-3.0	-1.7	-2.0	-6.0	-0.5	-4.9 3/
Real effective exchange rate						
Manufacturing unit labor costs (BoG)	7.5	4.9	4.0	-4.8	1.0	-4.2
Relative normalized unit labor costs (IMF)	6.5	5.7	3.5	-3.4	1.6	-3.5 3/
Relative producer prices (BoG)	1.0	3.6	0.4	-1.9	0.2	-2.3
Relative consumer prices (BoG)	2.7	4.8	1.8	-2.8	0.6	-5.2
EU countries	1.9	4.1	2.5	-3.4	2.3	-3.0
Relative consumer prices (IFS)	3.4	4.4	0.9	-2.7	0.1	-6.1 4/
Memorandum items:						
Drachma per U.S. dollar						
End of period	237.0	247.0	282.6	282.6	328.4	365.6
Period average	231.7	240.7	273.1	295.5	305.7	365.4
Drachma per DM						
End of period	165.5	159.0	157.9	168.5	168.5	174.2
Period average	161.6	160.0	157.5	168.0	166.6	172.1

Sources: Bank of Greece; IMF, *International Financial Statistics*; and Fund staff calculations.

1/ Foreign currency per drachma; a negative sign denotes a depreciation.
2/ Non-oil trade weighted vis-a-vis 15 competitor countries (1981–84 weights).
3/ January - July.
4/ January - November.

Table 38. Greece: Official Reserves

(In millions of U.S. dollars; end of period)

	1994	1995	1996	1997	1998	1999				2000			
						Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
Gold	850.9	871.7	833.2	684.5	685.3	858.4	858.9	860.1	781.8	783.2	784.5	785.4	753.2
SDRs	0.3	0.0	0.6	57.1	49.4	48.2	48.6	52.3	48.3	49.2	46.6	46.5	...
Reserve position in the Fund	166.0	169.4	163.5	153.7	268.1	338.5	372.4	408.8	390.3	382.3	344.6	299.9	296.8
Foreign exchange	14,321.6	14,611.0	18,109.6	12,441.2	17,188.4	20,376.1	19,726.1	20,755.8	17,726.0	15,860.7	14,536.4	13,788.3	13,115.5
Total	15,338.8	15,652.1	19,106.9	13,336.5	18,191.2	21,621.2	21,006.0	22,077.0	18,946.4	17,075.4	15,712.1	14,920.1	...
Memorandum item:													
Official reserves in months of current year imports	9.0	8.2	9.5	6.8	9.4	9.8	9.5	10.0	8.6	7.7	7.1	6.8	...

Sources: IMF, *International Financial Statistics*; and Bank of Greece.

Table 39a. Greece: Balance of Payments, 1994-98

(In millions of U.S. dollars; on old settlements basis)

