August 2004
IMF Country Report No. 04/235

Euro Area Policies: Selected Issues

This Selected Issues paper for Euro Area Policies, was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with officials at EU institutions in the context of the Article IV consultations with countries forming the euro area. It is based on the information available at the time it was completed on July 8, 2004. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the governments of the euro area or the Executive Board of the IMF.

The policy of publication of staff reports and other documents by the IMF allows for the deletion of market-sensitive information.

To assist the IMF in evaluating the publication policy, reader comments are invited and may be sent by e-mail to publicationpolicy@imf.org.

Copies of this report are available to the public from

International Monetary Fund ● Publication Services
700 19th Street, N.W. ● Washington, D.C. 20431
Telephone: (202) 623 7430 ● Telefax: (202) 623 7201
E-mail: publications@imf.org ● Internet: http://www.imf.org

Price: $15.00 a copy

International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

EURO AREA POLICIES

Selected Issues

Prepared by A. Annett, M. Estevão, and H. Faruqee (all EUR),
X. Debrun (RES), and J.-J. Hallaert (PDR)

Approved by the European Department

July 8, 2004

Contents Page

I. WHY IS PRODUCTIVITY GROWTH IN THE EURO AREA SO SLUGGISH?[1]

Core Questions, Issues, and Findings

- ***What are the main stylized facts regarding recent trends in euro-area labor productivity growth?*** Since the mid-1990s, the area's labor productivity growth (output per hour) has declined markedly. Across sectors, the deceleration was concentrated in the traditional production sectors, i.e. sectors that are neither producers nor intensive users of information and communications technology (ICT). The deceleration was largely common across countries. From a growth accounting perspective, slower growth in the capital-labor ratio seems to be the main driver behind the deceleration in labor productivity. (¶12 to ¶26)

- ***Why did the pace of euro-area productivity growth slow?*** The main factors seems to be sustained wage moderation and some progress on structural reforms since the early 1980s, which have induced firms to shift to more labor-intensive production, reversing earlier substitution policies in favor of capital. (¶27 to ¶39)

- ***Can labor reabsorption in the euro area fully account for the divergence between euro-area and U.S. labor productivity growth since the mid-1990s?*** It does not. Unlike the United States, the euro area did not experience a productivity surge in ICT-using service sectors, mainly wholesale and retail trade and financial intermediation. (¶17)

- ***Does the exceptionally low productivity growth during the recent protracted slowdown point to a further decline of underlying trend growth?*** It may be too early to tell. At least in part, the very low productivity growth since 2001 reflects cyclical factors, especially more labor hoarding than during previous cycles. (Appendix IV)

- ***Given this chapter's analysis, what should be the structural policy priorities?*** The Lisbon agenda and the Broad Economic Policy Guidelines (BEPGs) contain the right pointers. Reversing the area's secular decline in labor utilization should be a priority to ensure fiscal sustainability and preserve the integrity of social protection systems. Moreover, lagging productivity growth in ICT-using service sectors points to the need to accelerate both product and labor market reforms. (See Chapter II for a detailed discussion of the Lisbon agenda).

[1] Prepared by Marcello Estevão.

A. Introduction

1. **Labor productivity in the euro area seems to have risen a bit above U.S. levels in the mid-1990s, hinting at a full technological catch-up, but has lost some ground since then.** Several analysts have pointed to a decline in total factor productivity (TFP) growth in the euro area as an important cause for the sluggish labor productivity since 1995.[2] Others have highlighted the productivity surge in key high-tech sectors in the United States as crucial to the performance gap.[3]

2. **Unlike previous studies, this chapter focuses on the euro area (rather than on the EU or individual countries) and argues that:**

- **The bulk of the labor productivity deceleration in the euro area in the second half of the 1990s can be explained by slower capital deepening (slower growth in the capital-labor ratio), as opposed to slower TFP growth.** The apparent slowdown in TFP growth obtained from productivity calculations using national accounts data for the euro area disappears once better, industry-level data for Germany are considered in the analysis. Therefore, the sluggishness in euro-area labor productivity in the second half of the 1990s should be more associated with the use of production inputs and not with negative technological or structural shocks.

- **The slower capital deepening in the euro area in the second half of the 1990s can be explained by structural wage-setting changes.** These changes made labor cheaper, inducing firms to slow the process of capital accumulation and to hire more workers. To quantify the effect of these structural labor market changes on capital deepening, the chapter develops a simple model for evaluating how structural changes in wage setting affect labor productivity growth. Calculations based on econometric estimates using industry-level data for a subset of euro-area countries (France, Germany and the Netherlands) show that wage-setting shocks would have forced capital-labor ratios to decline in the second half of the 1990s. In the event, capital-labor ratios grew at a slower rate but did not decline, as other factors, including cheaper information and communications technology (ICT) equipment, partly offset the wage shock.

- **The productivity growth differential with respect to the United States since the mid-1990s can be explained by a faster labor productivity deceleration in traditional industries (i.e. industries that are neither producers nor intensive users of ICT) in the euro area and, to a lesser extent, by a surge in productivity growth in intensive-ICT-using sectors (mainly wholesale and retail trade and financial intermediation)**

---

[2] European Commission (2003).

[3] O'Mahony and van Ark (2003), for instance.

in the United States. Productivity behavior in ICT-producing sectors (e.g. computers, semiconductors, and communication services) was similar in the two areas.

3. **Looking ahead, policies to improve labor utilization in Europe should continue in the medium term as the Lisbon targets are pursued, which might dampen labor productivity growth through slower capital deepening.** However, lower labor productivity growth is a temporary phenomenon that will fade away when the economy reaches a new equilibrium unemployment rate. In addition, the labor market reforms needed for the continuation of low wage growth and reductions in the unemployment rate should improve economic efficiency. Besides labor market reforms, further product market deregulation (particularly in wholesale and retail trade) would promote efficiency gains, and help to close the productivity growth gap with respect to the United States. Higher TFP growth could also be attained by letting markets better reward individual effort, which would raise risk-taking activities, R&D spending, and human capital accumulation.

4. The next section discusses labor productivity developments in the euro area and in the United States using aggregate national accounts data within a larger context of convergence in GDP per capita between the two regions. It serves as a motivation for the paper and presents a decomposition of labor productivity growth in the euro area and in the United States into the contributions of capital deepening and TFP growth. Section C presents calculations using the industry-level database from the Groningen Growth and Development Center (GGDC) for the 12 euro-area countries and the United States. These calculations document productivity developments among intensive users of ICT equipment, producers of ICT equipment, and more traditional industries. Then, the GGDC growth accounting database for France, Germany, the Netherlands, and the United States is used to provide a breakdown of labor productivity growth into the contributions of changes in ICT and non-ICT capital, labor quality, and TFP. Section D proposes a simple wage-bargaining model to illustrate how structural labor market changes would affect the adjustment path of labor productivity growth through changes in capital deepening. An econometric estimate for the effect of structural wage-setting changes on capital deepening and, therefore, labor productivity is provided. Section E concludes this chapter by using key results from the literature to highlight the effect of structural changes, including deregulation of product markets, on TFP growth. Appendix IV provides a simple way to integrate the conclusions of this chapter into an analysis of the degree of labor hoarding at the current cyclical juncture.

B. GDP Per Capita and Productivity Growth in the Euro Area and in the United States

5. **The long-run pattern of declining GDP per capita growth in the euro area has a mirror image in declining trend rates of labor productivity growth.** Trend GDP per capita growth in the euro area has been declining since the 1950s, finally bringing to a halt the convergence to U.S. levels in the 1970s (Figures 1 and 2). In the United States, labor productivity growth oscillated around 1½ percent for many years until it trended up in the

second half of the 1990s, surpassing the euro-area figures for the first time (Figure 3 and Table 1).[4] Increasing employment rates in the United States (Figure 4 and Table 1) widened this gap and GDP per capita growth in the second half of the 1990s was about 1 percentage point higher than in the euro area.

Figure 1. GDP per Capita Trend Growth
(5-year moving average, in percent)

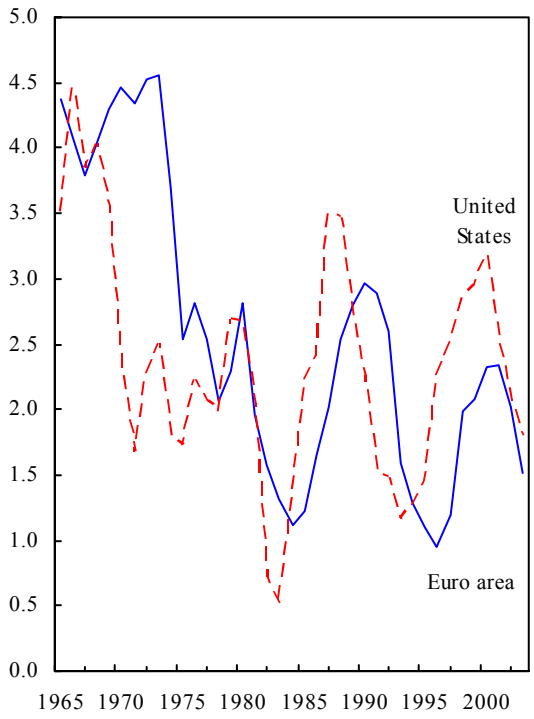
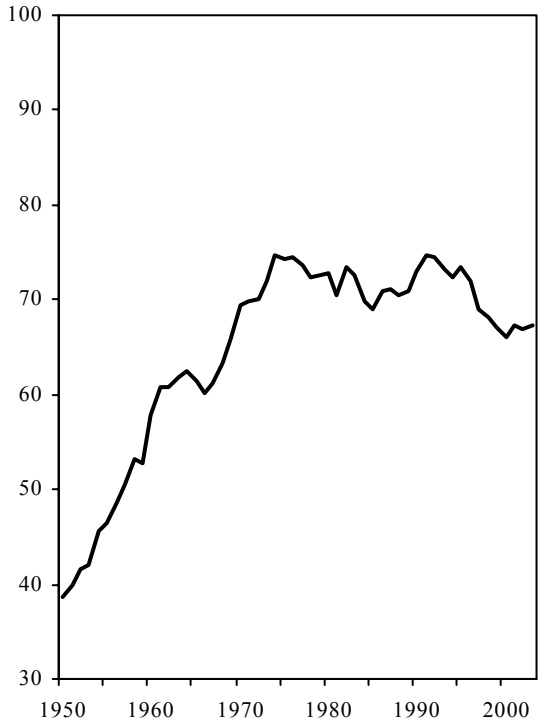


Figure 2. PPP GDP per Capita in the Euro Area as Percentage of U.S. Value



Sources: EC - AMECO database; OECD Productivity database; and staff calculations.

[4] Basic identity: Growth in GDP per capita = Growth in GDP per hours of work + Growth in employment as a ratio of total population + Growth in average hours of work per person. Data used in this section come primarily from the AMECO database, produced by the European Commission. Data on economywide average hours of work come from the new OECD productivity database.

Figure 3. Labor Productivity Growth
(5-year moving average, in percent)

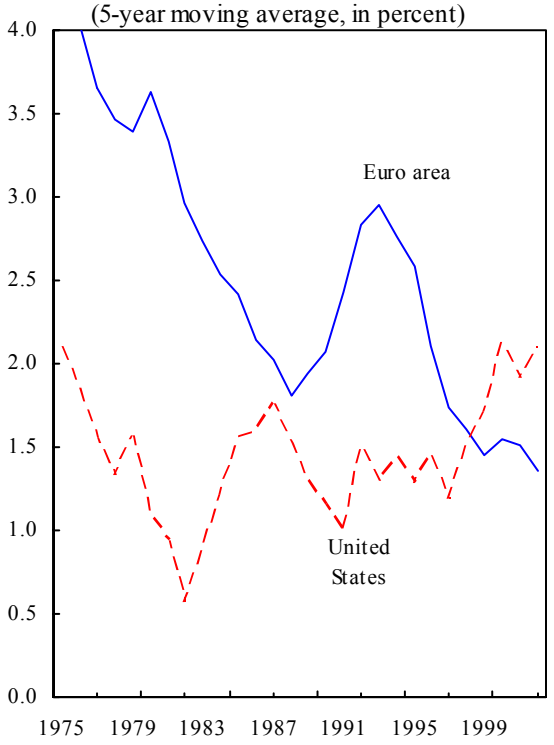
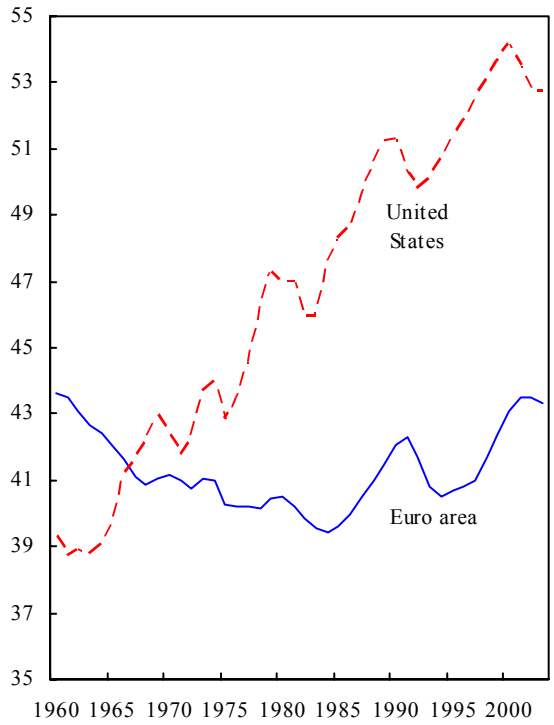


Figure 4. Employment Rates
(In percent of total population)



Sources: EC - AMECO database; OECD Productivity database; and staff calculations.

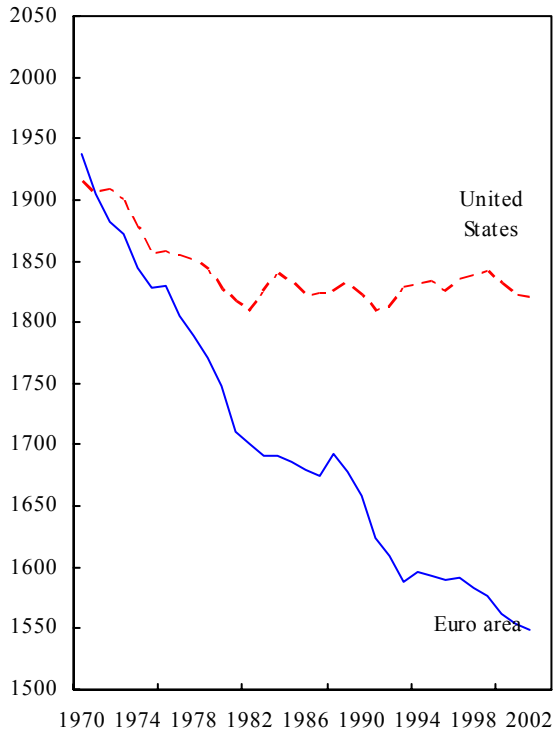
Table 1. GDP Per Capita Growth
(Annual rates, in percent)

	Euro area				United States			
	GDP per capita	Labor Productivity	Employment rate	Average hours worked	GDP per capita	Labor Productivity	Employment rate	Average hours worked
1960-70	4.4	---	-0.6	---	2.9	---	0.8	---
1970-80	2.7	3.9	-0.2	-1.0	2.2	1.6	1.1	-0.5
1980-90	2.1	2.2	0.4	-0.5	2.2	1.4	0.9	0.0
1990-95	1.1	2.6	-0.7	-0.8	1.4	1.3	0.0	0.1
1995-2000	2.3	1.6	1.2	-0.4	3.2	2.1	1.1	0.0
1995-2003	1.7	1.2	0.8	-0.4	2.4	2.1	0.3	0.0

Sources: EC-AMECO database; OECD productivity database; and staff calculations.

6. **GDP per capita growth in the euro area, even if lower than in the United States, did increase in the second half of the 1990s, when a surge in employment rates offset a deceleration in labor productivity and continued declines in average hours of work** (Figures 4 and 5, and Table 1). The opposite movements of employment rates and labor productivity during this period suggest that lower labor productivity growth in the euro area could be related to the reinsertion of unemployed individuals into jobs. On the other hand, the positive correlation between accelerating productivity and employment rates in the U.S. during the same period is consistent with increased technological growth and economic activity in an economy near its natural rate of unemployment.

Figure 5. Annual Hours Per Worker



Sources: Staff calculations based on total hours from OECD and employment from EC - AMECO.

7. **Breaking down labor productivity growth into the contribution of hours of work, capital, and TFP shows that a significant decline in capital deepening (a slower increase in the capital-labor ratio) explains a large part of the productivity deceleration**

in the euro area (Table 2).[5] However, the aggregate national accounts-based data used here also show that TFP growth declined in the euro area while sharply increasing in the United States. A note of caution should be introduced at this point. Cross-country comparisons using national accounts data could be compromised by different national methodologies in the calculation of investment flows, deflators (including the treatment of quality improvements in high-tech equipment), aggregation methods, and so on. In addition, changes in labor quality could bias the TFP measures shown in Table 2. While these are crucial issues, the chapter assumes them away for now but will return to them later.

Table 2. Labor Productivity Growth

(Annual rates, in percent)

	Euro area			United States		
	Labor Productivity	Capital deepening	TFP	Labor Productivity	Capital deepening	TFP
1970-80	3.9	1.2	2.7	1.6	0.4	1.2
1980-90	2.2	0.6	1.6	1.4	0.2	1.2
1990-95	2.6	1.0	1.6	1.3	0.3	1.0
1995-2000	1.6	0.4	1.2	2.1	0.4	1.7
1995-2003	1.2	0.4	0.8	2.1	0.6	1.4

Sources: EC-AMECO database; OECD productivity database; and staff calculations.

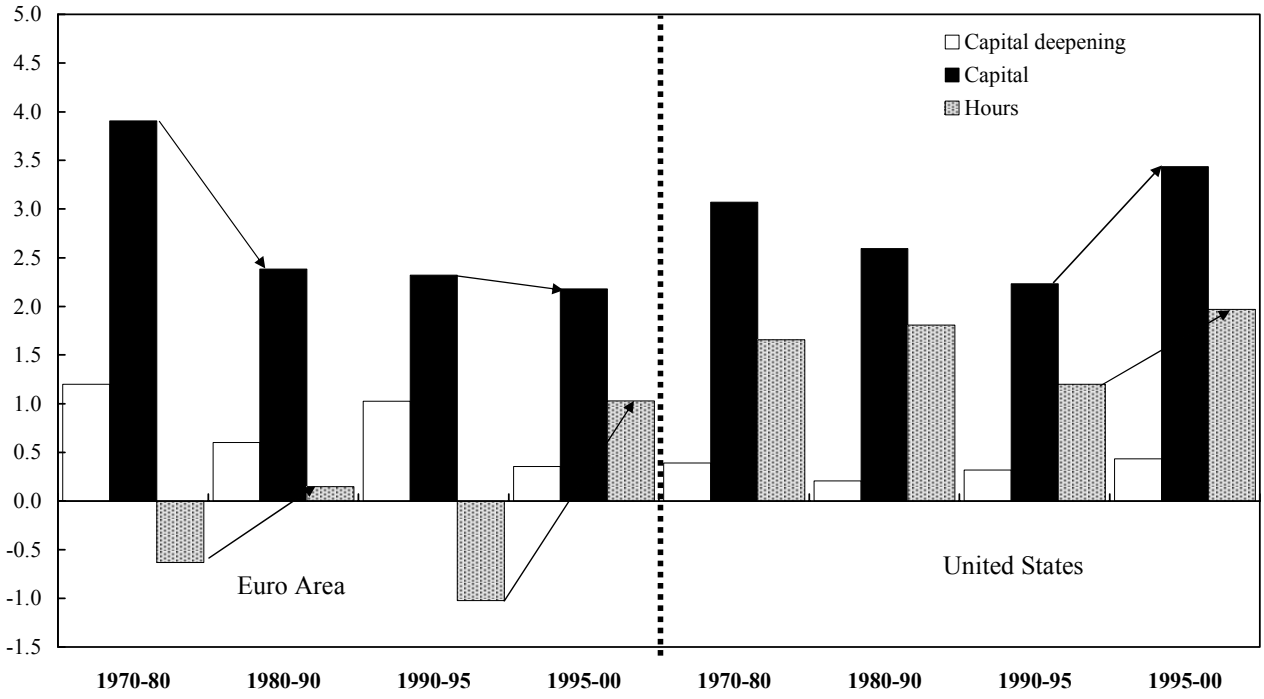
8. **TFP growth picked up in the US in the second half of the 1990s but not in the euro area.** In fact, euro-area TFP seems to have converged to U.S. rates for 1970-95. The boost in U.S. technological growth in the second half of the 1990s has been associated to the larger production of ICT equipment and more intensive ICT use. The cyclical decline in TFP growth during 2001-2003 was about the same in the two countries.

9. **The reduced rate of capital deepening in the euro area in the second half of the 1990s can be associated with the reinsertion of unemployed workers into jobs because of reduced wage demands.** That is consistent with the rate of capital growth declining only slightly while work hours growth surged in the euro area in the second half of the 1990s (Figure 6). In addition, real hourly compensation in the euro area in the second half of the 1990s grew significantly more slowly than in the U.S. for the first time since the series has

[5] Basic identity: $\hat{TFP} = \left(\hat{Y} - \hat{L}\right) - (1-\alpha)\left(\hat{K} - \hat{L}\right)$, where ^ denotes percent changes, Y is real value added, L is total hours of work (employment*average hours of work), K is the capital stock and α is the share of labor compensation in total domestic income.

been available (Figure 7). Overall, euro-area hourly compensation seems to follow a "boom-bust" pattern, but the downward trend in its growth rate is probably associated with labor market reforms and wage moderation agreements between social partners, that began in the 1980s and continued through the 1990s. This trend seems to have affected capital/labor growth already in the 1980s, and the first half of the 1990s represented only a pause. High unemployment rates could also have tamed wage demands, and, in Section D, the two effects will be isolated. In any case, labor cost developments were translated into a negative trend unit labor cost growth (total labor compensation divided by output, as in Figure 8).

Figure 6. Breaking Down Changes in the Capital-Labor Ratio
(Percent, annual rate)



Sources: EC-AMECO database for capital stock and employment; OECD for average hours of work; and staff calculations.

Figure 7. Real Hourly Compensation
(Percent changes)

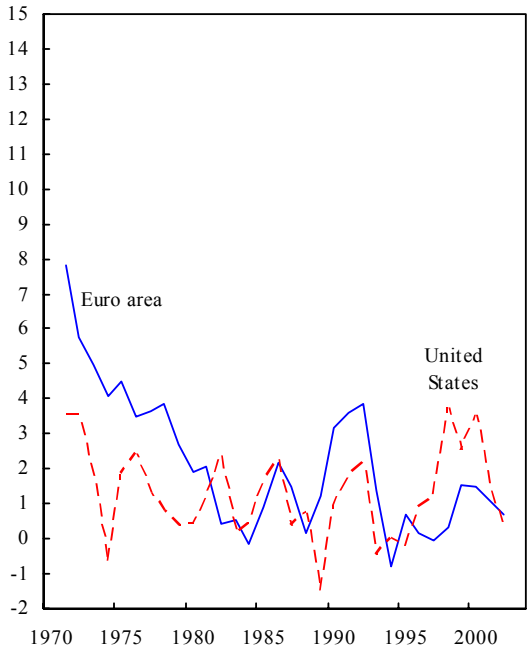
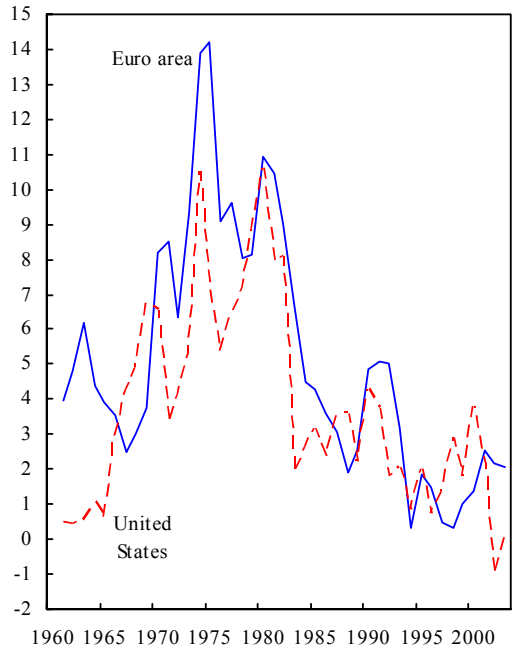


Figure 8. Unit Labor Costs
(Percent changes)



Sources: EC - AMECO database; OECD Productivity database; and staff calculations.

C. New Evidence on Labor Productivity Growth in the Euro Area and in the United States Using Industry-Level Data

10. **Observers have attributed the productivity acceleration in the United States in the 1990s to what has been dubbed the "new economy"—an acceleration in technical change in which rapid investment and use of ICT transformed business practices leading to new breakthroughs and the wider adoption and use of ICT.** Oliner and Sichel (2000), and Jorgenson and Stiroh (1999 and 2000) first documented the surge in U.S. productivity growth using traditional growth accounting techniques. They show that the accumulation of ICT capital plus the growth in TFP in the computer and semiconductor industries accounted for over three-fourths of the labor productivity acceleration in the U.S. nonfarm business sector. Still, about one-third of the acceleration is accounted for by TFP growth in non-ICT sectors.

11. **More recent work sheds light on differences between U.S. and European productivity developments,** focusing on either a small sample of European countries (Jorgenson, 2003, who also provides evidence for Japan) or on the European Union as a whole (O'Mahony and van Ark (2003)). O'Mahony and van Ark (2003) also present country-specific calculations for labor productivity growth and document some of the cross-country

disparities within the European Union. In this section, the focus is shifted to the euro area as a whole, and to comparisons with the United States.

Labor productivity growth by ICT classification and countries

12. **The first industry database used provides information for 15 EU countries and the United States.** The database was constructed by the GGDC departing from the OECD STAN database and national sources. It contains information on value added (real and nominal), employment, and hours of work for 56 industries in each of these countries. The database corrects several problems with the aggregate data used in Section B. Most important, the GGDC used information on quality changes in ICT equipment from the U.S. statistical agencies to correct data for all the other countries. All sector and country aggregations performed in this chapter use value-added weights at the industry level. For more information on the Industry Productivity Database, see Appendix I.

13. **The industry data broadly confirm labor productivity developments described in the previous section, with one important difference: labor productivity growth does not decline as much in the second half of the 1990s as shown in Tables 1 and 2.** According to the results in Table 3, labor productivity decelerated by 0.7 percentage point in the euro area in the second half of the 1990s, as opposed to the 1 percentage point indicated in the first two tables. Again, one could claim that labor productivity growth in the euro area converged to U.S. rates up to the mid-1990s (about 1.5 percent at an annual rate) but missed the technological shock observed in the United States thereafter.

Table 3. Labor Productivity Growth by ICT Classification[1]
(In percent, at an annual rate)

							GDP shares (%)	
	1979-90		1990-95		1995-2001		2001	
	Euro area	U.S.	Euro area	U.S.	Euro area	U.S.	Euro area	U.S.
Total economy	2.6	1.4	2.2	1.2	1.5	2.3	100.0	100.0
ICT-producing industries	7.7	8.5	5.0	7.4	7.3	8.0	5.5	7.0
ICT-producing manufacturing2	12.4	16.0	6.2	14.2	8.6	18.1	1.4	2.4
ICT-producing services3	4.7	2.4	4.5	2.5	6.6	1.9	4.0	4.5
ICT-using industries	2.5	1.2	1.9	1.2	1.7	4.8	27.6	31.6
ICT-using manufacturing4	2.3	0.3	2.2	-0.7	2.3	0.3	6.0	4.4
ICT-using services5	2.5	1.5	1.7	1.6	1.4	5.5	21.6	27.2
Non-ICT industries	2.1	0.4	2.1	0.4	0.9	0.0	66.9	61.4
Non-ICT manufacturing[6]	2.5	1.9	3.5	2.7	1.6	0.0	12.6	8.9
Non-ICT services[7]	1.0	0.1	1.2	-0.3	0.4	0.0	44.0	42.8
Non-ICT other[8]	3.4	1.0	2.9	1.1	1.7	0.4	10.3	9.7

Sources: Industry Labor Productivity Database - EC and GGDC; and staff calculations.

[1] Productivity is defined as real value added per hours worked. Detailed breakdown by ICT type listed in Appendix I.

[2] Includes office machinery, telecommunications equipment, and scientific instruments.

[3] Comprises communications, and computer and related activities.

[4] Includes most transportation equipment (excludes motor vehicles), mechanical engineering, and printing and publishing.

[5] Includes wholesale and retail trade, and financial intermediation.

[6] Includes motor vehicles, chemicals, basic and fabricated metals.

[7] Includes real estate activities and public services.

[8] Includes agriculture, construction, and mining and quarrying.

14. **The productivity deceleration in non-ICT industries accounts for most of the gap between the two regions, as this grouping covers over 60 percent of economic activity in each country (Table 3).** While the euro area has always outperformed the U.S. in this category, labor productivity growth fell from 2.1 percent at an annual rate in the first half of the 1990s to 0.9 percent at an annual rate in the subsequent six years. In the U.S., the deceleration was of only 0.4 percentage point. This gap accounts for ½ percentage point of the ¾ percentage point difference between labor productivity growth in the euro area and in the U.S. at the end of the 1990s. The deceleration in productivity in this grouping accounts for virtually all of the deceleration in aggregate labor productivity in the euro area. The service industries in this category account for the majority of the discrepancy, not least because of their large weight in the economy.

15. **The much faster acceleration in work hours in the non-ICT sector vis-à-vis the United States (1.5 percentage points in the euro area versus 0.5 percentage point in the United States) explains all of the relative labor productivity deceleration** (1.2 percentage points in the euro area versus 0.4 percentage point in the United States) (Table 4). The acceleration in hours of work suggests that changes in the relative costs of capital and labor may be behind the sluggish productivity in the sector.

Table 4. Acceleration in Total Work Hours[1]

(In percent, at an annual rate)

	1990-95 (1)		1995-2001 (2)		**Acceleration (2)-(1)**	
	Euro area	U.S.	Euro area	U.S.	**Euro area**	**U.S.**
Total economy	-0.6	1.0	1.0	1.6	**1.6**	**0.6**
ICT-producing industries	-1.2	0.9	2.5	3.6	**3.7**	**2.7**
ICT-producing manufacturing[2]	-3.0	-1.5	0.5	-0.5	**3.6**	**1.0**
ICT-producing services[3]	-0.1	2.8	3.5	5.9	**3.6**	**3.1**
ICT-using industries	-0.6	0.4	1.1	0.8	**1.8**	**0.3**
ICT-using manufacturing[4]	-3.2	-1.2	-0.4	-1.7	**2.8**	**-0.5**
ICT-using services[5]	0.3	0.8	1.7	1.2	**1.4**	**0.4**
Non-ICT industries	-0.6	1.4	0.9	1.9	**1.5**	**0.5**
Non-ICT manufacturing[6]	-2.4	0.5	0.0	-0.8	**2.4**	**-1.3**
Non-ICT services[7]	0.8	1.9	1.7	2.2	**0.9**	**0.3**
Non-ICT other[8]	-2.4	0.1	-0.9	2.2	**1.5**	**2.1**

Sources: Industry Labor Productivity Database - EC and GGDC; and staff calculations.

[1] Detailed listing of all industries in each ICT category in Appendix III.

[2] Includes office machinery, telecommunications equipment, and scientific instruments.

[3] Comprises communications, and computer and related activities.

[4] Includes most transportation equipment (excludes motor vehicles), mechanical engineering, and printing and publishing.

[5] Includes wholesale and retail trade, and financial intermediation.

[6] Includes motor vehicles, chemicals, basic and fabricated metals.

[7] Includes real estate activities and public services.

[8] Includes agriculture, construction, and mining and quarrying.

16. **The euro area has seen large productivity increases in several high-tech industries.**[6] Among ICT-producing industries, the euro area has always lagged behind the United States but not by much (Table 3, row 2). In addition, labor productivity growth in this category increased in the second half of the 1990s in both regions. Within ICT producers, the euro area lags in manufacturing but is an outstanding performer in services, where productivity growth jumped significantly in the second half of the 1990s while declining in the United States.

17. **Turning to intensive ICT users (mainly wholesale and retail trade, and financial services), productivity growth declined in the euro area but surged in the United States in the second half of the 1990s.** The large difference between the two regions in this category was caused by a productivity surge in service industries in the United States. Productivity growth among intensive ICT users in manufacturing in the euro area remained unchanged and much above U.S. rates. Lagging deregulation in product and labor markets, as described in chapter 2, is likely to have dampened efficiency gains in ICT-using service industries in the euro area. In addition, the much faster acceleration in work hours in the sector vis-à-vis the United States partly explains the lower productivity growth (Table 4).

18. **The aggregate euro-area pattern masks important cross-country differences (Table 5).** In ICT-using sectors, labor productivity growth increased between the first and the second half of the 1990s in several countries (Ireland, Netherlands, Portugal and Spain, although only Ireland had larger growth than the United States). However, the weight of the three largest euro-area countries (with some help from other smaller countries) forced down productivity growth in this category. The largest countries also imposed most of the productivity deceleration on the large non-ICT sector. Among them, Italy experienced the largest declines in productivity growth after 1995. Overall, Italy contributed about 40 percent of the 0.7 percentage point deceleration in labor productivity growth in the euro area in the second half of the 1990s (Table 6).

[6] Appendix III provides a listing of industries by ICT classification according to work presented in O'Mahony and Van Ark (2003).

Table 5. Labor Productivity Growth Across Countries
(In percent, at an annual rate)

	ICT-producing			ICT-using			Non-ICT			Total		
	1979-90	1990-95	1995-2001	1979-90	1990-95	1995-2001	1979-90	1990-95	1995-2001	1979-90	1990-95	1995-2001
Austria	9.4	6.8	3.3	3.3	3.9	2.7	2.2	3.6	1.9	2.9	4.0	2.3
Belgium	7.7	3.0	6.8	2.9	3.4	0.4	2.6	2.0	2.0	3.0	2.5	1.7
France	8.0	3.1	5.2	4.3	1.3	1.1	2.1	1.5	1.1	3.1	1.6	1.5
Finland	8.3	6.2	9.8	3.9	1.4	0.4	2.9	3.0	1.1	3.5	3.2	2.3
Germany	7.8	6.2	10.5	2.1	2.6	2.1	1.7	2.1	1.1	2.2	2.5	2.0
Greece	5.4	4.2	6.7	0.2	-1.0	4.1	1.3	1.3	2.4	1.3	0.9	3.1
Ireland	9.9	15.7	17.6	2.9	1.5	5.7	4.1	3.7	5.3	4.7	4.3	7.8
Italy	6.9	5.3	5.4	1.0	2.7	1.6	2.1	2.0	0.1	2.2	2.4	0.8
Luxembourg	7.1	8.2	4.0	3.0	0.9	-0.3	3.6	2.5	0.5	3.8	3.1	1.0
Netherlands	6.4	3.3	2.0	2.8	1.0	1.9	1.9	1.5	0.5	2.3	1.3	1.2
Portugal	12.7	10.7	5.6	3.0	0.8	1.9	3.2	2.1	3.0	3.8	2.3	3.0
Spain	8.1	3.3	3.8	2.2	-0.3	0.9	3.0	2.2	0.5	3.1	1.8	0.8
Euro area	**7.7**	**5.0**	**7.3**	**2.5**	**1.9**	**1.7**	**2.1**	**2.1**	**0.9**	**2.6**	**2.2**	**1.5**
Denmark	6.8	7.4	4.0	1.8	0.8	2.9	1.7	1.8	0.5	1.9	1.9	1.6
Sweden	8.7	6.5	-0.5	2.2	2.8	1.9	1.2	1.4	1.8	1.8	2.1	1.9
UK	8.9	9.5	8.0	2.0	2.1	3.3	1.3	2.9	1.0	2.1	3.2	2.2
EU-15	**7.5**	**5.8**	**6.8**	**2.4**	**2.0**	**1.9**	**2.0**	**2.2**	**1.0**	**2.4**	**2.4**	**1.7**
U.S.	**8.5**	**7.4**	**8.0**	**1.2**	**1.2**	**4.8**	**0.4**	**0.4**	**0.0**	**1.4**	**1.2**	**2.3**

Sources: Industry Labor Productivity Database - EC and GGDC; and staff calculations.

Notes: Productivity is defined as real value added per hours worked. Detailed breakdown by ICT type listed in Appendix III.

Table 6. Labor Productivity Deceleration in the 1990s

	Percentage points	Contribution
Austria	-1.6	0.0
Belgium	-0.8	0.0
Finland	-0.9	0.0
France	-0.1	0.0
Germany	-0.5	-0.2
Greece	2.2	0.0
Ireland	3.5	0.0
Italy	**-1.6**	**-0.3**
Luxembourg	-2.1	0.0
Netherlands	-0.1	0.0
Portugal	0.7	0.0
Spain	-1.0	-0.1
Euro area	-0.7	-0.7

Source: Staff calculations based on aggregation shown in Table 5.

Demonstrating the importance of capital deepening and correct TFP calculation

19. **The previous analysis of labor productivity developments is hampered by the lack of information on capital formation and changes in labor quality.** The Growth Accounting Database put together by the GGDC close this gap. It provides information on growth in real value added, hours of work, ICT capital, non-ICT capital, labor quality, and TFP. Data availability determined its coverage—the database contains information for three euro-area countries (France, Germany and the Netherlands), the U.K. (not used here), and the United States—the end-point for the analysis (2000), and a somewhat more aggregated industry classification (26 industries) than provided by the Industry Productivity Database. All the methodological improvements introduced in the Industry Productivity Database, including the homogenization of treatment of quality changes in ICT equipment, are also present in the Growth Accounting Database. The method used to break down labor productivity growth into its main components corresponds to the traditional methodology discussed, for instance, in Oliner and Sichel (2000). The database is described in more detail in Appendix II and the breakdown of labor productivity growth follows equation (A.2). When comparing to the breakdown shown in Table 2, capital deepening has two components, ICT and non-ICT capital deepening, and changes in labor quality are measured separately instead of being included in TFP growth.

20. **Turning to the components of labor productivity growth, the TFP growth shown in Table 2 is misleading: while German TFP accelerates continuously when carefully measured according to the GGDC, it declines sharply when using aggregate data (Table 7).** Given the weight of Germany in the euro area's aggregate (about 30 percent of total value added in the area) and considering the TFP calculations based on the detailed industry database as superior, TFP growth in the area would actually have been 0.35 percentage point higher than shown in Table 2—about the size of the deceleration in TFP shown in that table. If labor productivity growth in Table 2 were augmented by this amount, the deceleration in euro-area labor productivity would conform to the measurement based on the industry data shown in Table 4 (about 0.7 percentage point). The general profile of TFP growth in France and in the Netherlands is similar in both calculations.

21. **The contribution of ICT capital deepening to productivity growth increased significantly for all countries while the contribution of non-ICT capital deepening declined,** becoming negative in France and zero in the Netherlands (Table 8). Labor quality growth contributed less to productivity growth in the Netherlands and in Germany, but not in France. Looking at the ICT-based breakdown, the contribution of non-ICT capital deepening declined in all groupings for all countries between the first and the second halves of the 1990s, while the contribution of ICT capital deepening increased. That is consistent with the widespread use of ICT equipment in these countries even in the face of large increases in labor usage. TFP grew differently depending on the country and the sector being analyzed.

22. **A deceleration of capital deepening is the key factor behind gaps in labor productivity growth between the U.S. and an aggregate of France, Germany, and the Netherlands (called euro-3 in Table 9).** The contribution of non-ICT capital deepening to

labor productivity growth remained unchanged in the U.S. in the second half of the 1990s but declined markedly in the euro-3 aggregate. In addition, the contribution of ICT capital deepening to labor productivity growth increased by twice as much in the U.S. than in euro-3.

Table 7. Productivity Growth in Two Different Databases[1]

(In percent, at an annual rate)

	Growth Accounting Database			AMECO and OECD data		
	1979-90	1990-95	1995-2000	1979-90	1990-95	1995-2000
France - Total economy						
Labor productivity	2.95	1.47	1.54	2.91	1.86	2.13
of which: TFP[2]	1.85	0.59	1.05	2.16	1.00	1.70
Germany - Total economy						
Labor productivity	1.96	2.26	2.08	1.96	3.09	1.76
of which: TFP[2]	0.55	0.80	1.01	1.45	1.98	1.07
Netherlands - Total economy						
Labor productivity	2.33	1.42	1.52	1.85	1.26	1.59
of which: TFP[2]	1.21	0.44	0.72	1.28	0.97	1.44

Sources: Growth Accounting Database - EC and GGDC; EC-AMECO and OECD; and staff calculations.

[1] Productivity is defined as real value added per hours worked.

[2] Total factor productivity (TFP) from the Growth Accounting Database calculated as a residual after taking into account the contribution of different types of capital deepening and labor quality changes. Calculations using AMECO and OECD data do not correct for quality changes in ICT equipment, changes in labor quality, and aggregation issues.

Table 8. Decomposition of Labor Productivity Growth in Three Euro Area Countries[1]

(In percent, at an annual rate)

	1979-1990			1990-1995			1995-2000		
	France	Germany	Netherlands	France	Germany	Netherlands	France	Germany	Netherlands
Total economy									
Labor productivity	2.95	1.96	2.33	1.47	2.26	1.42	1.54	2.08	1.52
Contribution of:									
ICT capital deepening[2]	0.18	0.48	0.33	0.13	0.38	0.29	0.27	0.55	0.59
Non-ICT capital deepening[2]	0.56	0.60	0.69	0.48	1.01	0.46	-0.24	0.51	0.10
Labor quality[3]	0.37	0.33	0.10	0.26	0.07	0.23	0.47	0.01	0.10
TFP[4]	1.85	0.55	1.21	0.59	0.80	0.44	1.05	1.01	0.72
ICT-producing industries[5]									
Labor productivity	7.71	5.80	6.80	4.17	4.65	3.87	9.20	12.55	4.26
Contribution of:									
ICT capital deepening[2]	0.47	0.72	0.50	0.14	0.80	0.62	0.39	1.09	1.35
Non-ICT capital deepening[2]	1.43	0.97	0.77	0.74	1.62	1.16	-0.23	0.53	0.90
Labor quality[3]	-0.27	0.53	-0.10	0.12	0.88	0.05	0.36	0.56	0.31
TFP[4]	6.08	3.58	5.64	3.16	1.35	2.03	8.67	10.38	1.70
ICT-using industries[6]									
Labor productivity	4.41	1.75	2.86	1.75	2.60	1.08	1.55	1.54	2.75
Contribution of:									
ICT capital deepening[2]	0.32	0.45	0.78	0.26	0.54	0.57	0.55	0.60	1.18
Non-ICT capital deepening[2]	0.70	0.27	0.50	0.81	0.67	0.54	0.01	0.16	0.19
Labor quality[3]	0.19	0.33	0.04	0.05	0.30	0.22	0.42	0.23	0.15
TFP[4]	3.20	0.70	1.54	0.62	1.08	-0.26	0.58	0.56	1.23
Non-ICT industries[7]									
Labor productivity	1.78	1.29	1.51	0.90	1.66	1.40	0.85	0.84	1.35
Contribution of:									
ICT capital deepening[2]	0.09	0.31	0.19	0.09	0.17	0.21	0.15	0.39	0.39
Non-ICT capital deepening[2]	0.17	0.54	0.39	0.21	0.72	0.40	-0.48	0.29	0.18
Labor quality[3]	0.20	0.47	-0.02	0.19	0.28	0.26	0.43	0.01	0.28
TFP[4]	1.33	-0.03	0.94	0.41	0.49	0.53	0.74	0.16	0.50

Sources: Growth Accounting Database - EC and GGDC; and staff calculations.

[1] Productivity is defined as real value added per hours worked. Detailed breakdown by ICT type listed in Appendix III.

[2] Capital deepening defined as changes in the capital to hours worked ratio.

[3] Labor quality changes calculated by the ratio of hours weighted by wages of individuals with different educational backgrounds.

[4] Total factor productivity (TFP) calculated as a residual.

[5] Includes office machinery, telecommunications equipment, scientific instruments, communications, and computer and related activities.

[6] Includes most transportation equipment, mechanical engineering, printing and publishing, wholesale and retail trade, and financial services.

[7] Includes agriculture, construction, mining, motor vehicles, chemicals, basic and fabricated metals, real estate activities and public services.

