The convergence experience of the Greek economy in the EU: lessons for EU accession countries

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Abstract:

Greece joined the EU in 1981 but economic convergence started only in the mid-1990s. This paper argues that the strong growth performance of the Greek economy on the way to the euro (adopted in 2001) and in more recent years is due to better macroeconomic policies — fiscal consolidation and significantly reducing inflation—and structural reforms—financial labor, and product market liberalization—that have been found in the empirical growth literature to lead to faster growth, as well as some temporary reasons, such as the substantial decline in interest rates to euro area levels. In contrast, the divergence in the period 1980-1995 was due to steps backwards in many of these areas. The lesson of the Greek convergence experience in the EU for the accession countries is that EU participation alone does not lead to sustainable convergence, good policies do.

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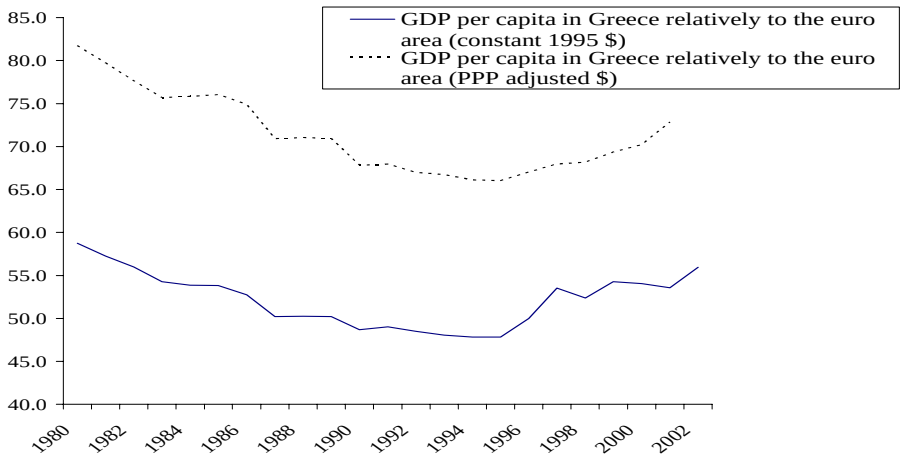
I. INTRODUCTION

The Greek growth experience in the EU consists of two periods: 1981-1995, a divergence period; and 1996-2002, a convergence period. Greece became the tenth member of the EU in January 1981 and the twelfth member of the euro area in January 2001. Greece joined the EU with GDP per capita at 59 percent of the average in the countries that are in the euro area today. At the end of 2002, Greece's per capita GDP relative to the euro area had fallen to 56 percent. Has Greece's experience in the EU been one of divergence? The answer is positive for the period up to the mid-1990s (Figure 1)—Greece's relative per capita output fell by 11 percentage points during this period. However, Greece started converging in the second half of the 1990s, and by the end of 2002 it had recovered 3/4 of the lost ground. In per capita terms, Greece has grown faster than the euro area every year since 1996, by an annual average of 1.5 percentage points, compared with slower growth by an annual average of 1.4 percentage points in the period 1981-1995. What explains these two trends? What caused the break in the mid-1990s? Will Greece continue converging?

Figure 1: Greece, growth performance in per capita terms, 1980-2002



The strong growth performance of the Greek economy on the way to the euro and in more recent years, compared with a very disappointing performance in the fifteen years following EU entry is not a puzzle. It can be explained by better macroeconomic policies—fiscal consolidation and price stability—and structural reforms—reducing the role of the state in the economy and liberalizing financial, labor, and product markets—factors that have been found to lead to faster growth in the

empirical growth literature. Temporary factors also played a role, such as the substantial decline in interest rates to euro area levels in recent years. Some of the reforms may have been difficult to be accepted by the Greek public without the need to meet the Maastricht criteria, and, in particular on structural issues, without also being introduced in other EU countries—often decided at the EU level and implemented through EU directives. In fact, the macroeconomic conditions in Greece had deteriorated so much by the mid-1990s that meeting the Maastricht criteria looked almost impossible.