	1994	1995	1996	1997	1998
Imports, c.i.f.	18,742	22,929	24,136	23,643	23,247
Of which: Petroleum products	1,943	2,230	2,880	2,784	2,024
Exports, f.o.b.	5,219	5,783	5,770	5,372	5,566
Of which: Petroleum products	606	491	652	592	727
Trade balance	-13,523	-17,146	-18,366	-18,271	-17,681
Of which: Non-oil	-12,186	-15,407	-16,138	-16,079	-16,384
Oil	-1,337	-1,739	-2,228	-2,192	-1,297
Invisible receipts	18,767	20,770	20,444	19,965	21,794
Travel	3,905	4,136	3,723	3,771	5,186
Transportation	1,957	2,190	2,264	2,104	2,281
Convertible drachma accounts	2,640	2,810	3,006	3,060	2,827
Private transfers	2,657	3,071	2,996	2,924	3,028
EU transfers (net)	4,307	4,968	5,057	4,622	4,865
Other	3,301	3,596	3,399	3,484	3,607
Invisible payments	5,366	6,475	6,618	6,528	7,757
Of which: Interest and dividends	2,101	2,683	3,003	2,482	2,716
Invisibles balance	13,401	14,296	13,826	13,437	14,037
Current account balance	-122	-2,850	-4,540	-4,834	-3,644
As percent of GDP	-0.1	-2.5	-3.7	-4.0	-3.0
Capital account balance 1/	6,903	3,161	8,657	111	8,527
Private capital	3,787	2,341	7,216	-4,371	-1,452
Long term	3,439	3,930	7,560	-1,496	2,405
Entrepreneurial 2/	2,125	3,731	4,844	2,620	2,806
Real estate	956	1,040	1,044	967	903
Banks	29	6	6	-5	457
Suppliers' credits 3/	-19	0	0	0	-1
Other	348	-847	1,666	-5,078	-6,571
Short term	348	-1,589	-344	-2,874	954
Banks	60	-2,116	-603	-3,344	588
Of which: Foreign exchange deposits	60	-2,173	-686	-3,738	613
Suppliers' credits 3/	288	527	259	470	366
Official capital	3,116	820	1,441	4,482	9,979
Long term	2,337	-25	4,431	3,258	10,954
Bank of Greece	-1,791	-2,385	-2,194	-2,570	-2,082
Central government	3,830	2,596	6,519	6,850	13,452
Public enterprises	103	-190	-154	-979	-371
Other 4/	195	-46	259	-44	-44
Short term	779	845	-2,990	1,225	-975
Bank of Greece	0	0	0	974	-975
Central government	873	845	-2,990	251	0
Other	-94	0	0	0	0
Errors and omissions	-415	-342	78	177	-428
Overall balance	6,367	-30	4,196	-4,546	4,855
Financing items:					
Use of IMF credit	0	0	0	0	0
Change in clearing accounts	0	0	0	-6	0
Change in reserves (+: decrease/-: increase)	-6,738	-304	-3,442	-5,840	4,855
Allocation of SDRs	0	0	0	0	0
Changes in the valuation of official gold (+:decrease)	372	334	-754	-1,302	400
Stock of foreign exchange reserves (IFS)	14,322	14,611	17,337	12,441	17,188

Sources: Bank of Greece, *Monthly Statistical Bulletin*; data provided by the authorities; and IMF, *International Financial Statistics.*

1/ Private and official capital, excluding errors and omissions.
2/ Includes direct investment and enterprise borrowing abroad.
3/ Includes official suppliers' credits.
4/ Borrowing by the Hellenic Industrial Development Bank, the Agricultural Bank of Greece, and the National Mortgage Bank of Greece.

Table 39b. Greece: Balance of Payments, 1997-2000

(In millions of U.S. dollars; on new settlements basis)