Table 9. Decomposition of Labor Productivity Growth in Euro-3 and in the U.S.[1]
(In percent, at an annual rate)

	1979-1990		1990-1995		1995-2000	
	Euro-3[2]	US	Euro-3[2]	US	Euro-3[2]	US
Total economy						
Labor productivity	2.35	1.26	1.89	1.00	1.83	2.17
Contribution of:						
ICT capital deepening[3]	0.36	0.48	0.28	0.41	0.45	0.80
Non-ICT capital deepening[3]	0.59	0.24	0.77	0.23	0.20	0.25
Labor quality[4]	0.32	0.26	0.15	0.23	0.19	0.25
TFP[5]	1.08	0.28	0.69	0.13	1.00	0.87
ICT producing industries[6]						
Labor productivity	6.59	7.72	4.40	8.41	10.53	14.31
Contribution of:						
ICT capital deepening[3]	0.61	1.30	0.54	1.27	0.86	1.84
Non-ICT capital deepening[3]	1.12	0.92	1.26	0.84	0.29	0.95
Labor quality[4]	0.18	0.24	0.53	0.41	0.46	0.03
TFP[5]	4.69	5.25	2.07	5.89	8.91	11.48
ICT using industries[7]						
Labor productivity	2.82	1.44	2.15	1.64	1.67	4.71
Contribution of:						
ICT capital deepening[3]	0.44	1.05	0.44	0.74	0.64	1.45
Non-ICT capital deepening[3]	0.45	0.61	0.71	0.59	0.11	0.57
Labor quality[4]	0.25	0.23	0.20	0.30	0.29	0.34
TFP[5]	1.68	-0.44	0.79	0.00	0.63	2.34
Non-ICT industries[8]						
Labor productivity	1.49	0.63	1.36	0.22	0.89	0.02
Contribution of:						
ICT capital deepening[3]	0.22	0.28	0.14	0.30	0.30	0.45
Non-ICT capital deepening[3]	0.39	-0.04	0.51	0.09	0.00	0.09
Labor quality[4]	0.32	0.37	0.25	0.19	0.19	0.29
TFP[5]	0.56	0.03	0.46	-0.37	0.40	-0.81

Source: Growth Accounting Database - EC and GGDC; and staff calculations.

[1] Productivity is defined as real value added per hours worked. Detailed breakdown by ICT type listed in Appendix III.

[2] Industry value-added weights used to aggregate data underlying Table 8.

[3] Capital deepening defined as changes in the capital to hours worked ratio.

[4] Labor quality changes calculated by the ratio of hours weighted by wages of individuals with different educational backgrounds.

[5] Total factor productivity (TFP) calculated as a residual.

[6] Includes office machinery, telecommunications equipment, scientific instruments, communications, and computer and related activities.

[7] Includes most transportation equipment, mechanical engineering, printing and publishing, wholesale and retail trade, and financial services.

[8] Includes agriculture, construction, mining, motor vehicles, chemicals, basic and fabricated metals, real estate activities and public services.

23. **TFP growth rose by ¾ percentage point in the U.S. in the second half of the 1990s but remained lower than the rates posted in euro-3, which increased 1/3 percentage point during this period.** The TFP growth differential in favor of the euro-3 aggregate contrasts with the message for the euro area as a whole shown in Table 2. Again, methodological problems with the aggregate data used in Table 2 likely overestimate the decline in TFP growth for the euro area as a whole, but the partial coverage of the euro-3 aggregate (in particular, the exclusion of Italy) may help to explain the more upbeat productivity scenario.

24. **Looking at the ICT groupings, labor productivity in non-ICT industries decelerated much less in the United States than in the euro-3 aggregate.** In addition, the productivity deceleration in the U.S. non-ICT sector was caused by a large decline in TFP growth that was partly offset by more capital deepening and faster improvements in labor quality. In contrast, in the euro-3 aggregate, TFP growth in the non-ICT sector remained nearly unchanged while declines in non-ICT capital deepening and labor quality growth accounted for the deceleration in labor productivity. Unlike the non-ICT grouping, labor quality growth in the euro-3 grouping increased in the ICT sectors in the second half of the 1990s. The United States posted larger increases in both TFP growth and capital deepening in ICT-producing and, more important, ICT-using industries than the euro-3 aggregate.

Summary of results from the sectoral productivity analysis

25. **A much slower deceleration in labor productivity in non-ICT industries and a faster acceleration in ICT-using sectors accounted for the U.S. productivity growth lead over the euro area in the second half of the 1990s (Tables 10 and 11).** Labor productivity acceleration in ICT-producing industries in the second half of the 1990s was faster in the euro area than in the United States but that had little effect on aggregate developments because of the small share of this sector in total value added (Table 10, row 2). The decline in labor productivity growth in the euro area is almost fully accounted for by the decline in labor productivity growth in non-ICT sectors (Table 10, third column, eighth row.)

26. **Turning to a breakdown of aggregate labor productivity growth, the difference in performance vis-à-vis the United States can be accounted for by a decline in capital deepening and slower labor quality improvements observed in an aggregate of France, Germany and the Netherlands.** These variables grew at a faster rate in the United States after 1995. TFP growth increased in the euro-3 aggregate in the second half of the 1990s but more slowly than in the United States. These variables are not readily available for the euro area as a whole but if generalized for the remaining 40 percent of the economy, they suggest that the decline in labor productivity growth in the second half of the 1990s discussed in Section B was not caused by slower technological growth (or at least not as much as suggested by the aggregate data used in Table 2). Slower capital deepening was the most important culprit.

Table 10. Contributions to Aggregate Labor Productivity Acceleration[1]
(In percentage points, at an annual rate)

	Acceleration 1995-2001		Contributions 1995-2001		GDP shares (%) 2001	
	Euro area	U.S.	Euro area	U.S.	Euro area	U.S.
Total economy	-0.7	1.1	-0.7	1.1	100.0	100.0
ICT-producing industries	2.3	0.5	0.1	0.1	5.5	7.0
ICT-producing manufacturing[2]	2.5	3.9	0.0	0.1	1.4	2.4
ICT-producing services[3]	2.2	-0.6	0.1	0.0	4.0	4.5
ICT-using industries	-0.3	3.6	-0.1	1.1	27.6	31.6
ICT-using manufacturing[4]	0.1	1.0	0.0	0.1	6.0	4.4
ICT-using services[5]	-0.3	3.9	-0.1	1.1	21.6	27.2
Non-ICT industries	-1.2	-0.4	-0.7	-0.2	66.9	61.4
Non-ICT manufacturing[6]	-1.9	-2.6	-0.2	-0.2	12.6	8.9
Non-ICT services[7]	-0.8	0.3	-0.4	0.1	44.0	42.8
Non-ICT other[8]	-1.2	-0.7	-0.1	-0.1	10.3	9.7

Sources: Industry Labor Productivity Database - EC and GGDC; and staff calculations.

[1] Productivity is defined as real value added per hours worked. Detailed breakdown by ICT type listed in Appendix III.

[2] Includes office machinery, telecommunications equipment, and scientific instruments.

[3] Comprises communications, and computer and related activities.

[4] Includes most transportation equipment (excludes motor vehicles), mechanical engineering, and printing and publishing.

[5] Includes wholesale and retail trade, and financial intermediation.

[6] Includes motor vehicles, chemicals, basic and fabricated metals.

[7] Includes real estate activities and public services.

[8] Includes agriculture, construction, and mining and quarrying.

Table 11. Contributions to Labor Productivity Acceleration[1]
(In percentage points, at an annual rate)

	Acceleration 1995-2000		Contributions 1995-2000	
	Euro-3[2]	US	Euro-3[2]	US
Total economy	-0.1	1.2	-0.1	1.2
ICT producing industries[3]	6.1	5.9	0.4	0.4
ICT using industries[4]	-0.5	3.1	-0.1	0.9
Non-ICT industries[5]	-0.5	-0.2	-0.3	-0.1

Sources: Growth Accounting Database - EC and GGDC;
and staff calculations.

[1] Productivity is defined as real value added per hours worked.
Detailed breakdown by ICT type listed in Appendix III.

[2] Industry value-added weights used to aggregate data underlying Table 7.

[3] Includes office machinery, telecommunications equipment, scientific instruments, communications, and computer and related activities.

[4] Includes most transportation equipment, mechanical engineering, printing and publishing, wholesale and retail trade, and financial services.

[5] Includes agriculture, construction, mining, motor vehicles, chemicals, basic and fabricated metals, real estate activities and public services.

D. Structural Labor Market Changes and Capital Deepening

27. The stylized facts produced so far can be mapped into an analytical framework relating structural labor market changes and productivity developments. Taking the results for the euro-3 aggregate as representative for the euro area as a whole, the actual reduction in labor productivity growth in the second half of the 1990s was rooted in the sharp declines in non-ICT capital deepening, which were the counterpart of the large increase in work hours in the period. Some studies suggest that this job-rich growth was caused in part by changes in the basic parameters of the wage-setting mechanism that shifted rightward a "labor-supply-like" relationship between real wages and the unemployment rate.[7] Other studies claim that workers actually learned from the mistakes of the past after observing the consequences of excessive wage demands[8], or that a set of factors could have conspired to generate lower wage growth in the 1990s.[9] Among many factors, declines in unions' bargaining power—maybe related to globalization—implicit contracts with governments—who provided services to workers in exchange for less wage demands—and targeted reductions in labor cost taxation are worth listing. Increased use of active labor market policies (mainly the policies directed toward increasing labor demand by private corporations) were also shown to have lowered wages for a given rate of unemployment and increased employment rates in a sample of OECD countries, including most euro-area economies.[10] Finally, labor market reforms allowing a better use of temporary and part-time work in many euro-area countries could also have strengthened labor market competition and held wage growth down.

Benchmark model

28. **Structural labor market changes such as the ones described in the previous paragraph are quite consistent with the stylized facts unearthed in Section C and a simple model captures the basic idea and provides a framework for the econometric analysis.**

---

[7] Decressin and others (2001) analyze macro data for the largest four euro-area countries and claim that wage moderation by unions was likely behind job-rich growth. Estevão and Nargis (2002) make the same claim for France after a detailed analysis.

[8] Blanchard and Phillipon (2003).

[9] Estevão and Nargis (2002) use household-level data for France to show that the trade-off between unemployment and real wages did improve in the 1990s. However, they caution that other factors beyond wage moderation could be behind the clear structural improvement in French labor markets.

[10] Estevão (2003a).

29. **A short-run labor demand curve, as SLD in Figure 9, can be obtained under standard neoclassical assumptions.** Following Blanchard (1997), assume the economy grows along a balanced path determined by the rate of labor-augmenting (Harrod-neutral) technological growth, g_a. The curve SLD is derived by assuming that the production function combines labor and capital according to a constant-returns-to-scale technology, that capital is fixed in the short run and that firms maximize profits. The labor force is normalized to 1 and employment is $N = 1-u$ (u is the unemployment rate). Wages are defined in efficiency units, i.e. as a ratio of the technology level, A.

30. **In the long run, capital varies and, assuming interest rates are determined abroad, the user cost of capital is exogenously given.** In this case, labor cost in efficiency units is set to equalize the profit rate to the user cost of capital independently of the unemployment rate (LLD in Figure 9).

31. **A "labor-supply-like" relationship can be modeled according to the *right-to-manage* model, in which firms and unions bargain over wages, given the short-run labor demand.** A version of such a model, developed in Estevão and Nargis (2002), generates

$$\frac{W}{A * B} * \tau = f(m,u), \quad f_m>0 \text{ and } f_u<0 \quad , \tag{1}$$

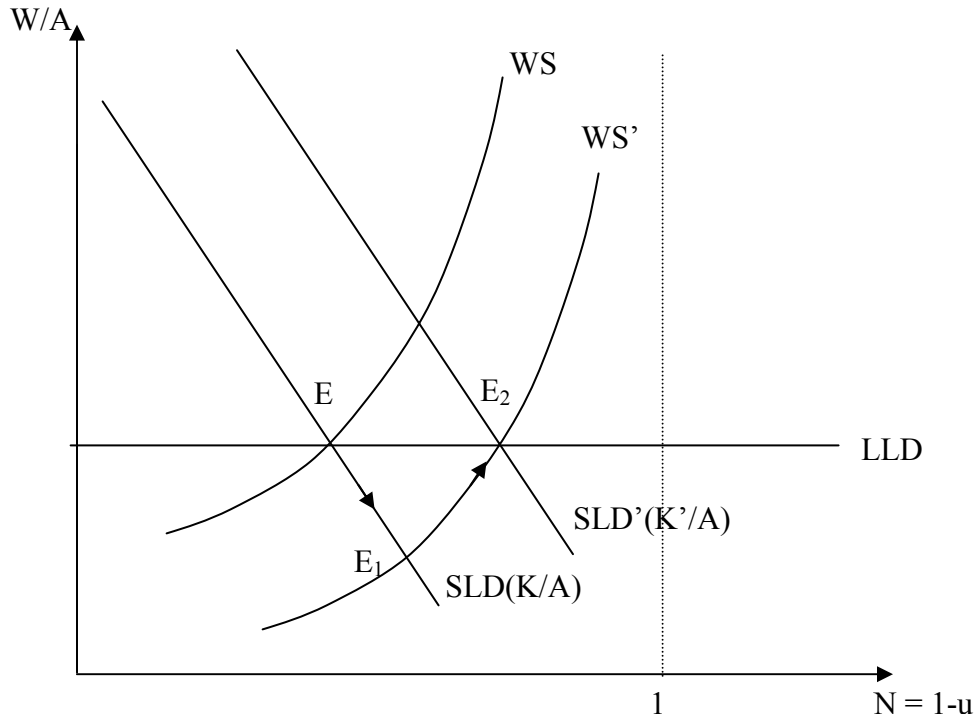
where B stands for the income a worker would receive if unemployed, and τ stands for the ratio of the fiscal wedge on unemployment income to the fiscal wedge on labor income; m is a structural parameter determining the position of the wage curve and its steepness. Equation (1) represents a contract curve relating wages in efficiency units to the unemployment rate (the wage-setting curve, WS, in Figure 9). For a given rate of unemployment, wages depend on unemployment income (net of the relative tax wedge) and on the position of the wage curve, a function of m. Ceteris paribus, wage demands are higher the higher is unemployment income (which depends, among other things, on unemployment benefits replacement rates), as the outcome in case of disagreement (and the worker is unemployed) is less unattractive. On the other hand, when the unemployment rate increases, the probability of not finding a job also rises and wage demands are more subdued. Whenever workers' bargaining power becomes weaker, or whenever workers value employment more, the parameter m decreases and wages are lower for a given rate of unemployment. Changes in the degree of labor market competition (e.g. because of reforms that allow better allocation of labor, like the deregulation of part-time and "temp" work in Spain and France in the 1990s), will also affect the position of the wage-setting relationship.

32. **Wage-setting changes trigger an adjustment path where labor productivity growth declines at first, but then surges before returning to its original steady state.** Point E in Figure 9 represents the long-run equilibrium in the labor market, where wages are such that the profit rate equals the worldwide user cost of capital. In this steady state, output, capital, and employment in efficiency units (AN) grow at g_a percent. Under the hypothesis of a significant downward shift in the wage-setting curve—due, for instance, either to a general

agreement for wage moderation, as in the Wassenaar agreement in the Netherlands in the 1980s, or to some labor market deregulation—wages will grow more slowly than technological progress and the unemployment rate will decline as the economy moves along a negatively sloped short-run labor demand curve and reaches the short-run equilibrium point E_1. In this transition path, the rate of growth of the capital-labor ratio declines as labor grows faster than capital in efficiency units, K/A.

33. **However, wage-setting changes in favor of cheaper labor for a given rate of unemployment will ultimately raise investment, as low wages raise profit rates to a level above the user cost of capital.** In the longer run, the short-run labor demand will then shift outward, moving along the labor supply relationship, until the profit rate and the unit cost of capital are equal at point E_2. Structural unemployment is lower than in E but wages in efficiency units are unchanged. While labor demand shifts, capital deepening speeds up as capital in efficiency units grows at a faster rate than labor.

Figure 9. Structural Labor Market Changes and Long-Run Adjustment



34. **During the transition path, technological growth remains unchanged, but the capital-labor ratio first decelerates and, then, accelerates, causing labor productivity growth to change as well.** This adjustment pattern does not account for other possible effects from structural labor market changes on labor productivity growth. In particular, TFP

growth is likely to benefit in the long run from labor market reforms as labor is allocated more efficiently. TFP growth may also suffer in the short run if labor quality is mismeasured and the newly hired unemployed are less efficient than currently employed workers. Changes in the sector composition of the labor force may also affect TFP aggregate productivity growth, although that seems to be a minor factor in explaining the disparities in productivity growth between the United States and the euro area.

Estimating the impact of wage moderation on capital deepening

35. **The wage-setting relationship has been estimated in different ways, but, in general, empirical work has tended to prefer regressing the logarithm of wages on the logarithm of the unemployment rate.** Therefore, empirical versions of equation (1) are in general written as

$$\ln\left[\frac{W_t}{CP_t * A_t}\right] = \xi_t * \gamma - \theta * \ln(u_t) \quad , \qquad (2)$$

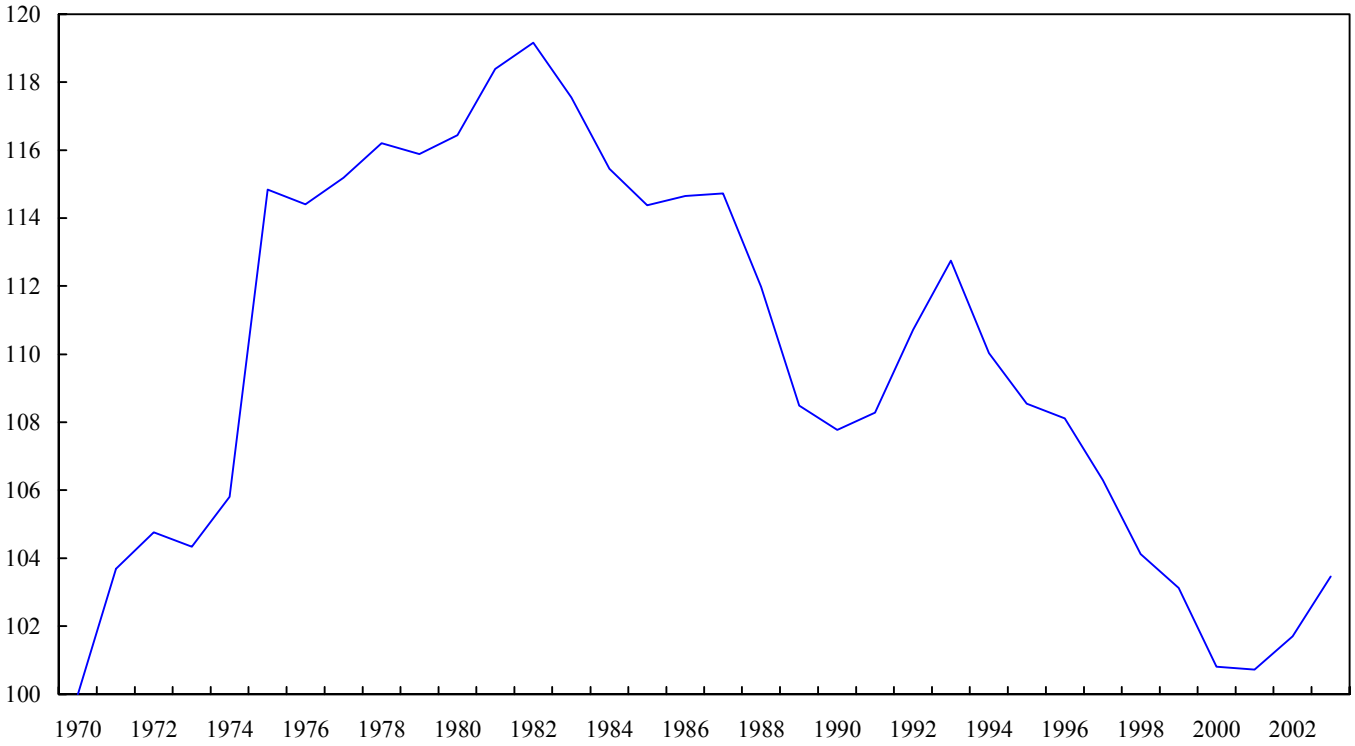
where CP_t represents consumer prices, ln(.) stands for the natural logarithm of a variable, and deviations from equilibrium levels of real hourly wages in efficiency units ($\ln(W_t/(CP_t*A_t))$) are modeled as $\xi_t \neq 1$. Therefore, in equilibrium at time 0, the wage-setting curve intercept is determined by γ, and structural shocks move the curve away from this value. Estimates of these changes can be obtained by assuming $\theta = 0.1$, as has been estimated by Blanchflower and Oswald (1994) for many different countries.[11]

36. **The large, negative wage-setting shocks of the 1970s, when workers resisted the efficiency shock from higher oil prices, were reversed in the 1980s and in the second half of the 1990s.** This path is shown in Figure 10, which plots the accumulated wage-setting shocks for the euro area using aggregate data from the AMECO database and the OECD. By the end of the sample period, the wage-setting curve is roughly back at its position at the beginning of the 1970s, although there is some evidence of a small upward shift during the recent slowdown.

---

[11] Several papers since Blanchflower and Oswald (1994) show that there may be some variation around the -0.1 estimate. Card (1995), in particular, raises doubts about their basic specification and notices that elasticities for the United States could be smaller than their estimate. More recently, Estevão and Nigar (2002) use micro data from the French labor force survey and estimate a wage-setting elasticity of -0.1. This general result does not seem to be unique to more developed industrial economies: Estevão (2003b) estimates, also using micro data and different methods, an elasticity of about the same size (but a bit smaller) for Poland. Finally, Estevão (2003a) has estimated the same -0.1 elasticity using aggregate information for a panel of 15 OECD countries, suggesting that the results are not dependent on the use of household-level data.

Figure 10. Accumulating Wage-Setting Shocks in the Euro Area
(Variable as defined in equation (7), 1970 = 100)



Sources: EC-AMECO database and staff calculations. Labor cost data refer to hourly labor compensation.

37. **In order to know the impact of wage-setting changes on capital deepening an elasticity estimate is needed.** This estimate may be obtained by using the industry data discussed in Section C. This is a superior alternative to using the aggregate cross-country data because of the greater degrees of freedom, and the quality of TFP estimates and capital deepening obtained from the growth accounting database. Using these data, industry-specific measures of wage-setting shocks can be built as

$$\xi_{ijt} * \gamma_{ij} = \ln\left(\frac{W_{ijt}}{CP_{jt} * A_{ijt}}\right) + 0.1 * \ln(u_{jt}) \quad , \qquad (3)$$

where i stands for country, j for industry, and t for the time period. Consumer prices and the unemployment rate are measured at the country level. Industry-level technology, A_{ijt}, gives the right norm for the wage increases industries could afford without weakening profit rates. Because wages are not available in the growth accounting database, hourly labor compensation is used instead.

38. **The estimated equation is consistent with a simple relationship between the capital-labor ratio and the relative price of labor and capital, as implied by the neoclassical labor demand equation used in the model sketched above.** Empirically, percent changes in the capital-labor ratio are modeled as a function of industry/country/year-specific dummies and their interactions, represented by the linear function F(.), shocks in wage-setting ($\Delta\xi_{ijt}$) and in the user cost of capital ($\Delta\eta_{ijt}$), and residuals that are identically and independently distributed (ε_{ijt}):

$$\Delta \ln\left(\frac{K_{ijt}}{L_{ijt}}\right) = F(country_i, industry_j, time_t) + \beta * \Delta\xi_{ijt} - \alpha * \Delta\eta_{ijt} + \varepsilon_{ijt} \ . \qquad (8)$$

β is the parameter of interest here. Function F(.) captures a significant amount of variation in the data, including common industry shocks within a country (e.g. variations in central bank interest rate policy), common country shocks within an industry (e.g. industry-specific technological shocks), and time shocks in industry characteristics (e.g. changes in the composition of the labor force), among others. Because of a lack of information, the residual of the estimated regression includes industry-specific shocks in the user cost of capital, which are assumed to follow an AR(1) process but to be uncorrelated to wage-setting shocks. Information on total capital deepening was obtained by averaging the accumulation of ICT and of non-ICT capital, using the shares of ICT and non-ICT capital income in total capital income as weights.

Table 12. Elasticity of Capital Deepening to Wage-Setting Shocks[1]

Dependent variable: $\Delta\ln(K_{ijt}/L_{ijt})$	
WS shock[2]	0.64* (0.31)
country dummies	yes
industry dummies	yes
time dummies	yes
industry*time dummies	yes
country*time dummies	yes
country*industry	yes
Adj. R^2	0.40
Nobs	1,690
Number of industries	26
Sample period	1980-2000

Sources: GGDC; AMECO database; and staff estimates.

[1] Estimation uses industry-level data for France, Germany and the Netherlands. Standard errors are shown in parentheses and are corrected for AR(1) residuals.

* stands for significant at the 5 percent level.

[2] Wage-setting shocks measured as shown in equation (7). Consumer prices are measured by the implicit deflator for private consumption expenditures.

39. **Wage-setting shocks are estimated to affect capital deepening significantly in the panel data formed by France, Germany and the Netherlands, with an elasticity of 0.64 (Table 12).** This elasticity can be used as representative of the euro area, since the estimation takes care of country-specific effects. Based on the evolution of wage-setting shocks as displayed in Figure 10, capital-labor ratios would have declined in the euro area in the absence of further shocks. The contribution of capital deepening to annual labor productivity growth would have been about -0.3 percentage point as opposed to the 0.4 percentage point shown in Table 2. Other factors, such as drops in the user cost of capital because of declining interest rates and ICT equipment prices, offset the strong push from these wage shocks for firms to substitute away from capital toward labor.

E. Additional Structural Changes to Boost TFP and Investment Growth

40. **The same labor market reforms necessary to continuing reabsorbing people into jobs will probably ultimately increase TFP growth.** These reforms should aim at increasing the incentives to work vis-à-vis receiving social benefits and correct incentives for human capital formation, with labor income better reflecting individual abilities and efforts. The increase in human capital accumulation and the better allocation of labor across alternative uses should boost TFP growth in the long term.

41. **However, recent research has shown that other direct measures could be helpful in addressing the relatively weak TFP growth in Europe.** The European Commission (2003) shows some evidence that the recent labor productivity differential between the U.S. and the European Union can be related to some fundamental structural differences at the individual country level, with five areas of significant quantitative importance: the level of product market regulation, the structure of financial markets, the degree of product market integration, the size of "knowledge" investment, and the aging of the labor force.

42. **Turning to product market reforms, the analysis provided in this chapter points to the need for reforms in specific sectors.** Notwithstanding considerable progress in product and financial market reforms (see, for instance, Chapter 2 and Blanchard (2004) for a recent positive evaluation) the gap in productivity growth in ICT-using services, which includes wholesale trade, retail trade, and financial intermediation, is worrisome. However, evidence from the McKinsey Global Institute research on productivity growth in France, Germany and the United States, does not clearly indicate which reforms should be implemented. Take the case of the retail food sector, for instance. McKinsey finds that labor productivity in that sector was actually 7 percent higher in France than in the U.S. in 2000. In addition, the degree of IT use in that sector was about the same in France, Germany and the United States in 1999, with the United States holding only a small lead. Blanchard (2004) suggests that barriers to firms' entry and exit in the retail sector in Europe could be behind the productivity differentials. In fact, Foster, Haltiwanger and Krizan (2002) show that productivity growth in the U.S. retail trade sector in the 1990s can be attributed to the replacement of less productive by more productive establishments. In this sense, lowering barriers to and easing the regulatory burden on the creation of enterprises in Europe seem to be necessary.

43. **The European Commission (2003) argues that, although it is important to address static efficiency problems, product market deregulation would not actually increase TFP growth in the long term.** The document provides some simulations showing that even relatively rapid deregulation toward the U.S. levels would not lead to sufficiently large productivity gains over the next seven years to close the efficiency gap with the United States. The document stresses that any gains from deregulation in terms of technological catching-up or from privatizations of state monopolies should be interpreted more as static efficiency gains and not as the dynamic efficiency gains needed to expand the technological frontier.

44. **However, product market reforms could positively affect those risk-taking activities that are the engine of technological progress.** Furthermore, Chapter 2 finds some evidence linking product market reforms to future labor market reforms, which would not only improve labor market functioning, but also, depending on the type of labor market reforms, increase human capital accumulation—an engine of TFP growth.

45. **The Commission's work also suggests that long-run productivity gains from investments in both education and R&D would have a direct positive impact in TFP growth.** With respect to R&D, the paper argues that the focus should not be on boosting R&D spending directly, but on creating the necessary conditions for promoting an endogenous increase in research spending. These could be obtained through two main channels: higher product market integration (e.g. through the completion of the single market program), and an investment environment that ensures the development of a more active market for risk capital.

46. **Given the pattern of TFP growth in the three euro-area countries studied in detail in Section C, it is equally possible to argue that the euro area is only lagging the United States in terms of adoption of ICT technologies in some service sector industries.** Although product market reforms and other structural changes would speed the diffusion of technology in the euro area, the diffusion will, nonetheless, happen. Evaluating such a hypothesis is outside the scope of this chapter and will be left to future research.

THE INDUSTRY LABOR PRODUCTIVITY DATABASE

47. The Industry Labor Productivity Database, put together by the Groninger Center for Development and Growth (GCDG), contains information on value added, employment, and hours worked in the 15 EU member states and the United States for 56 separate industries between 1979 and 2001. The point of departure for most countries was the new OECD STAN Database of national accounts. The STAN Database contains information on the most important national accounts variables from 1970 onward based on a common industrial classification. However, for a number of industries STAN does not contain sufficient detail. For example, the electrical engineering sector does not distinguish among semiconductors, telecommunications equipment, and radio and TV receivers. Wholesale trade and retail trade are aggregated in STAN, as are all industries within transport services as well as those within business services. To obtain a sufficiently detailed perspective on industry performance, the GGDC supplemented STAN with additional detail from annual production surveys, and service statistics. In addition, where necessary, more detailed national accounts were used from individual countries (e.g. in the case of Ireland). In general, the method employed was to use STAN aggregates as control totals and data from alternative sources to divide these totals into subindustries. The data series available from STAN are value added in current and constant prices (at basic prices), numbers of persons engaged (including self-employed), number of employees, total labor compensation, and, in a limited number of cases, working hours. Similar variables were available from survey statistics.[12]

48. Most important for this chapter, the Industry Labor Productivity Database homogenized the treatment of quality changes in computer and semiconductor prices across all countries. Following the work of Schreyer (2000 and 2002), the GGDC achieved international comparability in this area by using harmonized U.S. deflators for six ICT producing industries encompassing the production of computers, semiconductors , communications equipment and others, to correct value-added data for other countries. In the process, U.S. value-added deflators are corrected for differences in overall inflation between each country and the United States. In addition, the GGDC minimized the substitution bias in fixed-weight indices (like the Laspeyres) when calculating value-added at constant prices for higher levels of aggregation.

49. The GGDC used the Törnqvist method of aggregation to approximate an ideal Fisher price index, a procedure also followed here when calculating industry aggregates for the euro area and the United States. All the tables and results presented in this chapter for the euro area, the United States or the euro-3 aggregate uses value-added weights to get to (ICT-based) sectoral breakdowns.

---

[12] All the data described here are explained in detail in "Data Sources and Methodology" by R. Inklaar and others, published as Chapter 7 in O'Mahony and Van Ark (2003).

THE GROWTH ACCOUNTING DATABASE

50. The Growth Accounting Database from the GGDC provides information for three euro-area countries (France, Germany and the Netherlands), the United Kingdom (not used here), and the United States. The sample goes from 1980 to 2000, and it uses a somewhat more aggregated industry classification (26 industries) than provided by the Industry Productivity Database. The aggregations by the ICT taxonomy are based on a mapping between the listing in Appendix III and the 26 industries in the database. This was also the procedure used by O'Mahony and van Ark (2003) but it is possible that the mapping used here differs slightly from theirs, mainly in cataloguing some service industries as non-ICT users, as opposed to ICT users. All the methodological improvements presented by the Industry Productivity Database, including the homogenization of treatment of quality changes in ICT equipment, apply to this database. For more details, see the reference in footnote 13.[13]

51. The method used to break down labor productivity growth into several components assumes perfect markets and constant returns to scale so that the share of total capital is one minus the share of labor compensation in total value added—the same procedure used to break down the aggregate data in Section B. The database provides information on the labor share and the share of ICT capital income in total capital income. The assumption of constant returns to scale allows the share of each type of capital stock on value added to be recovered with this information.

52. The database also provides information on changes in labor quality calculated by first dividing total hours by skill level (education attainment), weighting the growth in each type by its wage share and subtracting total hours. The researchers divided, for each country, total hours worked into a number of different skill types. These types vary across country, but all include a high-skill category (degree and above) and a low-skill category (broadly equivalent to no high school graduation in the U.S.). Therefore, variations across countries in skill types are confined to intermediate categories. Second, capital input is measured using a Törnqvist capital service index, which comprises three assets for ICT—software, computers, and communications equipment—and three for non-ICT—non-ICT equipment, structures, and

[13] The results for labor productivity growth using information from this database will differ from the ones using the Industry Productivity Database for many reasons. First, the tables using the Growth Accounting Database will stop with averages up to 2000. The addition of 2001 in the tables based on the Industry Productivity Database lowers productivity growth slightly in the last sample period. Second, the aggregation by ICT grouping will differ because there is not a perfect match between the classification put together for the 56 industries in the Industry Productivity Database and the 26 industries included in the Growth Accounting Database. Third, small differences can be attributed to approximations made in the aggregation process.

vehicles. Capital inputs are measured as service flows, and the share of each type in the value of capital is based on its user cost and not its acquisition cost.

53. To derive the productivity growth accounting equation, the GGDC assumed percent changes in output can be written as

$$\Delta y = \alpha_l * \Delta l + \alpha_l * \Delta q + \alpha_{ict} * \Delta k_{ict} + \alpha_{nict} * \Delta k_{nict} + \Delta tfp \quad , \qquad \text{(A.1)}$$

where α_i represents the share of input i's income in value added, Δ represents first differences, lower-case letters refer to the natural logarithm of each variable, y is real value added in a particular industry at time t (subscripts are omitted for simplicity), l is total hours of work, q is labor quality, k_{ict} and k_{nict} represent capital services of ICT and non-ICT equipment, respectively, and tfp is total factor productivity. Subtracting total hours from both sides of the above equation, and rearranging and employing constant returns to scale so that $\alpha_l + \alpha_{ict} + \alpha_{nict} = 1$, gives a decomposition of average labor productivity growth as

$$\Delta p = \alpha_l * \Delta q + \alpha_{ict} * (\Delta k_{ict} - \Delta l) + \alpha_{nict} * (\Delta k_{nict} - \Delta l) + \Delta tfp \quad , \qquad \text{(A.2)}$$

where p is labor productivity, and the terms in parentheses are ICT and non-ICT capital-hours ratios.

ICT TAXONOMY[14]

1. ICT Producing - Manufacturing (ICTPM): Office machinery (30); Insulated wire (313); Electronic valves and tubes (321); Telecommunication equipment (322); Radio and television receivers (323); Scientific instruments (331).

2. ICT Producing – Services (ICTPS): Communications (64); Computer & related activities (72).

3. ICT Using – Manufacturing (ICTUM): Clothing (18); Printing & publishing (22); Mechanical engineering (29); Other electrical machinery & apparatus (31-313); Other instruments (33-331); Building and repairing of ships and boats (351); Aircraft and spacecraft (353); Railroad equipment and transport equipment not elsewhere classified (352+359); Furniture, miscellaneous manufacturing; recycling (36-37).

4. ICT Using – Services (ICTUS): Wholesale trade and commission trade, except for motor vehicles and motorcycles (51); Retail trade, except for motor vehicles and motorcycles; repair of personal and household goods (52); Financial intermediation, except insurance and pension funding (65); Insurance and pension funding, except compulsory social security (66); Activities auxiliary to financial intermediation (67); Renting of machinery & equipment (71); Research & development (73); Legal, technical & advertising (741-3).

5. Non-ICT Manufacturing (NICTM): Food, drink & tobacco (15-16); Textiles (17); Leather and footwear (19); Wood & products of wood and cork (20); Pulp, paper & paper products (21); Mineral oil refining, coke & nuclear fuel (23); Chemicals (24); Rubber & plastics (25); Nonmetallic mineral products (26); Basic metals (27); Fabricated metal products (28); Motor vehicles (34).

6. Non-ICT Services (NICTS): Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel (50); Hotels & catering (55); Inland transport (60); Water transport (61); Air transport (62); Supporting and auxiliary transport activities; activities of travel agencies (63); Real estate activities (70); Other business activities, not elsewhere classified (749); Public administration and defense; compulsory social security (75); Education (80); Health and social work (85); Other community, social, and personal services (90-93); Private households with employed persons (95); Extraterritorial organizations and bodies (99).

7. Non-ICT Other (NICTO): Agriculture (01); Forestry (02); Fishing (05); Mining and quarrying (10-14); Electricity, gas, and water supply (40-41); Construction (45).

[14] Original list can be found in O'Mahony and van Ark (2003).

LABOR HOARDING IN THE RECENT SLOWDOWN

54. The latest cyclical downturn did not trigger the area's traditional pattern of labor shakeouts and upward-ratcheting unemployment rates. Employment has also been surprisingly resilient. This appendix will attempt to shed light on these recent events using aggregate data because the detailed growth accounting database stops in 2000 and does not cover the euro area as a whole.

55. The apparent change in employment behavior might be related to the increased job intensity of growth in the area in the 1990s—the mirror image of the slowdown in labor productivity growth—because of the more favorable wage-setting patterns documented elsewhere in this chapter. In this case, output can grow more slowly and still generate hirings. This type of interpretation is consistent with two main characteristics of the recent slowdown: annual GDP changes were never negative and employment increased marginally every year between 2001 and 2003 (Table 13).

Table 13. Euro area: Output and Employment Changes during Previous Recessions
(Percent)

CEPR recession dates [1]	Output	Employment
1974	2.70	0.46
1975	-0.60	-1.21
1980	2.00	0.68
1981	0.47	-0.36
1982	0.75	-0.61
1992	1.43	-0.91
1993	-0.84	-1.69
2001 [2]	1.64	1.34
2002 [2]	0.90	0.54
2003 [2]	0.43	0.12

Sources: AMECO database; and staff calculations.

[1] Dating was done using quarterly data. Annual definition is an approximation of original dating.

[2] IMF staff dating.

56. However, labor-hoarding intensity might also have picked up when compared to previous slowdowns. Actually, more labor hoarding could also be associated with the wage moderation observed in the 1990s and the resulting increased job-intensity of growth. As opposed to previous slowdowns, this moderation seemed to have raised the profitability of companies, which might have weakened firms' justification for firing excess labor.

57. This appendix provides a benchmark for the extent of labor hoarding during the current slowdown. Labor hoarding can be defined as deviations from firms' optimal labor utilization levels in the absence of firing and hiring costs; it is, by definition, a temporary phenomenon that disappears after firms learn the true nature of a certain economic shock (i.e. how permanent such a shock is).

58. Labor can be hoarded in three ways: firms may hire fewer hours from each employee (because costs of varying average hours of work when facing unexpected shocks are smaller than costs of firing and hiring people), they may allocate workers to nonproduction tasks (e.g. equipment maintenance and cleaning), or they may simply reduce the intensity of production even if average hours paid are unchanged. Of course, during a slowdown firms choose a combination of the three types of labor hoarding. In all cases, we should expect a reduction in TFP growth, measured as the Solow residual, because it captures how efficiently labor and capital are combined to produce a certain level of output.

59. Depending on how labor hoarding takes shape, the behavior of employment and hours of work during a full business cycle (slowdown and recovery) will differ:

- Reductions in hours worked by each employee would keep employment roughly constant but total hours of work closer to its optimal value. Output would decline in tandem with total hours of work, although some short-run inefficiency in the matching of labor and capital could imply a small reduction in the Solow residual calculated using hours of work as a measure of labor input.

- A reallocation of workers to nonproduction activities or reductions in production intensity would keep employment and hours of work unchanged but would cause a large decline in the Solow residual, as more hours of work (than in the case described in the first bullet) would be hired for the same decline in output.

60. Using this logic, a natural way to define the extent of labor hoarding is the following:

- First, measure how efficiently employment and capital are combined during a recession.

- Second, isolate the importance of reductions in average hours of work to explain the inefficient combination of employment and capital in the first measure.

- Third, assess the importance of structural changes in the underlying behavior of production efficiency to isolate cyclical effects.

61. The table below shows changes in production efficiency, measured as the Solow residual, during CEPR-dated recessions. Efficiency changes in each recession (bolded dates in the table) are compared to the period extending from the initial cyclical recovery after the previous recession to the end of the current recession. This comparison gives some room for trend changes in the Solow residual while keeping the business cycle fluctuations nearly

balanced during each comparison period. The first period begins in 1970 because average hours are not available for the 1960s.

Table 14. Euro area: Solow Residual
(Percent at an annual rate within each period)

CEPR recession dates in bold[1]	Employment as labor input	Hours as labor input (OECD)[3]	Hours as labor input (ELFS)[4]
1970-1975	1.80	2.52	n.a.
1974-1975	0.31	0.97	n.a.
Difference	**-1.49**	**-1.56**	n.a.
1976-1982	1.15	1.85	n.a.
1980-1982	0.45	1.15	n.a.
Difference	**-0.71**	**-0.70**	n.a.
1983-1993	1.24	1.70	1.48
1992-1993	0.52	0.86	0.87
Difference	**-0.72**	**-0.84**	**-0.61**
1994-2003	0.74	1.03	1.07
2001-2003[2]	-0.08	0.34	0.49
Difference	**-0.82**	**-0.69**	**-0.58**

Sources: AMECO database; OECD; European LFS; and staff calculations.

[1] Dating was done using quarterly data. Annual definition is an approximation of original dating.

[2] IMF staff dating.

[3] OECD average hours of work refer to business sector. It takes national LFS as a basis but also uses information on payroll data and others.

[4] Average hours of work from the European LFS refers to the first quarter of each year.

62. Labor hoarding was only slightly more intense during the current slowdown than in the previous two recessions: -0.82 percentage point versus -0.72 percentage point and -0.71 percentage point, as seen in the first column of Table 1. Moving across columns, reductions in average hours of work do account for part of the labor hoarding in the latest recession as the decline in efficiency growth is smaller once hours of work from the OECD are taken into account (-0.69 percentage point compared to -0.82 percentage point). That is in fact a change from previous recessions when calculations using hours of work data yielded the same or even larger swings in the Solow residual.

63. Using average hours from the European labor force survey does not change this picture significantly, although the ELFS data seems to be a bit more cyclical than the OECD average hours series. (In other words, changes in average hours of work account for a slightly larger share of the observed labor hoarding when using the ELFS: -0.82+0.58 = -0.24

percentage point, versus -0.82+0.69 = -0.13 percentage point. The same is true for the previous recession.)

64. There is an important caveat to the calculations presented in this section: as shown in the main body of this chapter, aggregate data are quite imperfect for the calculation of production efficiency. Solow residual calculations based on the aggregate data overestimate the decline in TFP growth after the mid-1990s and may taint the benchmark for comparing recent cyclical swings. However, the existence of any bias depends on how the mismeasurement of TFP growth affects the 2001-03 period, which cannot be assessed due to data availability.

65. In summary, this analysis suggests that the changed response of labor markets to the most recent downturn reflects two factors:

- Lower underlying labor productivity growth, in part reflecting the reabsorption of labor owing to sustained wage moderation and some labor markets reforms, has shielded employment from the effects of lower output growth.

- There has been some increase in labor hoarding (number of employees) compared with earlier cycles, likely reflecting somewhat the higher cyclicality of hours and the interplay between overall improvements in the profitability of companies and employment protection laws.

66. Looking forward, a large cyclical pickup in labor productivity, as the hoarded labor is directed toward actual production, will introduce disinflationary pressures in the economy through a deceleration in unit labor costs. Household income growth should increase as individuals work longer hours but will be somewhat dampened by slow hirings. The amount of excess labor will be increased by rises in labor force participation, and unemployment rates are expected to decline very slowly in the near term.

References

Blanchard, O., 1997, "The Medium Run," *Brookings Papers on Economic Activity*, 2, pp. 89–158.

_____, 2004, "The Economic Future of Europe," *NBER Working Paper*, n. 10310, November. Forthcoming in the *Journal of Economic Perspectives*.

_____, and Thomas Philippon, 2003, "The Decline of Rents and the Rise and Fall of European Unemployment," *unpublished*, MIT.

Blanchflower, David G., and Andrew J. Oswald, 1994, *The Wage Curve*, MIT Press.

Card, David, 1995, "The Wage Curve: A Review," *Journal of Economic Literature*, Vol. XXXIII, June, pp.785–799.

Crépon, Bruno and Rozenn Dezplatz, 2001, "Une Nouvelle Évaluation des Effets des Allégements de Charges Sociales sur les Bas Salaires," *Economie et Statistique*, No. 348, pp. 3-24, August.

Debrun, Xavier, 2003, "Unemployment and Labor Market Institutions: Why Reforms Pay Off," *World Economic Outlook*, Chapter IV, Washington, IMF, April.

Decressin, Jorg, Marcello Estevão, Philip Gerson and Christoph Klingen, 2001, "Job-Rich Growth in Europe," *France, Germany, Italy and Spain: Selected Issues Paper*, Chapter 2, IMF Country Report No. 01/203, pp. 36-80, October.

Estevão, Marcello, 2003a, "Do Active Labor Market Policies Increase Employment?" *IMF Working Paper*, WP/03/234, Washington, IMF, September.

_____, 2003b, "Structural and Cyclical Labor Market Changes in Poland," in *Poland: Selected Issues*, IMF Country Report No. 03/188, Chapter II, pp. 14–44.

_____, and Nigar Nargis, 2002, "Wage Moderation in France," *IMF Working Paper*, WP/02/151, Washington, IMF, September.

European Commission, 2003, "Drivers of Productivity Growth : An Economy-Wide and Industry Level Perspective," *The EU Economy 2003 Review*, Jorgenson, Dale, 2003, "Information Technology and the G-7 Economies," *unpublished*, Harvard University.

Foster, Lucia, John Haltiwanger, and C. J. Krizan, 2002, "The Link Between Aggregate and Micro Productivity Growth: Evidence from Retail Trade," *NBER Working Paper*, 9120, August.

Jorgenson, Dale, 2003, "Information Technology and the G7 Economies," unpublished, Harvard University.