The macroeconomic adjustment and the convergence experience of Greece on the way to the euro suggest a valuable lesson for the EU accession countries: EU participation alone does not lead to convergence, good policies do. Greece experienced divergence up until the mid-1990s because of deterioration in its macroeconomic aggregates and serious structural impediments to growth. Convergence since the mid-1990s went hand-in–hand with macroeconomic adjustment and progress in structural reforms. Furthermore, Greece's convergence speed is still slower than what estimates from conventional growth models would imply because, despite considerable steps forward in recent years, progress in the above reforms is still insufficient, leaving Greece behind euro area averages in many areas.

II. CONVERGENCE IN GREECE AFTER EU ACCESSION

The initial convergence experience of Greece after joining the EU has been disappointing. Keeping everything else constant, Greece should be growing faster than most of the other member-countries simply because it started with a lower per capita income—according to empirical evidence, countries do converge after controlling for a number of other growth determinants (see for example Barro, 1991). Keeping everything else constant, and assuming that Greece's steady state income is determined by the average income of its trading partners, Greece should have grown faster after joining the EU as its steady state position increased. Assuming a conditional convergence speed—convergence controlling for all other growth determinants—of 3 percent per year (see Barro and Sala-I-Martin, 1995), Greece should have grown faster than the euro area by 1.4 percentage points after joining the EU and by 1.9 percentage points after 1995, in per capita terms. Instead, Greece grew less than the euro area by 1.4 percentage points up to the mid-1990s and more by 1.5 percentage points after 1995.

Therefore, Greece experienced divergence in the 1980s and in the first half of the 1990s, while the convergence in the second half of the 1990s was not as fast as standard estimates in growth models would imply.

Greece's labor market performance has also been disappointing since EU participation, with some improvement taking place only very recently. Greece's unemployment rate increased gradually since EU entry from below 6 percent to 12 percent in 1999, before falling to below 10 percent in 2002. Despite strong economic growth since the mid-1990s, no appreciable progress has taken place in increasing employment and Greece still has one of the lowest participation rates in the euro area. This poor labor market performance has largely to do with the lack of flexibility in the labor market, where Greece scores poorly despite recent reforms. Furthermore, Greece spends only 1/3 of what the euro area spends on active labor market policies as a share of GDP.

Greece's growth experience since joining the EU is not a puzzle. The difference between what convergence should had been in Greece and actual experience can be largely explained by developments in the main growth determinants found by the empirical growth literature (Table 1),[2] as well as the considerable decline in interest rates that took place on the way to adopting the euro. Most of the factors that have been found in the literature to explain cross-country and time growth variations deteriorated in Greece during the period of divergence, 1980-1995, and improved during the period of convergence, 1996-2002. And Greece is still not converging as fast as standard convergence estimates would imply because the gap for some of these indicators compared with their levels in the rest of the euro area remains large.

In more detail:

- **Investment in physical capital** followed very closely the growth trend during this period.[3] The share of fixed capital formation fell by 10 percentage points in the

[2] See Barro and Sala-I-Martin (1995).
[3] Investment in physical capital is one of the most robust determinants of growth (see Levine and Renelt, 1992), although the impact can be both ways (see Blomstrom, Lipsey and Zejan, 1996).

period 1980-1995 and increased by more than 4 percentage points by 2002, to about 3 percentage points above the euro area average. The share of public investment fell considerably after 1980, and it only slightly recovered after the mid-1990s. Most of the investment increase since 1995 has been driven by private investment, which is about 2 percentage points above the euro area average. However, foreign direct investment inflows have been very limited in Greece and remain well below the euro area average.