	1997	1998	1999	1999 Jan.-Oct.	2000 Jan.-Oct.
Current and capital account	-4,843	-3,647	-5,102	-3,329	-5,739
(In percent of GDP)	-4.0	-3.0	-4.0	-2.6	-5.1
Goods: exports	6,428	6,672	8,547	6,990	8,332
Oil	601	727	1,148	865	1,811
Non-oil	5,827	5,945	7,399	6,125	6,521
Goods: imports	23,667	23,305	26,493	21,273	25,188
Oil	2,805	2,024	2,674	1,999	3,947
Non-oil	20,862	21,281	23,819	19,274	21,241
Balance on goods	-17,239	-16,634	-17,947	-14,282	-16,856
(In percent of GDP)	-14.2	-13.7	-14.4	-11.3	-14.9
Services: credit	10,119	11,189	16,494	13,773	16,333
Travel	5,151	6,188	8,785	7,761	8,210
Transportation	1,876	2,173	5,141	3,893	6,385
Other	3,092	2,827	2,569	2,119	1,738
Services: debit	3,669	4,380	9,242	7,363	9,431
Travel	1,327	1,749	3,989	3,238	3,897
Transportation	368	486	2,387	1,841	3,327
Other	1,974	2,145	2,866	2,284	2,208
Balance on goods and services	6,450	6,808	7,252	6,409	6,902
(In percent of GDP)	5.3	5.6	5.8	5.1	6.1
Income: credit	1,255	1,534	2,553	2,068	2,262
Income: debit	2,824	3,072	3,230	2,637	3,046
Balance on goods, services, and income	-12,357	-11,364	-11,370	-8,442	-10,738
(In percent of GDP)	-10.2	-9.4	-9.1	-6.7	-9.5
Current transfers: credit	7,554	8,207	7,201	5,812	5,723
General government	4,623	4,882	4,548	3,570	3,549
Other	2,930	3,325	2,653	2,242	2,174
Current transfers: debit	40	489	932	699	724
General government	13	12	200	67	136
Other	28	477	732	632	588
Financial account 1/	6,071	3,782	4,970	2,864	7,262
Direct investment	1,617 1/	338	33	298 1/	-1,253 1/
Direct investment abroad	...	-266	539	...	...
Direct investment in Greece	...	72	572	...	...
Portfolio investment	1,605 1/	12,058	6,452	6,275 1/	7,706 1/
Assets	...	-419	444	...	...
Equity securities	...	-34	6	...	...
Debt securities	...	-385	437	...	...
Liabilities	...	11,639	6,896	...	...
Equity securities	...	1,673	-2,613	...	...
Debt securities	...	9,966	9,509	...	...
Other investments	-2,992	-3,759	-760	-1,858	-3,253
Assets	-8,506	-6,402	-4,802	-3,468	-910
Liabilities	5,513	2,643	4,042	1,610	-2,343
General government	3,633	2,258	797	1,332	-108
Other sectors	1,880	385	3,245	279	-2,235
Change in reserves	5,841	-4,855	-755	-1,852	4,062
Net errors and omissions	-1,227	-135	131	465	-1,523
Stock of foreign exchange reserves (IFS)	12,441	17,188	17,726	18,735	13,673

Sources: Bank of Greece; and *International Financial Statistics*.

1/ Net figure.

Table 40. Greece: External Services and Transfers

(In millions of U.S. dollars; on old settlement basis)

	1995			1996			1997			1998		
	Receipts	Payments	Balance	Receipts	Payments	Balance	Receipts	Payments	Balance	Receipts	Payments	Balance
Services	12,731	6,445	6,286	12,391	6,586	5,805	12,429	6,504	5,925	13,901	7,714	6,187
Transportation	2,190	422	1,768	2,264	431	1,833	2,111	394	1,717	2,281	532	1,749
Travel	4,136	1,323	2,813	3,723	1,210	2,513	3,772	1,327	2,445	5,186	1,756	3,430
Investment income	1,008	2,683	-1,675	971	3,003	-2,032	962	2,482	-1,520	1,194	2,716	-1,522
Interest	986	2,489	-1,503	908	2,818	-1,910	929	2,371	-1,442	1,140	2,545	-1,405
Dividends and profits	22	194	-172	63	185	-122	33	111	-78	54	171	-117
Convertible drachma account	2,810	0	2,810	3,006	0	3,006	3,060	0	3,060	2,827	0	2,827
Other, including government	2,587	2,017	570	2,427	1,942	485	2,524	2,301	223	2,413	2,710	-297
Unrequited transfers	8,039	31	8,008	8,053	31	8,022	7,538	37	7,501	7,893	43	7,850
Private	3,071	31	3,040	2,996	31	2,965	2,916	37	2,879	3,028	43	2,985
Emigrant remittances	2,982	0	2,982	2,894	0	2,894	2,816	0	2,816	2,925	0	2,925
Other	89	31	58	102	31	71	100	37	63	103	43	60
Public 1/	4,968	0	4,968	5,057	0	5,057	4,622	0	4,622	4,865	0	4,865
Total services and transfers	20,770	6,476	14,294	20,444	6,617	13,827	19,967	6,541	13,426	21,794	7,757	14,037

Source: Bank of Greece.

1/ Receipts reflect net EU transfers.