_____, and Kevin Stiroh, 1999, "Information Technology and Growth." *American Economic Review,* 109-115, May.

_____, 2000, "Raising the Speed Limit: U.S. Economic Growth in the Information Age," *Brookings Papers on Economic Activity*, 1.

Oliner, Steve and Dan Sichel, 2000, "The Resurgence of Growth in the late 1990s: Is Information Technology the Story?", *Journal of Economic Perspectives*, vol. 14, no. 4, pp. 3-22.

O'Mahony, Mary and Bart van Ark (editors), 2003, *EU Productivity and Competitiveness: An Industry Perspective*, European Commission, Brussels.

Schreyer, P., 2000, "The Contribution of Information and Communication Technology to Output Growth: A Study of the G7 Countries," *STI Working Papers*, 2000/2, OECD, Paris.

_____, 2002, "Computer Price Indices and International Growth and Productivity Comparisons," *Review of Income and Wealth*, 48(1), pp. 15-31, March.

II. IMPLEMENTING LISBON: INCENTIVES AND CONSTRAINTS[15]

Core Questions, Issues, and Findings

- ***Do EU countries differ from other industrial countries and among themselves as regards the pace of structural reforms?*** EU countries exhibit significant status-quo bias, with progress on structural reforms lagging other industrial countries, and the degree of labor and product market flexibility remaining relatively low. There is some evidence that, within the EU, smaller countries are more reformist. (¶29-35)

- ***What are the main factors driving structural reforms in industrial countries?*** European integration, particularly the Single Market Act, has triggered a bout of reforms, especially in product markets. Product market liberalization seems to spur labor market liberalization, consistent with the hypothesis that as product market rents diminish, resistance to labor market reforms weakens. (¶21-28; ¶40-47)

- ***Should structural reforms be coordinated among countries?*** Spillovers provide the main rationale for coordination. Cross-border spillovers affect structural reforms, especially through external competitiveness, whereby reformers gain a competitive advantage over non-reforming countries. There can also be spillovers arising from the benefits of market flexibility when all countries face the same monetary policy, and spillovers as countries learn from each other. (¶48-51)

- ***Has the Lisbon strategy's "open method of coordination" promoted structural reforms?*** To date, the open method of coordination has not lived up to expectations. But the open method—relying on coordination based on mutual appreciation of common goals and agreement on the appropriate policy response—remains appropriate given the EU's overall governance architecture, especially in the area of labor market reforms that are largely in the realm of national decision-making. (¶52-59)

- ***Could the open method of coordination be enhanced?*** The open method could be improved by streamlining the agenda to focus more on labor participation; bolstering multilateral surveillance, including through greater use of "naming and shaming"; further progress on product market reforms that would act as a catalyst for labor market liberalization; and more leadership on structural reforms by large countries. (¶60-63)

[15] Prepared by Xavier Debrun and Tony Annett.

A. Introduction

67. **After three decades of uneven economic performance and persistently high unemployment, there is widespread consensus that Europe's economic and social model needs to be reformed.** Since the early 1970s, the area's per capita GDP has remained at 70 percent of the U.S. level, as high labor productivity growth has been neutralized by a secular decline in labor utilization (see chapter I). Making the institutional and regulatory environment more market-friendly—more mindful of individual incentives to work, spend, save, invest, and innovate—is widely perceived as an essential ingredient of any policy package aiming to boost growth, reduce unemployment, and increase the economy's resilience in the face of shocks. Although the picture is not uniformly gloomy across countries, such reforms are needed in many member states, but particularly in the area's three largest economies.

68. **Structural reforms are intrinsically difficult to implement.** Distributive effects, and in some instances, significant adjustment costs lead to resistance from groups expecting to lose out. For policymakers, structural reforms are subject to two trade-offs, an intra-temporal trade-off between well-organized special interests and the more diffuse "common good," and an intertemporal trade-off between certain short-term adjustment costs and uncertain long-term benefits. These two trade-offs seem at the root of the status-quo bias against reforms (Fernandez and Rodrik, 1991).

69. **Although countries are not in denial about the need for reforms, action lags intentions, especially when it comes to contentious labor market reforms.** Inaction in the 1970s and early 1980s sometimes led to attempts to alleviate the slow growth and high unemployment with monetary or fiscal painkillers. The outcomes were often high inflation, rising public debts, and ultimately painful episodes of disinflation and fiscal adjustment. A change in direction came slowly in the 1980s, when an increasing number of governments in industrial countries realized that structural reforms needed to be an integral part of the therapy. It was becoming increasingly obvious that product and labor market regulation in Europe had a stifling effect on growth and productivity (see Koedijk and Kremers, 1996 and Nicoletti and Scarpetta, 2003, for the empirical evidence). Still, many policymakers in continental Europe remain reluctant to make hard choices. Reform efforts in notoriously difficult areas, such as labor market institutions, have generally been marginal and very gradual (see Boeri, 2004, and IMF, 2004 for recent evidence).

70. **The slow and uneven progress in structural matters has spurred EU governments to consider joint action in addressing the problem.** Beyond the common interest in improving the functioning of product and factor markets, the case for regional coordination in structural policies is further reinforced by political economy considerations as cooperation may help governments to overcome the resistance of special interests at home. Cooperation has served EU governments well over the past thirty years. The deepest changes affecting EU economies over that period were linked to the gradual process of economic integration.

71. **Against this backdrop, the European Council adopted a strategy aimed at transforming the EU into the "*world's most dynamic, and competitive economy*" by 2010.** The so-called Lisbon strategy, adopted in 2000, endeavors to foster economic reforms through the collective pressure created by annual peer reviews of achievements (see Box 1). Each member state is assessed on the basis of a scorecard of fourteen structural indicators covering specific dimensions of the ultimate objective (European Commission, 2004a). Although three of those indicators are formally considered as targets—the total employment rate, the employment rate of older workers, and expenditure on research and development—the strategy implies no specific policy commitment to meet these targets. By virtue of the subsidiarity principle, many aspects of structural policies remain in the realm of national policymaking processes.

Box 1. What is the Lisbon Strategy?

At the Lisbon summit in March 2000, the EU member states adopted a program designed to make Europe the most competitive knowledge based economy in the world by 2010. The agenda focused on promoting sustainable job-rich economic growth combined with social cohesion. The broad objectives include increasing the employment rate from 61 percent to 70 percent by 2010 (20 million extra jobs), and achieving an average real growth rate of 3 percent, higher than in the recent past.

The Lisbon strategy is based on the open method of coordination (OMC), a strategy which eschews the traditional centralization of policy formulation, and relies instead on benchmarking based on quantitative and qualitative indicators and specific timetables. The Council meets every spring to monitor progress and determine new targets.

The following are the basic structural indicators: GDP per capita; labor productivity; employment rate; employment rate of older workers; educational attainment; expenditure on research and development; business investment; comparative price levels; at-risk-of-poverty rates; long term unemployment; dispersion of regional employment rates; greenhouse gas emissions; energy intensity of economy; volume of transport.

72. **Only four years after the adoption of the Lisbon strategy, its impact on national reform processes remains difficult to gauge.** First, counterfactuals do not exist, pushing judgments uncomfortably close to priors. Second, recent evidence indicates that the effect of reforms on objectives often takes time to materialize (IMF, 2004). Still, evidence on labor reforms analyzed in this chapter indicates that the Lisbon strategy has coincided with increased reform activism (with respect to 1998 and 1999) in only four EU member states.

73. **The need to accelerate implementation of the Lisbon strategy is acknowledged by policymakers.** The perception that achievements currently fall short of expectations has resulted in mounting pressure from various quarters for member states to do more, which is

how the strategy is expected to operate. The Irish and upcoming Presidencies of the EU have placed the acceleration of structural reforms at the top of their agenda. Some member states have also suggested the appointment of a "super Commissioner" (in fact a vice-president of the European Commission) in charge of structural reforms and competitiveness. Finally, the Spring report from the European Commission to the European Council concluded that "*Member States must now commit more firmly to pursuing the reforms defined since the Lisbon European Council.*" Toward this end, a High-Level Group chaired by Mr. Wim Kok was set up invigorate the Lisbon process. The Group is expected to come up with proposals to improve delivery of the Lisbon objectives and submit them to the Commission by November 2004.

74. **An orderly rebalancing of current accounts would require the euro area to increase its potential growth.** In particular, a key element of the cooperative strategy to address global current account imbalances would be to accelerate the pace of structural reforms in the euro area. As suggested by the analysis of global imbalances in Chapter IV, this would help reallocate global patterns of domestic demand growth, not least by making the euro area a more favorable location for real and financial investments.

75. **Well-functioning product and factor markets are particularly important in the euro area, a currency area subject to asymmetric disturbances.** Focusing on the two critical areas of product and labor markets, this chapter provides a systematic analysis of the reform process over the last two decades in industrial countries in general and the EU in particular. More specifically, the analysis studies the relationship between aggregate structural indicators commonly used in macroeconomic analyses of structural reforms[16] and economic and political variables likely to shape policymakers' incentives and constraints. It sheds light on a number of key factors likely to drive the reform dynamics in Europe. Among those factors, particular attention is paid to the role of cross-border spillovers, as well as to the potential strategic complementarities across reform areas, and the effect of EU-wide coordination efforts.

76. **The remainder of the chapter is organized as follows.** Section B presents an analytical framework, including the main theoretical arguments relating to policymakers' incentives and constraints. Broad stylized facts about reforms in labor and product markets are described in Section C. Section D analyzes the determinants of structural reforms in these two critical domains, focusing on the rationale for a cooperative approach and on the desirable scope of such coordination. Section E builds on that analysis to discuss possible cooperation frameworks, and assesses the existing one.

[16] See among others, Elmeskov, Martin and Scarpetta (1998), OECD (2002), Nickell et al. (2003), and Nicoletti and Scarpetta (2001, 2003).

B. Implementing Structural Reforms: Incentives and Constraints

Knowing what's right

77. **Aggregate analyses of structural reforms generally overlook a formal treatment of normative issues and this chapter is no exception.** There is however a broad consensus on the need for, and the direction of, economic reforms in the EU, making the need for such an analysis less compelling (Elmeskov, Martin and Scarpetta, 1998; Nickell et al., 2003; Nicoletti and Scarpetta, 2001). Moreover, the normative literature still provides little practical guidance in areas where the case for reforms seems the most persuasive, like labor market institutions.[17]

78. **According to a popular view, the growing malaise about EU social and economic model, and the corresponding need for reforms, is related to the global trend toward liberalization.** Greater competition in product and factor markets around the world seems to have put a premium on market-friendly social models, like those in the United States and other common law countries, and heavily penalized models based on direct interference with market mechanisms (as in continental Europe). This argument can be rationalized as a change in the hypothetical "efficiency frontier" between social protection and growth (Figure 1, top panels). The bottom-left panel of Figure 1 illustrates the view of many that the EU will be forced to trade-off higher potential growth against a reduction in social protection through politically difficult reforms. Yet, the official EU objective to carry out reforms that simultaneously improve growth and social cohesion suggests the need for "smart reforms"[18] that could expand the frontier at the high end of social protection (bottom-right panel of Figure 1).

79. **This chapter defines as "reforms" any change in conventional aggregate indicators of structural conditions[19] that reflects a reduction in government's interference with market signals.** Although there is no alternative and internationally

---

[17] There is now a vast microeconomic literature laying out key features of optimal tax and transfer systems, and regulations of particular sectors or industry (especially utilities and financial institutions). Attempts to portray optimal market institutions and regulations in a broader macroeconomic framework are only very recent; in the area of labor markets see Blanchard, 2002; Blanchard and Tirole, 2003; and Saint-Paul, 1996.

[18] For instance, at a given level of social protection, a system of tax credits for low income workers ("negative income tax") is certainly more market-friendly than pricing these workers out of the labor market with high minimum wages. Of course, there are limits to pushing back the frontier.

[19] These indices, described in the Appendix, have been used in a large number of studies on the macroeconomic effects of labor and product markets reforms.

comparable measure of structural policies, the use of these indicators calls for caution in interpreting the results. First, they ignore many subtle and hardly quantifiable ingredients of reforms, including political and economic trade-offs between different measures. As a result, they may underestimate both the quality and the extent of reform efforts (Boeri, 2004). For example, trading-off a reduction in employment protection against a more generous unemployment benefits system may bring about significant efficiency gains in a country that has too much of the former and none of the latter. Yet, aggregate measures of labor-market flexibility will downplay the importance of that reform package. Second, those indices make no distinction between misguided government intervention and specific regulatory changes addressing market failures (e.g., Drèze and Gollier, 1993 or Agell, 1999).

80. **The analytical framework of this chapter follows the political economy literature, which investigates the reasons why governments fail to adopt desirable reforms** (Fernandez and Rodrik, 1991; and Rodrik, 1996)**.** First, an econometric relationship linking reforms to their potential determinants is estimated. These determinants capture key ingredients of the policymakers' decision problem, including the financial and political constraints and the intermediate objectives pursued. Second, the chapter builds on these results to discuss governance structures conducive to reforms in the specific context of the EU. This section now turns to a brief discussion of the main obstacles to reforms.

Why is it so difficult to make it happen?

81. **Assuming governments fully understand the need for reforms and genuinely intend to carry them out, why don't they just do it?** A number of theoretical analyses lay out various obstacles facing well-intended reformers.[20]

82. **The difficulty in carrying out reforms is sometimes blamed on politics.** Looking at fiscal adjustment, Alesina and Drazen (1991) depict a "war of attrition" among two social groups battling over who should bear the cost of the adjustment. The adjustment is delayed until the cost of status quo becomes so unbearable that one group yields and assumes these costs. The argument can easily be extended to explain the status quo bias in reforms with large distributive effects. Olson (1965) discusses how radical opposition by politically well-connected and well-organized groups may prevail over the widespread benefits expected by a diffuse majority.

83. **Turning to economic arguments, it is sometimes claimed that the reluctance to implement reforms reflects the policymaker's uncertainty about the desirable reform path.** Uncertainty about the effects of a particular policy naturally leads to caution, and justifies waiting for the costs of doing nothing (and the corresponding support for reforms) to

[20] A classic and comprehensive survey of the literature is Rodrik (1996). He also studies events that encourage reforms such as crises. These aspects are discussed in the empirical analysis.

be sufficiently strong and visible before acting. However, in many instances, the "aggregate uncertainty" about the net benefits of reforms is simply too low to justify inaction, although opponents of reforms may deliberately attempt to blur the distinction between aggregate uncertainty and their narrow interests.

84. **Even in the absence of aggregate uncertainty, so that everybody is aware of the economy-wide benefits of reforms, a sufficiently large number of people may not know exactly whether they will gain or lose.** Uncertainty about the distributive effects of reforms (Fernandez and Rodrik, 1991) could undermine the necessary support and result in a status quo bias. This is particularly relevant to areas where distributive effects are potentially large and/or uncertain, such as tax reforms, adjustments in pension benefits and other age-related entitlements, and labor market reforms. This may explain the striking contrast between the sustained and significant pro-competitive reforms achieved in product markets and the often marginal reforms of labor market institutions[21] (see Section C below).

85. **Of course, governments could in principle deal with the distributive effects of reforms through offsetting taxes and transfers.** However, transfer schemes targeted to compensate losers may simply not be feasible due to insufficient information about the distributive effects (Grüner, 2002). Moreover, the promise to compensate potential losers to get their support lacks credibility because after reforms are implemented, the majority of winners may simply deny such compensations (Fernandez and Rodrik, 1991). Finally, gains and losses may not materialize at the same time, with gains arising slowly over time while costs are felt immediately. In that case, any compensation of the losers through fiscal policy would have to be financed from future taxes on the expected winners, implying an immediate but temporary increase in the structural deficit (Beetsma and Debrun, 2004). This hypothetical scenario could fit a situation in which, for instance, workers laid off immediately after a relaxation in employment protection obtain better unemployment benefits and enhanced training while they have to wait before taking full advantage of the new employment opportunities expected from the reforms.[22]

86. **Finally, reforms may lack supporters because the proposed package is poorly designed.** Indeed, "technical" complementarities between reforms may increase the net expected gains from a reform package with respect to a series of piecemeal measures (Coe and Snower, 1997), thereby fostering support. Similarly, "distributive" complementarities may allow for a package with offsetting effects on income distribution. To the extent that those complementarities are clear enough to the broad public, they should help alleviate the opposition to desirable reforms.

---

[21] Among other things, that uncertainty relates to the risk for the currently employed to lose her job or the uncertainty of the unemployed about finding a new one.

[22] The same individual could actually be a winner and a loser. The point here is that her future taxes will pay for her present compensation.

Can product market reforms force labor market reforms?

87. **The complementarity between product and labor market reforms has attracted a great deal of attention in the literature recently,[23] not least because it appears particularly relevant to the current labor market reform backlog in the EU**. As documented in the next section, deep structural changes have affected product markets over the last 15 years in the EU, especially after the Single European Act of 1986. The induced reduction in firms' pricing power is expected to have deep implications for the labor market. Indeed, through wage bargaining and other institutions granting workers some monopoly power, the latter end up sharing the firm's monopoly rents. As product market reforms erode those rents and the firms' profit margins, incentives for workers to exert monopoly power are weakened. This may have played a role in the broad acceptance of "wage moderation" in a number of countries and may ultimately lower the resistance to competition-enhancing labor reforms.

88. **Does this mean that there is an obvious reform sequence from "easy" product market reforms to more "difficult" labor reforms, as resistance fades away?** Not necessarily. First of all, product market reforms are not obviously "easy." Indeed, as workers, voters expect to lose rents through lower wage growth even though, as consumers, they expect to benefit from lower prices, especially if reforms are widespread. Still, the losses from product market reforms are immediate and certain (partial equilibrium effect), whereas the benefits are more elusive (general equilibrium effect)—see Blanchard (2004) and Gersbach (2003). Second, "rent seeking"[24] is not the unique motivation behind the resistance to changes in labor market institutions. It is widely recognized that those institutions address important market failures (Blanchard, 2002) and provide significant insurance against macroeconomic risks (Agell, 1999). Hence, the strength of the product-labor nexus remains unclear and is ultimately an empirical issue.

89. **Product market reforms initiated in the second half of the 1980s have had a deep impact on the affected industries and the effect of reform appears contingent on labor market institutions**. Figures 2 and 3 compare the effects of liberalization in the transportation industry in the United States and France.[25] The OECD STAN database provides internationally comparable, industry-level data on value added (in volume and value), employment levels, and spending on wages and salaries. The comparison focuses on a

[23] See Blanchard and Giavazzi (2003), Blanchard and Philippon (2003), Blanchard (2004), Boeri (2004), Nicoletti and Scarpetta (2001), OECD (2002).

[24] Krueger (1974).

[25] See Scarpetta and Tressel (2002) and Nicoletti and Scarpetta (2003) for more detailed and systematic analysis of the impact of product market reforms. The choice of countries is dictated by data availability and by notorious differences in labor market flexibility.

sector for which a reasonable proxy for reforms could be calculated and revealed significant structural changes in both countries.[26] In common with other industries, the United States, starting from a lower level of restrictions, initiated the deregulation process in the late 1970s whereas a similar movement was only observed a decade later in France.

90. **In line with the related literature, Figure 2 illustrates the positive association between productivity growth and deregulation,** as firms attempt to compensate for the loss of pricing power by improving efficiency in the use of inputs (such as a reduction in overmanning) or adopting new technologies.[27] In both countries, productivity growth in the transportation industry was indeed much higher than in the rest of the economy. Interestingly, the industry's productivity gains in France were noticeably higher than in the United States, possibly indicating "decreasing returns" of reforms.

91. **Pro-competitive reforms in product markets can lead to tensions if not accompanied by greater labor market flexibility.** Stronger productivity gains in France did not translate into a larger reduction in real unit labor costs than in the United States, suggesting that labor market institutions in France allowed workers to absorb a significant share of the productivity gains through higher wages (Figure 3). Strikingly and in stark contrast with the United States, real unit labor costs in the French transportation industry remained broadly in line with those in the rest of the economy despite the large difference in productivity growth. On the one hand, the upward trend in real unit labor costs observed in France in the 1990s reveals lower price mark-ups over wages, in line with the expected erosion of firms' monopoly rents. On the other hand, workers continued to exert significant monopoly power, and take advantage of the ample productivity gains engineered by firms in an attempt to compensate for the loss of pricing power.

92. **In sum, the potential complementarity between product and labor market reforms finds some support in the data and suggests a strategic nexus that might be exploited further to overcome resistance against labor reforms.** Indeed, the complete integration of services and financial markets is still a work in progress and greater competition in these areas may further increase pressure to improve labor market flexibility (Blanchard, 2004).

Does monetary unification hinder or promote reforms?

93. **Many argue that the pressure for reforms should be stronger in euro area countries, as monetary unification puts a premium on reforms that increase their economy's resilience to shocks.** That argument rests on the presumption that member

[26] For details about the data, see the Appendix.

[27] The numbers refer to labor productivity per person (full-time equivalent). The positive effect of deregulation on multi-factor productivity growth is studied more formally by Scarpetta and Tressel (2002) and Nicoletti and Scarpetta (2003).

governments fully internalize Mundell's (1961) concerns about the costs associated with country-specific shocks in a region notorious for its low labor mobility. Indeed, the advantages of factor mobility inside a monetary union are less compelling if wages and prices adjust to asymmetric developments swiftly.

94. **But participation in a currency union may either be irrelevant or even reduce incentives to implement structural reforms.** Three arguments come into play:

- First, the euro notwithstanding, political-economy constraints may be so strong in the euro area that it would take a perfect "Mundellian storm" (a wave of massive asymmetric shocks) to trigger decisive reforms.

- Second, EMU's stability-oriented macroeconomic frameworks reduce the probability of high inflation or runaway deficits that would result from futile attempts to escape the temporary adverse effect of structural rigidities on growth and employment. This reduces the potential costs of structural rigidities, thereby weakening policymakers' incentives to eliminate them (Calmfors, 2001, Sibert and Sutherland, 2000).

- Finally, the formal restrictions on short-term fiscal flexibility may limit the scope for using fiscal policy to absorb transition costs and alleviate the distributive effects entailed by some reforms, making the adoption of such reforms politically more difficult (see Grüner, 2002, and Beetsma and Debrun, 2004).

C. The Pace of Structural Reforms: Is Europe Different?

95. **In contrast with other industrial countries, EU countries remain characterized by greater regulatory restrictions in product markets and lower flexibility in labor markets.** Figure 4 shows the evolution of aggregate structural indices between 1975 and 1998 for the United States and two (partly overlapping) groups of countries: the EU-15, and the "common law" countries, namely Australia, Canada, New Zealand, the United Kingdom, and the United States. The graph reveals a broad trend toward product market liberalization, with the US emerging as a clear leader. EU 15 countries started the process later, in the mid 1980s, and proceeded at a slower pace, which is characteristic of a status quo bias against reforms. As for labor market flexibility, the aggregate indices reveal little change in common law countries and a slow deterioration in the EU. Figure 5 looks at cumulative reform efforts in each group of countries—the relative change in structural indicators since 1975. In the EU 15, the adoption of the Single European Act and the launch of the single market (identified by vertical bars) coincide with significant accelerations in reforms. Figure 5 also suggests that the tendency toward increasingly restrictive labor markets in the EU culminated around 1992. Since then, a slow trend toward greater flexibility has been observed, pointing to the possibility that lower monopoly rents in product markets have helped reverse the anti-competitive bias of labor market policies.

96. **Episodes of more intense reforms coincide with a sharp increase in the cross-country dispersion of structural indicators, highlighting the country-specific dimension of reform patterns** (Figure 6). Despite the greater convergence expected from EU-wide coordination, idiosyncratic elements such as the political constraints facing national decision makers seem to play a critical role in shaping the reform process. Of course, in the EU 15, the dramatic increase in the dispersion of product market restrictions observed after 1986 (and the corresponding acceleration in reforms) partly reflects the fact that Austria, Finland, and Sweden only joined the EU in 1995, and indeed dispersion fell slightly after that date. Moreover, the United Kingdom alone contributes quite a lot to the dispersion of structural conditions among EU countries. It nevertheless remains remarkable that the dispersion of product market regulations is similar to the levels observed among common law countries, which unlike the EU had no institutional incentives to undertake product market liberalization in a coordinated fashion. As far as labor markets are concerned, cross-country dispersion is lower in both groups although the EU appears noticeably more homogeneous.

97. **What happened in recent years?** Unfortunately, available time series for aggregate structural indices stop in 1998. What happened since then? Part of the answer can be found in the Social reforms database compiled by the Fondazione Rodolfo DeBenedetti (FRDB). The database collects structural measures adopted by selected industrial countries between 1986 and 2002 along three dimensions: employment protection legislation, non-employment benefits, and pensions. Each measure is assessed on two features: (i) whether it improves the flexibility of the system and (ii) whether the measure is marginal or major. Reform efforts can be measured by the difference between the number of flexibility-enhancing measures and the number of flexibility-reducing measures—referred to as the "net number" of reforms in the remainder of the chapter.[28]

98. **The post-Lisbon structural reform record is decidedly mixed.** Post-1998 data on labor market reforms indicate ample cross-country differences in reform activism (Figure 7). Also, the period following the Lisbon Summit (2000-2002) saw an increase in reform efforts in only 4 countries (Denmark, Germany, Italy, and Spain) whereas all other countries made less effort compared with the preceding two years. With the exception of Italy, large countries generally implemented less labor reforms than small ones. Finally, two countries (France and Portugal) appear to have increased the overall rigidity of their labor markets, although this should be viewed with great caution since it is based on a net *number* of flexibility-enhancing measures. Overall, these mixed results concerning the impact of the Lisbon strategy are in line with the European Commission's assessment, which is based on objectives rather than instruments (see Box 2).

---

[28] Notice that over the period 1998-2002, virtually all reforms were deemed marginal by the FRDB. The reform count operated by IMF staff considered that one "structural" measure was equivalent to three marginal measures. In any case, only France would be affected by a change in that assumption.

99. **Another striking feature of labor reform patterns is the tendency of several countries to trade-off changes in employment protection and non-employment benefits regimes** (Figure 8)**.** Labor reform packages are often not flexibility-enhancing across the board. The trade-off between employment protection and unemployment benefits regimes is well-known (Blanchard, 2002; Blanchard and Tirole, 2003; Boeri, 2004; and Boeri and others, 2003) and reflects the attention paid by governments to the risk-reducing role of

Box 2. Progress Under the Lisbon Agenda, 2000-2003

Limited progress has been made in implementing the Lisbon agenda over the past few years. The recent growth slowdown did not help, with members facing an uphill battle to attain some of the targets. Overall, a north-south divide has emerged between the relatively good achievers—especially Austria, Denmark, Luxembourg, Netherlands, Sweden and the UK—and the Mediterranean laggards (Greece, Italy, Portugal, Spain). In terms of progress made since the institution of the Lisbon strategy, Belgium, France, and Greece have stepped up efforts, while Austria, Germany, Luxembourg, and Portugal have lagged behind. The Commission argues that implementing the Lisbon agenda in full could boost potential growth in Europe ½ to ¾ percentage points within 5-10 years.

Employment has grown, but not substantially. The total employment rate rose to 64.3 percent in 2002, up by 2 percentage points from 1999. Although the interim target of 67 percent in 2005 is unlikely to be achieved, the Commission feels the 70 percent target by 2010 is still feasible, as long as the pace of employment growth maintains its late 1990s rate. Although it improved by 3 points to 40.1 percent in 2002, the employment rate of older workers has a long way to go before it can hit 50 percent, the 2010 target. This target is unlikely to be met. Long term unemployment fell from 4 percent to 3 percent over this period. The overall unemployment rate, however, has increased in the downturn. Some labor market reforms are underway.

Productivity growth remains low. The growth rate of productivity per worker is currently less than in the US. In its assessment, the Commission pins the blame for poor productivity trends on low investment and slow take-up of information and communication technologies. It identifies productivity as being driven by four key areas—regulation, financial markets, product market integration, and investment in knowledge. While there has been some progress in financial market reform, production market integration stagnated, and investment in knowledge actually fell. Heroic efforts will be require to push investment in research and development, hovering around 2 percent of GDP, to its target of 3 percent of GDP by 2010. Moreover, investment in human capital remains inadequate, especially in the private sector. Public investment is also deemed to be to low, especially in areas critical to the Lisbon strategy, such as transnational network infrastructures, and the knowledge sector (research, innovation, education, and training). To rectify this, the European Council approved the Quick Start Program, which is designed to mobilize resources behind priority investment projects.

There are still substantial weaknesses in competitiveness, and in the development of the internal market. Competition has been enhanced in a number of key markets: telecommunications, rail freight, postal services, electricity, and gas. Some progress has also been made in financial services, elimination of fiscal distortions, establishing a favorable regulatory environment, and reducing state aid. Still, product market integration is slowing down, as cross-border manufacturing trade froze, and prices have stopped converging. The internal market in services—accounting for 70 percent of GDP—has been particularly slow to develop, and remains highly fragmented. Transposition of directives has also dried up recently, and the record is even worse for the Lisbon directives. Of the 70 directives arising directly from the Lisbon strategy, 40 should have been transposed by end-2003. In reality, however, less than 60 percent have been transposed on average; here, the strong performers are Denmark, Italy, and Spain, while France, Germany, and Greece lag behind. Only seven directives have so far been transposed by all members. Beyond transposition, members are showing no inclination to improve their enforcement: over a thousand infringement procedures remain open and this has barely decreased over the past few years.

Lisbon also emphasizes promotes sustainable growth, through social cohesion and environmental policy. On the former, the Commission argue that the rise in unemployment combined with inadequate social protection could raise the incidence of poverty. On the latter, there is also little is any notable improvement on any of the indicators—greenhouse gas emissions, the energy intensity of the economy, and the volume of transport. The share of renewable energy remains at 6 percent, and it is unlikely member states will be able to attain the 12 percent target by 2010, or the target to have 22 percent of generated electricity coming from renewable sources.

labor-market institutions. Figure 8 shows that the reduction in the generosity of unemployment insurance led to a tightening of employment protection in 6 member states.

100. **Looking at the timing of reforms in the EU (Figure 9), the net number of flexibility-enhancing measures has been noticeably lower in "good times",** that is when actual and future growth prospects were high (1999-2000). This may suggest a tendency to implement less reforms when it is in principle the least difficult time to do so. Indeed, robust growth in aggregate income makes the distributive effects as well as the possible transition costs of reforms less visible and painful. This tendency to do less reforms in good times is reminiscent of Rodrik's (1996) discussion about the role of "crises" as triggers for reforms. That hypothesis is further investigated in the next section.

101. **To summarize:**

- EU 15 countries have experienced a particularly **strong status quo bias** when compared with common law countries.

- **EU-wide initiatives** such as the Single European Act are clearly associated with an **acceleration in product-market liberalization**. A spillover effect on labor market reform appears likely although it has been small so far.

- **Country-specific constraints or objectives seem to play a key role in reform patterns**, as witnessed by the increasing dispersion in structural conditions. Recent but partial reform data are broadly consistent with those trends. These data also suggest that the **Lisbon process has not encouraged a large number of countries to accelerate labor reforms**, although the countries that implemented more reforms after the Lisbon summit are generally large, and therefore more likely to encourage smaller ones to follow.

D. The Determinants of Structural Reforms

102. **This section investigates the determinants of structural reforms.** In contrast with most existing studies, which look at the realization of objectives (like growth and employment), the design of structural policies is analyzed directly through proxies of instruments, namely the aggregate indices of structural conditions presented in Section C. This section is limited to a brief presentation of the model and a discussion of the main results; a more detailed discussion of the methodology and the potential explanatory variables can be found in IMF (2004).

Specification and estimation

103. **The econometric model relates annual variations in the structural indicators to a series of potential explanatory variables that mostly reflect policymakers' constraints, although some of them are also associated with objectives.** The conjecture of a status quo bias in reforms suggests that initial structural conditions matter. Accordingly, the dynamics

of reforms is assumed to be driven by the gap between the value of the structural indicator before current reforms are decided (or implemented) and an unobservable "intermediate target" reflecting the degree of liberalization deemed desirable by the policymaker[29]: $REFORM_t = \alpha(INDEX_{t-1} - TARGET_t)$. The targeted value of the structural index may change over time, along with variations in the incentive structure of the policymaker. With these elements in mind, the following equation is used to explain structural reforms:

$$\Delta Y_{i,t} = \kappa_i + \beta_1 Y_{i,t-1} + \sum_{k=2}^{K} \beta_k X_{k,i,t} + \varepsilon_{i,t} \ , \qquad (1)$$

where i denotes a country, and t is a time subscript; Δ represents the first-difference operator; $Y_{i,t}$ symbolizes the aggregate index of structural conditions; and β_1 captures the reform dynamics. The unobservable "operational target" is considered through a number of potential determinants of policymakers' incentives structure (X_k). Finally, κ_i represent country "fixed effects" taking into account country-specific features not captured by other explanatory variables.

104. **The model is estimated on a panel of 17 OECD countries[30] over the period 1975-1998.** Given the relatively long time-series dimension compared with the number of countries, Judson and Owen (1999) recommend an LSDV (least squares dummy variable) estimator. Their Monte-Carlo experiments suggest that the bias inherent in dynamic panel models estimations is small enough not to make alternative estimators more desirable. To allow for cross-section heteroskedasticity and contemporaneous correlation of error terms, a feasible Generalized Least Squares (GLS) fixed-effects estimator is used. Finally, to test for systematic differences between the behavior of policymakers inside and outside the EU, the estimated version of equation (1) also includes interactions of all explanatory variables with a dummy identifying membership to the European Union.

105. **Results for product-market and labor reforms are presented in Table 1**. In both cases, the dependent variable has been given a 0-1 scale with higher values representing a more flexible system. Hence, a positive (negative) sign means that an increase in the corresponding explanatory variable is conducive to (harmful for) reforms. For each reform area, there are three columns. The first column shows the effects that are common to all industrial countries, including EU-15 member states, while the second column reports the difference associated with EU membership. The third column is the sum of the first two.

---

[29] See Abiad and Mody (2003).

[30] Those countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, New Zealand, Portugal, Spain, Sweden, the United Kingdom and the United States. Over the estimation period, the number of EU members increased from 7 (1975) to 12 (1998).

Notice that the product market equation uses a more parsimonious specification than the labor equation as several non-significant variables were dropped to improve the precision of other estimates.

Main results

106. **Perhaps the most striking result in Table 1 is that almost all the determinants of reforms play a significantly different role depending on EU membership.** This is a strong indication that the incentive structure within the EU is on average quite different from that relevant for the group of outsiders. EU membership in itself and more specific initiatives such as the Single European Act or the deepening of economic and monetary integration after 1992 also emerge as significant determinants of policymakers' incentive structures. With the notable exception of participation in the narrow band ERM (discussed below), those EU-specific dummies are generally associated with more reforms. Since equation (1) controls for a large number of other potential determinants (including initial conditions and country-specific political constraints), it can be concluded that EU-related initiatives and/or broad-based policy coordination within the EU may have helped national governments overcome domestic resistance to reforms. This is particularly clear in the case of labor reforms, an area in which the EU has no direct prerogative.[31]

107. **Cross-border spillover effects appear relatively large and significant, especially for product market reforms.** These spillovers – defined as the effect of lagged reforms in the 3 main OECD trading partners – are not specific to EU countries and primarily reflect the impact of reforms on a country's competitiveness rather than the outcome of cooperative reform efforts. The importance of the external competitiveness channel is corroborated by the positive impact of trade openness on labor reforms, an effect that is specific to EU members.[32] The evidence of cross-border effects is also consistent with positive learning spillovers in the sense that reforms in trading partners (often neighboring countries) provide fresh evidence of their benefits (Abiad and Mody, 2003). Yet, one might have expected learning spillovers to be greater among EU countries given the intense exchange of information among them, but this does not appear to have been the case.

108. **Earlier product market reforms foster labor reforms but the reverse is not true.** In line with the theoretical argument developed in Section B, the erosion of monopoly rents

[31] Of course, these variables may also partly capture the effect of EU policies in areas not covered by product market indices, such as financial integration or increased competition in other sectors.

[32] Trade openness has a negative impact on reforms elsewhere, indicating that more open countries may be reluctant to give up protection against external disturbances (Agell, 1999; Rodrik, 1998). That variable inevitably has an ambiguous role since it potentially affects policy objectives (demand for protection) and constraints (the need to remain competitive).

in product markets creates significant pressure for reforms in the labor market. Alternative explanations are less convincing. First, a simple sequencing argument according to which relatively easier reforms are passed before more contentious measures are envisaged is at odds with the fact that product market reforms are not obviously easier (see section B). Second, although learning effects across reform areas may explain this result, the one-dimensional nature of the relationship tends to downplay such an interpretation.

109. **Pressure on macroeconomic policies may hinder labor market reforms, especially in the EU.** On the fiscal side, an increase in the cyclically adjusted primary surplus seems to be associated with less labor market reform activity in the EU; so is a reduction in the net public debt, although it is unclear whether this is linked to time-series or cross-section variations. However, these results do not invalidate the clear synergies between labor market reforms and fiscal sustainability. On the monetary side, countries that sought to disinflate aggressively through their participation in the narrow-band Exchange Rate Mechanism of the European Monetary System undertook significantly fewer labor reforms than others. Finally, a small negative effect of popular support for the euro is observed, indicating that governments pressured to comply with the Maastricht criteria may have been distracted from structural priorities. One popular interpretation linking these findings is that governments have a limited amount of political capital to be spent on difficult policy measures such as fiscal adjustment and disinflation. Hence, "investment" in financial stability is diverted from "investment" in reforms (Eichengreen and Wyplosz, 1998). A second interpretation is that supply-friendly reforms should ideally be accompanied by expansive macroeconomic policies (Saint-Paul, 2002) so that constraints on macroeconomic instruments may end up discouraging reforms in the first place. Third, as discussed earlier, fiscal policy may have to smooth the distributive effects of reforms or absorb part of their transitory costs to rally enough supporters (Grüner, 2002).

110. **These results support the idea that an institutional framework emphasizing financial discipline over the medium term while allowing flexibility in the short term is conducive to reforms.** Of course, one might interpret the evidence differently and argue that institutionalized commitment to financial discipline reduces incentives to reform (Calmfors, 2001; Sibert and Sutherland, 2000). This would be misguided. The estimation period is dominated by protracted episodes of fiscal adjustment and disinflation that were necessary to correct the uncontrolled slippages of the late 1970s. Hence, the estimates show that the priority given to fiscal adjustment and disinflation reduces incentives to take tough measures on the structural front as well. A medium term financial discipline objective is clearly the best way to avoid unpopular adjustments in macroeconomic policies and focus on structural issues.

111. **Overall economic performance affects the incentives to implement reforms.**[33] First, for all countries, but particularly EU members, periods of slow growth are conducive to product market reforms. By contrast, in labor matters, EU countries and outsiders react differently to macroeconomic conditions. While EU member states tend to accelerate reforms in years of low or negative growth and relax reform efforts as soon as stronger growth returns, outsiders implement reforms in good times and do not hesitate to increase restrictions in bad times.[34] The pattern observed for the EU is consistent with the conjecture of a particularly strong status-quo bias against labor market reforms.

112. **Purely political variables play a relatively minor role.** In particular, ideology does not appear as a key determinant of reforms although conservative administrations seem somewhat keener on labor market reforms in the EU and on product market liberalization elsewhere. Outside the EU, the number of years spent in office seems detrimental to labor reforms, in line with the view that unpopular measures are preferably implemented early in an administration. Other political variables such as the degree of political fractionalization, the type of electoral rule (majoritarian vs. proportional) and the timing of elections does not appear to play any role in the present specification of the model (see however IMF, 2004). Finally, in the EU, a large majority in parliament seems to discourage product market liberalization while it encourages labor reforms (the latter effect is close to the 10 percent significance level). This may indicate that strong governments (backed by a large parliamentary majority) will substitute away from "easier" reforms and opt for the more difficult labor reforms and vice-versa.

113. **Among other factors affecting structural policies, higher unionization rates are conducive to labor reforms, and, in the EU, to product market liberalization as well.** As observed by Blanchard (2004), countries with high unionization rates—such as Sweden, Denmark and, to a lesser extent, Belgium, Germany and Netherlands—have traditionally less confrontational unions and a strong revealed preference for social dialogue and consensual decisions in association with social partners. The evidence suggests that these consensus-based systems may be more conducive to deals and mutually beneficial compromises about reforms perceived as inevitable.[35] Conversely, countries with small and confrontational unions like France more likely face strong resistance to any change that would reduce

---

[33] It should be noted that the results obtained with dummies for "bad" years are robust to the use of other indicators of economic performance such as the output gap or real GDP growth. See Rodrik (1996) and Drazen and Easterly (2001) on the role of crisis in fostering reforms.

[34] This partly reflects the fact that some countries (like the US) increase the generosity of unemployment insurance when unemployment is on the rise.

[35] Incidentally, such deals on "inevitable" reforms with social partners might be easier to strike in "bad times" when the perceived cost of status quo is high. That might explain the typically European pattern of reforming in bad times.

workers' monopoly rents. Finally, the results also suggest that a large share of seniors in the total population is detrimental to labor reforms, particularly in the EU. Seniors may indeed discount the long-term benefits of certain reforms more heavily. Recent evidence on the dynamic impact of reforms (IMF, 2004) indeed shows that labor reforms entail short-term costs before substantial benefits materialize in the longer term. Boeri (2004) also documents the negative impact of the share of seniors on pension reforms.

E. Structural Reforms and EU Governance

This section first investigates the economic rationale for EU-wide structural policy coordination in light of the empirical results discussed above and compares the respective merits of alternative cooperation technologies. Then, the section turns to an assessment of the open method of coordination (OMC) underlying the Lisbon strategy. Particular attention is paid to recent proposals to enhance the OMC's effectiveness.

Spillovers and the case for EU-wide coordination

114. **Whenever policies decided in one country affect economic outcomes in others, cross-country coordination may be called for.** Coordination can enhance policy effectiveness by internalizing those externalities.[36] Beyond the sheer size of cross-border spillovers, three conditions make coordination beneficial. First, policymakers must agree broadly on the objectives they jointly pursue and on the set of constraints they face. Second, they must be reasonably confident that other players will stick to any commitment they make. Finally, coordination in one policy area should not trigger or aggravate conflicts in other policy areas.

115. **The empirical evidence reveals cross-country interdependence consistent with significant reform spillovers, especially in highly integrated economic areas such as the EU.** Admittedly, the reduced form equation (1) cannot isolate and let alone quantify the various channels of interdependence precisely. Indeed, interdependence may occur through multiple explanatory variables. For example, structural reform in one country or group of countries improves market flexibility and resilience to shocks in these economies, which in turn shapes cyclical patterns, and ultimately external demand and macroeconomic policies in the reformer's trading partners, with probable repercussions on their own incentives to carry out reforms. Also, the strong relationship between product and labor market reforms produces other indirect channels of interdependence in the latter. More generally, the empirical methodology cannot disentangle "pure" spillovers from the cross-country interdependence that normally arises from existing and partly overlapping coordination

[36] See Canzoneri and Henderson (1991) for a detailed exposition of the game-theoretic arguments underlying the case for coordination, including a discussion of counter-productive coordination (on the latter see also Rogoff, 1985; and, in the EU context, Beetsma and others, 2001).

frameworks inside and outside the EU (the G7 for instance). Hence, "pure" spillovers might be smaller than they appear in estimations of equation (1).

116. **Three main channels of cross-country interdependence can be identified**:

- **Competition spillovers**. As illustrated in section C, product and labor market reforms in one country increase competition in the domestic market, boosting productivity and reducing unit labor costs. Reforms thus make the economy more competitive and neighboring economies correspondingly less competitive. Governments in trading partners then face greater incentives to implement similar reforms.

- **Flexibility spillovers**. Reforms increase market flexibility, and resilience to shocks, thereby facilitating the task of macroeconomic policymakers in general and central banks in particular. Central bankers in flexible economies typically face lower sacrifice ratios and can be more effective in their stabilization efforts (IMF, 2003). In the single market, the benefits of flexibility are maximized if all countries undertake the necessary reforms simultaneously. This is especially pertinent for those sharing the same monetary policy.

- **Learning spillovers**. Countries learn from one another's successes (or failures) with structural policies (Abiad and Mody, 2003). By promoting the exchange of information, cross-country coordination helps take advantage of those spillovers.

Learning and flexibility spillovers are positive in the sense that reforms in one country benefits others. By contrast, competition spillovers are negative.

117. **Besides economic spillovers, the political dimension of structural policies entails additional benefits from coordination.** Coordination helps stifle domestic constraints, such as the resistance of special interests, by deflecting part of the political cost from domestic policymakers. The relevance of such political "fringe benefits" from coordination can be seen from the eagerness of special interest groups to set up cross-border networks, and from the tendency of national governments to blame "Brussels" for unpopular choices. In Table 1, the positive effect of EU-related dummy variables on reforms probably captures part of those political fringe benefits.

Methods of coordination

118. **The commitment to enact cooperative policies can take various legal forms.** Under "hard law," commitments are enshrined as legally binding obligations that are precise, and delegate authority for interpreting and implementing the law (Abbot and Snidal, 2000). Hard law implies a firm legal obligation so that parties are bound by rules or commitment, as distinct from non-legal norms; contingent obligations and escape clauses would fit somewhere in between. Hard law is also usually "precise" in the sense that rules unambiguously define the conduct they require, narrowing the scope for interpretation. Treaties with only vague commitments are examples of imprecision. Using hard law for

international policy coordination would lead to delegation to third parties such as courts, arbitrators, or administrative organizations. "Soft law" is defined as that general space whereby legal arrangements are weakened along one or more of these dimensions. Rather than a black-and-white categorization, international agreements often tend to occupy a whole continuum between hardest and softest law. For example, the "softest" attempt at coordination would involve vague norms with no legal consequences for violation, and enforced by mere political bargaining. The Lisbon process sits squarely in the soft law arena.