Macroeconomic policies also deteriorated considerably after EU accession and up until the macroeconomic adjustment after the mid-1990s.[4] Greece's general government deficit reached double digits as a share of GDP by the end of the 1980s, before fiscal consolidation after the mid-1990s brought it down to close to 1 percent of GDP in 2002 (with a primary surplus of more than 4 percent of GDP). Greece joined the EU with a general government debt to GDP ratio of 25 percent and reached 109 percent by the mid-1990s. And public sector debt remains above 100 percent of GDP despite recent progress in fiscal consolidation. Greece had a high inflation rate when joined the EU. Average annual inflation was 20 percent during the 1980s and the beginning of the 1990s. However, macroeconomic stabilization brought inflation down to single digits by the mid-1990s and to 2.6 percent in 1999—inflation is currently about 1.5 percentage points above the euro area average (about 1 percentage point is explained by Balassa-Samuelson effects).[5] Although fiscal consolidation and policies to bring down inflation can lead to slower growth in the short term, this does not seem to have been the case in Greece. Growth in Greece accelerated after the process of fiscal consolidation started. At the same time, efforts to address fiscal imbalances led to falling inflation rates, despite considerably lower interest rates.

[4] For the impact of fiscal policy on growth see Easterly and Rebelo (1993). For the impact of inflation on growth see Bruno and Easterly (1996).
[5] See Swagel (1999).

Table 1. Growth determinants in Greece (1980-2002) and in the euro area (2002)

	Greece				Euro area	
	1980	1990	1995	2002	2002	
Convergence						
GDP per capita relative to the euro area (in percent)	58.7	48.7	47.8	55.9	100.0	
Investment						
Gross fixed capital formation (in percent of GDP)	29.2	23.0	18.6	23.1	20.2	
Private gross fixed capital formation (in percent of GDP)	14.6	18.7	15.4	19.2	17.3	
Public gross fixed capital formation (in percent of GDP)	14.7	4.4	3.2	3.8	2.8	
Foreign direct investment inflows (in percent of GDP)	1.4	1.2	0.9	0.0	1.8	1/
Macroeconmic policy						
General government balance (in percent of GDP)	-2.7	-16.1	-10.2	-1.2	-2.3	
General government primary balance (in percent of GDP)	-0.3	-5.9	1.0	4.3	0.9	
General government total revenue and grants (in percent of GDP)	27.9	32.1	36.5	41.4	46.6	
General government total expenditure and net lending (in percent of GDP)	30.5	48.2	46.6	42.7	48.9	
Primary expenditure (in percent of GDP)	28.2	38.0	35.5	37.1	45.7	
General government debt (in percent of GDP)	25	81	109	105	69	
CPI inflation (in percent)	24.9	20.4	8.9	3.9	2.3	
Financial sector						
Domestic credit to private sector (in percent of GDP)	43.8	36.3	33.6	63.6 1/	102.8	1/
Lending interest rate (in percent)	21.3	27.6	23.1	7.4	6.1	
Interest rate spread (in percent)	6.8	8.1	7.3	4.7	3.3	
Human Capital						
Primary school enrollment ratio (in percent)	102.9	97.8	93.9	99.3 2/	104	2/
Secondary enrollment ratio (in percent)	81.2	93.3	95.3	98.4 2/	107	2/
Tertiary school enrollment ratio (in percent)	17.1	36.1	42.3	50.5 3/	52	4/
Labor force with primary education (in percent of total)	.	52.6	49.7	44.8 4/	.	
Labor force with secondary education (in percent of total)	.	25.0	28.0	29.2 4/	.	
Labor force with tertiary education (in percent of total)	.	11.4	20.9	25.1 4/	.	
Public spending on education (in percent of GDP)	2.0	2.4	2.9	3.8 2/	4.8	4/
Structural						
Trade in goods and services (in percent of GDP)	51.4	45.9	42.6	47.4	70.5	
Freedom to trade with foreigners (increasing from 1 to 10)	5.6	6.1	6.6	7.6 1/	8.4	
Economic freedom index (increasing from 1 to 10)	5.5	5.8	6.3	6.7 1/	7.3	1/
of which:						
Legal system and property rights	5.6	6.8	6.7	5.6	7.8	1/
Business Regulation	...	...	4.7	4.8	5.7	1/
of which:						
Starting a new business	...	...	4.2	4.0	5.1	1/
OECD product market regulation index (decreasing from 1 to 3)	...	...	...	2.2 4/	1.7	5/
Labor market regulation index (increasing from 1 to 10)	3.6	3.7	4.0	3.8 1/	4.4	1/
Unemployment rate	5.5	7.0	9.1	9.9	8.4	
Employment rate	56.7	57.4	56.4	57.0	63.9	
Spending on active labor market policies (in percent of GDP)	...	0.8	0.9	0.8 4/	3.0	5/
Technology						
R&D spending (in percent of GDP)	...	...	0.5	0.7 5/	2.1	2/
Information and communication technology expenditure (in percent of GDP)	...	2.3	3.8	6.1 1/	7.2	1/
Personal computers (per 1,000 people)	...	17	33	81 1/	286	1/

Sources: IFS, WEO, WDI, OECD, Economic Freedom Network.