Table 41a. Greece: External Current Account Deficit and Financing

(In percent of GDP; on old settlements basis)

	1994	1995	1996	1997	1998
Trade balance	-13.7	-14.6	-14.8	-15.1	-14.6
Non-oil balance	-12.3	-13.1	-13.0	-13.3	-13.5
Exports, f.o.b.	4.7	4.5	4.1	3.9	4.0
Imports, c.i.f.	17.0	17.6	17.1	17.2	17.5
Oil balance	-1.4	-1.5	-1.8	-1.8	-1.1
Invisible balance	13.6	12.2	11.1	11.1	11.6
Invisible receipts	19.0	17.7	16.4	16.5	18.0
Travel	3.9	3.5	3.0	3.1	4.3
EU transfers (net)	4.4	4.2	4.1	3.8	4.0
Other	10.7	9.9	9.4	9.5	9.7
Invisible payments	5.4	5.5	5.3	5.4	6.4
Of which: Interest and dividends	2.1	2.3	2.4	2.0	2.2
Current account balance	-0.1	-2.4	-3.7	-4.0	-3.0
Financing:					
Nondebt capital	3.5	1.6	5.6	-4.0	-1.9
Change in reserves	-6.8	0.3	2.8	-4.9	4.0
Debt financing, net 1/	3.0	0.9	1.4	4.3	8.6
Memorandum items:					
GDP (drachma)	23,983.5	27,235.2	29,935.1	33,103.8	35,872.5
Dr/US$ exchange rate (period average)	242.6	231.7	240.7	273.1	295.5
GDP(millions of US$)	98,859.0	117,564.0	124,361.0	121,234.0	121,384.0

Sources: Bank of Greece; and IMF, *International Financial Statistics.*

1/ Including residual items.

Table 41b. Greece: External Current Account Deficit and Financing

(In percent of GDP; on new settlements basis)

	1997	1998	1999
Trade balance	-14.2	-13.7	-14.4
Non-oil balance	-12.4	-12.6	-13.1
Exports, f.o.b.	4.8	4.9	5.9
Imports, c.i.f.	17.2	17.5	19.1
Oil balance	-1.8	-1.1	-1.2
Services balance	5.3	5.6	5.8
Travel	3.2	3.7	3.8
Transportation	1.2	1.4	2.2
Other	0.9	0.6	-0.2
Income balance	-1.3	-1.3	-0.5
Net investment income	1.2	1.2	1.2
Transfers balance	6.2	6.4	5.0
EU transfers (net)	3.8	4.0	3.5
Current and capital account balance	-4.0	-3.0	-4.0
Financial account	5.0	3.1	4.0
Direct investment	1.3	0.3	0.0
Portfolio investment	1.3	9.9	5.2
Other investment	-2.5	-3.1	-0.6
Change in reserves	4.8	-4.0	-0.6
Memorandum items:			
GDP (drachma)	33,103.8	35,872.5	38,147.2
Dr/US$ exchange rate (period average)	273.1	295.5	305.7
GDP(millions of US$)	121,234.0	121,384.0	125,024.0

Sources: Bank of Greece; and IMF, *International Financial Statistics.*

Table 42a. Greece: Current Account of the Balance of Payments

(In millions of U.S. dollars; on old ESA79 national accounts basis)