119. **Soft law has its own distinct advantages in the arena of international policy coordination.** When spillovers call for coordination, soft law may be the appropriate response. Soft law entails fewer contracting costs, and lower sovereignty costs, among states jealous of national economic policy prerogatives. Also, soft law is a tool of compromise, a way of navigating through the thicket of heterogeneous preferences across countries. Finally, and crucially in the economic policy context, soft law provides the means to deal with uncertainty. Flexibility is attractive when countries are unsure of the exact future consequences of an agreement, or the nature of compliance.

120. **The EU has embraced softer forms of coordination, which are particularly apt for labor market reforms.** Reacting to concerns about excess centralization, the EU moved away from its traditional mode of economic governance which emphasized delegation to the center, and instead embraced the principle of subsidiarity in the Maastricht treaty. A number of soft law innovations emerged from treaty commitments, including the Broad Economic Policy Guidelines (BEPGs), which set broad economic policy recommendations for each country; the multilateral surveillance arm of the SGP, which calls for countries to achieve underlying balance; and the European Employment Strategy, which issues recommendations designed to boost employment (Begg, Hodson, and Maher, 2003). This "guided" coordination entails agreement over common objectives, each member formulating a plan, and assessment of this plan through multilateral surveillance. In the specific area of labor market reforms, a consensus emerged in 1990s that the welfare state was hurting labor participation and that this was not sustainable (Mosher and Trubek, 2003).

121. **Depending on circumstances, there are different ways to operationalize the coordination needed to foster pro-competitive reforms.** A variety of coordination frameworks are possible and, in fact, already at work in different policy areas. Three are listed below: the first relies on hard law, the second on softer coordination, while the third is compatible with harder or softer elements.

- **Supranational delegation.** Governments explicitly delegate (in part or in full) policy prerogatives to a supranational authority. This approach is tilted firmly in the direction of hard law. Traditionally, delegation is deemed desirable when spillovers are evidently large, and policymakers have relatively homogeneous preferences about objectives and methods (Alesina and Wacziarg, 1999). Monetary, agricultural and trade policies are the purest examples of delegation in the European Union. Some aspects of product market liberalization also fall into that category, such as those related to the completion of the internal market.

- **The Open Method of Coordination (OMC).** This is a particular form of soft law coordination based on mutual appreciation of common goals and agreement on the appropriate policy response (Hodson and Maher, 2001; Morelli and others, 2002). Learning, exchange of information, and performance assessments are the main vehicles of the method. It emphasizes multilateral surveillance, benchmarking, best practices, and peer pressure. It is most useful in situations with common problems, but no uniform solutions, combined with uncertainty about the best way to go forward (Mosher and Trubek, 2003). Policy decisions, including the orientation, scope and the precise timing of the reforms remain fully decentralized. The OMC takes subsidiarity one step further, making it dynamic in nature (Hodson and Maher, 2001). This is the approach adopted at the March 2000 Lisbon summit in the hope of boosting structural reforms.

- **Leadership.** Another form of coordination in which policy choices remain fully decentralized occurs through the emergence of a "leader." Leaders, or leading groups, are important enough (economically and/or politically) to incite other countries to adopt similar policies. The EU external policy broadly follows this pattern. In the context of structural reforms, the emergence of a leader-follower pattern would be consistent with the operation of competition spillovers. The thorny issue of course is the emergence of a leader. Small and open economies clearly have stronger incentives to gain a competitive edge by taking the lead, but are unlikely to become leaders in the game-theoretic sense. Coordination through leadership rests on the sheer political will and focus of large countries.

122. **As the EU experience shows, these frameworks are not mutually exclusive and may actually complement each other.** Centralization is more suited to the single market program, given the commonality of objectives and large spillovers. This resulted in the prominence of the supranational delegation model (see also Sapir and others, 2003). Softer forms of coordination are more appealing in the arena of labor market reforms. Within the EU in particular, members have jealously guarded control over social and employment policy. Vested interests are strong, and preferences are divergent—between those, for example, who value more flexible labor markets and those who place a premium on social protection. Also, given the relatively low level of cross-border labor mobility, direct externalities are not obviously strong. Finally, negative externalities through the impact of labor reforms on competitiveness caution against hard forms of coordination in that domain because it could actually increase the anti-reform bias. The OMC thus appears appropriate for those policy prerogatives that should remain in national hands but about which the EU has a broad interest in a certain policy stance.

Coordination and the Lisbon strategy

123. **The Lisbon strategy has been criticized as too diffuse and unfocused.** As some have noted "*narrow intermediate objectives, precisely defined means and effective instruments have been replaced by broader objectives, softer means and weaker instruments.*" (Sapir and others, 2003, p. 85). There is a widespread impression that the

multiple and partly overlapping decision-making processes only create confusion and hinder action instead of promoting it (Alesina and Perotti, 2004). The recent progress report of the European Commission on the Lisbon Agenda seems to confirm this pessimistic assessment (see Box 2 for a summary). Economic reforms lag behind in many member states and it seems increasingly likely that key targets set for 2010 will not be attained. The labor participation goal seems particularly ambitious, and some observers have wondered how the 15 million jobs needed to reach the employment rate target of 70 percent by 2010 will be created (European Commission, 2004b).

124. **While many see the supranational delegation model as the superior form of coordination, its enforcement record is also not perfect.** Sapir and others (2003) contrast what they see as the clarity and effectiveness inherent in the delegation model with the paralysis engendered by looser coordination mechanisms such as the OMC. However, as already noted, delegation is not suited to labor market institutions. Furthermore, the delegation model may be weaker than it looks. To have any traction, EU legal instruments heavily rely on national enforcement mechanisms, and in the case of directives, on possibly slow and unwilling national legislatures.[37] As regards regulations, which require no national legal interface,[38] the Commission is burdened by hundreds of infringement cases, again pointing to significant enforcement difficulties.

125. **The current EU governance structure in structural matters is two-pronged, reflecting the allocation of policy prerogatives between the center (delegation) and national governments (OMC).** The delegation pillar focuses mainly on the completion of the internal market, a dimension that the empirical analysis in this paper has approached through the specific angle of product-market reforms. Softer norms are used to facilitate cross-country coordination on areas like labor market reforms, areas which are central to the Lisbon strategy. The two-pillar model seems appropriate as it does not lead to an undue centralization of prerogatives that should remain in the realm of national decision-making.

126. **The weaknesses in the OMC have prompted calls for reform.** The European Commission (2004b), supported by the European Council (2004), put forward a number of recommendations designed to improve the process. Proposals include enhanced monitoring, a greater emphasis on follow-up, publicizing successful achievements, streamlining recommendations, and enhancing the exchange of information. These propositions reflect the

---

[37] Sapir and others (2003) lament at the fact that in May 2003, 2.4 percent of the 1500 directives related to the single market program had not yet been transposed by all member states within the agreed deadlines. The European Commission (2003) also notes that the "transposition deficit" of internal market directives has been rising since 2002.

[38] Sapir and others (2003) cite the number of 2000 infringement cases. The European Commission (2003) also notes that open infringement cases has increased by 6 percent between 2002 and 2003.

inherent limitations of patching up a method that rules out direct action on incentives. By design, the OMC ultimately relies on the governments' goodwill and the lack of it breaks the critical link between monitoring and incentives. In terms of moving forward, these proposals are a step in the right direction in view of the empirical analysis of this paper. These measures help take fuller advantage of the learning spillovers.

127. **The Lisbon strategy should be strengthened by making peer pressure more effective.** Given the absence of an external enforcer under the OMC, incentives must be put in place to promote self-enforcement, which will be facilitated by building consensus over a core body of reforms and making peer pressure more effective. There are two types of incentives in particular that can lead countries to enforce the softer coordination involved in the Lisbon agenda (see Padoan, 2002). First, a state that takes no action to boost employment would see its reputation diminish in the policy arena, as it loses influence in the EU domain, and in the market, as it becomes less attractive for investment. Second, harmful behavior in one country weakens others, making the euro area as a whole less attractive. These factors could help make peer pressure more effective.

128. **In particular, the focus of reform could be on the following:**

- **Streamline policy advice.** In particular, there needs to be more focus on labor market reform, especially geared towards raising labor utilization. While the Lisbon process does emphasize the employment rate, there is a plethora of other policies and platforms on the agenda which distract from the core labor market issues. The link between monitoring and incentives should also be tightened. Streamlining is likely to boost the efficacy of peer pressure**.**

- **Bolster the multilateral surveillance process.** The Commission could pursue a "naming and shaming" strategy by ranking and publicizing relative country performances. This could be given more traction through the multilateral surveillance lever of the BEPGs, which are Treaty-based. The Commission could also contribute to fostering consensus by promoting the benefits of structural reforms more aggressively.

- **Step up reforms under the supranational delegation pillar.** Conventional analyses often fail to appreciate the complementarities between the delegation and the OMC pillars. The empirical evidence on structural reforms in goods and labor markets suggests that resolute actions by the center to implement reforms falling under its responsibility would complement peer pressure by reinforcing individual incentives to carry out reforms. The uneven record in the area of labor markets should therefore encourage an acceleration in competition-enhancing initiatives by the center, including an increase in the scope of product market reforms to cover still heavily protected industries like retail trade, banking, and other services.

- **Promote large country leadership.** Maximizing learning spillovers and publicizing achievements would gain in effectiveness if large countries with a significant

influence on the competitiveness of smaller trade partners took the lead. Like in other policy areas (such as foreign policy), the recognition by large countries of their particular stake in the success of EU-wide coordination would facilitate the operation of the OMC by making reforms incentive-compatible for a larger number of countries given competition spillovers.

129. **In sum, the current two-pillar system possesses built-in strengths that have not yet been fully exploited.** First, the flexible design of the OMC pillar allows it to take advantage of different spillover effects while providing non-negligible political fringe benefits. In particular, it accommodates the leadership coordination game that may prove decisive in nudging incentives towards a more activist stance on pro-competitive reforms. Second, the two-pillar approach avoids the temptation to unduly centralize policy prerogatives, such as labor market policies. Third, there are important strategic complementarities between the actions undertaken under each pillar, notably those reflecting the fundamental interdependence between goods and factors markets.

Data Sources and Definitions

Labor market flexibility

The labor market flexibility index was constructed on the basis of the following variables:

- *Employment protection.* Index measuring the restrictiveness of *employment protection,* ranging *from* 0 to 2.
- *Benefit replacement rates.* Average first-year unemployment benefits as a percentage of average earnings before tax.
- *Benefit duration.* Ratio of the average benefit replacement rates in the second to the fifth year of an unemployment spell to the average benefit replacement rate in the first year of an unemployment spell.

These annual time-series cover the period 1960-1998. They come from the *Labor Market Institutions Database* set-up by Nickell and Nunziata (2001) and extended by IMF staff on the basis of OECD data provided by Giuseppe Nicoletti (see IMF,2003). In view of their aggregation, those indices were rescaled on the 0-1 interval, with higher values meaning improved incentives to supply and demand labor.

Product market regulatory indices and industry-level data

The paper uses annual time series of regulatory restrictions indices constructed by the OECD and covering the period 1975-98 period for the following industries: gas, electricity, post, telecommunications, passenger air transport, railways and road freight. Depending on the industry, 2 to 4 dimensions of the regulatory restrictions are available: barriers to entry, public ownership, market structure, vertical integration, and price controls. The text figures use simple averages of the original indices, which range between 0 and 6, where 6 indicates the highest level of restrictions. To ease comparisons between labor and product market reforms, the regression analysis considers an average index over all industries and rescaled between 0 and 1, with 1 indicating the lowest level of restrictions.

As far as the analysis of the transportation industry is concerned, time-series covering the period 1975-1998 are available for passenger air transport, railways and road freight. Figures 2 and 3 depict average regulatory restrictiveness indices for those three industries as vertical bars. Industry data on value added, employment and wages refer to the "*transport, storage and communication*" sector in the OECD STAN database. Similar analysis on post and telecommunications revealed broadly similar patterns as for the transportation industry although the regulatory reforms in France were more limited in scope and came much later. Nicoletti and Scarpetta (2003) provide a detailed discussion of those data, including quality and other mismatches.

Additional data used in the regression analysis

- Share of seniors: percentage of the total population over the age of 65 (source: *World Development Indicators*).
- Cross-border spillovers: difference (lagged once) between the value of structural indicator in a specific country and the weighted average of its three main trade partners (on the basis of exports) among the group of 20 OECD countries considered in the study (source of the trade weights: *World Economic Outlook*).
- Trade openness: sum of imports and exports of goods and services in percent of GDP (Source: *OECD Analytical Database)*.
- "Bad" year: dummy set equal to 1 when annual real GDP growth is at or below 1 percent.
- Number of bad years over the last three years: sum of the above dummy over the three preceding years.
- Cyclically adjusted primary surplus: primary surplus adjusted for the cycle in percent of potential GDP (source: *OECD Analytical Database*).
- Net government debt: Net government liabilities in percentage of GDP (source: *OECD Analytical Database*).
- Country size: Real GDP divided by US GDP (source: *OECD Analytical Database*).
- Union density: Total reported union members divided by wage and salaried employees (source: Nickell and Nunziata, 2001).
- Conservative government: dummy set equal to 1 if the chief executive's ideology is conservative. (Source: *World Bank - Database of Political Institutions)*.
- Size of government majority: number of government seats in Parliament divided by total number of seats. (Source: *World Bank - Database of Political Institutions)*.
- Number of years in office: *World Bank - Database of Political Institutions*.
- Popular support for the euro: survey data showing percentage of people supporting the adoption of the euro by their country (Source: *European Commission – Eurobarometer, various issues*, http://europa.eu.int/comm/public_opinion/).

- ERM “hard-core”: dummy variable equal to 1 for all long-term members of the narrow-band ERM (1979-1993), including after the widening of the bands to 15 percent. Italy was considered a member of the hard core ERM in 1990 and 1991 only.

References

Abbot, Kenneth W., and Duncan Snidal, 2000, "Hard and Soft Law in International Governance," *International Organization*, Vol. 54, No. 3., pp. 421-456.

Abiad, Abdul, and Ashoka Mody, 2003, "Financial Reform: What Shakes It? What Shapes It?" IMF Working Paper 03/70 (Washington: International Monetary Fund).

Agell, Jonas, 1999, "On the benefits from rigid labour markets: norms, market failures, and social insurance", *The Economic Journal*, Vol. 109 (February), pp. F143-F164.

Alesina, Alberto and Alan Drazen, 1991, "Why Are Stabilizations Delayed?", *American Economic Review*, Vol. 81(December), pp. 1170-88.

Alesina, Alberto and Roberto Perotti, 2004, "The European Union: A Politically Incorrect View", NBER Working paper No 10342 (Cambridge, Massachusetts: National Bureau of Economic Research).

Alesina, Alberto and Romain Wacziarg, 1999, "Is Europe going too far?" *Carnegie-Rochester Conference Series on Public Policy*, Vol. 51 (December), pp.1-49.

Beetsma, Roel and Xavier Debrun, 2004, "Reconciling Stability and Growth: Smart Pacts and Structural Reforms," *IMF Staff Papers*, forthcoming (Washington: International Monetary Fund).

Beetsma, Roel, Xavier Debrun and Franc Klaassen, 2001, "Is Fiscal Policy Coordination in EMU Desirable?", *Swedish Economic Policy Review*, Vol. 8 (Spring), pp. 57-97.

Begg, Ian, Dermot Hodson, and Imelda Maher, 2003, "Economic Policy Coordination in the European Union," *National Institute Law Review,* Vol.. 183, pp. 66-77.

Blanchard, Olivier, 2002, "Designing Labor Market Institutions" (unpublished; Cambridge, Massachusetts: MIT). Available via the Internet: http://econ-www.mit.edu/faculty/blanchar/papers.htm.

Blanchard, Olivier, 2004, "The Economic Future of Europe", NBER Working Paper No 10310 (Cambridge, Massachusetts: National Bureau of Economic Research).

———, and Francesco Giavazzi, 2003, "Macroeconomic Effects of Regulation and Deregulation on Goods and Labor Markets," *Quarterly Journal of Economics*, Vol. 118 (August), pp. 879–907.

Blanchard, Olivier, and Thomas Philippon, 2003, "The Decline of Rents, and the Rise and Fall of European Unemployment" (unpublished; Cambridge, Massachusetts: MIT). Available via the Internet: http://econ-www.mit.edu/faculty/blanchar/papers.htm.

Blanchard, Olivier, and Jean Tirole, 2003, "Contours of Employment Protection Reform," (unpublished; Cambridge, Massachusetts: MIT). Available via the Internet: http://econ-www.mit.edu/faculty/blanchar/papers.htm.

Boeri, Tito, 2004, "Labor and Product Market Reforms: Why So Many and So Difficult?" (unpublished; Washington: International Monetary Fund). Available in the Internet at : http://www.igier.uni-bocconi.it/boeri.

Boeri, Tito, José Ignacio Conde-Ruiz, and Vincenzo Galasso, 2003, "Protecting Against Labour Market Risks: Employment Protection or Unemployment Benefits?" CEPR Discussion Paper No. 3990 (London: Centre for Economic Policy Research).

Bulow, Jeremy, Geanakoplos, J., and Paul Klemperer, "Multimarket Oligopoly: Strategic Substitutes and Complements", *Journal of Political economy*, Vol. 93, pp. 488-511.

Calmfors, Lars, 2001, "Unemployment, labor market reform, and monetary union", *Journal of Labor Economics* (April), Vol. 19, pp. 265-89.

Canzoneri, Matthew B., and Dale W. Henderson, 1991, *Monetary policy in interdependent economies: A game-theoretic approach* (Cambridge and London: MIT Press)

Coe, David T., and Dennis J. Snower, 1997, "Policy Complementarities: The Case for Fundamental Labor Market Reform," *Staff Papers*, International Monetary Fund, Vol. 44 (March), pp. 1–35.

Commission of the European Communities, 2004a, "Delivering Lisbon. Reforms for the Enlarged Union," Report to the Spring European Council on the Lisbon Strategy of Economic, Social, and Environmental Renewal (Brussels: European Commission).

Commission of the European Communities, 2004b, "Strengthening the Implementation of the European Employment Strategy," Communication from the Commission (Brussels: Commission of the European Communities).

Drazen, Allan, and William Easterly, 2001, "Do Crises Induce Reform?: Simple Empirical Tests of Conventional Wisdom," *Economics and Politics*, Vol. 13 (July), pp. 129–57.

Drèze, Jacques and Christian Gollier, 1993, "Risk Sharing on the Labour Market and Second-Best Wage Rigidities", *European Economic Review,* Vol. 37 (December), pp. 1457-82.

Eichengreen, Barry and Charles Wyplosz, 1998, "The Stability Pact: More than a Minor Nuisance?", *Economic Policy*, No 26 (April), pp. 65-104.

Elmeskov, Jorgen, John Martin, and Stefano Scarpetta, 1998, "Key Lessons for Labour Market Reforms: Evidence from OECD Countries' Experiences", *Swedish Economic Policy Review*, Vol. 5 (Autumn), pp. 205-52.

European Council, 2004, *Presidency Conclusions, Brussels European Council 25/26 March*, Brussels.

Fernández, Raquel, and Dani Rodrik, 1991, "Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty," *American Economic Review*, Vol. 81 (December), pp. 1146–55.

Gersbach, Hans, 2003, "Structural Reforms and the Macroeconomy: The Role of General Equilibrium Effects," Invited Lecture, IEA meetings, Lisbon, September.

Grüner, Hans Peter, 2002, "Unemployment and Labour-Market Reform: A Contract Theoretic Approach," *Scandinavian Journal of Economics*, Vol. 104 (December), pp. 641–56.

Hodson, Dermot, and Imelda Maher, 2001, "The Open Method as a New Mode of Governance: The Case of Soft Economic Policy Co-ordination," *Journal of Common Market Studies*, Vol. 39 (November), pp. 719–46.

International Monetary Fund, 2003, "Unemployment and Labor Market Institutions: Why Reforms Pay Off," Chapter IV, *World Economic Outlook* – April (Washington: International Monetary Fund).

International Monetary Fund, 2004, "Fostering Structural Reforms in Industrial Countries," Chapter III, *World Economic Outlook* – April (Washington: International Monetary Fund).

Judson, Ruth and Ann Owen, 1999, "Estimating Dynamic Panel Data Models: A Guide for Macroeconomists", *Economics Letters*, Vol. 65 (October), pp. 9-15.

Koedijk, Kees and Jeroen Kremers, 1996, "Market Opening, Regulation, and Growth in Europe," *Economic Policy*, No. 23 (October), pp. 445-485.

Krueger, Anne O., 1974, "The Political Economy of the Rent-Seeking Society," *American Economic Review*, Vol. 64 (June), pp. 291–303.

Morelli, Pierluigi, Pier Carlo Padoan, and Lisa Rodano, 2002, "The Lisbon Strategy to the New Economy. Some Economic and Institutional Aspects," paper presented at the XIV Villa Mondragone International Economic Seminar on Institutions and Growth: The Political Economy of International Unions and the Constitution of Europe, University of Rome, June 26–27.

Mosher, James S, and David M. Trebek, 2003, "Alternative Approaches to Governance in the EU: EU Social Policy and the European Employment Strategy," *Journal of Common Market Studies*, Vol. 41, no. 1., pp. 63-88.

Mundell, Robert, 1961, "A Theory of Optimum Currency Areas", *American Economic Review*, Vol. 51, pp. 657-665.

Nickell, Stephen and Luca Nunziata, 2001, "Labour Market Institutions Database" (London: Centre for Economic Performance, London School of Economics). Available via the Internet: http://cep.lse.ac.uk/pubs/download/data0502.zip.

———, Wolfgang Ochel, and Glenda Quintini, 2003, "The Beveridge Curve, Unemployment and Wages in the OECD from the 1960s to the 1990s," in *In Knowledge, Information and Expectations in Modern Macroeconomics: In Honor of Edmund S. Phelps*, ed. by Philippe Aghion, R. Frydman, Joseph Stiglitz, and Michael Woodford (Princeton, New Jersey: Princeton University Press).

Nicoletti, Giuseppe, and Stefano Scarpetta, 2001, "Interactions Between Product and Labor Market Regulations: Do They Affect Employment? Evidence from OECD Countries," paper presented at the Banco de Portugal Conference on "Labour Market Institutions and Economic Outcomes," Cascais, Portugal, June 3-4.

———, 2003, "Regulation, Productivity and Growth: OECD Evidence," *Economic Policy*, Vol. 18, No. 36, pp. 19–72.

Organization for Economic Cooperation and Development, 2002, *Employment Outlook* (Paris: Organization for Economic Cooperation and Development).

Olson, Mancur, 1965, The Logic of Collective Action (Cambridge, Massachusetts: Harvard University Press).

Padoan, Pier Carlo, 2002, "EMU As An Evolutionary Process," in David M. Andrews, C. Randall Henning, and Louis W. Pauly [eds.] *Governing the World's Money*, Cornell University Press.

Rodrik, Dani, 1996, "Understanding Economic Policy Reform?" *Journal of Economic Literature*, Vol. 34 (March), pp. 9–41.

Rodrik, Dani, 1998, "Why Do More Open Economies Have Bigger Governments?" *Journal of Political Economy*, Vol. 106 (October), pp. 997–1032.

Saint-Paul, Gilles, 1996, "Exploring the Political Economy of Labour Market Institutions," *Economic Policy*, Vol. 23 (October), pp. 265–315.

Saint-Paul, Gilles, 2002, "Some Thoughts on Macroeconomic Fluctuations and the Timing of Labor Market Reform," IZA Discussion Papers, No 611 (Bonn: Institute for the Study of Labor – IZA)

Sapir, André, Philippe Aghion, Giuseppe Bertola, Martin Hellwig, Jean Pisani-Ferry, Dariusz Rosati, José Viñals, and Helen Wallace, 2003, *An Agenda for a Growing Europe: Making the EU Economic System Deliver*, Report of an Independent High-level Study Group established on the initiative of the President of the European Commission, Brussels.

Scarpetta, Stefano and Thierry Tressel, 2002, "Productivity and convergence in a panel of OECD industries: Do regulations and institutions matter?", OECD Economics Department Working Paper No 342, (Paris: Organization for Economic Cooperation and Development).

Seldeslachts, Jo, 2002, "Interaction Between Product and Labor Market Reforms" (unpublished; Barcelona, Spain: Department of Economics and Economic History, Universidad Autónoma de Barcelona).

Sibert, Anne C, and Alan Sutherland, 2000, "Monetary Union and Labor Market Reform," *Journal of International Economics*, Vol. 51 (August), pp. 421-35

Figure 1. Reforms and the Equity-Growth Trade-Off, 1960-2004

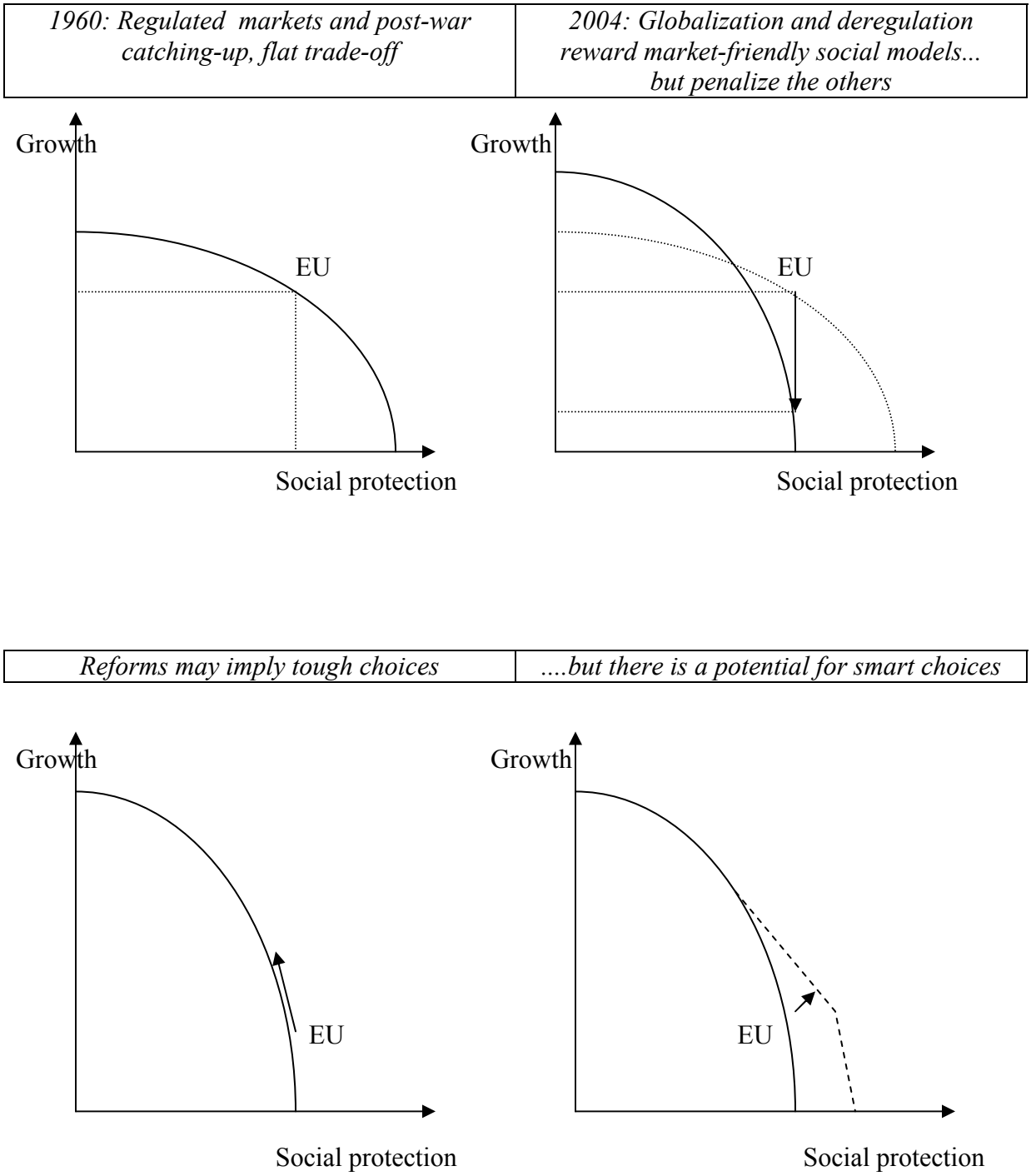
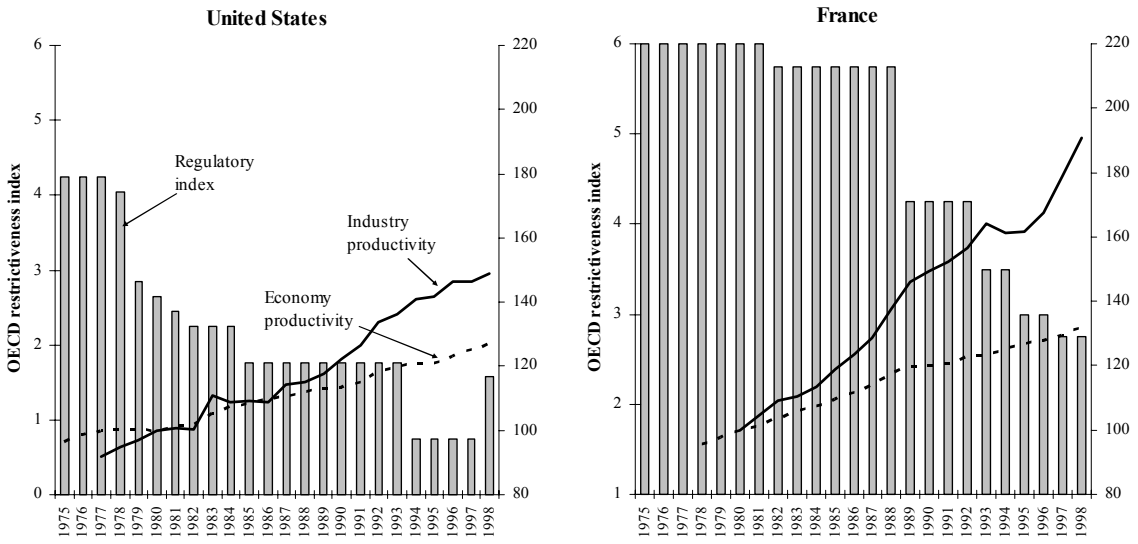
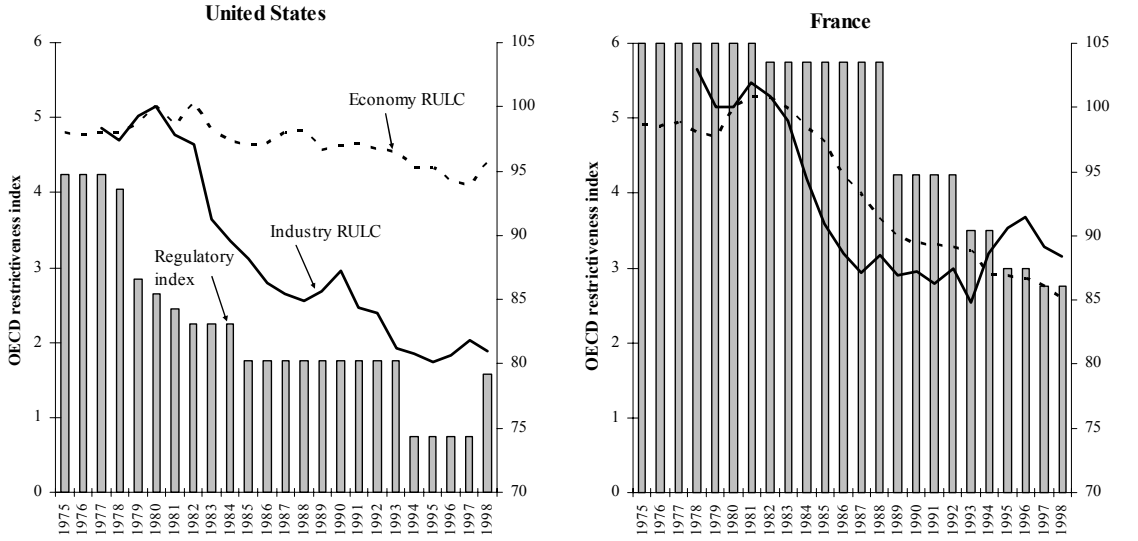


Figure 2. Liberalization and Labor Productivity in the Transportation Industry: France Versus the United States, 1975-1998



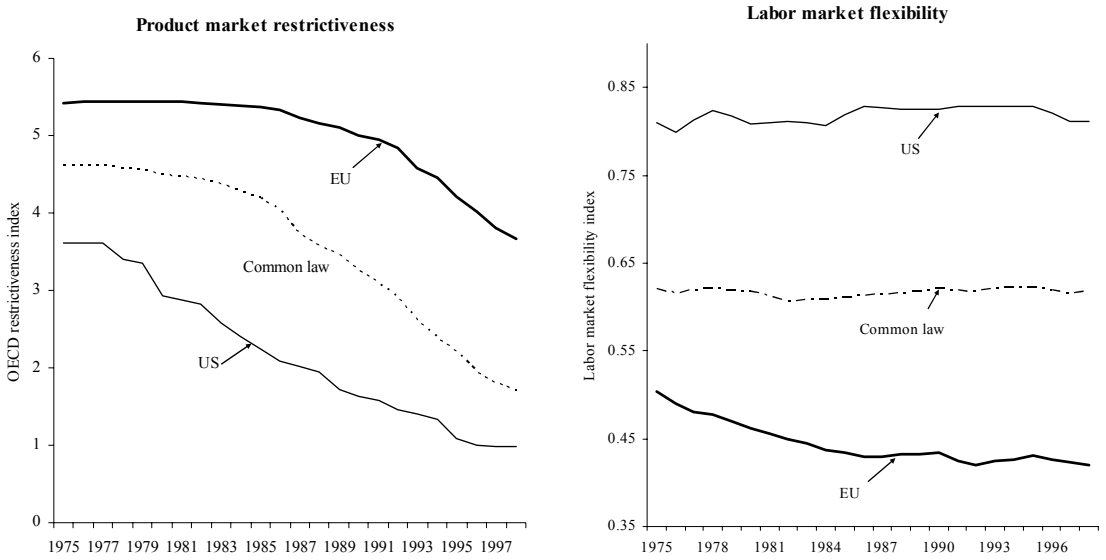
Sources: see Appendix.

Figure 3. Liberalization and Real Unit Labor Costs in the Transportation Industry: France Versus the United States, 1975-1998



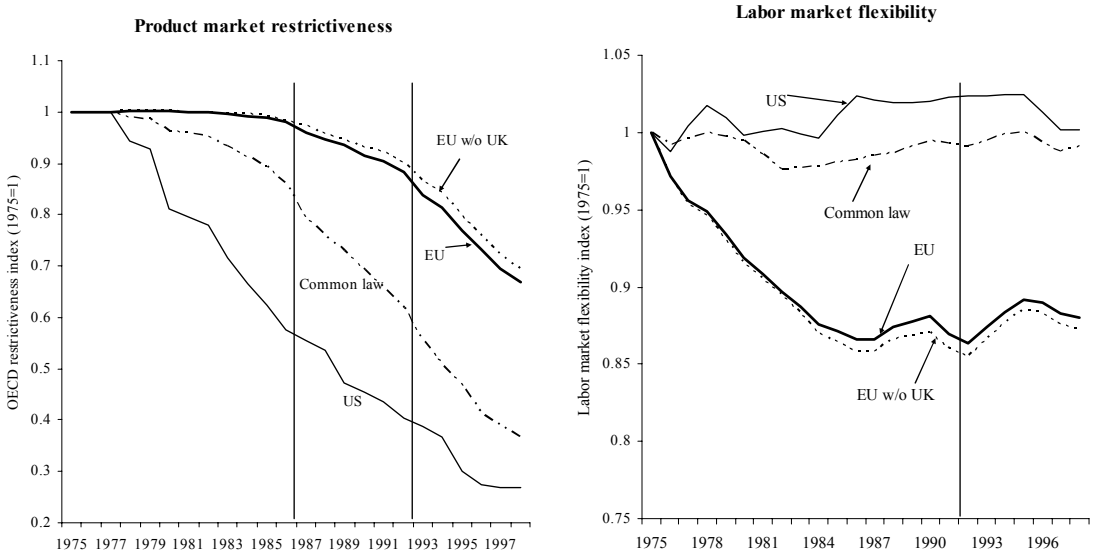
Sources: see Appendix.

Figure 4. Regulatory Restrictions in Product Markets and Labor Market Flexibility: Industrial Countries, 1975-1998



Sources: see Appendix.

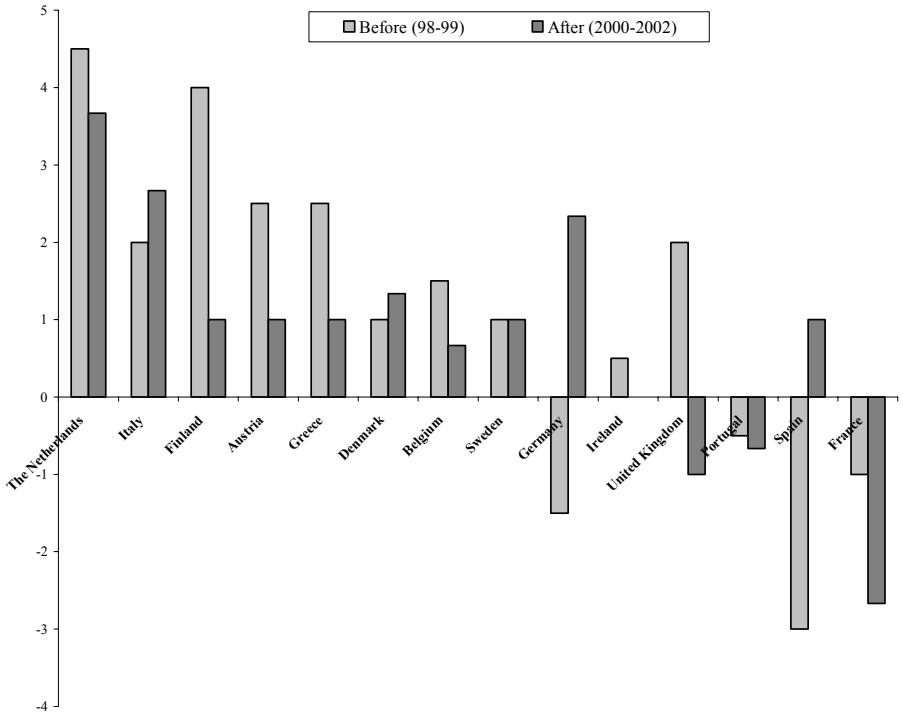
Figure 5. Cumulative Reform Efforts in Industrial Countries, 1975-1998



Sources: see Appendix.

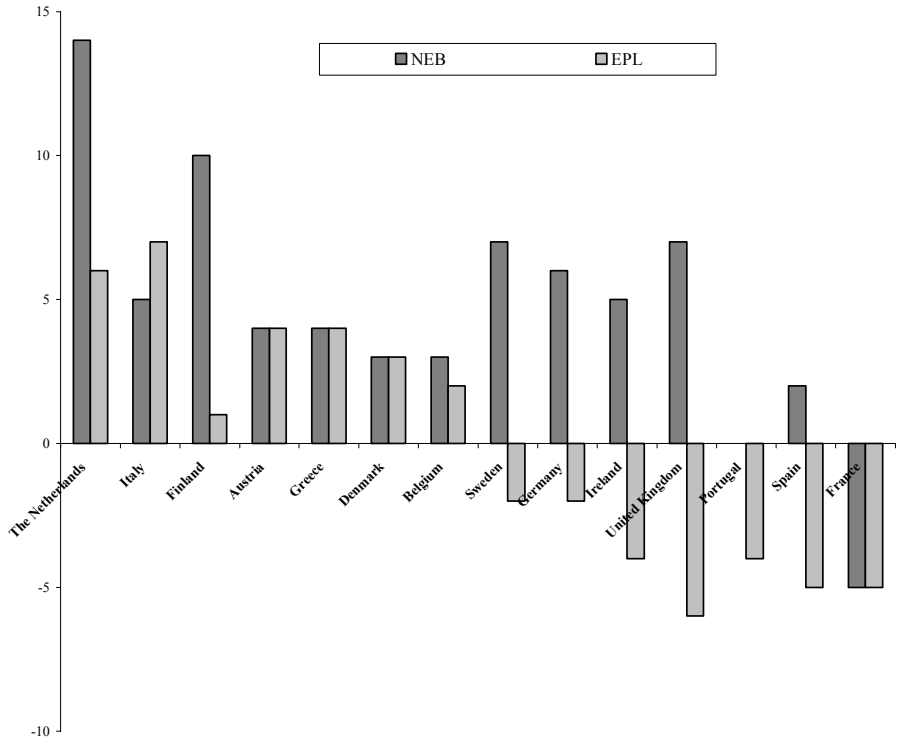
Figure 6. Cross-Country Dispersion of Structural Conditions, 1975-1998

Figure 7. Net Number of Flexibility-Enhancing Labor Reforms Per Year: Before Lisbon and After



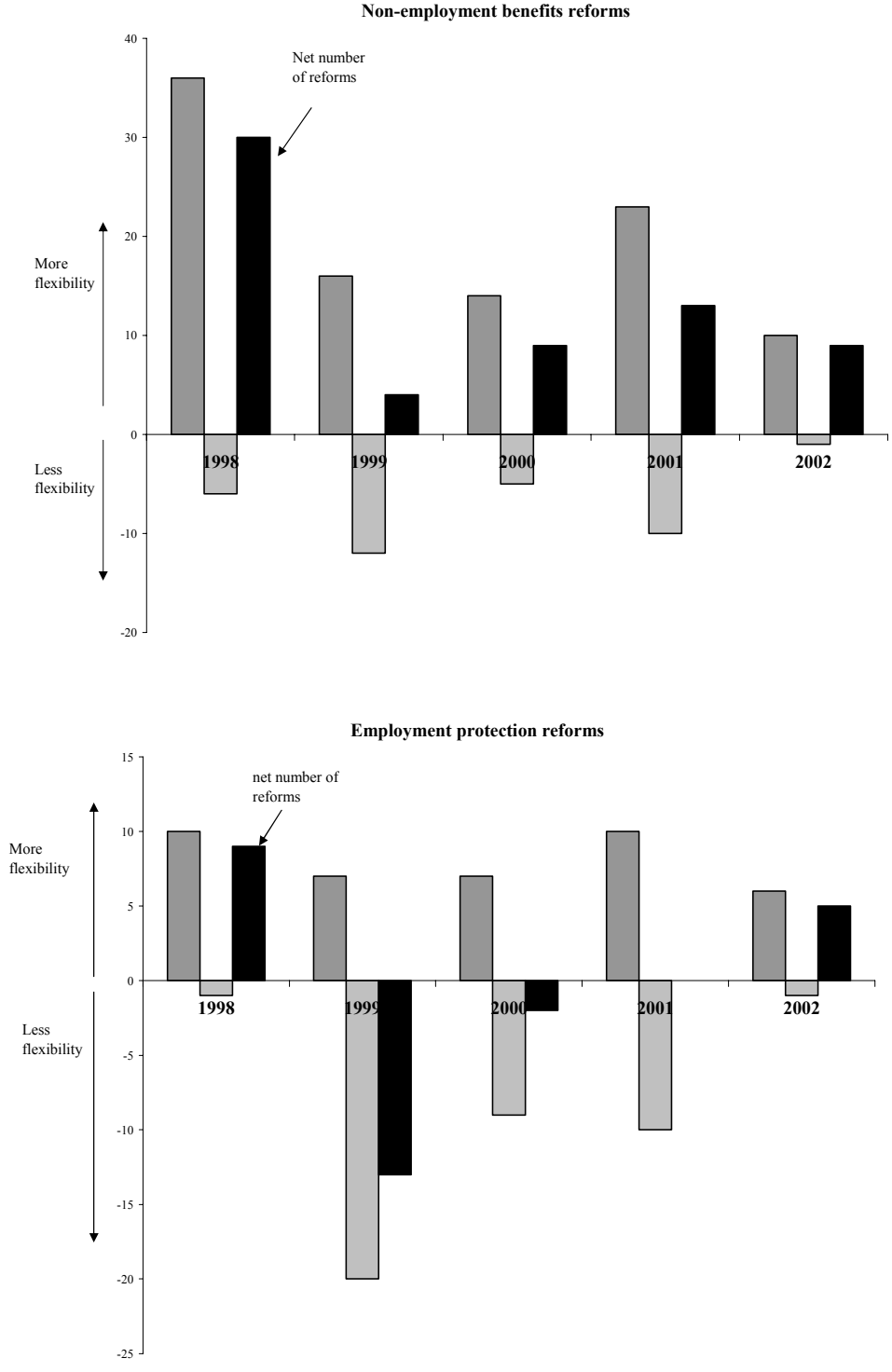
Sources: FRDB *Social reforms database* and IMF staff calculation.

Figure 8. Net Number of Flexibility-Enhancing Labor Reforms:
Employment Protection (EPL) Versus Non-Employment Benefits (NEB)



Sources: FRDB *Social reforms database* and IMF staff calculation.

Figure 9. Total Number of Labor Reforms in the EU, 1998-2002



Sources: FRDB *Social reforms database* and IMF staff calculation.