1/ 2001.
2/ 2000.
3/ 1997.
4/ 1998.
5/ 1999.

- Greece's human capital is somewhat behind the human capital in the other euro area countries according to some indicators.[6] Enrollment ratios for primary, secondary and tertiary education in Greece are slightly lower than the euro area averages, but, except for primary education, they have increased since EU entry. Public spending on education as a share of GDP also increased, by almost 2 percentage points since 1980, but remains 1 percentage point below the euro area average. However, the stock of human capital, implied by data on the level of education of the labor force, is still relatively low in Greece.

- Greece's growth experience since joining the EU can be also explained by developments in the **financial sector**.[7] During the 1980s, the banking sector in Greece was heavily regulated: commercial banks had to invest ¾ of their deposits to finance preferential activities, 40 percent of which had to be placed in Treasury bills; banks were subject to strict branching regulations, asset holding restrictions, and legal barriers to developing new financial products; and large state banks dominated the sector. A far-reaching liberalization of the Greek banking system started during the 1990s: interest rates were liberalized by 1990; rules forcing banks to invest in treasury bills and lend to state enterprises and preferential sectors were abolished in 1993; and capital account transactions were liberalized by 1994.[8] Furthermore, privatization facilitated consolidation in the sector, while supervision, prudential regulation, and risk management requirements were strengthened in accordance with the relevant EU directives. As a result, competition increased considerably, reducing interest rate spreads—from about 8 percentage points in the beginning of the 1990s to less than 5 percentage points in 2002—while bank profitability also increased considerably. The liberalization of the banking sector and the fall of interest rates to euro area levels resulted in considerable credit expansion, although from very low levels—credit to the private sector fell from 44 percent of GDP in 1980 to 34 percent by 1995, but increased to 64 percent by 2001. However, despite recent consolidation and privatization, state controlled banks remain an important feature of the Greek banking system, while Greek interest rate spreads remain above the euro area average by almost 1.5 percentage

[6] On the impact of human capital on growth see Benhabib and Spiegel (1994) and Engelbrecht (2003).
[7] Indicators of financial sector development have been found to be positively correlated with growth (see Levine (1997) for a discussion of the literature).
[8] For details, see Eichengreen and Gibson (2001) and Vamvakidis (2001a).

points. This suggests, among others, that competition in the Greek banking sector still lags behind that in the euro area.

- Although Greece has been a relatively open economy to **foreign competition**, its trade share declined during the 1980s and in the first half of the 1990s, and it only partially recovered since the mid-1990s.[9] Greece was an open economy at the time of EU accession according to the Sachs and Warner (1995) openness measure, which captures many dimensions of protection. However, capital controls during the 1980s resulted in a black market premium of about 10 percent, significantly distorting trade before the removal of the controls by the mid-1990s.[10] An index of freedom to trade with foreigners, capturing tariff and non-tariff barriers and the size of the black market premium shows a gradual improvement since 1980. However, Greece has not been as integrated in the world economy as the rest of the euro area. Greece's trade share (the ratio of exports and imports to GDP) of about 47 percent remains well below the euro area average of 70 percent. And the index of free trade is somewhat lower than the euro area average.