	1994	1995	1996	1997	1998
Exports of goods	9,816.5	11,595.7	12,373.3	11,688.7	11,685.5
Imports of goods	21,596.6	26,483.3	27,861.6	26,390.8	27,042.0
Trade balance	-11,780.2	-14,887.6	-15,488.2	-14,702.0	-15,356.5
Percent of GDP	-11.9	-12.7	-12.5	-12.1	-12.7
Exports of nonfactor services	6,275.7	6,785.3	7,143.0	7,148.7	8,098.4
Of which: Tourism	4,669.0	4,976.3	5,330.5	5,451.9	6,397.3
Imports of nonfactor services	2,134.4	2,503.2	2,467.3	2,372.0	2,689.4
Of which: Tourism	1,428.7	1,561.3	1,528.0	1,589.0	1,864.8
Balance of nonfactor services	4,141.3	4,282.1	4,675.7	4,776.7	5,408.9
Percent of GDP	4.2	3.6	3.8	3.9	4.5
Net factor income from abroad	874.3	1,046.3	821.3	694.0	439.9
Net private transfers	3,518.1	4,234.6	4,202.5	3,977.5	4,229.7
Net official transfers	2,774.5	2,488.5	2,564.5	2,183.8	2,063.1
Of which: EU transfers 1/	2,344.2	2,353.4	2,506.7	2,156.3	2,266.1
Balance of factor income and transfers	7,166.9	7,769.6	7,588.3	6,855.3	6,732.7
Percent of GDP	7.2	6.6	6.1	5.7	5.5
Current account balance	-472.0	-2,836.0	-3,224.2	-3,070.0	-3,214.9
Percent of GDP	-0.5	-2.4	-2.6	-2.6	-2.7
Balance of factor income and transfers (including all PIP transfers) 2/	8,355.0	9,158.7	9,865.2	9,411.6	9,744.2
Percent of GDP	8.5	7.9	8.0	7.8	8.1
Current account balance (including all PIP transfers)	716.2	-1,446.8	-947.4	-513.8	-203.4
Percent of GDP	0.7	-1.2	-0.8	-0.4	-0.2
Memorandum items:					
Current account excluding EU transfers	-2,816.1	-5,189.4	-5,730.9	-5,226.4	-5,481.0
Percent of GDP	-2.8	-4.4	-4.6	-4.3	-4.5
Total EU transfers (BoG)	4,307.0	4,968.0	5,057.0	4,622.0	4,865.3
Percent of GDP	4.4	4.2	4.1	3.8	4.0
Total EU transfers (Budget)	4,586.0	4,649.9	5,847.8	4,747.9	4,993.6
Percent of GDP	4.6	4.0	4.7	3.9	4.1
Total transfers to PIP 2/	1,188.2	1,389.2	2,276.8	2,556.2	3,011.5
Percent of GDP	1.2	1.2	1.8	2.1	2.5

Sources: Ministry of National Economy; IMF, *International Financial Statistics*, and Fund staff calculations.

1/ Excludes official EU transfers to the public investment program.
2/ PIP: Public Investment Program.

Table 42b. Greece: Current Account of the Balance of Payments

(In millions of U.S. dollars; on ESA95 national accounts basis)

	1995	1996	1997	1998	1999
Exports of goods	12,273	12,534	12,098	12,585	12,444
Imports of goods	26,600	28,999	28,845	30,943	29,827
Trade balance	-14,327	-16,465	-16,747	-18,359	-17,383
(In percent of GDP)	-12.2	-13.2	-13.8	-15.1	-13.9
Exports of services	8,448	9,258	11,458	11,519	12,763
Of which: Tourism	6,169	6,107	6,413	6,502	7,866
Imports of services	2,720	2,715	3,858	4,127	5,905
Of which: Tourism	928	1,570	1,729	1,824	2,950
Services balance	5,727	6,544	7,599	7,392	6,858
(In percent of GDP)	4.9	5.3	6.3	6.1	5.5
External balance of goods and services	-8,600	-9,922	-9,148	-10,967	-10,525
Balance of primary income	3,720	3,470	2,790	2,758	3,310
Net current transfers	3,826	3,498	3,512	3,450	3,199
Balance of primary incomes and current transfers	7,546	6,968	6,302	6,207	6,509
Current external balance	-1,054	-2,954	-2,846	-4,759	-4,016
(In percent of GDP)	-0.9	-2.4	-2.3	-3.9	-3.2
Net capital transactions	974	1,742	2,357	2,751	2,775
Net lending (+)/net borrowing	-79	-1,212	-489	-2,008	-1,240
(In percent of GDP)	-0.1	-1.0	-0.4	-1.7	-1.0

Sources: Ministry of National Economy; IMF, *International Financial Statistics*, and Fund staff calculations.