Table 1. Determinants of Reforms in Product and Labor Markets
(Dependent variable: change in the relevant structural index times 100)

	Labor market			Product markets		
Explanatory variables	All countries	EU effect 1/	Total EU 2/	All countries	EU effect 1/	Total EU 2/
Cross-border spillovers	5.560 *	-1.619	3.940 **	18.520 ***	-1.091	17.429 ***
Lagged product market reforms	-0.924	5.003 ***	4.079 ***	...	...	...
Lagged labor market reforms	...		...	8.119	-3.506	4.613
Cyclically adjusted primary surplus	0.017	-0.105 ***	-0.089 ***	…	…	…
Change in the cyclically adjusted primary surplus	-0.094 ***	0.114 ***	0.020	0.202 ***	-0.225 ***	-0.023
Net government debt	0.011 ***	0.011 **	0.022 ***	…	…	…
"Bad" year	-0.320 ***	0.545 ***	0.226 ***	0.329 *	0.743 ***	1.072 ***
Number of bad years over the 3 preceding years	0.062 *	-0.172 ***	-0.110 **	0.209 **	0.101	0.311 **
Trade openness	-2.958 ***	4.202 ***	1.244 **	-2.484	0.909	-1.575
Conservative government	-0.143 *	0.381 ***	0.238 **	1.054 ***	-1.230 ***	-0.176
Size of government majority in Parliament	-0.421	0.907	0.486	0.263	-4.864 ***	-4.601 ***
Number of years government is in office	-0.024 *	0.041 **	0.017	…	…	…
Share of seniors (>65 years old) in total population	-0.050 **	-0.184 **	-0.234 ***	…	…	…
Union density	3.442 ***	1.216	4.658 ***	-4.305 **	6.144 ***	1.839
Country size	-5.219	5.514 ***	0.296	…	…	…
Popular support for the euro (Eurobarometer)	-0.003 *	...	-0.003 *	…	…	…
EU membership	5.174 ***	...	5.174 ***	-0.894	…	-0.894
Single European Act (dummy=1 from 1987 onwards)	0.525 ***	...	0.525 ***	1.056 ***	…	1.056 ***
Single market (dummy=1 from 1992 onwards)	0.258 **	...	0.258 **	0.587	…	…
ERM "hard-core" member (excl. Germany)	-1.437 ***	...	-1.437 ***	…	…	…
Adjusted R-squared		0.356			0.252	
Number of observations		346			377	

Note: Both equations were estimated using a feasible GLS estimator allowing for cross-section heteroskedastic and contemporaneously correlated errors (SUR). Significance levels are based on robust standard errors. Superscripts *, **, and *** indicate that the estimated coefficient is significantly different from zero at the 10, 5, and 1 percent level, respectively. The labor equation includes two lags of the dependent variable while the product market equation includes one lag of the dependent variable (not reported). All equations include country fixed effects (not reported).
1/ Coefficients of the EU membership dummy interacted with the corresponding explanatory variable.
2/ Significance levels based on Wald test that the sum of both coefficients is equal to zero.

III. ENFORCEMENT AND THE STABILITY AND GROWTH PACT[39]

Core Questions, Issues, and Findings

- ***Why is the SGP in a procedural impasse?*** The proximate causes were that France and Germany breached the 3 percent deficit limit repeatedly, owing to lack of fiscal adjustment during good times and the effects of automatic stabilizers during the protracted slowdown. But the crux of the matter was that neither the preventive nor the dissuasive procedures of the SGP proved enforceable (¶9-12; ¶31-36).

- ***What aspects of the SGP rendered enforcement difficult?*** First, there seemed to be an imbalance between the SGP's preventive arm, which is rooted in "soft law" and relies mainly on peer pressure, and the SGP's dissuasive arm, which is based on more traditional "hard law" in terms of legal obligations (¶13-21). Second, differing internal incentives within countries meant that some countries found the SGP as an external commitment mechanism more valuable than others. In particular, the SGP seemed more suited to countries which use a "commitment" form of fiscal governance to enforce fiscal discipline. By contrast, countries that used a "delegation" form of fiscal governance, i.e. rely more on a single agenda-setter to enforce fiscal discipline, typically the finance minister, had more limited incentives to adhere to external commitments (¶22-30). The evidence suggests that commitment countries tended to respect the SGP more than delegation countries (¶37-46).

- ***What does this analysis suggest in terms of reforming the Pact?*** It seems to point toward a need to rebalance the Pact's hard and soft law elements. Reforms should make the SGP more enforceable among the delegation states while not undermining its external anchor role for fiscal policy among commitment states (¶47-50).

- ***How can the SGP's preventive arm (soft law component) be strengthened?*** More emphasis could be placed on linking underlying fiscal targets to country-specific fiscal sustainability concerns (¶53-55). Strengthening fiscal institutions could help reduce procyclical fiscal leakages (¶51-52). Peer pressure could also become more effective, by raising the reputational costs of not living up to SGP precepts (¶57-60).

- ***How can the excessive deficit procedure (hard law component) be adapted?*** The dissuasive arm could be tuned better to the proximate reasons that lead to breaches of the 3 percent deficit limit, particularly by distinguishing the effects of policies and economic circumstances. A more flexible time frame for eliminating excessive deficits may also be needed (¶56).

[39] Prepared by Tony Annett.

A. Introduction

130. **The Stability and Growth Pact (SGP), Europe's five-year old fiscal framework, is in abeyance.** In November 2003, the European Commission recommended that the procedures against France and Germany be speeded up given that their excessive deficits were likely to persist for a third consecutive year. While accepting the need to take measures to reduce deficits in 2004, the ECOFIN Council[40] elected not to follow the Commission's recommendations, which would have placed both countries under enhanced fiscal surveillance, one step short of financial sanctions. Instead, they placed the SGP in abeyance, prompting the Commission to challenge what it viewed as a sidestepping of the legal procedures in the European Court of Justice.

131. **Enforcement has been the Achilles' heel of the SGP.** Kopits and Symansky (1998) include enforceability in their core characteristics of a good fiscal rule—the others being well-defined, transparent, simple, flexible, adequate relative to the final goal, consistent, and underpinned by structural reforms. Observers such as Buti, Eijffinger, and Franco (2003) assign the lowest marks to enforcement when gauging the SGP framework against these criteria. Inman (1996) argued that, to be effective, a deficit rule needed four key characteristics: it should rely on ex post, not ex ante accounting; it should be constitutionally grounded; there should be open enforcement by a politically independent agent able to impose significant penalties; and it should be difficult to amend. Against this template, the SGP fares reasonably well, except for enforcement. To improve the framework, some wish to vest more enforcement powers with external bodies, such as the Commission (Buti, Eijffinger, and Franco, 2003) or the European Court of Justice (Calmfors and Corsetti, 2003).

132. **Against this backdrop, this chapter asks how the SGP can be made more enforceable.** Focusing only on independent enforcement is too narrow. Instead, this chapter explores the different incentives of countries to respect the SGP's precepts, both preventive and dissuasive. It will not touch upon issues related to the optimality of fiscal frameworks directly, unless these issues touch on enforceability. In fact, however, there is a strong overlap between reforms that improve the underlying economic rationale, and those that improve enforceability. The chapter is structured as follows: Section B provides a basic overview of the SGP. Section C delves into the hard and soft law aspects of the SGP. Following from this, the next part (Section D) detours into the political economy literature to ask why some countries respected the tenets of the SGP more than others. With this in mind, Section E then discusses the fiscal policy experience under the SGP. Building on all of this, Section F tentatively presents some options for reform.

[40] The decision making forum for the EU's finance and economics ministers; hereafter referred to as the "Council".

B. Overview of the SGP

133. **The SGP fleshes out the fiscal policy provisions of the Maastricht Treaty.** The Maastricht Treaty, adopted in 1992, provides for a two-pronged fiscal framework—a **preventive arm** focusing on multilateral surveillance and the avoidance of excessive deficits, and a **dissuasive arm** tackling "excessive deficits" once they arise. The SGP in a narrow sense, introduced in 1998, consists of two regulations that provide detailed guidance on implementing the Treaty framework. In this chapter, "SGP" will refer to the Treaty provisions plus the supporting regulations.

The Preventive Arm

134. **The preventive arm urges countries to strive for underlying balance.** It emphasizes economic policy coordination and multilateral surveillance. The Council is empowered under Article 99 of the Treaty to issue Broad Economic Policy Guidelines (BEPGs) and monitor developments in member countries. If it deems that a country's policies are not consistent with the guidelines, it can make recommendations to that country.[41] The SGP beefs up the surveillance function. It complements the 3 percent of GDP deficit limit by requiring countries to strive for a medium-term "close-to-balance or in surplus" objective. This has subsequently been interpreted as a cyclically-adjusted balance requirement.

135. **Stability Programs (SPs) form the backbone of the surveillance procedure.** Member states are required to submit annual SPs (Convergence Programs for those countries which have not adopted the euro) which detail progress towards this medium-term goal and the evolution of debt. Based on a Commission recommendation, the Council considers whether the medium-term objective contains a sufficient safety margin to avoid an excessive deficit, whether the economic assumptions are realistic, and whether the proposed measures are sufficient to achieve the targeted adjustment path. If it chooses, the Council can invite the country to adjust its program. A key feature of the preventive arm of the SGP is the early warning system, whereby the Council can address a recommendation to a member country to take measures to avoid a possible excessive deficit.

The Dissuasive Arm

136. **The dissuasive arm is charged with ensuring that countries respect the limits on deficits and debt laid down by the Maastricht Treaty.** Countries are obliged to keep their deficits under 3 percent of GDP, and their public debt under 60 percent of GDP. The dissuasive element of the Treaty—Article 104, or the Excessive Deficit Procedure (EDP)—describes what happens when countries breach these reference limits. If countries fail to take

[41] In 2001, the Council issued a recommendation to Ireland on the grounds that its budget, which entailed tax cuts and expenditure increases, was not compatible with the BEPGs, which called for Ireland to avoid procyclical fiscal policies.

the necessary measures, sanctions can be imposed. The SGP fleshes out the procedure, by detailing each phase in the process, including the timing. One of the goals of this regulation is to speed up the process and allow sanctions to be imposed relatively quickly if the country has not complied with the earlier steps. It also clarifies some of the "escape clauses" embedded in the Treaty (see Box 1 for details).

137. **Ultimately, a non-complying country can be sanctioned.** The Treaty prescribes a range of option for sanctions: requiring the member state to publish additional information before issuing bonds; inviting the European Investment Bank to reconsider its lending policy to the country; requiring the member state to make a non-interest bearing deposit; and imposing fines. The SGP regulation states that non-interest bearing deposits are required "as a rule". While sanctions are at the prerogative of the Council, the framers of the SGP wanted to make sanctions "quasi-automatic" (Stark, 2001).

Procedural Impasse

138. **The Council first balked at issuing early warnings.** It opted not to follow Commission recommendations to send early warnings to Portugal and Germany in early 2002. Later, however, the Council decided to send a warning to France in January 2003. Following a promise by the authorities to take action to reduce the likelihood of breaching the 3 percent limit, the Council opted not to send an early warning to Italy in April 2004.

139. **To date, five euro-area countries have been subject to the EDP.** The Council launched the procedure against Portugal in November 2002, and closed it in April 2004, noting that Portugal had complied with the recommendations and kept its deficit below 3 percent in 2002 and 2003. In the case of Germany, the EDP was initiated in January 2003; in response to the requirement to adjust within four months, Germany committed to, and implemented, measures equal to 1 percent of GDP. The Council launched the EDP against France in June 2003, again giving it four months to take effective action. France did not implement the required measures over this period. The EDP was also launched against Greece and Netherlands in 2004. Finally, six of the ten new members—Czech Republic, Cyprus, Hungary, Malta, Poland, and Slovakia—were placed under the EDP upon accession in May 2004, although as non-euro-area members, some of the dissuasive aspects of the SGP (enhanced fiscal surveillance and sanctions) do not apply to them.

140. **In November 2003, the Commission recommended ratcheting up the process for both France and Germany.** Although Germany had implemented corrective measures, it seemed that the excessive deficit would persist into 2004. Accordingly, the Commission recommended that the Council give notice under Article 104.9 to France and Germany. First, the countries should take measures sufficient to reduce their cyclically-adjusted deficits in 2004—1 percent of GDP for France, and 0.8 percent of GDP for Germany. Second, recognizing the adverse economic circumstances

Box 1. The Excessive Deficit Procedure

Is there an excessive deficit? A deficit greater than 3 percent of GDP will trigger the EDP as long as the excess is not considered to be exceptional, temporary, and close to the reference value. This criterion is also satisfied if the deficit has declined substantially and continuously and comes close to 3 percent of GDP. A similar caveat for the debt ratio is even looser: in this case, all that needs to happen is for the ratio to be approaching the 60 percent of GDP threshold at a satisfactory pace. When preparing its initial report under the EDP, the Commission takes into account whether the deficit exceeds government investment and also considers "all other relevant factors, including the medium-term economic and budgetary position of the member state".

What are exceptional circumstances? Exceptional is defined as resulting from "an event outside the control of the member state... which has a major impact on the financial position of the general government, or when resulting from a severe economic downturn". In turn, a severe economic downturn is defined as a fall in real GDP by at least 2 percent. A fall between 0.75 and 2 percent may be exceptional, given supporting evidence. A less than 0.75 percent decline is not. The deficit is temporary if it will "fall below the reference value following the end of the unusual event or the severe economic downturn". The SGP does not define the "closeness" criterion. All three must apply for this escape clause to be utilized.

First stage: Within *three months* of the reporting date, the Council decides on whether an excessive deficit exists (Article 104.6). If so, it will immediately issue a recommendation under Article 104.7. Two deadlines are presented: (a) four months to take "effective action" and; (b) a deadline for the elimination of the excessive deficit, which is typically the year following its identification, barring "special circumstances".

Second stage: After *four months*, if the Council feels that the member state is not implementing the measures, or that they are inadequate, or that data indicate that the excessive deficit will not be corrected within the time limits specified, then it will move on to the next step. If the country is deemed to have taken effective action, the procedure is placed in abeyance. Otherwise, within *one month*, the Council will give notice under Article 104.9 for the member state to take, within a specified time limit, measures to reduce the deficit. This stage is only applicable to countries in the final stage of EMU. The Council may request the member state to submit regular reports to monitor adjustment efforts under enhanced fiscal surveillance.

Final stage: If the member state is in compliance with the notice given, the procedure is held in abeyance. If not, then the Council will move to the sanctions phase within *two months* (Article 104.11). By this timetable, sanctions can be imposed within ten months of the reporting date. A non-interest bearing deposit will be required. The first deposit comprises a fixed component of 0.2 percent of GDP and a variable component equal to one tenth of the difference between the deficit and the 3 percent, in percent of GDP. Each following year, the Council may decide to intensify the sanctions by requiring another deposit (variable component only). No single deposit can exceed 0.5 percent of GDP. If the excessive deficit has not been corrected two years after the deposit was made, it shall be converted into a fine. If, before two years are up, the Council considers the excessive deficit to be corrected, it abrogates the procedure and returns the deposit. Fines are not reimbursed. Interest on deposits, and fines, shall be distributed among member states without excessive deficits (proportional to their share in total GDP).

facing them, the countries were given an extra year (until 2005) to eliminate their excessive deficits. Third, again in accordance with Article 104.9, the countries would be placed under enhanced fiscal surveillance—an initial report would be due in December 2003, followed by regular implementation reports.

141. **The Council did not endorse these recommendations, opting instead to place the EDP against France and Germany in abeyance.** The differences between the Commission and the Council were largely procedural, and did not involve significant disagreement about the desirable fiscal stance. The Council endorsed the commitment of France and Germany to marginally lower adjustment in 2004 (0.8 percent and 0.6 percent of GDP respectively) while agreeing with the Commission on the need to eliminate the excessive deficit by 2005. However, it did not move to the next step in the procedure—enhanced fiscal surveillance. The Commission has taken the case to the European Court of Justice, challenging the legal basis under which the Council acted.

C. Hard Law, Soft Law, and the SGP

142. **The distinction between "hard" and "soft" law helps in analyzing community-wide economic governance and policy coordination issues.** Conceptually, "hard law" comprises legally binding obligations that are precise and delegate authority for interpreting and implementing the law (Abbot and Snidal, 2000). There are three distinct concepts here. First, obligation means that the parties are bound by rules or commitment, as distinct from non-legal norms. Second, precision means that rules unambiguously define the conduct they require, narrowing the scope for interpretation. Third, delegation to third parties implies that decisions are implemented by non-partisan courts, arbitrators, or administrative organizations. In contrast, "soft law" comprises legal arrangements that are weakened along one or more of these three dimensions (Abbot and Snidal, 2000). Rather than a black-and-white categorization, international agreements tend to occupy the whole continuum between hardest and softest law.

143. **Traditionally, policy coordination in the EU has emphasized hard law.** Decision-making was centralized, and the Commission was endowed with a significant agenda-setting role. The liberalization of product markets, under the auspices of the Single European Act, broadly followed this pattern. Such a centralized approach to policy coordination is more advantageous when there are substantial economics of scale and spillovers, and where preferences are not too heterogeneous (Alesina and Wacziarg, 1999).

144. **Soft law has a number of distinct advantages as a tool of international policy coordination** (Abbot and Snidal, 2000):

- **Soft law facilitates dealing with uncertainty.** Oftentimes, it is difficult to anticipate all future consequences of an agreement, and for the enforcer to grasp fully the nature of the compliance. To accommodate this, agreements can be made less precise, or less legally binding.

- **Soft law is a tool of compromise.** The more diffuse the preferences and the more heterogeneous the states, the harder it is to come to an agreement. Soft law tries to accommodate "divergent national circumstances" by offering some element of flexibility.

- **Soft law lowers contracting costs.** Multinational agreements are often hard to reach. While hard law reduces the cost of operating within an already-agreed legal framework, a softer arrangement is less costly to reach in the first place.

- **Soft law reduces sovereignty costs.** States are often loath to transfer power from the national to the international arena. Sovereignty costs are particularly marked when a state accepts a higher degree of delegation to an external authority, such as the European Court of Justice.

145. **In fact, the EU now leans heavily on soft law in many aspects of economic policy coordination.** Partly in response to perceptions of excessive centralization, the Maastricht Treaty deliberately embraced the principle of subsidiarity, which allows for greater country autonomy. Different aspects of EU policy coordination occupy different areas of the hard-soft scale (Begg, Hodson, and Maher, 2003). While hard coordination emphasizes top-down policy formulation and financial penalties for non-compliance, the softer approach uses guidelines and codes, peer review, and benchmarking. A related concept adopted by the EU in recent years is the open method of coordination. This refers to a policy process that stresses subsidiarity over centralization, and relies on consensus building around a common assessment of the situation and agreement on the appropriate policy response (Hodson and Maher 2001). It recognizes the importance of surveillance, peer review, and peer pressure in enforcement, and eschews legally binding rules and the threat of sanctions in favor of non-binding recommendations. The Lisbon agenda uses this form of economic governance to urge countries to undertake structural reforms (see Chapter II).

146. **The SGP combines elements of hard and soft law.** Multilateral surveillance under the preventive arm of the Pact is firmly rooted in soft law, as enforcement relies on peer pressure and sanctions are not legally binding. The EDP is substantially "harder". The Treaty creates a firm "obligation" for countries to respect the deficit limit, despite a number of escape clauses. Non-compliance invokes legal responsibility. In terms of "precision", the 3 percent condition can be pinned down, whereas the close-to-balance criterion requires an ex post evaluation, relying as it does on the complex calculation of cyclically-adjusted balances. Finally, given the ultimate authority of the Council in judging SPs, issuing early warnings, and initiating and escalating the EDP, the extent of "delegation" of interpretation or implementation to a designated third party is limited under all aspects of the SGP.

147. **The inherent uncertainty in fiscal policy favors soft law.** A degree of flexibility is often prized alongside fiscal discipline. In the context of the SGP, even assessing the medium-term underlying balance is riddled with uncertainty. Hodson (2004) goes further and points to diagnostic uncertainty about the exact nature of the fiscal policy spillover, and prescriptive uncertainty over whether such coordination is even the right response to a fiscal

spillover. More generally, the unknown nature of future economic shocks calls for an element of flexibility. Such flexibility can also take account of "divergent national circumstances" and foster greater legitimacy among governments.

148. **To be effective, however, softer forms of fiscal policy coordination need mechanisms to facilitate enforceability.** A number of observers try to pin-point the conditions under which soft law can be effective. Padoan (2002) identifies two different kinds of incentives most relevant in the European context: a competition incentive and a cooperation incentive. Under the former, a non-complying state would see its reputation diminish both in the market and in the policy arena (in particular, influencing the design of EU policies). The cooperation incentive operates under the presumption that harmful behavior in one country affects other countries, making peer pressure an effective disciplining device. Another, similar approach stresses the need to build consensus and to make peer pressure effective (Hodson, 2004). Yet another observer argues that credible rules require either self-enforcement or a strong external agent, and that self-enforcement only works if the rule makes sense to the country, or if it has a "totemic" or "sacral" quality (Buiter, 2002).

149. **Looking back, many observers were skeptical about the potential for enforcement at both the preventive and dissuasive stages.** Amtenbrink and de Haan (2003) argue that neither the competition nor the cooperation incentives really bind in the context of the SGP. They downplay the importance of spillovers, and argue that financial markets have not disciplined countries in contravention of the SGP. Moreover, they maintain that countries are loath to judge their peers for fear that they themselves could be in a similar situation on some future date. Hodson and Maher (2004) reach similar conclusions, arguing that for peer pressure to bind, the obligation must be defined precisely, the sanctioner must be credible and willing to reprimand, and states must see the rebuke as costly; in the context of the SGP all are in doubt. Moreover, Buiter (2002) argues that since the SGP is not tailored to individual country circumstances, and has not attained "sacral" status, self-enforcement will not work.

150. **The uneasy mix of hard and soft law in the SGP has been a source of tension.** For a core group of countries, self-enforcement did not always work and peer pressure did not act as a strong enough deterrent. There may therefore be an argument for "hardening" the preventive aspect, to make peer pressure more effective. At the same time, the dissuasive arm has been criticized as too rigid, lacking in legitimacy. Although they had not adjusted in accordance with the preventive arm, France and Germany saw their excessive deficits as resulting largely from the operation of automatic stabilizers during the protracted slowdown. A feeling that the dissuasive arm lacks legitimacy could feed back to the earlier stage, lessening the incentives of countries to respect the tenets of the preventive arm. A case could also be made, therefore, for "softening" the dissuasive arm, which would better distinguish between the effects of poor policies and weak economies and reserve sanctions for egregious policy misbehavior. Such reforms could go hand-in-hand with greater flexibility at the preventive stage, to increase the overall legitimacy of the framework.

D. The SGP and Fiscal Governance

151. **The theme of this section is that the SGP could be more suited to some countries than others, in particular to countries for which an external commitment technology proves especially valuable.** To prevent fiscal policy drift, or to curb politically-motivated deficits, policymakers can latch onto the rules embodied in the SGP to anchor fiscal behavior. In a very loose sense, the SGP replicates the advantages of the old Bretton Woods system in a monetary union; instead of relying on the exchange rate peg to maintain discipline, countries can now make use of a fiscal anchor. However, not all countries require such a disciplining device. Much as countries with strong domestic governance mechanisms were able to enjoy the flexibility of a floating exchange rate without negative policy repercussions, so too is the SGP of less relevance to a significant subset of member states. In a nutshell, some countries can make better use of the external anchor than others, and this has implications for enforcement.

152. **On one dimension, fiscal governance is related to the quality of domestic budgetary institutions.** If there is insufficient coordination in the budgetary process, spending ministers may fail to internalize the costs of their demands on society as a whole. Applying the logic of the common pool model, a more fragmented budget process—with more autonomous agents—will lead to a deficit or expenditure bias. There are a number of institutional solutions which can facilitate budgetary coordination and minimize the common pool problem.

153. **A *delegation* strategy, which relies on strong domestic governance institutions, can foster fiscal discipline.** The common pool problem can be overcome through the choice of an appropriate domestic agenda-setter. For example, the finance minister may be granted a leading role in the budget process, from negotiation through design, implementation, and monitoring.

154. **Budgetary coordination can also be achieved through *commitment*, whereby the different parties negotiate a "fiscal contract" involving strict budget targets.** Such targets typically take the form of binding spending commitments for the individual ministries. Whereas delegation countries attempt to solve the common pool problem by granting a leadership role to one player, commitment countries typically rely more on various formal rules to maintain the fiscal contract. There is also a hybrid case, or a ***mixed*** system, whereby the ideal solution would look like a cross between the two polar cases of delegation and commitment—the finance minister is granted a strong role in setting the budget, and this is followed by a negotiated agreement with parliament (Hallerberg, 2004).

155. **The choice between delegation and commitment technologies seems to be related to the electoral system** (Hallerberg and von Hagen, 1999; von Hagen, 1998). By this reasoning, delegation is seen as more suited to single-party governments, where there are few policy differences on the budget. The ultimate sanction for a non-complying spending minister is dismissal from office. Even without going this far, the finance minister's first-among-equals position, with the backing of the prime minister, can be used to ensure

compliance. It is unlikely that coalition partners will agree to vest a single agent with agenda-setting power. In such a case, commitment is the more logical choice, and the threat of breaking up a coalition serves as the enforcement mechanism. Finally, the mixed system may work well with single party minority governments, where the budget is set by one party, and then negotiated with the opposition to secure passage through parliament.

156. **Best practices differ between delegation and commitment countries.** Delegation states could cede authority in both setting and implementing the budget to a single agent, such as the finance minister. Commitment states could have clear multi-annual budget plans and fiscal rules to deal with unexpected shocks during the implementation of the budget. Formal rules are not as important in delegation states. For mixed systems, there could be a clear budget pact between the government and the opposition, as well as fiscal rules to deal with unexpected shocks to avoid the temptation to "buy" votes from the opposition to remain in power (Hallerberg, Strauch, and von Hagen, 2001).

157. **Hallerberg (2004) found that most EU countries have reformed their budgetary institutions in recent years.** Based on detailed case studies, Hallerberg (2004) classifies the EU countries by forms of fiscal governance over the past two decades (see Box 2 for details). In his scheme, the traditional delegation states are France, Germany, and the United Kingdom; these countries have had relatively stable institutions over the past few decades. Italy switched to the delegation model in 1996, as did Greece in 1997. He also notes that a large number of countries adopted the commitment technology. Some countries reformed prior to Maastricht, while for others, reducing the deficit to qualify for EMU was clearly a motivating factor. Finally, Portugal is seen as the one country which still maintains a fragmented budget system.[42]

158. **Within this framework, the SGP works in the spirit of the commitment approach.** Like domestic commitment technologies, the SGP places a lot of weight on multi-annual targets and a regular review procedure. The main difference is that the mechanisms of the SGP rely on an external agent to enforce the fiscal contracts (von Hagen, Hughes Hallett, and Strauch, 2000). The SGP wraps neatly around the kinds of domestic rules that embody commitment, but the fit with delegation is less smooth. In delegation countries, fiscal policy will be based on domestic considerations and constraints, with few incentives to abide by SGP rules. In commitment states, on the other hand, the SGP reinforces domestic fiscal rules, and can provide an added impetus for all sides to live up to their side of the bargain, especially if the external actor is credible.

---

[42] This classification simplifies Hallerberg (2004). In his interpretation, Austria exhibited brief interludes when commitment broke down, and attempted to move to delegation in 2000. Similarly, Spain shifted subtly away from mixed to delegation around this time. Since Hallerberg's case studies for these countries are less detailed than others, and do not analyze the post-2000 period, these complications are ignored here.

Box 2. Forms of Fiscal Governance in Euro Area Countries

Delegation		Commitment/Mixed		Unreformed	
France	throughout	Belgium	1993	Portugal	throughout
Germany	throughout	Finland	throughout		
Italy	1996	Ireland	1988		
Greece	1996	Luxembourg	throughout		
		Netherlands	1983 (strengthened 1994)		
		Austria	1987		
		Spain	1994		

Source: Hallerberg (2004).

159. **The SGP offers substantial additional benefits to commitment countries through its external anchor.** Of course, a strict reading of this political economy approach would argue that the SGP, while compatible with commitment, is not strictly necessary for fiscal discipline. Commitment is fundamentally a domestic technology. Still, there are good reasons to think that the SGP can bolster the efficacy of commitment. First, it allows for closer fiscal policy coordination, around the shared goal of "close to balance or in surplus." Second, and more basically, the SGP can strengthen the commitment technology when external enforcement is superior to the domestic variety. In this sense, the SGP takes over the role once played by the Bretton Woods system. Indeed, it is possible to embrace a more general interpretation of commitment, going beyond the basic political economy story—the incentives towards over-spending within coalition governments—and encompassing any domestic policy coordination problem that can be rectified with an external anchor. In this context, it may be no coincidence that most of the commitment countries in the Hallerberg (2004) dichotomy are also smaller, more open economies.

E. Fiscal Policy Behavior Under the SGP

Overview

160. **EU countries' fiscal discipline records prior to the signing of the Maastricht Treaty were widely divergent.** Some countries ran large and persistent deficits, which fed into rapid public debt accumulation, while others preserved a remarkable degree of fiscal discipline (Table 1). By the early 1990s, gross public debts in Belgium, Greece, Ireland, and Italy had spiraled to over 100 percent of GDP, with fiscal policies clearly on unsustainable paths. The average general government deficit in these countries hovered around 10 percent of GDP throughout the 1980s. On the other hand, public debt accumulation in core countries like France and Germany had traditionally been kept in check, and public debt levels remained moderate.

Table 1. Fiscal Policy in the Euro Area, 1980-2003

(In percent of GDP)

	Overall balance			Structural balance			Government debt		
	1980-90	1991-1998	1999-2003	1980-90	1991-1998	1999-2003	1980-90	1991-1998	1999-2003
Euro area	-4.5	-4.5	-1.6	-5.0	-4.2	-1.7	50.1	71.3	71.4
Austria	-2.3	-3.5	-1.2	-1.8	-3.5	-0.9	48.4	63.5	66.9
Belgium	-10.3	-4.8	0.1	-10.7	-4.9	-0.9	112.8	130.6	107.9
Finland	4.1	-3.2	4.2	-1.9	-2.5	3.8	15.1	49.2	44.8
France	-2.3	-4.2	-2.4	-2.5	-2.9	-2.3	29.3	49.9	58.8
Germany	-2.0	-2.8	-2.1	-1.3	-3.1	-2.2	39.2	52.5	61.2
Greece	-9.6	-8.9	-1.9	-14.3	-8.9	-2.2	48.8	102.7	105.1
Ireland	-8.5	-1.1	1.4	-8.2	-0.5	0.7	90.0	80.8	37.9
Italy	-10.9	-7.8	-1.9	-11.2	-7.3	-2.3	78.6	116.7	110.1
Luxembourg	2.1	2.1	3.5	2.2	4.1	5.4	9.8	6.4	5.5
Netherlands	-4.9	-2.7	-0.5	-5.0	-2.8	-1.2	67.5	75.9	56.5
Portugal	-5.9	-4.3	-3.1	-6.1	-4.3	-3.0	64.5	60.8	56.3
Spain	-4.0	-4.9	-0.4	-6.2	-4.3	-0.3	35.3	58.7	56.9
Average EU-12	-4.5	-3.8	-0.4	-5.6	-3.4	-0.4	53.3	70.7	64.0

Source: WEO.

161. **Historically, fiscal policy in EU countries also tended to be highly procyclical, muffling in part or in full the operation of automatic fiscal stabilizers** (European Commission, 2001). Procyclicality tended to be especially pronounced during good times (Jaeger, 2001; Skilling, 2001), and was seen as a leading cause of debt accumulation. Factors that facilitated procyclicality included a large PAYG system and a sizeable lower government sector (Jaeger, 2001), dispersed political power (Lane, 2002), and coalition governments (Skilling, 2001).

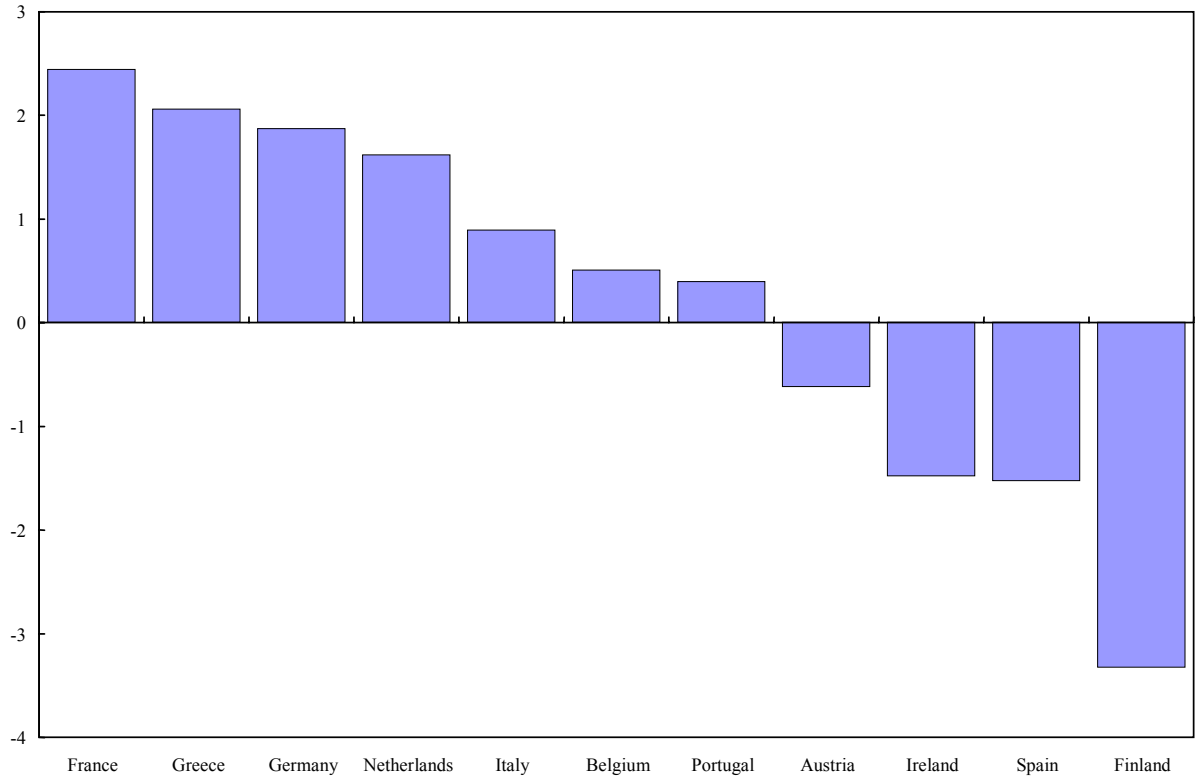
162. **The ratification of Maastricht spurred countries into action as they scrambled to meet the deficit criterion.** Most countries underwent substantial fiscal adjustment in the 1990s (see IMF, 2001; von Hagen, Hughes Hallett and Strauch, 2000). As a result, by the onset of EMU in 1999, all of the present euro-area member countries had succeeded in bringing their deficits under 3 percent of GDP. A good one-third of the member countries were even running surpluses at this point, including some with histories of high public debt accumulation.

163. **The SGP has proven generally conducive to fiscal discipline.** Looking at the big picture, the average euro area deficit over the period 1999-03 stood at 1½ percent of GDP, a full 3 percentage points below the earlier post-Maastricht era (1992-98) average. The (unweighted) average deficit fell to a mere ¼ percent of GDP, down by even more. A similar story can be told for the structural balance. Indeed, from this viewpoint, the scale of consolidation over the past five SGP years surpassed the earlier 1990s adjustment, a time when countries were clambering to reach the 3 percent limit. One interesting development is that those countries with a history of low stable deficits—France and Germany in particular—did not change their behavior. Given the extent of adjustment among the other countries, this catapulted the previous star performers to the bottom of the pack during the

SGP period. They were joined by Greece and Italy, two traditionally high-debt countries that had undertaken major adjustment in the 1990s, although it was insufficient to attain close-to-balance.

164. **Despite the generally favorable fiscal performance, the close-to-balance condition proved elusive for a number of countries.** In fact, by the end of 2003, only five countries could comfortably meet this criterion, defined rather loosely as a maximum structural deficit of ½ percent of GDP—Austria, Finland, Ireland, Luxembourg, and Spain (see Figure 1). Of the others, France and Germany had the most ground to cover, requiring adjustment of 2½ and 2 percent of GDP respectively, followed by Greece and Italy. France and Germany failed to be affected by the SGP requirement to achieve underlying balance, instead maintaining a structural deficit which hovered around the historical average (2-2½ percent of GDP).

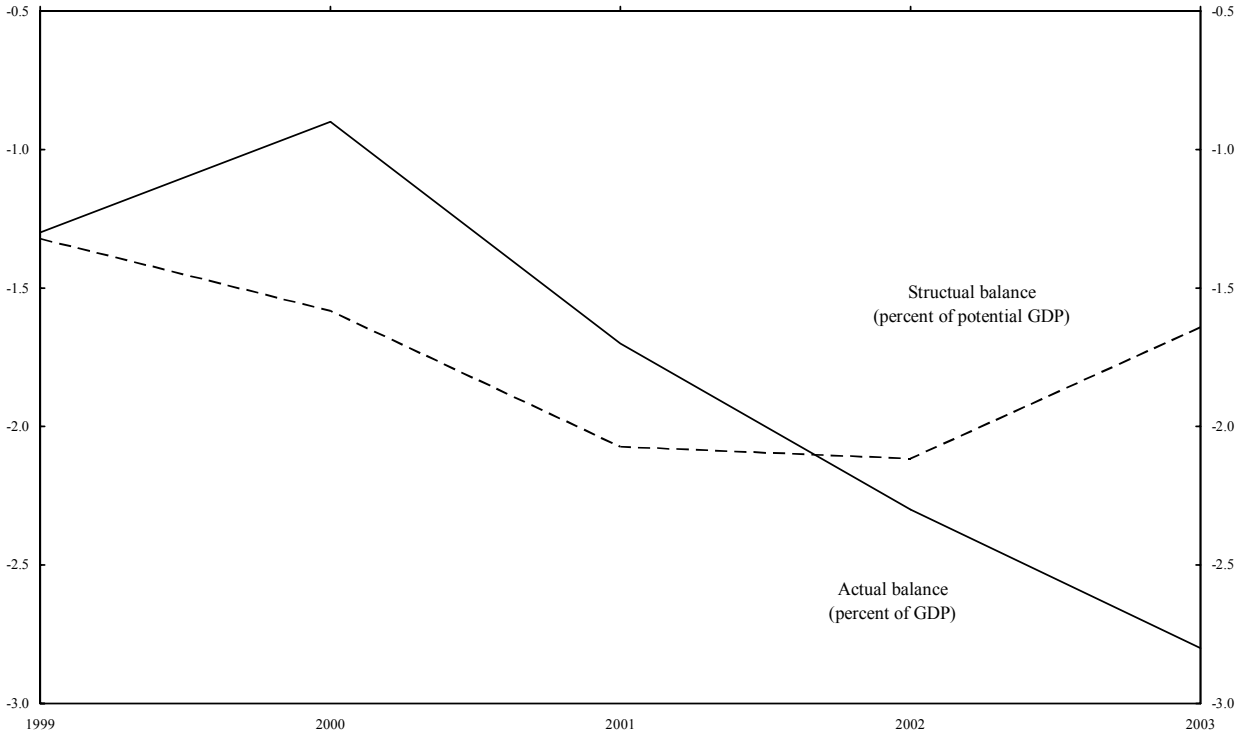
Figure 1. Adjustment in Structural Balance Needed to Reach "Close-to-Balance" (0.5 Percent of GDP Deficit), 2003



165. **Fiscal policy also seems to have become less procyclical under the SGP.** In contrast with past patterns, various studies have also shown that procyclicality was more muted under Maastricht (Gali and Perotti, 2003) or the SGP when the emphasis shifted from nominal to structural balances (Fatas and others, 2003). Glancing over the most recent cycle (1999-03), the structural balance barely budged while the overall balance rose steadily, as automatic fiscal stabilizers were allowed to operate unhindered, especially in the downturn phase (Figure 2). Table 2 contrasts the degree of adjustment during the good times phase

(1999-00) and the ensuing downturn (2001-03) for each country. On average, the automatic stabilizers were allowed to work, with an improvement in the balance during the boom almost matched by a corresponding decline during the downturn. About half of the countries consolidated during the upswing, leading to a small increase in the average structural balance. A number of countries failed to take advantage of the propitious circumstances to push for underlying balance; for France and Germany in particular, the structural balance barely moved during the upswing, while it deteriorated during the downturn. Other countries consolidated during the downswing, suggesting some remnants of procyclical policy in the push for close-to-balance. Still, four countries engaged in countercyclical fiscal policy throughout the cycle.

Figure 2. General Government Balances Under the SGP



Source: WEO, IMF.

Table 2: Fiscal Adjustment under the SGP

(Cumulative change, in percent of GDP)

	Overall balance			Structural balance		
	Good times (1999-00)	Bad times (2001-03)	Overall (1999-03)	Good times (1999-00)	Bad times (2001-03)	Overall (1999-03)
Austria	0.8	0.2	1.1	-0.2	2.8	2.6
Belgium	0.9	0.1	1.0	-1.0	0.7	-0.3
Finland	5.4	-5.0	0.5	6.0	-3.2	2.8
France	1.3	-2.7	-1.5	-0.3	-0.9	-1.2
Germany	3.5	-5.4	-1.8	0.1	-0.8	-0.7
Greece	0.4	-1.2	-0.7	0.0	-0.1	-0.1
Ireland	2.0	-4.6	-2.6	0.7	-1.8	-1.1
Italy	2.2	-1.8	0.4	0.5	1.0	1.4
Luxembourg	3.2	-7.4	-4.2	-0.1	-3.4	-3.5
Netherlands	3.0	-5.4	-2.4	1.3	-2.0	-0.7
Portugal	-0.3	0.1	-0.3	-1.1	3.0	1.9
Spain	2.3	1.1	3.3	1.0	2.2	3.3

Source: WEO and staff calculations.

Explaining the Outcome

166. **Under the SGP, euro area countries are dividing into two camps: those near underlying balance, and those not.** There are a number of possible explanations for the emerging division:

- ***Country size:*** The SGP is more suited to small countries. Small countries are more accustomed to external influences over policy (Von Hagen, Hughes Hallett, and Strauch, 2000). They have less bargaining power, and so the loss of reputation for violating the rule is greater (de Haan, Berger, and Jansen 2003). Small countries could also fear the loss of transfers such as structural funds. Another variant of the country size hypothesis argues that small countries tend to be less heterogeneous, making simple numerical rules easier to apply. Large countries are therefore more apt to go for procedural solutions (Eichengreen, 2003).[43]

[43] This variant is less compelling given that some smaller countries, such as Belgium, are among the most heterogeneous in the region.

- ***Volatility:*** The discipline engendered by the SGP is more attractive to countries with a record of macroeconomic and fiscal volatility. Such countries are more inclined towards prudence and a rules-based framework. In an EMU environment, an external commitment technology is especially valuable.

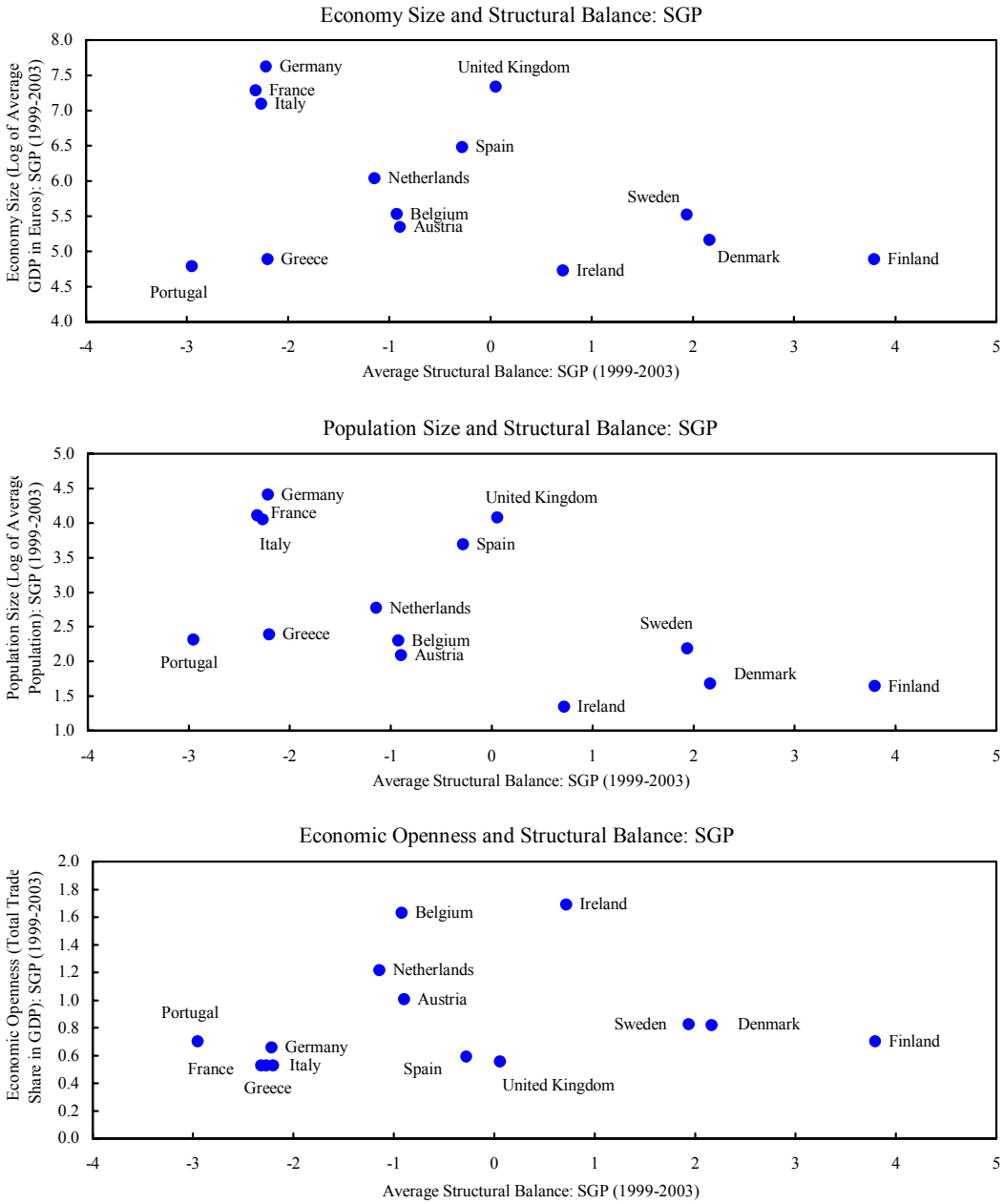
- ***Fiscal governance:*** The SGP is more suited to commitment than delegation countries (Hallerberg, 2004). With its emphasis on multi-annual targets, the SGP fits snugly with the numerical contracts approach in commitment states, but not so well with states which rely on domestic governance institutions.