- The lack of sufficient **domestic competition** has been another impediment to growth in Greece, but notable progress has been achieved more recently in some sectors.[11] Indices of product market competition show a gradual improvement since joining the EU. However, many of these indices remain well below euro area averages (which are well below the levels of these indices in the UK and the USA). A considerable number of large inefficient state enterprises were privatized during the 1990s. One-stop shops, to facilitate the establishment of new businesses and reduce bureaucratic procedures, have been established in recent years, but it is still too early to determine their effectiveness. The benefits from domestic competition have been clearly seen in Greece in recent years—in addition to the banking sector discussed above—in the telecoms sector, where prices have fallen sharply and quality of products and

[9] The literature on the links of openness and growth is vast. For a discussion of the early empirical and theoretical literature, see Bhagwati and Srinivasan (1985). For more recent literature reviews, see Greenaway, Morgan, and Wright (1998), Bhagwati and Srinivasan (2002), Vamvakidis (2002) and Baldwin (2003).

[10] The source for Greece's black market premium is the Barro and Lee data set: http://www.nuff.ox.ac.uk/Economics/Growth/barlee.htm.

[11] Indices measuring the extent of domestic competition have been found to lead to faster growth (see Vamvakidis and Zanforlin, 2002). For evidence on the negative growth impact of state-led industrialization see Sachs (1996).

services compares well with EU standards. However, in the electricity sector efficiency gains have been hampered by continued cross-holdings and high entry barriers. And a large number of inefficient state enterprises remains.

- **Information technology (IT) and research and development (R&D)** spending increased considerably in Greece during the 1990s, although from very low levels.[12] Spending in these areas is still very low in Greece compared with other industrial countries—Greece spends about 1/3 of what the euro area spends for R&D as a share of GDP and one percentage point less for IT. Internet use indicators and the number of computers per capita also show a relatively large gap in Greece compared with other industrial countries, despite more than doubling since the mid-1990s. Part of this is explained by higher costs in Greece for IT products and internet connection.[13] Low R&D spending has retarded the convergence of Greece and, therefore, the increase in spending in this area in recent years, although not enough, is a positive development. However, there is evidence of a shortage of graduates with information technology skills and of limited existence of links between the education system and the labor market, which has resulted in oversupply of graduates in some sectors and undersupply in others (especially for the new economy sectors).[14] A recent education reform promises to address this problem, but it is still at the initiation stage.

If Greece had not joined the EU, its growth performance could have been even slower. Greece's participation in the EU implied a change in the set of its trading partners. Recent research has found that the economic conditions in the trading partners of a country have important implications for domestic growth.[15] Namely, the growth performance and the relative GDP per capita of the trading partners of a country are positively correlated with domestic growth. This may be driven by spillover effects and/or specialization in technologically more advanced sectors when exporting to a more advanced country, which may also result in positive spillovers to other sectors in the economy. What do these estimates imply for Greece's growth performance since joining the EU? If Greece had kept the same trading partners as in the 1970s, the estimates

[12] For theoretical foundations of the impact of R&D on growth see Grossman and Helpman (1991) and for empirical evidence see Coe and Helpman (1995).
[13] For details on information technology and the use of internet in Greece see Vamvakidis (2001b).
[14] See Lutz (2001) and Vamvakidis (2001b).
[15] See Arora and Vamvakidis (2003).

suggest that annual growth would had been lower by 1 percentage point in the 1980s compared with the 1970s, and by 0.2 percentage points compared with the actual growth rate in the 1980s. This is explained by two effects: the lower relative per capita GDP of Greece's hypothetical trading partners in this scenario, and their lower growth relative to that of Greece's actual trading partners. However, the acceleration of growth in Greece in the second half of the 1990s is not explained by external factors—Greece's trading partners growth was almost equal before and after 1995.

The strong acceleration of growth in Greece since the mid-1990s has also been partly driven by temporary factors. Growth has been supported by the decline of interest rates to euro-area levels—the 12-month lending rate fell from 18.6 percent in 1998 to 7.4 percent in 2002. As noted above, this, as well as the release of blocked excess reserves of banks, contributed importantly to strong credit growth—for example, mortgage lending has been growing in excess of 30 percent in recent years, although from a very low basis. Using estimates based on the Oxford Economic Forecasting Model (OEF), growth without interest rate convergence effects would have been lower by 1.5 percentage points in 2001. Other temporary factors that have supported growth in recent years include the sizable EU transfers, expected to decline considerably in the medium term, and investment for the preparation of the 2004 Olympics.