Table 43. Greece: Selected Indicators for Trading Partners 1/

(Annual changes, in percent)

	1994	1995	1996	1997	1998	1999	2000
Output and demand in partner countries (Export-weighted market growth) 2/							
Real GDP 3/	2.2	2.9	1.7	2.0	2.4	2.2	3.9
Real total domestic demand 4/	3.0	2.6	1.9	2.3	3.5	2.9	3.3
Volume of merchandise imports 3/							
Total	4.6	9.8	1.6	4.8	7.6	2.9	9.1
Non-oil	4.7	10.7	1.9	5.2	7.0	3.9	10.1
Costs and prices of partner suppliers (Import-weighted) 5/							
Unadjusted for exchange rate changes 6/							
GDP deflators 4/	2.6	2.9	2.4	1.8	1.8	1.1	1.4
Consumer prices 4/	2.9	2.8	2.4	1.8	1.5	1.3	2.2
In U.S. dollar terms							
GDP deflators 4/	3.7	10.7	0.7	-8.2	-1.0	-1.2	-9.1
Consumer prices 4/	4.0	10.6	0.7	-8.2	-1.3	-1.0	-8.3
Export unit values 3/							
Total	3.1	11.3	0.2	-8.1	-4.6	-1.7	0.8
Non-oil	3.4	11.4	-0.8	-8.6	-2.5	-3.9	-3.6
Costs and prices of advanced economy trading partners (Export weighted, in U.S. dollar terms) 2/ 4/							
Export unit values	2.4	10.7	-0.1	-8.1	-2.4	-3.0	-3.2
Unit labor costs	-2.7	7.5	-0.4	-9.7	-1.9	-2.9	-11.4
World market prices for nonfuel commodities 7/ (in U.S. dollar terms)							
Weighted by:							
Commodity composition of Greek exports	15.9	11.4	-2.7	-3.1	-15.4	-10.0	2.6
Commodity composition of Greek imports	15.2	10.3	-1.5	-2.8	-15.8	-9.6	2.1

Source: IMF, WEO database.

1/ Except for nonfuel commodity prices (see footnote 7 below), these composites are averages of percentage changes of data for each trading partner (as specified in footnotes 3 and 4 below) weighted by their share in exports or imports, as appropriate, of Greece.

2/ Weights are proportional to averages of 1997/99 exports of Greece to partner countries as specified in footnotes 3 and 4 below.

3/ Based on data for partner countries that together account for at least 95 percent of exports or imports, as appropriate, of Greece.

4/ Based on data for advanced economy partner countries only.

5/ Weights are proportional to averages of 1997/99 imports of Greece from partner countries as specified in footnotes 3 and 4 above.

6/ That is, weighted averages of percentage changes in indices expressed in national currencies of advanced economy partner countries.

7/ Based on averages of world market prices for component nonfuel commodities weighted by the 1996–98 composition of commodity trade (exports and imports) of Greece.

Table 44. Greece: Capital Account

(In millions of U.S. dollars; on old settlements basis)