167. **These explanations are by no means mutually exclusive.** Small countries tend to be more open, and more prone to external shocks (Alesina and Wacziarg, 1998). Small countries also tend to be more amenable to a commitment technology. Moreover, excess volatility in the past could signal policy weakness and overlap with weak domestic fiscal governance mechanisms. There is also a noted tendency for small, open economies to adopt proportional political systems, which in turn makes commitment more suitable (Rogowski, 1987). So the SGP could be suited to a subgroup of countries, because (i) they are small and more likely to accept an external constraint; (ii) they have the potential for macroeconomic volatility and so appreciate an external anchor; and (iii) their form of fiscal governance emphasizes the need for a robust commitment technology.

168. **Smaller and more open countries seemed to run more prudent fiscal policies under the SGP.** Figure 3 suggests a negative relationship between the average structural balance under the SGP period and size, whether measured by GDP or by population. However, this hypothesis fails to explain why two small countries, Greece and Portugal, did not adjust more. Figure 3 also depicts a positive relationship between the SGP-era structural balance and openness, defined as the ratio of exports plus imports to GDP; while this could provide a better explanation for the behavior of Greece and Portugal, the Nordic countries are outliers.

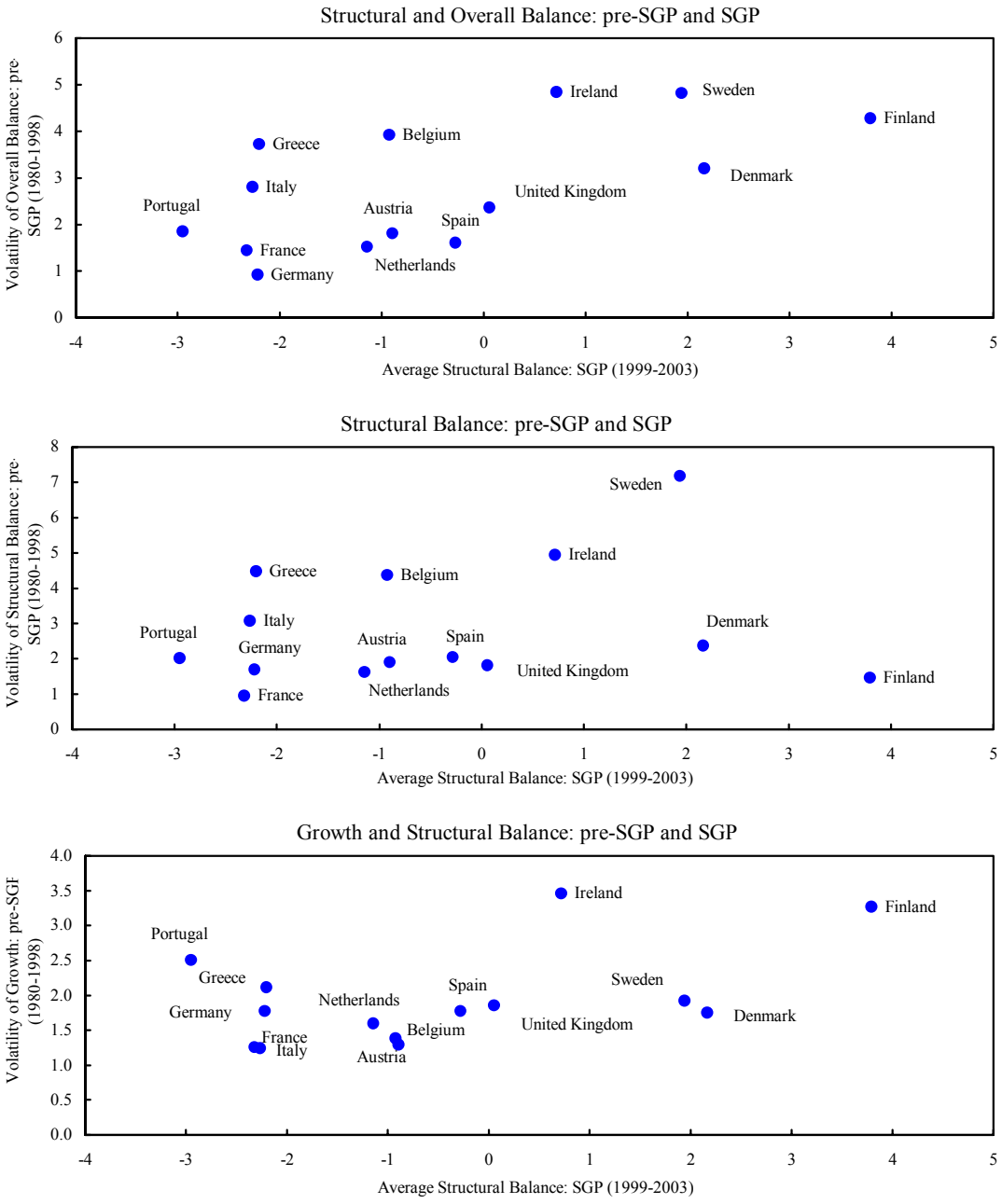
169. **The volatility hypothesis suggests that those countries which have historically experienced large swings in macroeconomic variables would be more apt to latch onto an anchor like the SGP**. Indeed, there has been a noted reduction in the volatility of fiscal policy under the SGP (Fatas and Mihov, 2003). Figure 4 plots the average structural balance during the SGP period against volatility in pre-SGP times (1980-98). There seems to be a positive association between historical swings in growth and fiscal discipline under the SGP. Of course, the volatility in the overall balance could be policy induced, although the seemingly weaker relationship between balances under the SGP and historical structural balance variability casts some doubt upon this.

Figure 3. The SGP, Country Size, and Openness



Source: IMF.

Figure 4. The SGP and Volatility



Source: IMF.

170. **The advantage of the fiscal governance hypothesis is that it can explain the relatively weak performers under the SGP: France, Germany, Italy, Greece, and Portugal**. Fiscal policy behavior for France and Germany has not changed much under the SGP, suggesting that it had not made an impact on the prevailing form of fiscal governance. For Italy and Greece, the adoption of delegation coincided with dramatic deficit reduction, but adjustment tapered off under the SGP. Finally, Portugal seems to be the only remaining euro area country not to have reformed its institutions in either a delegation or a commitment direction.

171. **The fiscal governance explanation is also consistent with some simple regression results.** Table 3 displays a number of results based on regressing the average structural balances under the SGP from a cross-section of the EU countries[44] (excluding Luxembourg) on a number of potential explanatory variables. Caution is needed in interpreting these results, given the limited degrees of freedom. Still, some interesting findings emerge. First, there is some evidence that size matters, in that larger countries were associated with smaller structural balances in the SGP era, but only when measured by population, not economy. Moreover, this result is not robust to the inclusion of a dummy representing commitment countries, a variable with a statistically significant coefficient.[45] Furthermore, the coefficient on openness is not statistically significant. Table 4 provides some evidence that, with the same econometric caveats, countries with higher past volatility in growth and the overall balance (but not in the structural balance) are more inclined towards prudent fiscal policy under the SGP. Interestingly, this conclusion is robust to the inclusion of the commitment dummy, which is again statistically significant. It should be reiterated that these results are suggestive at best. Moreover, in focusing on the external commitment hypothesis, this analysis abstracts from other plausible economic and political factors which could affect compliance such as cyclical developments, elections, and the degree of local government autonomy.

[44] Given the low sample size, the regression analysis incorporates the 14 EU countries, excluding Luxembourg. The results all hold for the sub-sample of euro area economies.

[45] Delegation states comprise France, Germany, Italy, Greece, and the United Kingdom, while commitment states comprise all the others bar Portugal. For the purposes of the analysis in this section, "mixed" states are placed under the commitment banner, given that these states also employ fiscal contracts and numerical targets.

Table 3. SGP Era Regressions (I) 1/

	[1]	[2]	[3]	[4]
Constant	2,43*	3.79	-1.25	1.41
	(1.35)	(3.05)	(1.36)	(2.23)
Log population	-1.04**			-0.57
	(0.45)			(0.51)
Log GDP		-0.72		
		(0.51)		
Openness			0.92	-2.31
			(1.46)	(1.34)
Commitment 2/				2.96**
				(1.13)
R^2	0.30	0.14	0.03	0.60
NOBS	14	14	14	14

Source: staff estimates.

1/ Cross sectional OLS; standard errors in parentheses. Superscripts *, ** and *** indicate that the estimated coefficient is significantly different from zero at the 10 percent, 5 percent, and 1 percent levels respectively.
2/ Dummy for Belgium, Denmark, Finland, Ireland, Netherlands, Austria, Spain, Sweden.

Table 4. SGP Era Regressions: (II) 1/

	[1]	[2]	[3]	[4]
Constant	-3.06*	-3.05**	-1.16	-3.78***
	(1.50)	(1.05)	(1.07)	(1.17)
Volatility in GDP growth 2/	1.33*			1.00*
	(0.73)			(0.57)
Volatility in overall balance 2/		0.93**		
		(0.34)		
Volatility in structural balance 2/			0.25	
			(0.32)	
Commitment 3/				2.40***
				(0.78)
R^2	0.22	0.38	0.05	0.58
NOBS	14	14	15	14

Source: staff estimates.

1/ Cross sectional OLS; standard errors in parentheses. Superscripts *, ** and *** indicate that the estimated coefficient is significantly different from zero at the 10 percent, 5 percent, and 1 percent levels respectively.
2/ Standard deviation over pre-SGP periods (1980-98).
3/ Dummy for Belgium, Denmark, Finland, Ireland, Netherlands, Austria, Spain, Sweden.

172. **Commitment countries have managed to adjust toward close-to-balance while delegation countries have not.** The simple econometric evidence points to being a commitment country, more than anything else, as the driving factor in explaining performance under the SGP. Figure 5 shows the diverging experience of the two groups: while commitment countries continued to adjust under the SGP and reached aggregate structural budgetary balance, the fiscal positions of delegation countries actually deteriorated. Table 5 also looks at the difference between the two groups of countries over the last cycle, but using unweighted country averages. By adjusting more in good times, the "average" commitment state could afford the luxury of a larger countercyclical effect during the downturn while still managing to adjust over the cycle.[46] The "average" delegation state failed to adjust.

Table 5. Fiscal Adjustment and Fiscal Governance under the SGP

(Cumulative change, in percent of GDP)

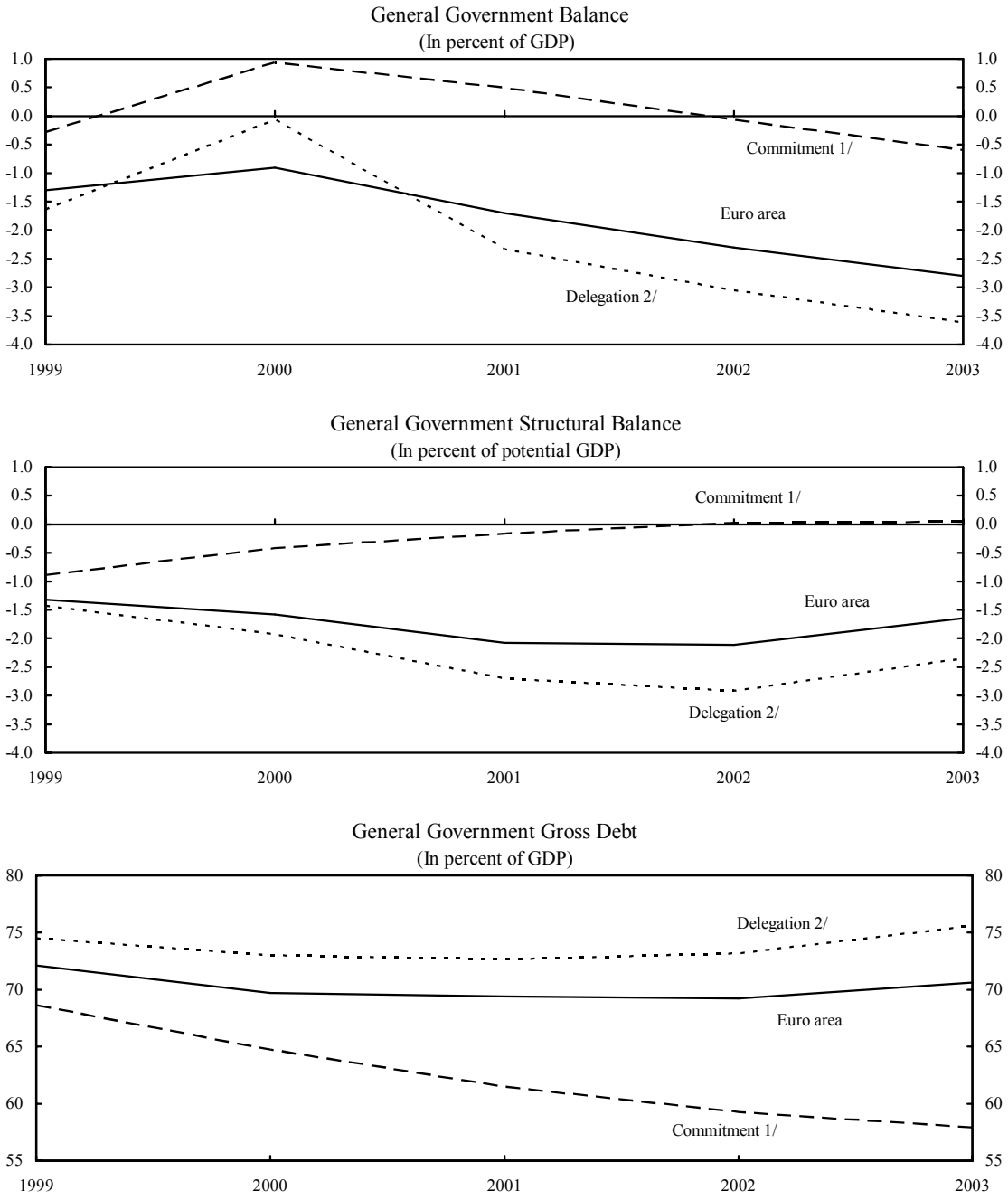
	Adjustment			Structural balance, 2003
	(in good times)	(in bad times)	(whole SGP period)	
Average, EUR12	0.6	-0.2	0.4	-0.5
Average, delegation	0.1	-0.2	-0.1	-2.3
Average, commitment	1.1	-0.7	0.4	0.7
Unreformed	-1.1	3.0	1.9	-0.9

Source: WEO.

173. **A number of conclusions can be drawn from the behavior of countries before and after they reformed their budgetary institutions** (Table 6). First, countries that have used delegation for the entire period (France and Germany) experienced little change in fiscal policy under the SGP; both the absolute and structural balances remained in the historical range (2-2½ percent of GDP). Second, those who had always employed commitment technology (Finland and Luxembourg) saw their surpluses increase substantially under the SGP. Third, while both "new" delegation countries (Greece and Italy) and "new" commitment (Austria, Belgium, Ireland, Netherlands, Spain) countries experienced dramatic consolidation in the aftermath of institutional reforms, the pace of adjustment continued for the latter, and tapered off for the former under the SGP. Fourth, spending declined in commitment countries under the SGP, while it rose in delegation countries; this is confirmed by the pattern of structural primary expenditure, pointing to the discretionary nature of the divergence. Fifth, delegation countries dealt with the SGP by raising revenue, while commitment countries did not, and some actually cut taxes. Sixth, differences cannot be explained by diverging growth patterns across countries in the pre and post-SGP periods.

[46] This is the unweighted average, meaning that this table is not strictly compatible with Figure 5.

Figure 5. Diverging Fiscal Policy Under the SGP



Source: WEO, IMF.

1/ Austria, Belgium, Finland, Ireland, Luxembourg, Netherlands, and Spain.

2/ France, Germany, Greece, and Italy.

Table 6. Fiscal Policy, the SGP, and Forms of Fiscal Governance 1/

(In percent of GDP, except as indicated)

		Before	After	SGP	Difference
OVERALL BALANCE	Always delegation 2/	...	-2.7	-2.3	0.5
	Always commitment 3/	...	1.6	3.8	2.3
	Switch to commitment 4/	-6.3	-3.5	-0.1	3.4
	Switch to delegation 5/	-10.3	-3.7	-1.9	1.8
STRUCTURAL BALANCE	Always delegation 2/	...	-2.4	-2.3	0.1
	Always commitment 3/	...	0.4	4.6	4.2
	Switch to commitment 4/	-6.5	-3.1	-0.5	2.6
	Switch to delegation 5/	-11.3	-3.4	-2.2	1.2
EXPENDITURE	Always delegation 2/	...	50.1	50.7	0.6
	Always commitment 3/	...	46.0	43.7	-2.3
	Switch to commitment 4/	50.3	49.3	44.5	-4.9
	Switch to delegation 5/	46.6	46.9	47.4	0.6
REVENUE	Always delegation 2/	...	47.4	48.5	1.1
	Always commitment 3/	...	47.5	47.5	0.0
	Switch to commitment 4/	44.1	45.8	44.4	-1.5
	Switch to delegation 5/	36.2	43.1	45.5	2.4
STRUCTURAL PRIMARY	Always delegation 2/	...	45.7	47.2	1.5
EXPENDITURE 6/	Always commitment 3/	...	47.3	43.0	-4.3
	Switch to commitment 4/	43.8	42.9	40.3	-2.6
	Switch to delegation 5/	42.4	41.2	41.6	0.4
REAL GDP GROWTH RATE	Always delegation 2/	...	2.0	1.7	-0.3
	Always commitment 3/	...	3.7	3.4	-0.3
	Switch to commitment 4/	1.5	3.4	3.1	-0.2
	Switch to delegation 5/	1.5	2.6	2.7	0.1

Source: WEO and staff calculations.
1/ Period: 1980-2003. SGP: 1999-03. Fiscal governance breakdown from Hallerberg (2004). Simple averages.
2/ France, Germany.
3/ Finland, Luxembourg.
4/ Portugal.
4/ Belgium, Netherlands, Ireland, Austrtia, Spain.
5/ Italy, Greece.
6/ Excludes Belgium, Greece, Luxembourg.

174. **A final piece of evidence can be mustered from the stability programs.** SPs are more integrated into the national budget processes of commitment countries (Hallerberg, Strauch, and von Hagen, 2001). Commitment states tend to opt for more conservative forecasts, as parties build in significant safety margins to reduce the likelihood of renegotiation (Strauch, Hallerberg, and von Hagen, 2004). Strauch, Hallerberg, and von Hagen (2004) find an empirical relationship between commitment (and mixed) states and cautious forecasts, controlling for economic factors. This is consistent with what emerges from examining one-, two-, and three- year ahead forecast errors arising from annual SP updates (Tables 7, 8, and 9). First, the absolute value of the forecast error (defined simply as the difference between the outturn and the projection) is lower for commitment states. Second, the difference in forecast errors between the two groups is much larger in the downturn years; delegation states tended to underpredict the size of the deficit dramatically during this period, suggesting overly-optimistic assumptions. Third, the frequency of positive surprises (a higher balance or lower deficit than projected) is far higher among commitment countries. Indeed, during the three bad years (2001-03), not a single delegation or unreformed country experienced a single positive surprise, while it was a fairly common occurrence among commitment countries (see Table 9).

Table 7: Average Absolute Forecast Errors By Forecasting Period, 1999-2003 1/

(In percent of GDP)

	One-Year Ahead	Two-Year Ahead	Three-Year Ahead
All delegation	1.4	2.1	2.3
France	0.9	1.5	2.1
Germany	1.3	2.4	2.5
Greece	1.7	2.2	2.4
Italy	1.1	1.7	1.9
All commitment	0.9	1.4	1.4
Austria	0.4	0.9	1.3
Belgium	0.5	0.7	0.4
Finland	1.1	1.5	1.9
Ireland	1.3	2.3	2.9
Netherlands	2.1	2.8	1.8
Spain	0.2	0.2	0.1
Unreformed	1.3	2.1	2.6
Portugal	1.3	2.1	2.6

Source: Stability Programs and staff calculations.
1/ Based on Stability Programs; excluding Luxembourg.

Table 8. Absolute Forecast Errors for Overall Balance Based on Year, 1999-2003 1/

(In percent of GDP)

Year		Delegation	Commitment	Unreformed
1999	One Year Ahead	0.4	0.8	0.8
2000	One Year Ahead	1.4	1.3	1.3
	Two Year Ahead	1.2	2.1	1.4
2001	One Year Ahead	1.4	1.0	3.3
	Two Year Ahead	1.2	1.2	3.3
	Three Year Ahead	0.9	1.3	3.2
2002	One Year Ahead	1.6	1.0	0.9
	Two Year Ahead	2.4	1.2	1.9
	Three Year Ahead	2.0	0.9	2.0
2003	One Year Ahead	1.5	0.7	0.3
	Two Year Ahead	3.0	1.1	1.8
	Three Year Ahead	3.7	2.1	2.4

Source: Stabilty Programs and staff calculations.
1/ Based on 6 Stability Programs, excluding Luxembourg.

Table 9. Percentage of Positive Forecast Errors, 1999-2003 1/

(In percent)

	Delegation	Commitment	Unreformed
(by forecast period)			
One-Year Ahead	35	63	0
Two-Year Ahead	19	58	0
Three-Year Ahead	0	61	0
(by year)			
1999	100	67	0
2000	75	83	0
2001	0	73	0
2002	0	44	0
2003	0	50	0

1/ Based on 6 Stability Programs; excluding Luxembourg.

175. **Based on current forecasts, the current pattern is expected to prevail into the medium-term** (Table 10). By 2007, all commitment countries are expected to be at close-to-balance, while all four delegation countries, plus Portugal, are not. Moreover, this appraisal is in line with the Council's assessment of the recently submitted 2003 SPs: the delegation and unreformed countries are less likely to reach structural balance before 2006 or 2007, more likely to employ optimistic assumptions, and more likely to breach the 3 percent limit.

F. Reform Options

176. **Notwithstanding the recent procedural impasse, the record on SGP enforcement to date has been reasonably positive, especially for a clear sub-group of member states.** Many countries had clear vested interests in adhering to the targets, and the costs of violating them were non-trivial. Clearly, the preventive arm is crucial: France and Germany would likely have avoided getting enmeshed in the protracted EDP during the downturn had they adjusted earlier. Such self-enforcement was largely absent in delegation states.

177. **It could be shortsighted for the delegation countries not to enforce the agreed fiscal framework given how many members benefit from an external fiscal anchor.** This will become even more relevant as the EU expands, given that most of the accession countries have adopted some form of commitment technology. As many of these countries have large deficits, the importance of an external fiscal anchor is only going to increase. As documented by Ylaoutinen (2004), nearly all central and eastern European countries use some kind of proportional representation in their electoral processes, and rely predominantly on commitment; only Hungary and Slovenia have adopted delegation (see Box 3). Indeed, most of the commitment countries have strengthened their institutions lately, mainly by establishing multi-annual frameworks, possibly in anticipation of the SGP.

Box 3: Fiscal Governance in Central and Eastern European Countries

Bulgaria	Commitment (from 1998)
Czech Republic	Commitment (from 1994)
Estonia	Commitment (from 1994; strengthened 2001)
Hungary	Delegation (from 2002)
Latvia	Commitment (from 1994; strengthened 2001)
Lithuania	Commitment (from 1999; strengthened 2000)
Poland	Commitment (from 1999)
Romania	Commitment (from 1994; strengthened 2003)
Slovakia	Commitment (from 1994; strengthened 2000)
Slovenia	Delegation (from 1994)

Source: Ylaoutinen (2004).

Table 10. Structural Balance Projections, 2003-07

(In percent of GDP)

	2003	2004	2005	2006	2007	Close-to-balance?	Council assessment 1/
Austria	0.1	0.6	-0.5	-0.5	-0.3	Yes	C-t-b in 2004 and 2007; realistic assumptions; no major risk of ED
Belgium	-1.0	0.7	0.5	0.3	0.6	Yes	C-t-b all years; realistic assumptions; no major risk of ED
Finland	2.8	2.6	2.6	3.0	3.4	Yes	C-t-b all years; cautious assumptions; no major risk of ED
France	-2.9	-2.5	-1.9	-1.5	-1.2	No	C-t-b by 2007; plausible assumptions; ED may continue into 2005
Germany	-2.4	-1.9	-1.6	-1.6	-1.6	No	C-t-b by 2007; optimistic assumptions; ED may continue into 2005
Greece	-2.6	-2.7	-2.4	-2.2	-2.0	No	C-t-b by 2006; optimistics assumptions; no major risk of SD
Ireland	1.0	0.6	0.3	0.2	0.3	Yes	C-t-b in 2006; realistic assumptions; no major risk of ED
Italy	-1.4	-2.0	-1.8	-1.6	-1.6	No	C-t-b by 2006; ambitious assumptions; risk of ED
Luxembourg	...	...	...	...	...	...	C-t-b all years; plausible assumptions; risk of ED in 2005
Netherlands	-2.1	-1.5	-1.1	-0.6	-0.4	Yes, by 2006	C-t-b by 2005; some risk to assumptions; risk of ED under adverse circumstances
Portugal	-0.9	-1.8	-1.8	-1.8	-1.8	No	C-t-b by 2007; realistic assumptions; risk of ED
Spain	1.0	1.3	1.2	1.1	1.0	Yes	C-t-b all years; realistic assumptions; no major risk of ED

Source: WEO, Council assessments of Stability Programs.
1/ Based on 2003 updated Stability Programs; c-t-b= "close to balance or in surplus" in line with the SGP; ED= "excessive deficit".

178. **But rebalancing the hard and soft dimensions of the Pact may be necessary.** For soft enforcement at the preventive stage to be effective, a number of conditions need to be satisfied. First, there needs to be political legitimacy and country ownership, which in turns calls for a certain amount of flexibility. Second, there needs to be some cost for non-compliance. Such a cost will be reputational, both within the country and among peers. Peer pressure is most likely to work when driven by the center (top-down) and when a rebuke triggers domestic opposition (bottom-up). Top-down peer pressure will be most effective when the sanctioning body is credible and when there is an even-handed treatment of countries. This form of peer pressure would encompass a more active role for the Commission, which could include the ability to send its own direct early warnings. At the same time, the legitimacy of the dissuasive arm could benefit from more flexibility. In a nutshell, this perspective suggest that the hard aspects should be softened, and the soft aspects hardened.

179. **The challenge is to increase enforceability for the delegation countries while maintaining the external anchor role for the commitment countries.** Against this backdrop, reforms could proceed along the following lines:

- Avoiding procyclical behavior during good times (¶51-52).
- Improving the economic underpinnings of the SGP (¶53-56).
- Increasing reputational costs (¶57-60).

Avoiding Procyclicality in Good Times

180. **To reduce procyclical leakages, countries could be encouraged to strengthen or reform their underlying fiscal institutions.** For a start, countries could adopt the form of fiscal governance most suitable to them. Although often downplayed, institutional reform was a theme in the Maastricht Treaty, which—in its EDP protocol—calls for member states to "ensure that national procedures in the budgetary area enable them to meet their obligations in this area deriving from the Treaty". In terms of surveillance, there could be a section in the SPs on ongoing institutional reforms, which would then be assessed by the Commission.

181. **Commitment countries in particular could rely on formal rules to stem procyclical pressures to loosen policies in good times.** In this regard, a number of observers have suggested complementing the SGP with national rules such as expenditure ceilings (Mills and Quinet, 2001) or a system of rainy day funds (Buti, Eijffinger, and Franco, 2003). The Commission's staff emphasized the importance of improving expenditure rules and internal stability pacts between central and local governments (European Commission, 2003). These reforms would make the SGP work more symmetrically, ensuring that countries adjust in good times; this, after all, is the heart of the preventive arm. However, these technologies are more suitable for commitment countries, accustomed to more rules-

based frameworks. But even delegation countries might benefit from internal stability pacts with local governments.

Improving Economic Underpinnings

182. **Better economic underpinnings could bolster the Pact's legitimacy, and thus make its enforcement more credible.** Legitimacy is a crucial, often overlooked, component of economic policy coordination in EMU (Hodson and Maher, 2002). Indeed, legitimacy has been elevated by some alongside credibility and flexibility among the most important facets of a fiscal framework (UK Treasury, 2004). In a nutshell, countries will not enforce the SGP if it is not seen as legitimate. States which benefit from an external commitment technology already find legitimacy in the SGP. The challenge is to find the right amount of flexibility in the Pact to make it more legitimate for the delegation states.

183. **How far should the quest for improved economic underpinnings go?** There is a large body of opinion arguing for more flexibility under the SGP, much of it concerned with sustainability issues (see Table 11). The Commission's staff recently tabled a number of ideas, such as tying the medium-term underlying balance target to more country-specific factors, including debt, implicit liabilities associated with aging, and potential growth (European Commission, 2004). Others argue that countries should have complete freedom to set fiscal rules, as long as they are compatible with sustainability (Wren-Lewis, 2003). Many seek more focus on debt (Coeure and Pisani-Ferry, 2003; Calmfors and Corsetti, 2003; Gros, 2003; De Grauwe, 2003). Yet others argue that the SGP should be flexible enough to trade off somewhat higher deficits for other valuable goals such as public investment (Blanchard and Giavazzi, 2003); factor accumulation or growth-enhancing incentives (Padoan and Rodrigues, 2004); or structural reform (Beetsma and Debrun, 2004; Eichengreen, 2003). Although this literature is mainly concerned with the optimality of fiscal rules, it has direct implications for enforceability through the avenue of legitimacy.

184. **But reforms would also need to strive to retain the external anchor needed by commitment countries.** By enhancing political ownership, these kinds of reforms could well make the SGP more acceptable to delegation countries. But some of the more far-reaching proposals could loosen enforcement among commitment countries. Indeed, many of these reform proposals seem designed to tilt the framework towards delegation countries. Also, legitimacy suffers if the proposed modification reduces transparency or accountability. Nonetheless, there could be a role for linking underlying fiscal targets to country-specific fiscal sustainability concerns, all the while retaining the external anchor for commitment countries.

185. **Where does this leave the EDP?** Some observers believe that hard sanctions would become less credible if the SGP became more flexible on the preventive side, as the likelihood of being hit with sanctions diminishes (Hodson and Maher, 2004). However, greater credibility could increase the probability of self-enforcement, while the specter of the ultimate sanction would continue to cast a pall over countries' fiscal policy. At the same time, however, the legitimacy of the EDP is at stake if countries believe it is invoked in an

Table 11. An Overview of SGP Reform Proposals

I. Focus on Sustainability		
General approaches		
	Countries which obey their own fiscal rules should be exempt from the EDP, so long as sustainability is guaranteed.	Wren-Lewis (2003)
	Initiate a permanent balance rule. Intertemporal tax smoothing approach whereby taxes are set at the minimum value that would satisfy intertemporal budget constraint.	Buiter and Grafe (2003)
	Allow for country-by-country articulation of targets to account for such factors as public debt and pension liabilities (within EDP).	Buti, Eiffenger and Franco (2003)
Placing more emphasis on debt		
	Initiate a Debt Sustainability Pact. Countries keeping their debt ratios below a certain level (say 50 percent of GDP) would be exempt from the EDP.	Coeure and Pisani-Ferry (2003)
	Condition the deficit ceiling on the debt level.	Calmfors and Corsetti (2003)
	Countries chose debt targets, and set transition paths by requiring that one twentieth of the difference be eliminated each year.	Gros (2003)
	Countries choose debt targets, below 60 percent of GDP. Procedure would be triggered if major deviation from target, or from 60 percent.	De Grauwe (2003)
II. Trading off deficit targets for other factors		
	Initiate a "golden rule". Deficit criterion would exclude net government investment.	Blanchard and Giavazzi (2003)
	Allow trade-offs between numerical targets and structural reform.	Beetsma and Debrun (2004)
	Allow trade-offs between numerical targets and: pension reform, labor market reform, and reform of budgetary institutions.	Eichengreen (2003)
	Exclude factor accumulation measures from SGP deficit, and do not allow measures which reduce long-run growth from counting towards the SGP requirement.	Padoan and Rodrigues (2004)
III. Independent fiscal councils		
	National fiscal policy committee sets annual deficit targets and is charged with assuring sustainability.	Wyplosz (2002)
	National Debt Board enforces upper limit on growth of public debt.	Von Hagen (1998)
	Sustainability Council for euro area as a whole replaces numerical targets.	Fatas and others (2003)
	Multinational committee charged with establishing whether country had made enough progress in other areas to be exempted from the EDP.	Eichengreen (2003)
	National council charged with implementing countercyclical discretionary policy.	Wren-Lewis (2002)
IV. Complementing the Pact		
	Introduce expenditure rules to ensure compliance with SGP.	Mills and Quinet (2001)
	Improve national fiscal rules, especially expenditure rules and internal stability pacts.	European Commission (2003)
	Introduce "rainy day funds" to curb excessive loosening in good times.	Buti, Eiffenger and Franco (2003) Calmfors and Corsetti (2003)

unreasonable way, especially in the midst of a protracted downturn. Hence the drive to reform the multilateral surveillance stage should be accompanied by moves to make the EDP itself more legitimate. In particular, sanctions could be reserved for situations where excessive deficits reflect patent fiscal policy misbehavior. In this light, the definition of "exceptional circumstances" could be re-appraised, and the deadline for correcting the excessive deficit could become less rigid. Indeed, the Commission's staff recently recognized the need for some softening here, and argued for a broader definition of exceptional circumstances and for linking the timetable to such factors as debt and growth (European Commission, 2004).

Increasing Reputational Costs

186. **For peer pressure to work, countries should ideally suffer some loss in reputation.** As noted, the cost of non-compliance can be substantial for a commitment country as fiscal policy loses its anchor. Moreover, the governing coalition itself could break up. Commitment counties, being smaller, also have more to lose from breaching the rules in terms of stature within the EU. Policymakers in delegation countries, especially the larger ones, need not suffer any concrete reputational cost within the country when they breach the SGP.

187. **A growing group of observers believes that a better balance between credibility and flexibility can be reached by passing some fiscal authority to an independent council of experts.** The basic idea is to replace numerical targets ("dead rules") with an independent council ("living bodies"). Such an entity could either be national or EU-wide. On the national level, von Hagen (1998) recommends setting up a National Debt Board, which would enforce an upper limit to the growth in public debt. Wyplosz (2002) also proposes a fiscal policy committee with the authority to set annual deficit targets, with the aim of ensuring debt sustainability. There are also a number of proposals for an EU-wide version of the fiscal policy committee. Eichengreen (2003) calls for a committee to assess whether each country had made enough progress in a number of key areas—such as labor reform, pension reform, and budgetary institutional reform—to be granted an exemption from the EDP. Fatas and others (2003) argue that a Sustainability Council should be established, which would assess the consistency of countries' fiscal plans with sustainability, asking for adjustments if necessary. Enforcement would rely on political pressure through public opinion and financial market reaction.

188. **Within a delegation state, an independent fiscal council could bolster peer pressure, fostering compliance with both arms of the SGP.** Any element of compulsion, however—such as the power to set binding deficit targets—would sit uneasily with the delegation model. Instead, a national watchdog body could monitor fiscal policy against the SGP benchmark, and exercise moral suasion over the government, leading to reputational costs for any violation. In other words, if endowed with enough national credibility to cause the government to lose face domestically in the event of a negative assessment, then it could play a useful role. Independent councils could also help coordinate budgetary policy across different levels of government in countries where local governments possess significant

fiscal autonomy. Along similar lines, Gros, Mayer, and Ubide (2003) suggest that ownership could be improved by compelling governments to testify before their own parliaments following a negative report from the Commission. On the same wavelength, the Commission's staff argued that the dissuasive arm of the Pact could be bolstered if a credible domestic institution—either an independent committee or the national parliament—focused attention on the need for corrective action (European Commission, 2004). Independent councils can also perform a useful role in commitment countries; indeed, Belgium employed this model successfully in the 1990s to bolster its commitment governance mechanism.

189. **Peer pressure should ultimately be guided by the Commission.** Peer pressure from the "bottom up" (country level) could be complemented with "top down" peer pressure, directed by the Commission. The new Treaty would allow the Commission to issue direct warnings to member states, an important step in "hardening" the preventive arm. The Commission could take the views of country-specific independent fiscal authorities into consideration when making its own assessments. Going further and setting up a multinational version of the independent council, endowed with the power to assess fiscal plans and to request adjustment, could overlap too much with the Commission's responsibilities.

References

Abbot, Kenneth W., and Duncan Snidal, 2000, "Hard and Soft Law in International Governance," *International Organization*, Vol. 54, No. 3, pp. 421-456.

Alesina, Alberto, and Roman Wacziarg, 1998, "Openness, Country Size, and Government," *Journal of Public Economics,* Vol. 69, pp. 305-321.

———, 1999, "Is Europe Going Too Far," *NBER Working Paper* No. 6883.

Amtenbrink, Fabian, and Jakob de Haan, 2003, "Economic Governance in the European Union: Fiscal Policy Discipline Versus Flexibility," *Common Market Law Review,* Vol. 40, pp. 1075-1106.

Beetsma, Roel, and Xavier Debrun, 2004, "Pacta Sunt Servanda: Towards A Better Implementation of the Stability and Growth Pact," unpublished.

Begg, Ian, Dermot Hodson, and Imelda Maher, 2003, "Economic Policy Coordination in the European Union," *National Institute Law Review,* Vol. 183, pp. 66-77.

Blanchard, Olivier, and Francesco Giavazzi, 2003, "Improving the SGP Through A Proper Accounting of Public Investment," unpublished.

Buiter, Willem, 2002, "Ten Commandments for a Fiscal Rule in the E(M)U," unpublished.

Buiter, Willem, and Clemens Grafe, 2003, "Patching Up the Pact: Some Suggestions for Enhancing Fiscal Sustainability and Macroeconomic Stability in An Enlarged European Union," unpublished.

Buti, Marco, Sylvester Eijffinger, and Daniele Franco, 2003, "Revisiting the Stability and Growth Pact: Grand Design or Internal Adjustment?," *European Economy Economics Papers* No. 180, European Commission.

Calmfors, Lars, and Giancarlo Corsetti, 2003, "How to Reform Europe's Fiscal Policy Framework," unpublished.

Coeure, Benoit, and Jean Pisani-Ferry, 2003, "A Sustainability Pact for the Eurozone," unpublished.

De Grauwe, Paul, 2003, "The Stability and Growth Pact in Need of Reform," unpublished.

De Haan, Jakob, Helge Berger, and David-Jan Jansen, 2003, "The End of the Stability and Growth Pact?," unpublished.

Eichengreen, Barry 2003, "The Future of the European Growth and Stability Pact," *CESifo Forum* 2/2003.

European Commission, 2001, "Public Finances in EMU, 2001", *European Economy*, No. 3.

———, 2003, "Public Finances in EMU, 2003," *European Economy*, No. 3.

———, 2004, "Public Finances in EMU, 2004," *European Economy*, No. 3.

Fatas, Antonio, and Illian Mihov, 2003, "On Constraining Fiscal Policy Discretion in EMU," *Oxford Review of Economic Policy*, Vol. 19, No. 1, pp. 1-28.

Fatas, Antonio, and others, 2003, *Stability and Growth in Europe: Towards a Better Pact*, Center for Economic Policy Research, London.

Gali, Jordi, and Roberto Perotti, 2003, "Fiscal Policy and Monetary Integration in Europe," *Economic Policy: A European Forum*, No. 37, pp. 533-572.

Gros, Daniel, 2003, "A Stability Pact for Public Debt?," *CEPS Policy Brief* No. 30.

Gros, Daniel, Thomas Mayer, and Angel Ubide, 2003, "The Nine Lives of the Stability Pact," Centre for European Policy Studies.

Hallerberg, Mark 2004, Domestic Budgets in a United Europe: Fiscal Governance from the End of Bretton Woods to EMU, Cornell University Press.

Hallerberg, Mark, and Jurgen von Hagen, 1999, "Electoral Institutions, Cabinet Negotiations, and Budget Deficits in the European Union," in *Fiscal Institutions and Fiscal Performance*, eds. James Poterba and Jurgen von Hagen, Chicago: University of Chicago Press.

Hallerberg, Mark, Rolf Strauch, and Jurgen von Hagen, 2001, *The Use and Effectiveness of Budgetary Rules and Norms in the EU Member States*, Report prepared for the Dutch Ministry of Finance by the Institute of European Integration Studies.

Hodson, Dermot, 2004, "Macroeconomic Coordination in the Euro Area: the Scope and Limits of the Open Method," *Journal of European Public Policy,* Vol. 11, No. 2., pp. 231-248.

Hodson, Dermot, and Imelda Maher, 2001, "The Open Method As A New Mode of Governance: the Case of Soft Economic Policy Coordination," *Journal of Common Market Studies,* Vol. 39, No. 4, pp. 719-46.

Hodson, Dermot, and Imelda Maher, 2002, "Economic and Monetary Union: Balancing Credibility and Legitimacy in An Asymmetric Policy-Mix," *Journal of European Public Policy*, Vol. 9, No. 3, pp. 391-407.

———, 2004, "Soft Law and Sanctions: Economic Policy Coordination and Reform of the Stability and Growth Pact," *Journal of European Public Policy*, Vol. 11, No. 5.

Inman, Robert. P., 1996, "Do Balanced Budget Rules Work? U.S. Experience and Possible Lessons for the EMU," *NBER Working Paper* No. 5838.

International Monetary Fund, 2001, Fiscal Policy and Macroeconomic Stability, *World Economic Outlook*, May 2001.

Jaeger, Albert, 2001, "Cyclical Fiscal Policy Behavior in EU Countries," IMF Staff Country Report 01/201.

Kopits, George, and Steven Symansky, 1998, "Fiscal Policy Rules," *IMF Occasional Paper* No. 162.

Lane, Philip R., 2003, "The Cyclical Behavior of Fiscal Policy: Evidence from the OECD," *Journal of Public Economics*, Vol. 87, pp. 2661-1675.

Mills, Phillipe, and Alain Quinet, 2002, "How to Allow the Automatic Stabilizers to Operate Fully? A Policymaker's Guide for EMU Countries," in Marco Buti, Jurgen von Hagen, and Carlos Martinez-Mongay, eds. *The Behavior of Fiscal Authorities: Stabilization, Growth, and Institutions*, European Communities.

Padoan, Pier Carlo, 2002, "EMU As An Evolutionary Process," in David M. Andrews, C. Randall Henning, and Louis W. Pauly [eds.] *Governing the World's Money*, Cornell University Press.

Padoan, Pier Carlo, and Maria Joao Rodrigues, 2004, "The Stability and Growth Pact and the Lisbon Strategy Need Each Other, and Europe Needs Both," unpublished.

Rogowski, Ronald, 1987, "Trade and the Variety of Democratic Institutions," *International Organization*, Vol. 41, pp. 203-223.

Skilling, David, 2001, "The Political Economy of Public Debt Accumulation in OECD Countries Since 1960," unpublished.

Stark, Jurgen, 2001, "Genesis of a Pact," in Anne Brunila, Marco Buti, and Daniele Franco [eds.] *The Stability and Growth Pact: the Architecture of Fiscal Policy in EMU*, Palgrave.

Strauch, Rolf, Mark Hallerberg, and Jurgen von Hagen, 2004, "Budgetary Forecasts in Europe: the Track Record of Stability and Convergence Programmes," unpublished.

UK Treasury, 2004, "The Stability and Growth Pact: A Discussion Paper," HM Treasury.

Von Hagen, Jurgen, 1998, "Budgeting Institutions for Aggregate Fiscal Discipline," *ZEI Policy Paper No. B98-01*, Center for European Integration Studies.

———, 2003, "Fiscal Discipline and Growth in Euroland: Experiences with the Stability and Growth Pact," *ZEI Working Paper No. B06-2003*, Center for European Integration Studies.

Von Hagen, Jurgen, Andrew Hughes Hallett, and Rolf Strauch, 2000, *Budgetary Consolidation in EMU*, Center for Economic and Policy Research.

Wren-Lewis, Simon, 2003, "Changing the Rules: Why We Should Not Accede to EMU's Current Fiscal Regime," *New Economy*, Vol. 10, pp. 73-78.

Wyplosz, Charles 2002, "Fiscal Policy: Institutions Versus Rules," *CEPR Discussion Paper* No. 3238.