III. THE GROWTH DIVIDEND OF REFORM IN GREECE

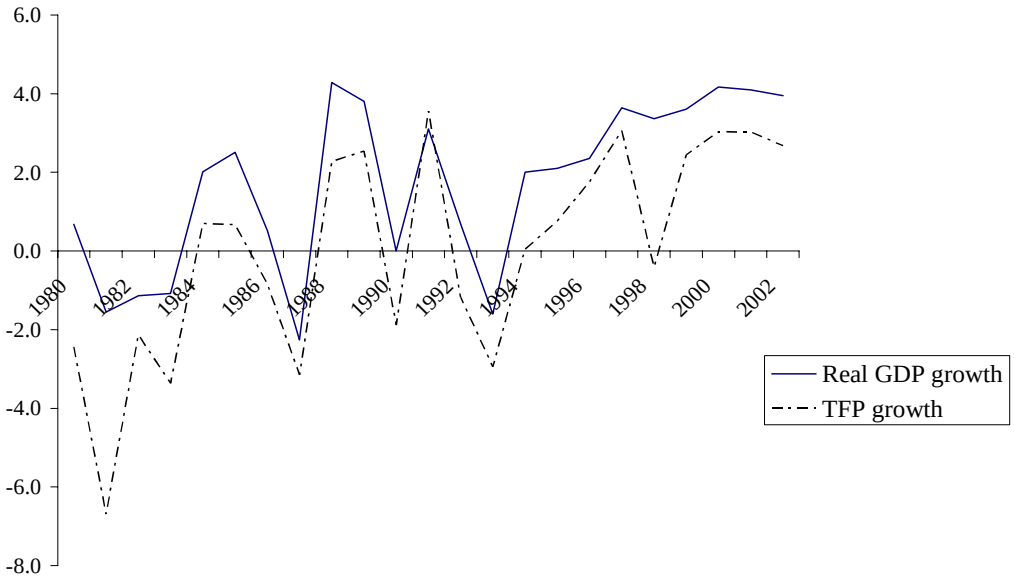
The trend in total factor productivity (TFP) growth in Greece since EU accession is an indication of the growth impact of recent reforms. The previous section argued that the considerably improved growth performance of the Greek economy since the mid-1990s followed macroeconomic and structural reforms that were found in the literature to contribute to faster growth, while the stagnation of output in the 15-year period following EU accession went together with the deterioration of macroeconomic aggregates and the presence of many structural impediments to growth. Estimations from a standard production function indicate that TFP growth was negative during the period 1981-1995, equal to an annual average of -0.8 percent, while it increased by 3

percentage points, to an annual average of 2.2 percent in the period 1996-2002 (Figure 2).[16]

Estimates from a standard growth model can provide a more concrete indication of the growth dividend of reforms in Greece in recent years. Vamvakidis and Zanforlin (2002) have estimated such a model, which included most of the growth determinants analyzed above. Estimates from updating this model suggest that the growth dividend from the reforms that took place in Greece in the second half of the 1990s and up to 2002 is about 1.5 percentage points annually. Had the values of the growth determinants reached the level in the rest of the euro area, this growth dividend would have been higher by another ½ percentage points. If these determinants had reached the levels in Ireland, the fastest growing country in the euro area in recent years, Greece would had grown faster by another ½ percentage point.

[16] Some caution would be warranted here, since the improvement in data quality during recent years my explain part of the large break in TFP growth.

Figure 2: Greece, real GDP growth and total factor productivity growth, 1980-2002



IV. CONCLUDING REMARKS: LESSONS FOR THE EU ACCESSION COUNTRIES AND CHALLENGES AHEAD

The experience of the Greek economy since joining the EU, both the divergence period of 1980-1995 and the convergence period of 1996-2002, **suggests useful lessons for the EU accession countries**:

- The first, and perhaps most important lesson, is that **participating in the EU will not necessarily lead to convergence**. **Convergence is conditional on good policies**, **macroeconomic and structural**. If such policies are present, countries can benefit from trading within a large market, which includes some of the most developed countries in the world economy.