	1994	1995	1996	1997	1998
Nondebt capital flows	3,489	1,808	6,951	-4,835	-2,274
Enterpreneurial capital 1/	2,125	3,731	4,844	2,620	2,806
Real estate investment	956	1,040	1,044	967	903
Deposits with credit institutions	60	-2,116	-603	-3,344	588
Other private capital flows	348	-847	1,666	-5,078	-6,571
Debt financing	3,414	1,353	1,706	4,948	10,801
Medium and long term	2,346	-19.1	4,437	3,253	11,410
Bank of Greece, net	-1,791	-2,385	-2,194	-2,570	-2,082
Disbursements	0	0	0	0	0
Amortization	1,791	2,385	2,194	2,570	2,082
Central government, net	3,830	2,596	6,519	6,850	13,452
Disbursements	4,738	4,108	9,755	9,517	16,932
Amortization	9,083	1,513	3,236	2,667	3,481
Public enterprises, net	103	-190	-153	-979	-371
Disbursements	796	623	554	308	747
Amortization	693	813	708	1,286	1,119
State credit institutions, net 2/	195	-46	259	-44	-45
Disbursements	258	0	318	0	0
Amortization	63	46	59	44	45
Commercial banks, net	29	6	6	-5	457
Disbursements	45	28	26	15	475
Amortization	15	23	21	20	18
Suppliers' credit	-19	0	0	0	-1
Short term	1,067	1,372	-2,731	1,695	-609
Bank of Greece	0	0	0	974	-975
Central government	873	845	-2,990	251	0
Suppliers' credit	288	527	259	470	366
Public enterprises	-94	0	0	0	0
Errors and omissions	-415	-342	78	187	-429
Memorandum items:					
Current account balance	-122	-2,850	-4,540	-4,834	-3,644
Public sector gross borrowing 3/	5,795	4,732	10,627	9,824	17,679
Public sector net borrowing 3/	2,339	-25	4,431	3,258	10,955

Source: Bank of Greece.

1/ Includes some debt-creating capital flows in the form of enterprise borrowing abroad.

2/ Borrowing by the Helenic Industrial Development Bank, the Agricultural Bank of Greece, and the National Bank of Greece.

3/ Medium and long term only.

Table 45. Greece: General Government External Debt 1/

(In millions of U.S. dollars; end of period)

	1994	1995	1996	1997	1998	1999 Est.
Portfolio investment (bonds)	13,408	14,753	17,221	19,372	24,057	23,105
Loans	8,638	8,645	7,604	6,689	4,897	4,523
Long term	8,478	8,485	7,444	6,529	4,738	4,363
Central government	8,446	8,457	7,431	6,529	4,738	4,363
Local government	32	28	13	0	0	0
Suppliers' credits	160	160	160	160	159	160
Military debt	3,505	3,881	3,440	3,107	3,174	3,372
Total debt	25,551	27,279	28,265	29,167	32,129	31,000
(in percent of GDP)	26	23	23	24	26	25
Distribution by creditor 2/						
Official creditors	4,128	4,722	3,866	3,590	3,117	2,843
International institutions	2,767	2,478	1,677	1,373	757	596
Governments	90	79	43	35	30	8
European Investment Bank	1,271	2,165	2,146	2,182	2,329	2,239
Private creditors	17,918	18,676	20,959	22,471	25,838	24,785
Bank loans	4,350	3,762	3,578	2,939	1,622	1,520
Bonds	13,408	14,753	17,221	19,372	24,057	23,105
Other	160	160	160	160	159	160
Total debt	22,046	23,398	24,825	26,061	28,954	27,628
Memorandum item:						
Private/total debt	81.3	79.8	84.4	86.2	89.2	90

Sources: Bank of Greece; and Ministry of Finance.

1/ Including external borrowing by the Bank of Greece on behalf of the central government prior to 1994. Does not include drachma-denominated bonds held by nonresidents because of the high volatility of ownership related to the operation of secondary markets.

2/ Excluding military debt.

Table 46. Greece: General Government External Debt Service

(In millions of U.S. dollars)

	1995	1996	1997	1998	1999
A. Interest payments	1,921.0	1,938.0	1,887.0	2,047.0	1,927.0
B. Amortization	3,395.0	3,710.0	5,236.0	5,562.0	4,320.0
C. Suppliers' credit 1/	0.3	0.2	0.1	0.7	...
Total (A + B + C)	8,933.2	5,648.2	7,123.1	7,609.7	6,247.0
Memorandum items:					
Debt service ratio 2/	33.6	21.5	28.1	27.8	18.0
Current account receipts	26,533.2	26,214.0	25,337.7	27,359.6	34,795.3

Source: Bank of Greece.

1/ Medium and long term only. Includes both interest and amortization payments.
2/ Debt service (total: A + B + C) in percent of current account receipts.