Ylaoutinen, Sami, 2004, "Fiscal Frameworks in the Central and Eastern European Countries," unpublished, Finnish Ministry of Finance.

IV. GLOBAL REBALANCING OF CURRENT ACCOUNTS: A EURO-AREA PERSPECTIVE[47]

Core Questions, Issues, and Findings

- ***What role has the euro area's current account and currency played during the period of widening imbalances and exchange rate swings?*** Counterpart imbalances to U.S. deficits were largely found outside the euro area. The euro, however, figured prominently in exchange rate fluctuations and, by some accounts, was the most variable currency. (¶8-13)

- ***What fundamental driving forces are consistent with this global pattern of external developments since the mid 1990s?*** Accelerating productivity but, more importantly, declining risk premia on assets in the United States relative to partner countries appear to have been key underlying determinants. Accounting for the uneven pattern of counterpart imbalances, differences in relative size and trade patterns and a greater willingness to hold U.S. assets in the rest of the world help explain differences with the euro area. (¶16-22).

- ***What factors would facilitate a relatively benign global rebalancing scenario from the euro area's vantage point?*** Rebalancing prompted by an unwinding of recent shocks that boosted domestic demand and potential output growth in partner countries relative to the United States holds the promise of an orderly resolution to global imbalances. (¶23-24).

- ***What alternative global rebalancing scenarios or key risks would present more challenging circumstances from the area's perspective?*** An adjustment entailing excessive reliance on exchange rates would present a more challenging scenario and provide little in the way of meaningful global rebalancing. Limited exchange rate flexibility in the rest of the world would further complicate the adjustment process. (¶25-26).

- ***What area-specific policy lessons can be drawn from the implications of various global adjustment scenarios?*** Policies that raised potential growth would well position the economy to face the ramifications of global rebalancing. This would provide a solid footing for moderating inflation, boosting domestic demand, attracting foreign capital, and coping with a strengthening currency. If precipitous changes in exchange rates were to occur, a more aggressive easing of euro area monetary policy would be warranted. (¶23-26).

[47] Prepared by Hamid Faruqee.

A. Introduction

190. **Concerns regarding global current account imbalances still loom large.** While foreign exchange market turbulence appears to have subsided in recent months, concerns about the implications of large, persistent external imbalances remain very much in place. In particular, the issue of long-run sustainability of the massive U.S. current account deficit leaves open the prospect of a further significant decline in the value of the dollar. History suggests that external deficits of 5 percent of GDP (or larger) are rarely sustained for significant periods and inevitably involve real depreciation (and slower growth) during the subsequent adjustment process.[48]

191. **This chapter examines the potential implications—from the perspective of the euro area—of global adjustment in current account imbalances.** Using a three-country version of the IMF's Global Economic Model (GEM), the analysis proceeds in two steps. First, the analysis provides a coherent macroeconomic framework, within the dynamic general equilibrium approach, for understanding recent external developments and identifying fundamental drivers in that process. Second, the structural model provides a useful framework for examining alternative scenarios regarding the possible nature of the rebalancing process and the policy implications for the euro area.

192. **The basic issue is that the area's prospective role in the needed global adjustment of current account imbalances remains fairly uncertain.** Two stylized viewpoints emerge:

- From a benign standpoint, neither the euro area's net external position—which has remained close to balance, nor the euro—which has moved back in line with its historical averages—appear significantly misaligned with medium-term fundamentals. This might suggest that the area's external balance could remain relatively stable, perched "on the middle of a see-saw," as forces tilt back and allow major imbalances elsewhere to unwind. The euro's value, correspondingly, would remain broadly stable, with appreciation against the dollar offset by depreciation against other currencies.

- From a more cautious view, however, the euro is the second leading global currency behind the U.S. dollar.[49] Hence, it is very difficult to envision the euro staying on the sidelines throughout the process, particularly if market sentiment on the dollar were to weaken. Recent gyrations in the euro's value against the dollar and other major currencies only underscore the concerns associated with this view.

---

[48] See Freund (2000), Edwards (2004).

[49] See ECB (2003) for analysis on the euro's role as an "international currency."

193. **The consequences of global rebalancing for the euro area will ultimately depend on the nature of the adjustment.** Contingent on the nature of the rebalancing process, the impact on growth and welfare ranges from relatively benign to more disruptive. Ascertaining in advance the central forces that will shape the course of the adjustment process will be difficult. Global adjustment invariably reflects a multitude of shocks and transmission mechanisms from multiple sources. Discerning among alternative adjustment trajectories and their likelihoods would serve as an important input to a risk assessment of global imbalances.

194. **One approach that may help anticipate the rebalancing process is to better understand the key drivers underlying past macroeconomic developments that have generated the current constellation of external balances and exchange rates.** This would provide a starting point or set of candidate shocks that, if they were to unwind, could facilitate a steady reversal of the capital flows that have largely supported the prevailing external alignment.

195. **A key feature of recent external developments, that requires explanation, has been the *asymmetric* global pattern of adjustment during the period of widening imbalances.** In considering possible driving forces, it is important to note that the expanding U.S. current account deficit did not find its counterpart adjustments distributed evenly across partner countries. At the same time, the relative stability or volatility of currency swings did not coincide closely with the pattern of changing imbalances. From the euro area's vantage point, two observations are salient.

- **The euro area's net external position has showed little counterpart movement to the burgeoning U.S. current account deficit.** Rather, other countries in the rest of the world saw the biggest offsetting adjustments to the widening saving-investment gap in the United States. Trade imbalances exhibited a similar global allocation pattern.

- **In foreign exchange markets, however, the euro has remained very much "in play."** The relative stability of area's external position has not been associated with relatively stability for the value of its currency. The euro, both against the U.S. dollar and in multilateral terms, has experienced dramatic swings, and by some measures, has been the most variable currency in recent years.

196. **The remainder of the chapter is organized as follows.** Section B recaps major global developments in current accounts and currency markets, highlighting the asymmetric pattern of adjustment. Section C investigates, using GEM, key fundamental drivers that could help explain the uneven pattern of external imbalances and exchange rate movements. Section D explores the implications of an unwinding of these forces on the euro area economy and possible policy implications associated with this or other possible rebalancing scenarios.

B. Recent External Developments

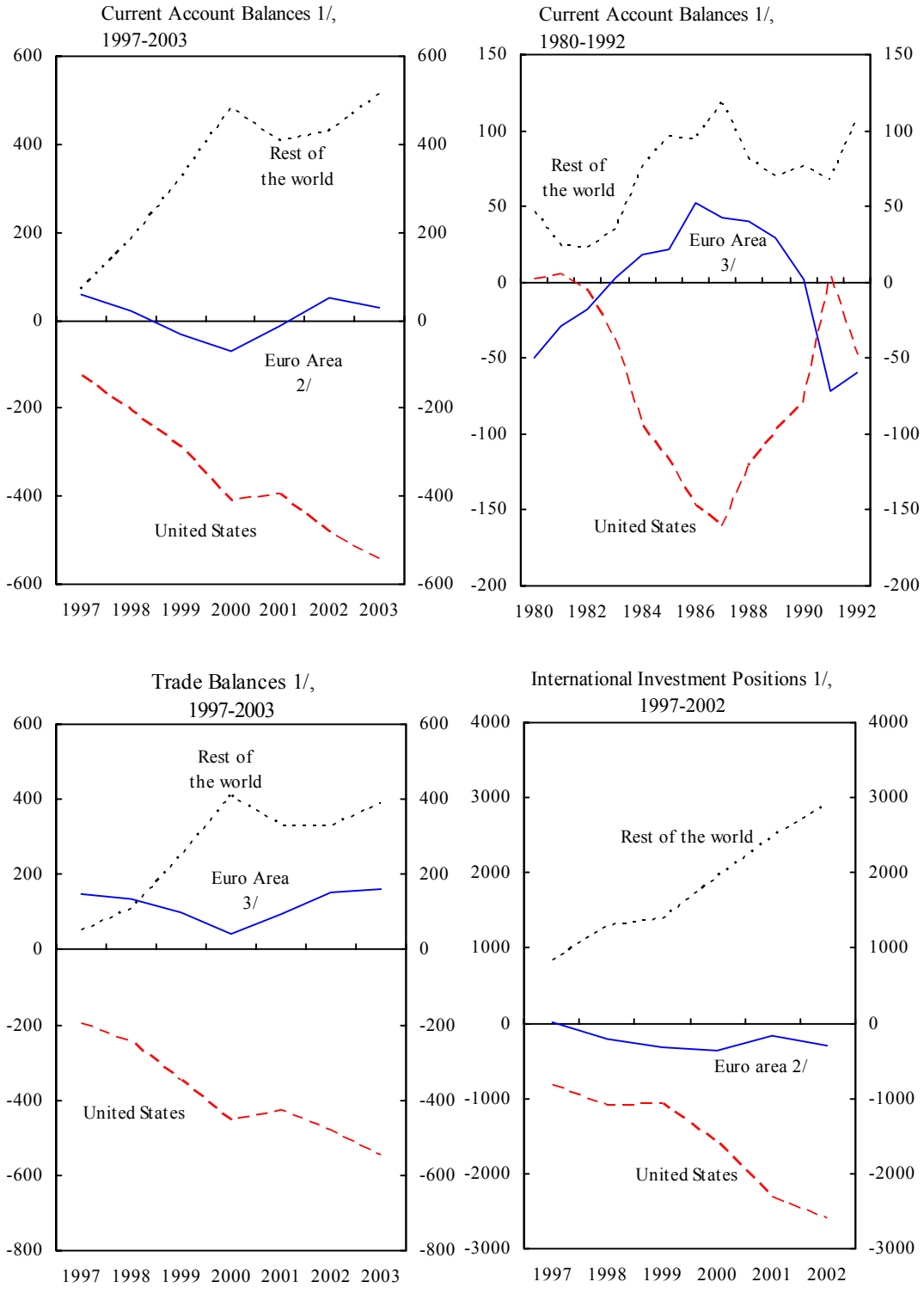
197. **Widening and persistent external imbalances have been a prominent feature of the global landscape in recent years, but the pattern of imbalances has not been symmetric.** Led by the United States, whose current account deficit increased five-fold from 105 billion dollars in 1995 to over 540 billion dollars in 2003, external imbalances have grown dramatically over the past decade. Interestingly, however, the counterpart, on a net basis, to the massive U.S. deficit was largely found outside the world's second largest economy—the euro area (Figure 1). In the figure, to ensure adding-up of current accounts consistent with the model described later, the global discrepancy was allocated to the rest of the world's balance.[50] Excluding the global discrepancy, however, would yield a similar uneven adjustment pattern. Moreover, global trade imbalances exhibited a very similar distribution, suggesting that the asymmetry was not simply a statistical artifact.[51] In contrast to the experience of the mid-1980s, when a strong dollar and large external deficit in the United States essentially found their counterparts among other G-7 economies, the current external configuration has broadened the list of players. From a stock perspective, this pattern of net borrowing has produced a further divergence in net international indebtedness between the United States and the rest of the world, with, again, the euro area remaining relatively stable.[52]

[50] In dollar terms, the global current account discrepancy averaged -$110 billion from 1997-2003, with a peak value of -$175 billion in 2001. Adding-up (i.e., current account summing to zero) thus requires a larger surplus in the rest of the world by these amounts.

[51] The global discrepancy for trade balances is opposite in sign, suggesting the rest of the world surplus is larger still when the trade discrepancy is excluded. See Marquez and Workman (2001).

[52]Decumulating (accumulating) net external assets are associated with depreciating (appreciating) currencies over the longer term. See Faruqee (1995), Gagnon (1996), Lane and Milesi-Ferretti (2002) for empirical evidence.

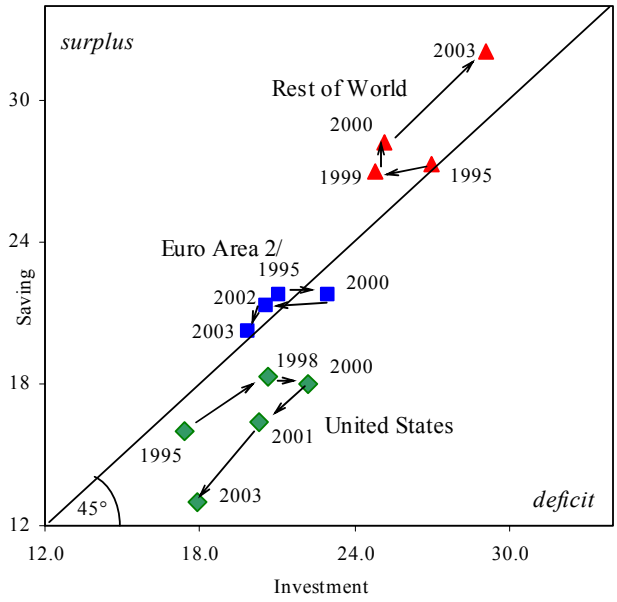
Figure 1. External Imbalances



Sources: ECB; WEO, IMF.
1/ Billions of U.S. dollars. Rest of the world calculated as residual (includes global discrepancy).
2/ ECB concept.
3/ Sum of country data.

198. **Growing current account imbalances reflect significant shifts in the pattern of saving and investment in the United States and the rest of the world.** By definition, the current account imbalance is equal to the difference between national income and expenditure or between national saving and investment. Figure 2 shows the evolution of saving and investment levels (in percent of GDP) in the three regions since the mid-1990s. The 45-degree line represents zero current balance—i.e., where saving equals investment. The vertical or horizontal distance from this line, correspondingly, represents the shortfall or excess of saving relative to investment, where the region below (above) the diagonal represents a current account deficit (surplus). Note that the euro area has remained near balance, while the other two regions experienced widening imbalances, led initially by changes in investment and later by changes in saving.[53]

Figure 2. Saving-Investment Balances, 1995-2003 1/
(In percent of GDP)

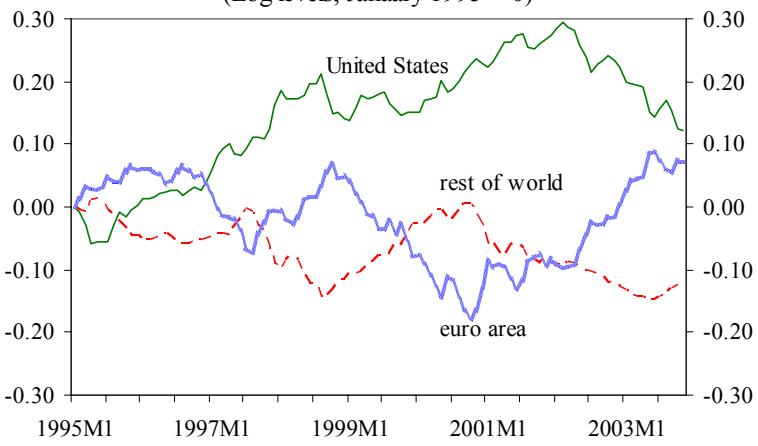


Sources: ECB; WEO, IMF.
1/ Rest of the world calculated as residual (includes global discrepancy).
2/ Sum of country data until 1997; ECB concept after 1997.

[53] In 2003, the U.S. external deficit absorbed 10 percent of gross saving in the rest of the world, excluding the euro area. On sustainability assessments of the U.S. external deficit, see for example IMF (2002 a,b), Obstfeld and Rogoff (2000) and Mann (2002, 2003).

199. **In currency markets, nominal effective exchange rates—including the multilateral value of the euro—have exhibited substantial swings in recent years.** Figure 3 displays multilateral exchange rates—where an increase denotes an appreciation—for the euro area, the United States, and the rest of the world. In the case of the rest of the world, its multilateral rate is derived residually to ensure consistency among exchange rates. Namely, with *n* currencies, there exists only *n*-1 independent exchange rates (i.e., *n*th currency problem). In the case where *n* equals 3, observing two effective exchange rates is sufficient to determine the third rate based on an "adding-up" constraint (i.e., linear dependence) among multilateral exchange rates.[54] As evident from Figure 3—and in contrast to the relative stability of its external position—the euro area's exchange rate has swung widely, reaching its nadir near end-2000 before steadily regaining its value through a two and a half year-long appreciation.

Figure 3. Effective Exchange Rates, 1995 - 2003
(Log levels; January 1995 = 0)



Sources: IMF Information Notice System and staff estimates.

200. **The pattern of exchange rate behavior that emerged in the second half of the sample is materially different; the euro, in effective terms, became the most variable currency.** Correlations among effective exchange rates are shown in Table 1. As evident in the table, the euro, on a multilateral basis, has displayed significant negative correlation—i.e., counterpart movements—with the other two currencies.[55] In terms of relative volatility,

[54] See, for example, Isard and Faruqee (1998).

[55] Note that in a two-currency world, by necessity, effective exchange rates would be mirror inverses, and, hence, would have perfect negative correlation of -1. In a three-currency setting, there are (at most) two independent bilateral exchange rates that underpin multilateral

(continued)

the U.S. and euro area rates are both significantly more variable than the benchmark rate in the rest of the world (normalized to unity). Since 1999, however, the correlation structure among multilateral rates has changed substantially. The effective exchange rate for the rest of the world had a slight *positive* correlation with the United States' effective rate and a very strong negative correlation with the euro area's effective rate. The pattern of relative volatilities also changed dramatically. The euro area had the world's most variable multilateral exchange rate as relative volatility in the U.S. rate declined sharply.

Table 1. Correlations Between Effective Exchange Rates
(Log levels; January 1995=0)

	Monthly Data, 1995 to 2003		
	Euro Area	United States	Rest of World
Euro Area	1.00	-0.63	-0.47
United States	...	1.00	-0.39
Rest of World	...	...	1.00
Relative Variance	2.28	4.42	1.00
	Monthly Data, 1999 to 2003		
	Euro Area	United States	Rest of World
Euro Area	1.00	-0.57	-0.87
United States	...	1.00	0.08
Rest of World	...	...	1.00
Relative Variance	2.58	1.15	1.00

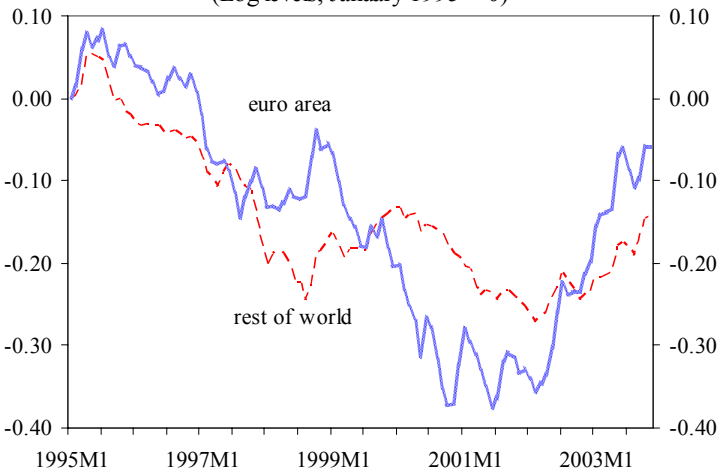
Sources: IMF Information Notice System and staff estimates.

201. **The properties of multilateral exchange rates derive from the underlying behavior of bilateral exchange rates—particularly those involving the euro.** The bilateral rates vis-à-vis the U.S. dollar are shown in Figure 4, where an increase denotes an appreciation for the "home" country—i.e., either the euro area or the rest of the world. Again, the exchange rate for the rest of the world is derived implicitly, given the observed paths for the euro-dollar exchange rate and their respective multilateral rates, and the weights of bilateral rates entering the effective exchange rate baskets. After 1999, note that while the euro continued its slide against the dollar, the rest of the world's exchange rate with the dollar remained more stable, trading sideways in a narrower range. Greater bilateral exchange rate stability between the dollar and currencies in the rest of the world, in turn, has eliminated the negative correlation between U.S. and RW multilateral rates in Table 1.

---

rates. Provided that various bilateral rates are not perfectly correlated (i.e., no fixed parities), the correlations between effective rates should be between 0 and -1.

Figure 4. Exchange Rates versus U.S. dollar, 1995-2003
(Log levels; January 1995 = 0)



Sources: IMF Information Notice System and staff estimates.

202. **Overall, the euro-dollar exchange rate has been 2½ times more volatile than other bilateral exchange rates**. Table 2 reports the variance-covariance matrix of bilateral exchange rates; diagonal elements show variances and the off-diagonal elements show covariances—all normalized relative to the variance of the dollar-RW rate. Over the entire sample, the euro-dollar rate was by far the most variable bilateral exchange rate. After 1999, the relative volatility in the euro-dollar and the euro-RW exchange rates were significantly amplified. In effect, the other currencies increasingly moved in tandem against the euro, reflected by the large positive covariance term between the euro-dollar and euro-RW exchange rates. Greater cross-rate stability between the dollar and currencies in the rest of the world, in turn, has allowed the volatility of bilateral exchange rates involving the euro to translate into greater variability in the multilateral exchange rate for the euro area seen in Table 1.

Table 2. Variance-Covariance Matrix of Bilateral Exchange Rates
(Log levels; January 1995=0)

	Monthly Data, 1995 to 2003		
	€ / $	€ / *RW*	*RW* / $
€ / $	2.41	1.15	1.24
€ / *RW*	...	0.91	0.25
RW / $	...	...	1.00
	Monthly Data, 1999 to 2003		
	€ / $	€ / *RW*	*RW* / $
€ / $	6.06	4.79	1.17
€ / *RW*	...	4.68	0.19
RW / $	...	...	1.00

Sources: IFS and staff estimates.

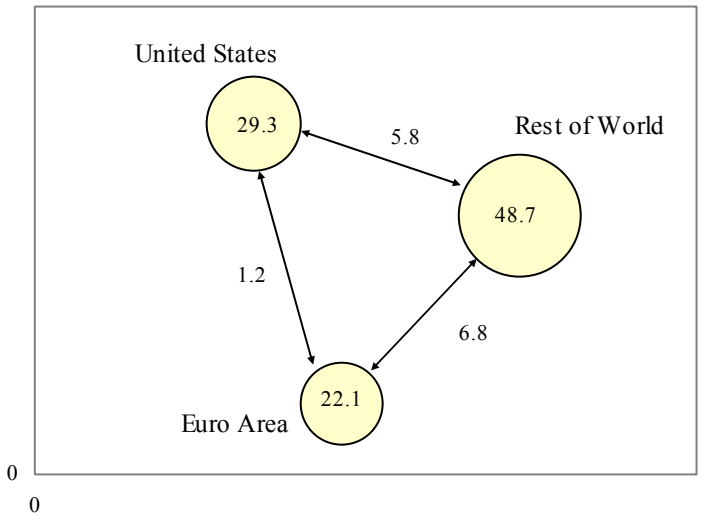
C. Understanding Recent External Developments and Global Asymmetries

203. **To better understand the fundamental forces driving the underlying dynamics, the analysis relies on the macroeconomic framework provided by the IMF's Global Economic Model.** GEM is a dynamic, stochastic general equilibrium (DSGE) model with explicit microfoundations based on the "new open economy macroeconomics" paradigm.[56] Replete with nominal and real frictions, the model, suitably calibrated, can produce plausible impulse-response patterns consistent with a broad set of macroeconomic times-series evidence. Following a brief description of the model, the remainder of this section uses the GEM framework to (1) explore possible driving forces behind recent external developments, and (2) investigate possible sources of underlying asymmetries in the global pattern of external adjustment to those shocks.

204. **To understand global asymmetries in external adjustment, the use of a three-country version of the model is crucial.** This allows for more than one international counterparty to a given domestic macroeconomic shock. Depending on the nature of interdependence among the three economies, factors influencing asymmetric global adjustment—consistent with recent developments—can then be investigated. The basic structure of the three-country model is described graphically in Figure 5. The relative size of each economy, as in percent of world output, is represented by the figure in and the relative size of the circles in the figure; the United States and the euro area, for example, each comprise roughly one-quarter of the world economy, respectively. The arrows in the figure represent total trade flows—i.e., sum of imports and exports of goods and services—between each pair of trading partners. Trade flows between the United States and the euro area, for example, comprise roughly 1 percent of world GDP. The ratio of total trade flows to economic size provides a measure of trade openness.

[56] See Laxton and Pesenti (2003) for a technical description. See the survey by Lane (2001) on the "NOEM" approach.

Figure 5. Three-Country Global Economic Model:
Relative Size and Trade Patterns
(In percent of world GDP)



Sources: DOTS, WEO, ECB and staff estimates.

205. **From the U.S. perspective, accelerating productivity and declining risk premia appear to be important drivers behind the macroeconomic developments from the mid-1990s until 2000.** Hunt and Rebucci (2003), using a two-country version of GEM, find that a relative increase in total factor productivity in the tradable goods sector combined with a persistent decline in the risk premium—i.e., increased investor appetite—for dollar assets reproduce many of the U.S. stylized facts. Namely, these exogenous drivers account for a strengthening dollar (in both nominal and real terms), an investment-led current account deficit, moderating inflation, and higher U.S. output and consumption growth.[57] The channel through which faster productivity growth affects the exchange rate is the familiar Harrod-Samuelson-Balassa (H-B-S) effect. Accelerating productivity alone, however, is insufficient quantitatively to generate the degree of real appreciation in the dollar and the extent of deterioration in the U.S. current account. Consequently, a relative decline in the perceived riskiness of U.S. assets was also incorporated into the Hunt and Rebucci (2003) analysis to explain the remaining "half" of historical trajectories for these external variables.

206. **A closer examination of productivity performances in Europe and the United States lends support to the view that a relative acceleration in U.S. total factor productivity (TFP) occurred in the second-half of the 1990s.** During a long period of

[57] To better match persistent time profiles, Hunt and Rebucci (2003) also include uncertainty and learning about the underlying shock process. This refinement was omitted but could be added to the present analysis.

economic catch-up, the euro area experienced faster labor and total factor productivity growth compared to the United States, as income per capita converged toward U.S. levels.[58] After the mid-1990s, however, relative productivity growth in the euro area slipped. For the first time during the post-war period, average productivity growth fell below par with the United States. See Table 3. Aggregate TFP growth performance switched from a small differential in favor of the euro area to a ½ percent differential in favor of the United States more recently. This suggests a cumulative gain in relative terms of roughly 4 to 5 percent in the level of U.S. TFP since 1995. If these aggregate gains were concentrated primarily in the tradables sector, the relative gain in TFP at the sectoral level, given the tradables goods share in the overall economy, would be in the range of 10-15 percent.

Table 3. Income and Productivity Growth
(In percent)

	Euro Area			United States		
	GDP per capita	Labor Productivity	Total factor productivity	GDP per capita	Labor Productivity	Total factor productivity
1961-1970	4.42	---	---	2.93	2.55	1.79
1971-1980	2.68	3.68	1.51	2.20	1.62	0.83
1981-1990	2.09	2.38	1.18	2.24	1.24	1.05
1991-1995	1.10	2.41	1.05	1.45	1.31	0.92
1996-2002	1.91	1.44	0.74	2.39	2.22	1.24

Sources: European Commission, OECD, and staff calculations.

207. **Relative productivity developments, however, fall far short of directly accounting for movements in current accounts and exchange rates.** Multifactor productivity as the single driver falls short for several reasons. First, though aggregate TFP measures for the rest of the world are not readily available, real GDP and GDP per capita accelerated in the rest of the world in the second half of the 1990s, registering faster concurrent growth than in the other two economies. *Prima facie*, a 10 or 15 percent relative gain in U.S. productivity thus likely represents an upper bound. Other factors further working in the same direction include:

- **Aggregate versus sectoral productivity developments**. Examining sectoral data reveals that a large portion of the aggregate U.S.-euro area productivity differential stems from differences in specific sectors—including, IT-using and non-IT services—some of which have large non-traded components.[59] Productivity gains

[58] See Chapter I.

[59] See Chapter I.

in non-traded goods while reinforcing the positive consumption, investment, and growth effects, would tend to undercut the effects on external variables—i.e., exchange rate appreciation and widening current account deficit.

- **Modest productivity effects on external variables.** Lastly, the effects of productivity in standard models on external balances and exchange rates are generally quite modest. See Box 1. Moreover, numerous empirical studies find that nominal exchange rate fluctuations rather internal relative price movements are the major source of real exchange rate variation in the short to medium term.[60]

Box 1. Productivity Effects on External Variables: Theory and Evidence

Conventional wisdom posits a roughly proportional relationship between relative prices and productivity. Following De Gregorio, et al (1994) and others, the relationship between the real exchange rate and total factor productivity can be written as:

$$\hat{q} = \hat{q}_T + (1-\alpha)\hat{q}_N = \hat{q}_T + (1-\alpha)\left[\frac{\lambda_N}{\lambda_T}\hat{a}_T - \hat{a}_N\right] \quad (1)$$

where ^ denotes percent change, q is the real exchange rate—i.e., the ratio of consumer prices, q_T is "external" real exchange rate—i.e., the relative price of tradable goods, q_N is the "internal" real exchange rate—i.e., the relative price of non-tradable to tradable goods at home and abroad, a_T and a_N are respective TFP levels in the traded and non-traded sectors in the home country relative to its partners. Finally, α is the share of tradable goods in consumption; λ_T and λ_N are respective labor shares in sectoral output. Assuming PPP holds in traded goods—i.e., $\hat{q}_T$ is zero, the impact of higher TFP growth in tradables on the CPI-based real exchange rate depends on consumption and labor shares.

Under the same standard assumptions, a unit elastic relationship between q_N and relative labor productivities l_T, l_N obtains directly:

$$\hat{q}_N = \hat{l}_T - \hat{l}_N, \quad (2)$$

suggesting a less-than-proportional response in the CPI-real exchange rate q based on equation (1).

Recent empirical studies broadly support these theoretical implications. In a large panel of countries, Lee and Tang (2003), for example, find that labor productivity is positively associated—albeit less than proportionately—with appreciating real exchange rates, but the empirical relation between TFP and relative prices is weaker. Using time-series analysis to examine the dollar-euro real exchange rate, Alquist and Chinn (2002) find an unusually high elasticity (i.e., between 2 and 5) on labor productivity, leading them to conclude that other factors must also be at work. Schnatz, et al (2003) find more plausible elasticities between 1-2, but also conclude that labor productivity cannot account for the majority of movements in the euro-dollar rate.

In GEM, the long-run elasticity on the CPI-based real exchange rate with respect to TFP is typically below one across different parametrizations of the model; see Hunt and Rebucci (2003). Likewise, the current account implications of productivity shocks are also typically small.

[60] See, for example, Engel (1999), Engel and Rogers (1996).

208. **Financial considerations—modeled here as changes in the risk premium—are also likely to have played an important, if not central, role.** As discussed above, the magnitude of observed swings in currencies and current accounts is difficult to attribute directly to productivity. Following others, including Hunt and Rebucci (2003), the analysis thus also relies on relative changes in risk premia on U.S. financial assets to better account for external developments. Specifically, a shock representing a persistent decline in the perceived relative riskiness, or, equivalently, an increase in the relative risk-adjusted return, on U.S. assets is considered. The shock acts to increase investor appetite for U.S. financial instruments, inducing the pattern of net capital flows consistent with Figure 1. This factor can also be viewed as a complementary asset-market component to the increase in relative U.S. productivity.[61] This relative shift in risk premia also likely reflects, in part, fallout from the Asian financial crisis in 1997-98. Coupled with expansionary U.S. fiscal policies in later years when domestic investment rates receded, these shocks provides an initial short list of fundamental drivers for the analysis.

209. **A first attempt to explain the asymmetric pattern of external adjustment, in response to common external shocks, would begin by investigating underlying differences in economic structures and cross-border linkages.** Major considerations that could affect the nature of interdependence among the three economic regions would include the following.

- **Asymmetric size, openness, and trade patterns**. Differences in size, openness, and trading relationships between "countries," summarized in Figure 5, could help determine differences in trade responses. Note that a disproportionately larger share of trade transacts with the rest of the world.

- **Differential exchange rate pass-through behavior.** To the extent that pass-through from exchange rates into prices is incomplete, the trade balance may respond more modestly than otherwise.[62] Arguments for why euro area pass-through may be lower than in the rest of the world include the following.[63]

    - The importance of the European destination market and the larger international role of the euro—e.g., as an invoice currency—in the pricing of traded goods suggest that area-wide import and export prices may be more

[61] Bonds, but not equities, are traded internationally in the model—omitting the direct effects of stock markets on current accounts seen in other frameworks like Mercereau (2004).

[62] See Obstfeld (2002) for a review.

[63] In the model, differential pass-through is introduced through the pricing-to-market component and adjustment cost parameters in price-setting.

stable in euro currency terms and subject to more "pricing to market." This argument, however, would apply *a fortiori* to the U.S. dollar.[64]

- Less-differentiated goods—e.g., commodities—with slimmer margins and less pricing to market, typically have higher pass-through and comprise a higher share of trade in the rest of the world.[65]

- Lower inflationary environments lead to lower pass-through—i.e., Taylor (2000) hypothesis.[66]

- **Differences in Foreign Asset Substitutability.** From the financial side, the degree of substitutability between home and foreign—specifically, U.S.—assets may differ between the euro area and other countries. In particular, several studies have pointed toward a greater willingness in emerging market economies to hold U.S. assets for a *given* rate of risk-adjusted return, particularly with respect to official holdings.[67] This may reflect, among other things, the more dominant role of the U.S. dollar as a international and "safe-haven" currency. On a related but distinct issue, foreign central banks may also place greater emphasis on exchange rate stability, as suggested by figure 4.[68]

- **Other possible asymmetric factors.** Differences in consumption behavior, reflecting underlying differences in liquidity constraints, substitution elasticities, etc, may also affect external response patterns. Other factors could include the role of initial conditions (e.g., initial net foreign asset position), which have been shown to affect current account dynamics.[69]

210. **Dynamic simulations indicate that differences in relative size and trade patterns help explain uneven adjustment patterns across the three regions.** Figure 6 illustrates the effects of a 10 percent increase in U.S. multifactor productivity, a persistent 1 percentage point decline in the risk premium on dollar assets, and a 1 percentage point (of GDP)

---

[64] See Bachetta and Van Wincoop (2002), Devereux, Engel and Storgaard (2003) for analytical discussions. See Bekx (1998), Faruqee (2004) for empirical evidence.

[65] See Campa and Goldberg (2003), Knetter (1993).

[66] See Choudhri and Hakura (2002) for cross-country evidence.

[67] See Dooley, Folkerts-Landau, and Garber (2004).

[68] See Calvo and Rheinhart (2002), Rheinhart and Rogoff (2004).

[69] See Thoenissen (2003). These issues are left for future research.

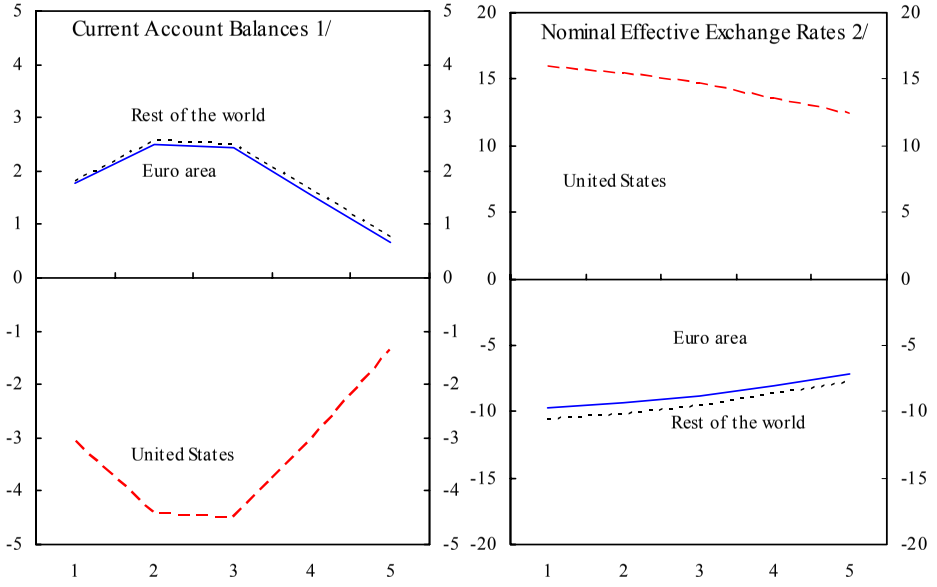
increase in U.S. fiscal spending. The figure further shows the changing external adjustment patterns in response to these shocks by progressively adding structural elements that affect interdependence among the three economies. As a reference point, the first panel (Figure 6A) begins with a symmetric structure in terms of identical size and trade patterns between countries. Not surprisingly, a symmetric response pattern emerges—i.e., the euro area and rest of the world are equal counterparts to the resultant dollar appreciation and U.S. external deficit. Compared to this counterfactual configuration, the second panel (Figure 6B) shows that empirical trade patterns and relative size differences go some way toward explaining the uneven pattern of external adjustment in U.S. partners. Disproportionately high trade with the rest of the world places it center stage as counterpart to the U.S. deficit. Meanwhile, the similar degree of multilateral exchange rate depreciation remains intact in these two regions.

211. **Financial considerations, related to the greater willingness to hold U.S. dollar assets in the rest of the world, also help generate asymmetric responses.** Greater willingness by foreigners to hold U.S. financial instruments in the rest of the world sharpen differences in response patterns with the euro area from common external shocks (Figure 6D). Higher substitutability between domestic and foreign assets in the rest of the world induce larger relative shifts in financial flows in response to changes in relative (risk-adjusted) rates of return in the United States.[70] Differential rates of pass-through also have some role in explaining asymmetric adjustment. Greater local currency price stability and, consequently, lower pass-through in euro area import prices tend to mute the net external trade balance response. The fact, however, that the degree of external adjustment was indeed large in the United States places a limit on the pass-through mechanism in explaining multilateral differences given that U.S. pass-through is also relatively low, if not lower than in Europe.

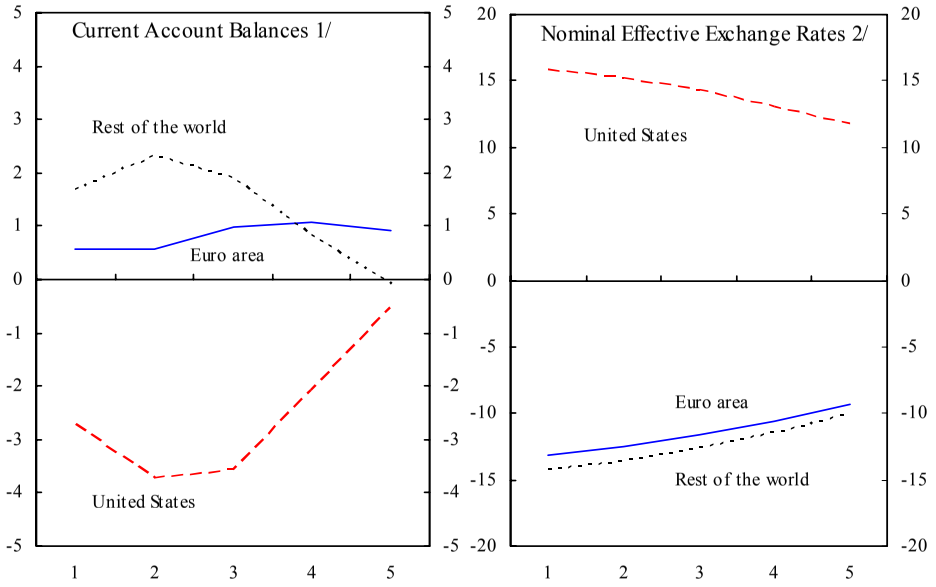
[70] This effect is introduced in the model by modifying the parameters representing financial frictions on non-resident holdings of foreign assets, affecting the degree of substitutability. See Benigno (2001).

Figure 6. Explaining Asymmetric External Adjustment to Common Shocks

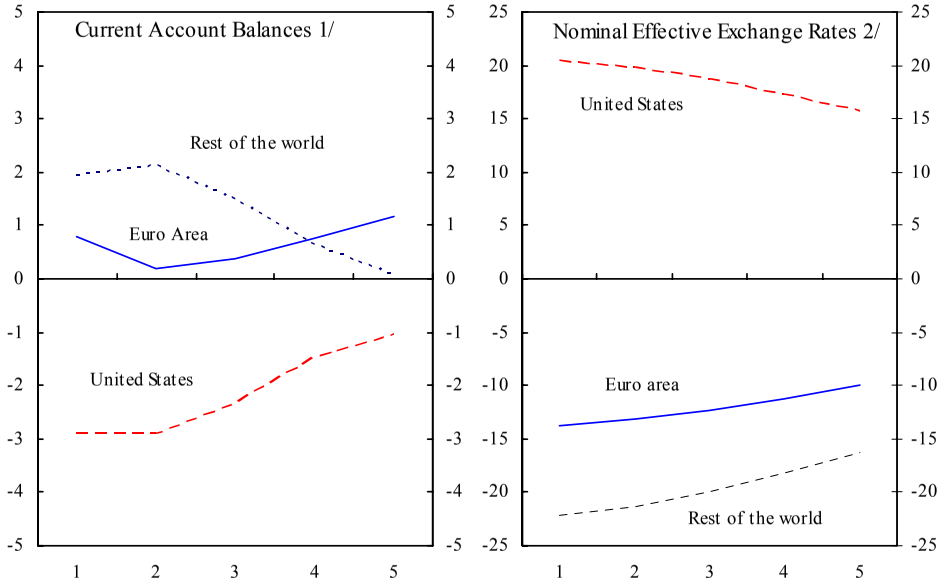
A. Identical Relative Sizes and Trade Patterns



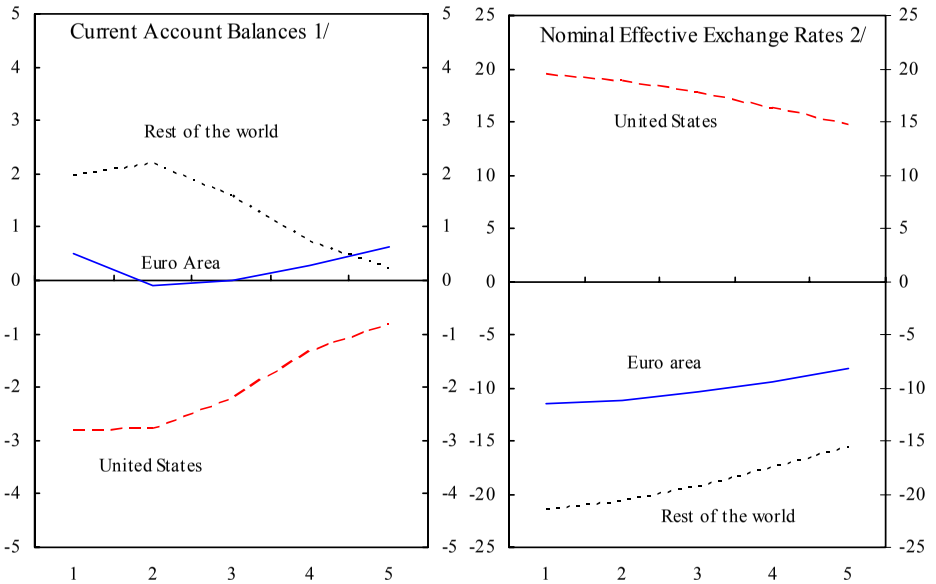
B. Historical Relative Sizes and Trade Patterns



C. And Differential Exchange Rate Pass-through



D. And Differences in Foreign Asset Subsitution



Sources: ECB; WEO, IMF and staff estimates.
1/ Deviations from baseline; in percent of GDP.
2/ Deviations from baseline; in percent. Increase represents an appreciation.

D. Global Rebalancing Scenarios

212. **A reversal in direction, at least in relative terms, of past shocks that have supported the present external alignment would drive an orderly global rebalancing process.** Faster productivity growth outside the United States and a reversal in the perceived risk profiles between U.S. and foreign assets would prompt an unwinding of current account imbalances. Specifically, a gradual, persistent increase in TFP growth in tradable goods sector in the euro area and the rest of the world, converging toward U.S. productivity levels, would generate a relative acceleration in output and domestic demand beyond U.S. borders, and, correspondingly, significantly reduce global current account imbalances. See Table 4. A deceleration in U.S. productivity—"falling back to the pack", combined with rising risk premia on U.S. assets, would also generate a similar reallocation of capital flows but lead to lower U.S. and global growth.

213. **Provided that the factors underpinning asymmetric adjustment remain intact, the implications for the euro area's external balances would be modest, despite the multilateral appreciation in the euro and substantial bilateral appreciation against the dollar.** In accord with past events, this rebalancing process would produce significant swings in exchange rates—including in the value of the euro—but without a major realignment in the area's current account position, reminiscent of the external developments described in section B. The area-wide trade balance, reflecting stronger exchange rates and import growth, registers an initial decline, despite higher productivity in tradable goods production. Nevertheless, the greater boost to area-wide demand, through higher consumption (from higher permanent income) and higher investment (from higher returns to capital), tend to raise euro area output. Macroeconomic policies react to, rather than lead, the rebalancing process. For example, euro area monetary policy—represented by a forward-looking Taylor rule targeting inflation—would ease interest rates to accommodate the disinflationary impulses from the shock.