- The Greek case suggests that **macroeconomic and structural reforms do deliver substantial growth benefits**. Divergence in the period 1980-1995 was clearly connected with steps backwards in these areas, while the much improved growth performance in recent years with steps forward. Fiscal consolidation, low inflation, product market liberalization, labor market flexibility, and steps in other areas to increase domestic and foreign competition have led to faster growth in Greece in recent years.

- Some of the **structural reforms** that Greece undertook in recent years **are considerably easier to initiate within the EU**. Many of these reforms benefited from guidelines from EU directives. They were are also acceptable by the public as they were seen to be EU requirements that were also adopted by all other member-countries.

- **Macroeconomic reforms are also easier to implement when they are based on EU or/and euro area requirements**. The need to meet the Maastricht criteria in order to be a part of the euro area was one of the main factors, if not the most important factor, that made macroeconomic reforms in Greece possible in the late 1990s. The public supported these reforms because meeting the Maastricht criteria was considered to be a priority for Greece. Such reforms are often linked to political costs, but in the case of Greece exactly the opposite was the case: failing to reform and be a part of the euro area would have implied a large political cost.

Despite the considerable achievements since the mid-1990s in terms of convergence, **Greece faces considerable challenges ahead**. If anything, the Greek experience since EU accession shows that these challenges cannot be ignored if convergence is to continue and even accelerate. Convergence in Greece is still not as fast as implied by convergence estimates in standard growth models because it still lags behind other industrial countries in many of the factors that support convergence. Furthermore, as noted above, growth in recent years has been in part supported by temporary factors, and can continue at its present pace only through further reforms:

- **Fiscal consolidation**. With public debt still one of the highest in the euro area as a share of GDP, bolder fiscal consolidation steps are required, and in particular to cut primary spending. Fiscal consolidation since the mid-1990s was based on higher revenues and lower interest payments—primary spending actually increased during this period. Although Greece spends considerably less than the euro as a share of GDP, Greece also collects considerably less revenues and has a much higher public sector debt. This leaves cutting primary spending as the main path to fiscal consolidation—in particular given the ongoing tax reform, a positive step, which includes cuts in tax rates. Greece should take advantage of its currently favorable cyclical position for more progress in this area.

- **Pension reform**. Pension expenditures are projected to increase, absent reforms, by more than in any other EU country, almost doubling in relation to GDP (from already relatively high levels) by 2050.[17] Recent reform steps to consolidate the system are positive, but have so far failed to address the underlying expenditure pressures. Greece will need to introduce bold reforms in this area to avoid explosive long-term debt dynamics.

- **Reducing inflation**. Despite considerable progress toward price stability in recent years, inflation remains about 1.5 percentage points above the euro area average. The part of this differential that is not explained by Balassa-Samuelson erodes competitiveness. This deserves serious consideration since monetary union does not provide the option to support competitiveness through devaluations, a solution often

[17] For details, see IMF Country Report No. 03/156, Lutz (2002), and Börsch-Supan and Tinios (2001).

used by Greece in the past. Further progress in fiscal consolidation will go a long way in reducing the inflation differential, as well as further steps in product market liberalization.

- **Reducing the role of the state: privatization and product market liberalization**. Despite recent progress, Greece still scores poorly in indicators of competition and product market liberalization. Increasing competition in product markets, facilitating new firm entry, including FDI, continuing with the ambitious program for privatization, and reducing and rationalizing bureaucratic procedures should be elements of Greece's convergence strategy.

- **Labor market reform**.[18]. The achievement of employment-rich growth requires flexible labor markets. An unemployment rate of 8.9 percent (in the second quarter of 2003) for an economy that during the last 7 years has been growing by close to 4 percent is a clear indication of a very inflexible labor market. Greece's employment rate—the ratio of the number of employees to working age population—remained broadly constant since EU entry, and at 57 percent in 2002, it remains well below the euro area average of close to 64 percent. Greece particularly needs steps to facilitate labor market entry by women and the young, and to increase spending on active labor market policies. Recent reforms to facilitate the use of atypical labor contracts—part-time employment and fixed-term contracts—are positive steps in this direction and should be pursued further.

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[18] For details, see Lutz (2001).

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