Table 4. Benign Global Rebalancing Scenario: Implications for the Euro Area[1]
(Deviation from baseline; in percent)

	Years After The Shock				
	$t = 1$	2	3	4	5
Real GDP	-0.2	0.8	1.1	0.5	0.0
Contribution of					
Domestic Demand	0.4	0.9	1.0	0.8	0.6
Net Exports	-0.6	-0.1	0.1	-0.3	-0.6
CPI Infl [2]	-0.1	-0.2	-0.2	-0.1	-0.1
CA/GDP [2]	-0.6	-0.1	0.1	-0.4	-0.8
Nominal Interest Rates [2]	-0.3	-0.5	-0.4	-0.4	-0.5
Nominal Effective Exchange Rate [3]	8.6	6.9	3.7	0.6	-1.1
Real Effective Exchange Rate [3]	8.6	6.9	3.6	0.2	-1.9
Bilateral Real Rate *v*. RW [3]	2.3	2.0	1.1	-0.1	-1.1
Bilateral Real Rate *v*. $ [3]	20.4	16.0	8.3	0.9	-3.4
memorandum item					
U.S. CA/GDP [2]	3.3	4.2	4.4	4.1	3.1

[1]Table reports the simulated effects of a 7 percent increase in TFP in the euro area and rest of the world, and persistent 0.75 percentage point decline in risk premia on non-dollar assets.

[2] In percentage points.

[3]A - (minus) indicates a depreciation of the euro.

214. **Factors that would complicate the rebalancing process include efforts to limit exchange rate flexibility.** Swings in area-wide growth, exchange rates, and the external balance would become more pronounced if either (1) monetary authorities in the rest of the world limited their exchange rate flexibility (vis-à-vis the dollar) during the adjustment process, or (2) their greater willingness to hold U.S. assets dissipated as part of that process.[71] Table 5 in the appendix revises the baseline adjustment scenario in the instance where monetary authorities in the rest of the world limited their nominal exchange rate flexibility against the dollar. The policy response would involve a significant monetary easing in the rest of the world and set in motion greater oscillatory (boom-bust) dynamics in domestic activity and external balances across regions. From the area's perspective, effective euro appreciation would be larger initially due to additional bilateral appreciation against other currencies falling in tandem with the weakening dollar. Deteriorating international competitiveness would hurt the area's external balance and growth at the outset. Strong growth, higher inflation and real appreciation in the rest of the world, however, would eventually work to reverse these effects.

[71] See discussion in Eichengreen (2004).

Table 5. Limited Exchange Rate Flexibility Scenario: Implications for the Euro Area[1]
(Deviation from baseline; in percent)

	Years After The Shock				
	t = 1	2	3	4	5
Real GDP	-0.8	1.7	1.5	0.1	-0.6
Contribution of					
Domestic Demand	0.3	0.7	0.9	0.9	0.9
Net Exports	-1.1	1.1	0.7	-0.9	-1.5
CPI Infl [2]	0.0	0.1	0.1	-0.2	-0.4
CA/GDP [2]	-1.1	1.0	0.7	-0.8	-1.5
Nominal Interest Rates [2]	0.2	0.4	0.0	-0.8	-1.2
Nominal Effective Exchange Rate [3]	13.7	6.7	1.4	-1.6	-3.8
Real Effective Exchange Rate [3]	13.5	6.2	1.8	0.0	-1.5
Bilateral Real Rate *v*. RW [3]	9.6	0.5	-1.9	-0.3	0.0
Bilateral Real Rate *v*. $ [3]	20.7	16.7	8.8	0.6	-4.2
memorandum item					
U.S. CA/GDP [2]	3.0	5.1	5.2	4.0	2.6

[1]Table reports the simulated effects of the same shocks in Table 4 but with limited exchange rate flexibility in the rest of the world.

[2] In percentage points.

[3]A - (minus) indicates a depreciation of the euro.

215. **Greater reliance on exchange rates—led by changes in asset market sentiment—without underlying reallocations in the global pattern of domestic demand and potential output growth, would also present a more challenging situation for the euro area with little effect on global rebalancing.** A sharper initial increase in the perceived relative riskiness of U.S. assets—reflecting souring sentiment on the dollar—would lead to sharper currency movements. Without fundamental shifts toward relatively higher domestic demand and potential output growth in U.S. partner countries, however, this narrow adjustment scenario would prove ineffectual in reducing global imbalances, with an effect on the U.S. current account that is *de minimis*. See Table 6. But the consequences for the euro area would be significant, especially if the euro were to bear the brunt of the currency realignment as markets exited out of the dollar. Note that the overall degree of effective euro appreciation is the same (at annual averages) in Table 4 and Table 6, but the former depicts a broad decline in the dollar compared to a broad advance in the euro in the latter table, producing very different outcomes with respect to global rebalancing. Area-wide monetary policy should ease more aggressively in this latter instance.

E. Concluding Remarks

216. Using the coherent, dynamic framework provided by the IMF's Global Economic Model, this paper has sought to analyze the macroeconomic implications of global current account rebalancing from the vantage point of the euro area. While this multilateral issue inherently involves many complexities and uncertainties, including the nature of economic interdependence and the underlying shock processes, several general lessons can be drawn.

- **Accounting for asymmetric global adjustment in response to recent shocks, the role of financial factors appears important.** The differential impact in partner countries from recent external shocks—represented by accelerating productivity, declining risk premia, and fiscal expansion in the United States—partly reflects differences in relative size and trade patterns. But other factors are also required. The greater willingness on the part of countries in the rest of the world to hold U.S. assets also helps account for differential responses with the euro area.

- **A rebalancing scenario prompted by an unwinding, at least in relative terms, of recent shocks consistent with generating the current external configuration holds the promise of an orderly resolution to global imbalances.** If the fundamental forces that appear to have driven recent external developments "operated in reverse," many positions, including current account imbalances, would unwind. Namely, relative productivity gains and increased investor appetite for financial assets outside the United States could effect a broad-based decline in the value of the dollar and narrow the U.S. external deficit. If the factors that underpin asymmetric adjustment held firm, the implications for the euro area's current account would be relatively mild. Decelerating productivity in the United States would generate a similar reallocation pattern, other things equal, but lend less support to global growth.

- **An adjustment more narrow in scope—specifically, one entailing excessive reliance on exchange rates to shoulder the burden—would present a more challenging scenario for the euro area and provide little in the way of meaningful global rebalancing.** If global adjustment was largely conducted by asset markets—such as souring market sentiment on the dollar—without a supportive underlying reallocation of domestic demand and potential output growth, the implications for the euro area economy could become more disruptive, but the reduction in global imbalances would be minimal. From the area's perspective, the current account and growth implications would be especially acute if the euro were to bear the brunt of the currency realignment. Limiting exchange rate flexibility in the rest of the world would further exacerbate the adjustment process, leading to a larger swings in domestic and net external demand across regions. Also, if the greater willingness to hold U.S. assets in other countries were to give way, the impact on the euro area would be amplified.

- **From the euro area's perspective, policies that enhanced potential growth would well position the economy to face the ramifications of global adjustment in current account imbalances.** Policies that raised the growth potential of the economy would provide a solid footing for boosting domestic demand, attracting foreign capital, and mitigating the competitiveness implications of a strengthening currency. Supported by an accommodative monetary stance, consistent with the disinflationary impulses in play, this policy mix would help facilitate a more benign resolution to global imbalances from the area's perspective. If either precipitous changes in market sentiment were to occur, or external factors underpinning asymmetric adjustment were to give way, or exchange rate flexibility elsewhere were to be impeded, a more aggressive easing of area-wide monetary policy would be warranted.

References

Alquist, R., and M. D. Chinn, 2002, "Productivity and the Euro-Dollar Exchange Rate Puzzle", NBER Working Paper, 8824.

Bacchetta, Philippe, and Eric van Wincoop, 2002, "A Theory of Currency Denomination of International Trade," CEPR Discussion Papers 3120.

Bekx, Peter, 1998, "The Implications of the Introduction of the Euro for Non-EU Countries," Euro Papers 26, European Commission, July (Brussels: European Commission).

Calvo, Guillermo and Carmen Rheinhart, 2002, "Fear of Floating," *Quarterly Journal of Economics*, Vol. 117, pp. 379-408.

Campa, Jose M., and Linda S. Goldberg, 2002, "Exchange Rate Pass-Through into Import Prices: A Macro or Micro Phenomenon?," manuscript, Federal Reserve Bank of New York (revised March 2002).

Choudhri, Ehsan U., and Dalia S. Hakura, 2001, "Exchange Rate Pass-Through to CPI: Does the Inflationary Environment Matter?," IMF Working Paper 01/194 (Washington: International Monetary Fund).

De Gregorio, Jose, Alberto Giovannini, and Holger Wolf, 1994, "International Evidence on Tradables and Nontradables Inflation." *European Economic Review*, 38, 1225-44.

Devereux, Michael B., Charles Engel, and Peter Storgaard, 2003, "Endogenous Exchange Rate Pass-Through When Nominal Prices Are Set in Advance," mimeo, *Journal of International Economics*, forthcoming.

Dooley, Michael, David Folkerts-Landau and Peter Garber, 2003, "An Essay on the Revived Bretton Woods System", NBER Working Paper 9971.

Edwards, Sebastian, 2004, "Thirty Years of Current Account Imbalances: Current Account Reversals and Sudden Stops," NBER Working Paper 10276**.**

Eichengreen, Barry, 2004, "Global Imbalances and the Lessons of Bretton Woods," NBER, Working Paper 10497.

Engel, Charles, 1999, "Accounting for U.S. Real Exchange Rate Changes." *Journal of Political Economy*, 107, pp. 507-538.

Engel, Charles, and John Rogers, 1996, "How Wide Is the Border?" *American Economic Review*, 86, pp. 1112-1125.

European Central Bank, 2003, *Review of the International Role of the Euro*, (December) (Frankfurt: European Central Bank).

Faruqee, Hamid, 1995, "Long-Run Determinants of Real Exchange Rates: A Stock-Flow Perspective," *IMF Staff Papers*, Vol. 42.

———, 2004, "Exchange Rate Pass-Through in the Euro Area: The Role of Asymmetric Pricing Behavior," IMF Working Paper 04/14, (Washington: International Monetary Fund).

Gagnon, Joseph, 1996, "Net Foreign Assets and Equilibrium Exchange Rates: Panel Evidence," International Finance Discussion Paper No. 574, Board of Governors of the Federal Reserve System

Freund, Caroline, 2000, "Current Account Adjustment in Industrialized Countries," Board of Governors of the Federal Reserve System, International Finance Discussion Paper No. 692, December.

Goldberg, Pinelopi, and Michael Knetter, 1997, "Goods Prices and Exchange Rates: What Have We Learned?," *Journal of Economic Literature*, Vol. XXXV, pp. 1243-1272, September.

Hunt, Benjamin and Alessandro Rebucci, 2003, "The U.S. Dollar and the Trade Deficit: What Accounts for the Late 1990s?" IMF Working Paper 03/194 (Washington: International Monetary Fund).

Isard, Peter and Hamid Faruqee, (editors), 1998, *Exchange Rate Assessment: Extensions of the Macroeconomic Balance Approach*, IMF Occasional Paper 167, (Washington: International Monetary Fund).

IMF, 2002a, *Assessing Sustainability* (Washington: International Monetary Fund).

———, 2002b, *World Economic Outlook* (Washington: International Monetary Fund).

Knetter, Michael, 1993,"International Comparisons of Pricing to Market Behavior." *American Economic Review*, Vol. 83, pp.473-86.

Lane, Philip, 2001, "The New Open Economy Macroeconomics: A Survey," *Journal of International Economics*, August.

Lane, Philip and Gian Maria Milesi-Ferretti, 2002,"External Wealth, the Trade Balance, and the Real Exchange Rate," *European Economic Review*, Vol. 46, pp. 1049-1071.

Laxton, Douglas and Paolo Pesenti, 2002, "Monetary Rules for Small, Open, Emerging Economies," *Journal of Monetary Economics* , Vol. 50, July 2003. Previously presented at the Carnegie-Rochester Conference on Public Policy, November 2002.

Lee, Jaewoo, and Man-Keung Tang, 2003, "Does Productivity Growth Lead to Appreciation of the Real Exchange Rate?," IMF Working Paper 03/154, (Washington: International Monetary Fund).

Mann, Catherine L., 2002, "Perspectives on the U.S. Current Account Deficit and Sustainability," *Journal of Economic Perspectives* 16 (3), pp. 131-152.

———, 2003, "The US Current Account, New Economy Services, and Implications for Sustainability," mimeo, *Review of International Economics*, forthcoming.

Marquez, Jaime, and Lisa Workman, 2002, "Modeling the IMF's Statistical Discrepancy in the Global Current Account," *IMF Staff Papers*, Vol. 48, pp. 499-521.

Mercereau, Benoit, 2004, "The Role of Stock Markets in Current Account Dynamics: A Time Series Approach," IMF Working Paper 04/50 (Washington: International Monetary Fund).

Obstfeld, Maurice, 2002, "Exchange Rates and Adjustment: Perspectives from the New Open Economy Macroeconomics," NBER Working Paper No. 9118.

Obstfeld, Maurice, and Kenneth Rogoff, 2000, "Perspectives on OECD Economic Integration: Implications for U.S. Current Account Adjustment," in *Global Economic Integration: Opportunities and Challenges*, Federal Reserve Bank of Kansas City, Jackson Hole Symposium.

O'Mahony, Mary and Bart van Ark, (editors), 2003, *EU Productivity and Competitiveness: An Industry Perspective*, European Commission, Brussels.

Rheinhart, Carmen, and Kenneth Rogoff, 2004, "The Modern History of Exchange Rate Arrangements: A Reinterpretation," *Quarterly Journal of Economics*, Vol. 119, pp. 1-48.

Schnatz, Bernd, Focco Vijselaar, and Chiara Osbat, 2003, "Productivity and the 'Synthetic' Euro-Dollar Exchange Rate," ECB Working Paper No. 225.

Taylor, John, 2000, "Low Inflation Pass-Through, and the Pricing Power of Firms," *European Economic Review*, Vol. 44, pp. 1389-1408.

Thoenissen, Christoph, 2003, "Current Account and Real Exchange Rate Dynamics and the Role of Net Foreign Assets, " mimeo, University of St. Andrews.

V. THE CHANGING PATTERNS OF EU-CHINA TRADE[72]

Core Questions, Issues, and Findings

- ***What are the recent trends in EU-China trade?*** In 1988, China was the EU's tenth largest trading partner. Over the last fifteen years, bilateral trade in goods has increased sharply, and China has become the EU's second-largest trading partner (after the United States). (¶2-3)

- ***What have been the implications for the EU and third countries?*** The increase in bilateral trade was accompanied by a large bilateral EU trade deficit. China's market share seems to have increased mainly at the expense of other East Asian countries. (¶4-5)

- ***What happened to the composition of bilateral trade?*** China's exports have diversified over the past two decades, mainly from traditional goods (including toys and textiles and clothing) to more sophisticated goods (including electronics). (¶7)

- ***What are the main driving forces behind trade developments in electronics and textiles?*** The rapid growth of electronics exports to the EU highlights China's shift to more sophisticated goods and seems in part driven by FDI flows and China's industrial policies. As regards textiles and clothing, China's EU market share is also increasing. In particular, the phasing out of some textiles quotas in 2002 led to a sharp increase in imports from China that have displaced other suppliers (but not domestic production). This suggests that the elimination of the remaining textile quotas by 2005 could trigger a further import surge. (¶8-14)

- ***What are the major issues driving EU-China trade disputes?*** The bilateral trade deficit is not a major issue but could play a role in the future. Disputes have so far been limited and are related to adjustment pressures in some industries, access to raw materials, and more importantly, to the implementation of China's WTO commitments. (¶15-18)

- ***What is the EU strategy to deal with trade tensions?*** The EU has emphasized dialogue, technical assistance and a focus on implementation of China's WTO commitments. It has refrained from imposing sanctions or safeguards, but it has resorted to antidumping measures. (¶19-20)

[72] Prepared by Jean-Jacques Hallaert.

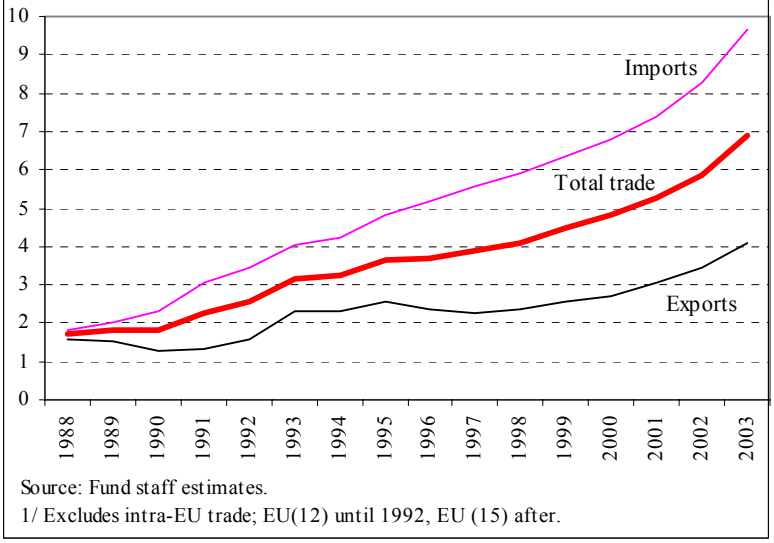
A. Introduction

217. Over the past decade, EU trade with China increased at more than twice the rate of total EU external trade and China became the EU's second largest trading partner. This chapter takes stock of the rapid increase in EU-China trade; analyses the diversification of Chinese exports to the EU with a focus on electronics and textiles; and, finally, describes current and potential trade disputes and the EU strategy to prevent and resolve differences.

B. Developments in Bilateral Trade

218. **Illustrating the sharp increase in bilateral trade, China became in 2003 the EU's second largest trading partner.** Fifteen years ago, China accounted for 1.7 percent of EU external trade.[73] However, over 1988-2003, EU-China trade has increased on average by 17 percent every year compared to 7 percent for total EU external trade. As a result, China's share in the EU's external trade currently reaches 7 percent (9 percent of EU imports and 4 percent of its exports; Figure 1) and China, which was EU's tenth largest trading partner in 1988, became, in 2003, its second largest trading partner after the United States, overtaking Japan in 2002 and Switzerland in 2003. Conversely, the EU accounted for 14 percent of China's trade in 2002 and was its third-largest trading partner.

Figure 1.China Market Share in EU External Trade of Goods
(In percent) 1/



Source: Fund staff estimates.
1/ Excludes intra-EU trade; EU(12) until 1992, EU (15) after.

219. **Developments in trade flows differ across EU-15 members**. All EU-15 members experienced a substantial increase in their trade with China. However, China's share in total trade is very different across EU members ranging, in 2003, from 3½ percent for Ireland and Portugal to 9½ percent for the Netherlands. For imports, it ranges from 4 percent for Portugal to more than 13 percent for the Netherlands and, for exports, from 1 percent for Greece to 6 percent for Germany and Finland (Table 1).

[73] Comext database, Eurostat. The EU refers to EU(15) and prior to 1995 to EU(12).

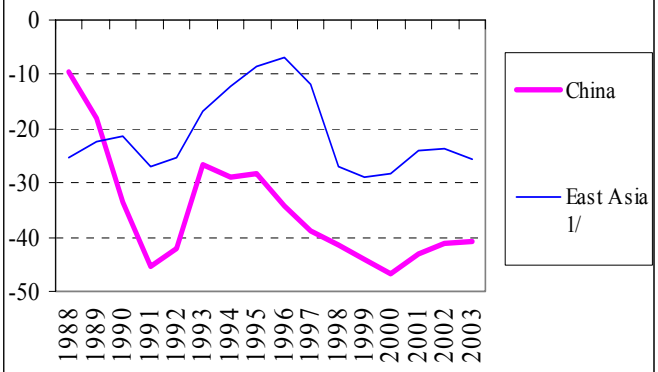
Table 1. Trade Flows Between EU Countries and China
(In percent)

	Imports of Goods from China (Percent of total imports)		Exports of Goods to China (Percent of total exports)	
	1995	2003	1995	2003
EU	4.8	9.7	2.6	4.1
Austria	3.7	5.5	2.3	2.8
Belgium	4.4	11.2	2.2	4.0
Denmark	5.8	11.6	1.5	3.2
Finland	3.2	8.1	3.3	5.9
France	4.4	8.4	2.4	3.6
Germany	5.7	9.4	3.4	6.2
Greece	4.9	6.8	0.4	0.9
Ireland	2.4	6.0	0.3	1.8
Italy	4.9	8.6	2.6	3.2
Netherlands	3.7	13.2	2.0	2.8
Portugal	2.3	4.0	0.7	2.6
Spain	5.3	9.3	2.9	2.8
Sweden	5.3	8.9	3.4	4.7
United Kingdom	4.9	10.6	1.3	2.4

Source: Fund staff estimates.

220. **The increase in bilateral trade was accompanied by a widening trade deficit.** While bilateral trade in goods was balanced in 1980, since 1998 the EU's trade deficit with China has been persistently above 40 percent of bilateral trade (Figure 2).[74] The deficit reached €47.7 billion in 2002 and €55.3 billion in 2003. This constitutes by far the EU's largest bilateral trade deficit with any trading partner. At the same time, in 2002, the EU registered a small trade

Figure 2. EU's Trade Deficit with China and East Asia
(Percent of bilateral trade)



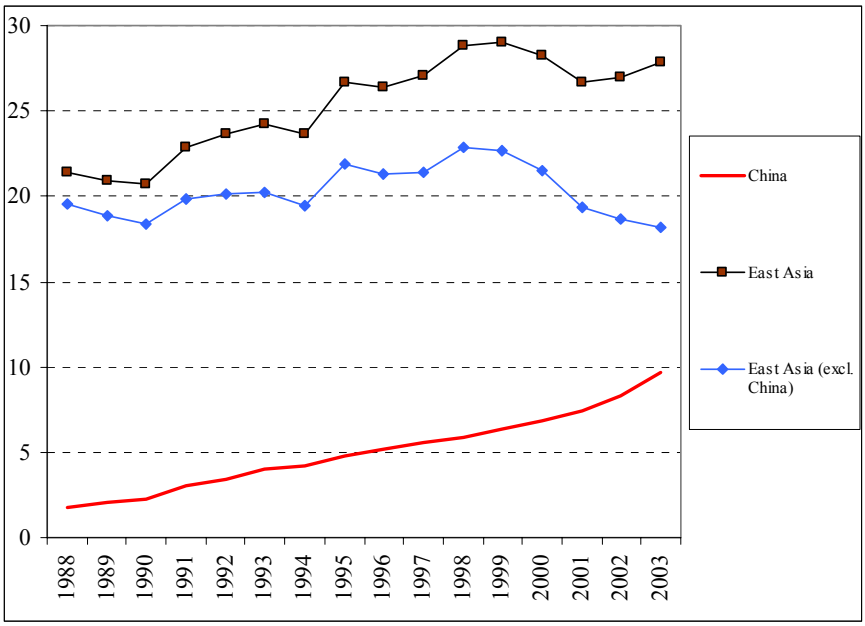
Source: Fund staff estimates.
1/East Asia includes ASEAN, China, Hong Kong SAR, Taiwan, Province of China, South Korea, and Japan.

[74] The situation varies across EU-15 countries. Except Finland, who register a shrinking bilateral surplus, all EU countries face a deficit ranging from 7 percent of bilateral trade for Sweden to 92 percent for Greece.

surplus of €0.6 million in trade in services with China.

221. **China's market share seems to have increased at the expense of other East Asian countries.** Until 1998, the increase in China's market share did not prevent the increase in market penetration by East Asian countries (Figure 3). However, during 1998–2003, East Asian countries experienced a continuous drop in their market share. The evolution of the trade deficit with East Asian countries (including China) also suggests that trade with China may have replaced trade with other East Asian countries (Figure 2). Despite fluctuations, the deficit with East Asian countries remains, as a share of total bilateral trade, similar in 2003 as it was in 1988 while, over the same period, the bilateral deficit with China jumped from 10 to 41 percent.[75]

Figure 3. East Asian Market Share
(Percent of EU imports)



Source: Fund staff estimates.
1/ East Asia includes ASEAN, China, Hong Kong SAR, Taiwan, Province of China, South Korea, and Japan.

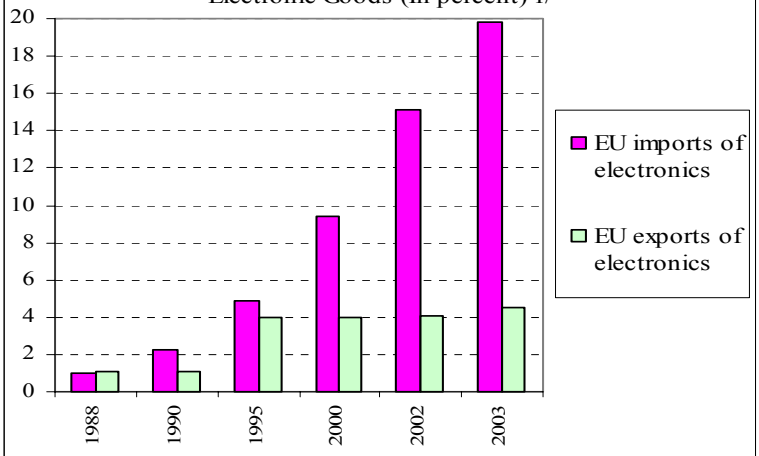
[75] During 1988–96, the trade deficit with China increased by 24 percentage points, while the deficit with East Asian countries dropped from 18 percentage points. The degradation in 1997–98 is likely to be more the result of the Asian crisis than driven by China's bilateral deficit.

C. Developments in Trade Composition: The Case of Electronics and Textiles

222. **Chinese exports have experienced a substantial diversification as illustrated by trade in textiles and electronics goods.** Over the past two decades, Chinese exports have diversified from goods like toys and textiles and clothing to electronics goods (Oxford Analytica, 2004). This section analyses EU-China trade in both electronics and textiles, which accounts for one-third of EU-China trade and about 40 percent of EU imports from China and raises a host of policy issues.

223. **EU imports of electronics from China have surged recently.** Over 1995–2000, China's market share in EU imports of electronics increased from 5 to 9½ percent and then more than doubled over the following three years to reach almost 20 percent in 2003. The share of China in total EU exports of electronics increased from 1 to 4 percent in the first half of the 1990s and stagnated thereafter (Figure 4).

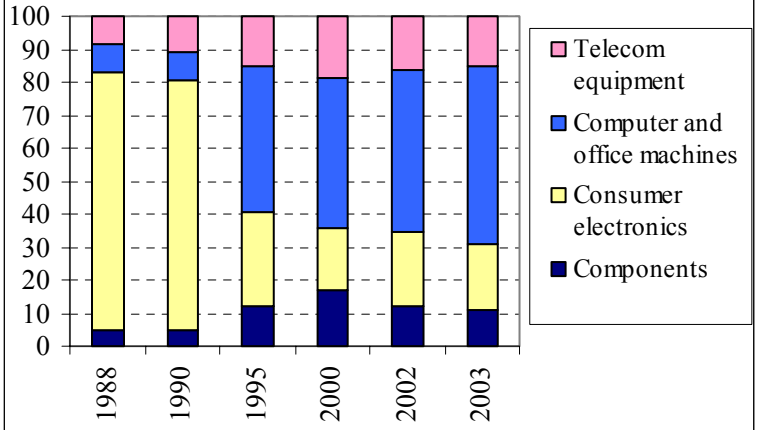
Figure 4. Share of China in EU Trade in Electronic Goods (In percent) 1/



Source: Fund staff estimates.
1/ Extra-EU trade only; EU(12) until 1994.

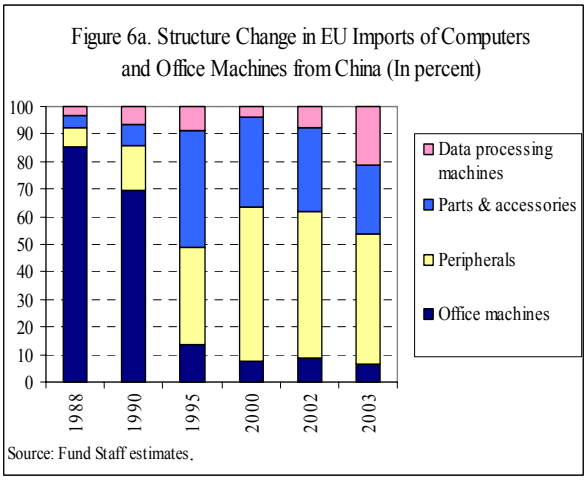
224. **The change in the structure of EU imports of electronics illustrates the rapid technological improvement of China's exports.** Consumer electronics, which were responsible for about 80 percent of EU imports of electronics from China in 1988, represented only 20 percent in 2003. Over the same period, the share of computer and office equipment increased from 8 to 54 percent (Figure 5), driven by an increase of parts and accessories and peripherals in the 1990s and, recently, data processing machines (Figure 6a). Although China remains largely dependent on high tech

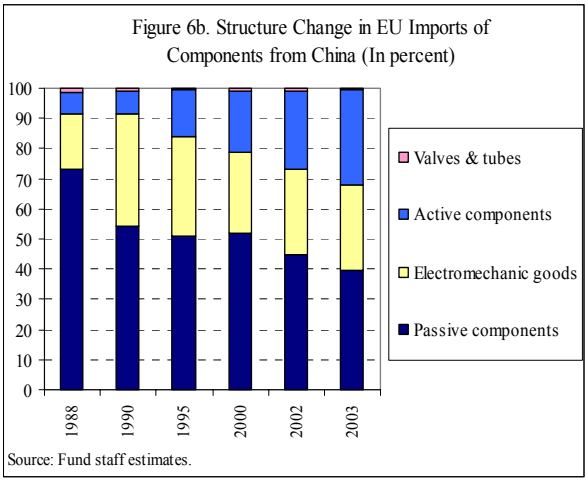
Figure 5. Change in Pattern of EU Imports of Electronics from China (in percent of imports)

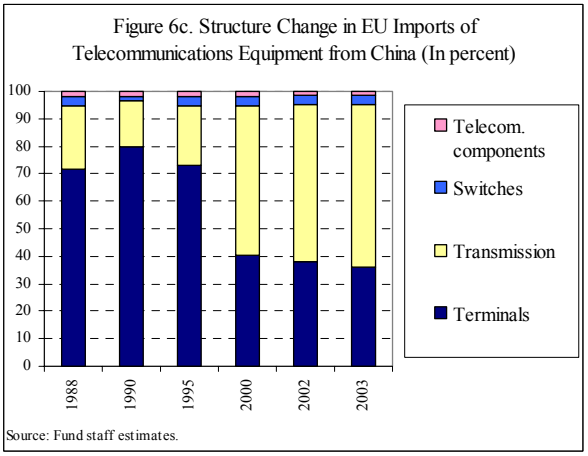


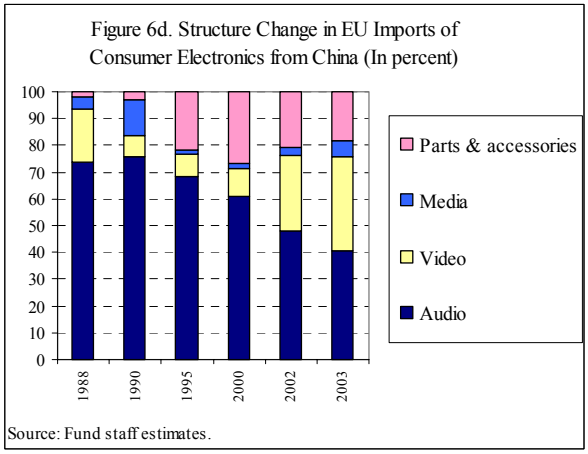
Source: Fund staff estimates.

components,[76] Chinese exports of components also moved up the technology ladder, namely from passive to active components (Figure 6b). Similarly, exports of telecom equipment moved from terminals to transmission equipment (Figure 6c) and exports of consumer electronics from audio to video products (Figure 6d).









225. **The increased sophistication in Chinese production and exports seems partly driven by governmental policies and FDI inflows.** China's government supports the production of electronics and encourages transfer of technologies through foreign investment. WTO accession, may also have played a role because trade liberalization and improved market access for Chinese exporters may have stimulated FDI inflows and in turn transfers of technologies. In the Ninth Five Year Plan (1996-2000), the electronic sector was declared a "pillar industry." Several state-owned enterprises were selected and benefited

[76] China produced in 2003 about 12 percent of its domestic needs of semiconductors (Oxford Analytica, 2003).

from important support. In addition, the government launched several large research programs and projects that aimed at improving the IT infrastructure (U.S. Department of Commerce, 1997a, 1997b; and Hallaert, 1998). The Chinese government also tried, although less successfully, to promote the components industry. For example, semiconductor manufacturing has been identified as one of the key high-tech industries for development in the Tenth Five-Year Plan (2001–05). In order to help domestic production and foster technological transfers, chips produced and designed in China benefit from tax rebates. However, this policy has been recently challenged at the WTO, with the United States claiming that tax rebates discriminate against imported semiconductors and are inconsistent with WTO rules. The EU, referring to substantial trade interests, has requested the right to participate in the consultation between the United States and China.

226. **FDI led to a relocation of production of electronics to China at the expense of other East Asian countries.** As early as 1995, joint ventures with foreign partners were responsible for 21 percent of the sector's output and 55 percent of exports (*Directory of China Electronics Industry '96*, 1997).[77] Many electronics firms, mostly from East Asia, have indeed relocated their production facilities to mainland China. As a result, the increase in China's market share has been accompanied by a decline in other East Asian countries' market share. While the share of East Asia (including China) in EU imports of electronics goods was stable over 1995–2002 at about 28 percent, the share of East Asia excluding China dropped from 26 percent to 21 percent.[78]

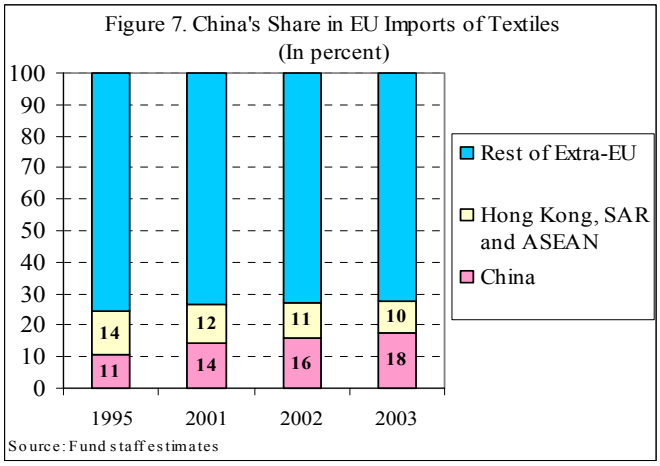
227. **Diversification of China's exports led to a decrease in the share of traditional exports such as textiles and clothing in EU imports from China.** Despite a healthy annual growth rate of 12½ percent on average over 1995–2003, EU imports of textiles and clothing, constrained by bilateral quotas, increased more slowly than other imports from China (18 percent). As a result, the share of textiles and clothing declined from 18 percent to 13 percent.

228. **Nevertheless, China's share in EU imports of textiles and clothing is increasing rapidly.** EU imports of textiles and clothing from China are growing more rapidly than total EU imports of these products from other countries (12½ percent compared with 4½ percent over 1995-2003), reflected in a substantial increase in the share of China in EU imports (Figure 7).

---

[77] In 2002, foreign-funded enterprises were responsible for about 52 percent of China's total exports (Oxford Analytica, 2004). Over the past five years, the EU was the largest foreign investor in China (excluding Hong Kong SAR) and, according to EU statistics, the stock of EU foreign direct investment reached €20.3 billion at the end of 2002.

[78] Estimates based on Comtrade data at HS-6 digits basis. Therefore, the results are not fully comparable (the product coverage is larger) to estimates based on the Comext database.



229. **China's textile exports have displaced other suppliers**. In 2002, as part of the WTO Agreement on Textiles and Clothing, the EU eliminated some of its bilateral quotas on textiles. However, the liberalization did not lead to a surge in the aggregate value of imports but instead resulted in a change in the sources of imports. Over 2001–03, the total value of EU imports of textile products declined by 3 percent, while EU imports from China grew by 18 percent. The growth in China's exports displaced other suppliers, in particular East Asian countries: EU imports of textiles from ASEAN countries as well as from Hong Kong SAR dropped by about 20 percent (Figure 7). More specifically, imports from China of textile products on which China used to face quota controls increased by 46 percent in value in 2002 and, due to a drop in the average price by 50 percent, the volume surged by about 190 percent. For the same products, EU imports from other countries dropped by 13 percent in value and 11 percent in volume due to a smaller decline in unit prices (European Commission, 2003a).[79]

230. **The elimination of remaining textiles quotas by the end of 2004 is likely to result in another expansion of China's textile and clothing exports to the EU.** MFA Quotas still limit half of Chinese exports of textiles and clothing to the EU. About 60 percent of these quotas are utilized at more than 90 percent. This illustrates the restrictive impact of the quotas and suggests that their elimination is likely to lead to a further increase in Chinese exports. However, safeguard mechanisms under China's WTO accession allow countries to continue with temporary quotas on textile imports from China, which, if they are invoked, may spread out the adjustment process.

D. EU-China Trade Disputes and Trade Dialogue

231. **The bilateral trade deficit is "not yet" a major issue.**[80] One reason mentioned is that the EU does not have a large overall trade deficit. However, the EU has warned that pressure was mounting (Lamy, 2003, and McLaughlin, 2004). Illustrating the growing

[79] The difference in unit prices is due to the alignment of Chinese prices toward average prices of EU imports, not to undercutting other imports. This provides another illustration of the restrictiveness of the quotas.

[80] For example, Commissioner Lamy declared, "Has the EU trade deficit now become a political problem, as it evidently has in the US? In my view, not yet."

concerns, both the joint statement of the sixth annual China-EU summit of October 2003 and the policy document on EU relations with China published by the European Commission in 2003 stressed the importance "to ensure continued and balanced growth of two-way trade" (European Commission, 2003b; Delegation of the European Commission to China, 2003).

232. **Although import competition is only one factor driving adjustment pressures faced by some European industries, including the textiles industry, a surge in imports from China could prompt protectionist pressures.** In 2001–02, production and employment in the European textiles and clothing industry declined by about 8½ percent. The adjustment proved difficult because the textile industry tends to be concentrated in some regions that are highly dependent upon the sector for employment and where other employment opportunities are limited (European Commission, 2003a). The recent increase in imports from China may have contributed to, but does not explain the contraction of the European industry. The decline started several decades ago not only because of the emergence of other international competitors, but also because of technological changes, the evolution of production costs, and the relocation of production facilities mainly in the Euro-Mediterranean zone. Nonetheless, demands for protection are building up. EURATEX, the European textile lobby, asked recently the European Commission to adopt safeguard measures against imports from China before the end of 2004 citing the possibility of massive job losses (European Report, 2004). And the European Commission, characterizing the situation as "alarming," indicated that, if China's imports surge after the elimination of the remaining quotas, as they did after the previous eliminations of quotas, this could lead to a proliferation of safeguard measures (Lamy, 2004).

233. **However, EU policies have been directed primarily at improving access to the Chinese market rather than at shielding domestic industries from competition.** Ensuring full and timely implementation of China's WTO commitments is one of the European Commission's key priorities (European Commission, 2003b). Both in the context of the WTO and of bilateral meetings, the EU has expressed concerns about the allocation of quotas and tariff-rate quotas, about new regulations that limit the effective opening up of services sectors such as financial services, telecommunication, retail, and construction, as well as about problems in the enforcement of intellectual property rights and international standards.[81]

234. **Access to some raw materials has emerged recently as an issue in EU-China trade relation.** For example, the EU has complained about China's restriction of coke exports, a major raw material for steelmakers. Recently, China, which supplies one third of EU coke imports, restricted its exports in order to limit the environmental impact of coke production and to ensure supply to its growing steel industry. As a result, prices skyrocketed and some steel plants in Europe were forced to close. The EU announced it was considering launching a WTO action. However, a bilateral agreement was reached before the procedure

[81] For more details, see Lamy (2003).

was launched. As a result of the agreement, in 2004, the European industry will get at least the same volume of coke as during the previous year, and the EU and China will work together to eliminate the export license system by the end of 2004.

235. **The EU and China have set up several dialogue mechanisms to resolve trade tensions.** Several dialogue mechanisms on policy and regulation have been set up in order to deal as smoothly as possible with trade disputes and implementation of WTO commitments. These mechanisms include a customs cooperation agreement, which will help curb the trade in counterfeit goods; a EU-China trade policy dialogue, which will facilitate exchanges of views on multilateral, bilateral, and regional trade issues; a high-level dialogue on textiles trade, which will deal with the impact of the elimination of remaining MFA quotas; a dialogue on intellectual property; a dialogue on industrial policy, etc. (European Commission, 2003b and 2004a; Joint Press Statement; 2003; and Lamy, 2004). In addition, the EU provides technical assistance to support China's integration into the world economy and to assist the Chinese government in implementing its commitments in the WTO.[82]

236. **In this context, the EU has refrained from imposing sanctions, safeguards, or launching WTO dispute procedures, but it has taken recourse to antidumping measures.** According to the WTO, during 1995–2003, 17 percent of the antidumping measures taken by WTO members and 16 percent of EU measures (14 percent of initiations of antidumping actions) targeted China (Table 2).[83] Anti dumping measures only affect a small share of EU imports, but because they target specific sectors or firms they can affect competition and creates uncertainty for exporters. As a result, China's main goal in bilateral discussions on trade has been to persuade the EU to grant China full market economy status. This status would generally provide China with a stronger position in antidumping actions. In a preliminary assessment at the end of June 2004, the Commission, however, rejected the request, arguing that China does not yet meet all the requirements of a full market economy (European Commission, 2003b and 2004b).

---

[82] In 2004, an EU-China Cooperation Program was launched. It followed a pilot program that ended in 2003. With funding of €20 million, the program has six components: customs and import/export regulatory system; agriculture and agro-food; technical barriers to trade and sanitary and phytosanitary measures; services; legislative and legal aspects of domestic implementation; IPR enforcement; and policy development, cooperation and transparency.

[83] Currently, the EU has 32 definitive antidumping measures in force and 22 investigations. According to Chinese experts, as of February 2004, China was facing 600 antidumping measures (Zhang, 2004). Detailed statistics can be found on the WTO website at http://www.wto.org/english/tratop_e/adp_e/adp_e.htm and on the European Commission website at http://europa.eu.int/comm/trade/issues/respectrules/anti_dumping/stats.htm.

Table 2. Initiations of Antidumping Actions Against China, 1995-2003 1/

Year	United States 2/	European Union 2/	India 2/	Other 2/
1995	7	3	3	14
1996	3	6	2	19
1997	4	3	2	22
1998	1	5	4	17
1999	3	4	4	10
2000	2	11	3	10
2001	11	3	13	25
2002	7	3	12	24
2003	7	3	13	19
Total	45	41	56	160

Source: WTO Report of the Committee on Anti-Dumping Practices (various).

1/ Period ranging from July 1-June 30 for each year covered.

2/ Country initiating antidumping action.

References

Delegation of the European Commission to China, 2003, *Joint Press Statement of the Sixth China EU Summit,* available via the internet at: http://www.delchn.cec.eu.int/en/whatsnew/summit.htm.

Directory of China Electronic Industry '96, 1997 (Beijing).

"EU/China: European Textile Group Appeals for Action Against Imports," 2004, *European Report*, January 17.

European Commission, 2003a, "The Future of the Textiles and Clothing Sector in the Enlarged European Union," Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, COM(2003) 649 (Final), October 29. Available via the Internet at: http://europa.eu.int/comm/enterprise/textile/com2003.htm.

——, 2003b, *A Maturing Partnership—Shared Interests and Challenges in EU-China Relations,* Commission Policy Paper for Transmission to the Council and the European Parliament, COM(2003) 533 (Final), October 9. Available via the Internet at: http://europa.eu.int/comm/enterprise/enterprise_policy/gov_relations/china/com533.pdf.

——, 2004, *China-Trade: Launch of EU-China Trade Policy Dialogue*, IP/04/605, May 5 (Brussels). Available via the Internet at: http://wlsprod.cc.cec.eu.int:7611/rapid/pressReleasesAction.do?reference=IP/04/605&format=HTML&aged=0&language=EN&guiLanguage=en.

——, 2004b, *China-Market Economy Status in Trade Defense Investigations.* June (Brussels). Available via the Internet at: http://europa.eu.int/comm/trade/issues/bilateral/countries/china/pr280604_en.htm.

Hallaert, Jean-Jacques, 1998, *Les Relations Sino-Européennes Concernant l'Industrie Électronique*, GEM de Sciences-Po, unpublished.

Lamy, Pascal, 2003, "EU-China Relations: Continuity and Changes," address at the EU Chamber of Commerce in China, October 31. Available via the Internet at: http://europa.eu.int/comm/commissioners/lamy/speeches_articles/spla197_en.htm.

——, 2004, "Liberalizing Textiles Trade—Rising to the Challenge of Change," address at the PES Group Seminar, European Parliament, Brussels, March 25. Available via the Internet at: http://europa.eu.int/comm/commissioners/lamy/speeches_articles/spla219_en.htm.

McLaughlin, Kathleen, 2004, "EC's Prodi Says China Carries Responsibility; EU Rules on Market Economy Status in June," *International Trade Reporter*, April 22, pp. 695–6.

Oxford Analytica, 2003, "Foreign Entrants to Aid Semiconductor Industry," July 2.

——, 2004, "China: A Five-Year Outlook (A Multi-Client Study)," March 30–31.

U.S. Department of Commerce, 1997a, *China's National Information Infrastructure Projects (The Golden Projects)*, International Trade Administration, Office of Computers and Business Equipment, June.

——, 1997b, *Information Technology Overview*, Commercial Service Hong Kong, August.

Zhang Jin, 2004, "Report Supports Market Status," *China Daily*, June 9, page 11.