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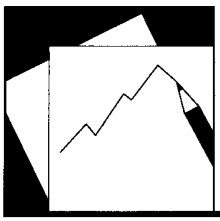

IMF Working Paper

Competitiveness in the Southern Euro Area: France, Greece, Italy, Portugal, and Spain

Herman Bennett, Julio Escolano, Stefania Fabrizio, Eva Gutiérrez, Iryna Ivaschenko, Bogdan Lissovolik, Marialuz Moreno-Badia, Werner Schule, Stephen Tokarick, Yuan Xiao, and Ziga Zarnic

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European Department

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Prepared by Herman Bennett, Julio Escolano, Stefania Fabrizio, Eva Gutiérrez, Iryna Ivaschenko, Bogdan Lissovolik, Marialuz Moreno-Badia, Werner Schule, Stephen Tokarick, Yuan Xiao, and Ziga Zarnic

Authorized for distribution by James Daniel

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Abstract

This collection of studies analyzes developments in nonprice external competitiveness of France, Greece, Italy, Portugal, and Spain. While France, Italy, and Portugal have experienced substantial export market share losses, Greece and Spain performed relatively well. Export market share losses appear associated with rigidities in resource allocation (sectoral, geographical, technological) relative to peers and lower productivity gains in high value-added sectors. Disaggregated analysis of goods and services export markets provides insights on aspects such as quality, market concentration, growth of destination markets, and geographical and sectoral diversification. Also, increased import penetration, offshoring and FDI could improve productivity and export performance.

JEL Classification Numbers: E23, F10, F12, F14, F21, F30, F43, O14, O39.

Keywords: Competitiveness; export structure; product quality; services exports; outsourcing; value-added; technological intensity; restructuring; growth; technological change; industry and trade; services and trade; market concentration; market entry and exit; foreign direct investment; productivity; real effective exchange rate.

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I. COMPETITIVENESS OF THE SOUTHERN EURO AREA: A HELICOPTER TOUR[1] [2]

This collection of studies focuses on developments in the external competitiveness of five countries: France, Greece, Italy, Portugal, and Spain (hereafter five southern euro area countries or SEA-5 for short). As members of the EU and euro area, these countries share key institutional arrangements—notably their currency, exchange rate, and trade policy. Also, the challenges posed by globalization have been prominent in the debate among policymakers and observers—partly owing to conspicuous export market share losses, either across the board or in specific areas perceived as important. The studies, however, show that there is much diversity in these countries' economic trajectories. Indeed, these five economies were chosen, in part, to provide a sufficiently varied sample of experiences, contrasting two G-7 economies with countries where catch-up in the wake of EMU membership has played a crucial role—while maintaining the data volume manageable given the heavy use of disaggregated statistics in some of the studies.

Throughout these studies, we take competitiveness to mean the success of an economy in seizing the opportunities afforded by an increasingly integrated international economic environment to deliver sustained growth in living standards.[3] To achieve a given level of living standards, proxied by purchasing power, an economy can either obtain goods and services directly by domestic production or by exchanging part of that production through external transactions. Conceptually, external markets can be seen as an additional "technology" available to an economy, whereby exports (the inputs of that "technology") are transformed into imports (the outputs) at a rate given by the price of exports relative to imports, i.e., the terms of trade (TOT).[4] Thus, from the standpoint of an individual economy, the ongoing expansion in international markets' span and depth is similar to a shift in the frontier of available productive technologies.[5] Also, in practice, the economic processes

[1] Prepared by Julio Escolano.

[2] While responsibility for errors remains with the author, this introduction summarizes some of the findings in the following accompanying studies: "International Competitiveness: Looking at Direct Competitors" (H. Bennett and Z. Zarnic); "Are the SEA-5 Countries Advancing in the Search for New and Better Products?" (S. Fabrizio); "Services Exports in SEA-5: Performance and Restructuring" (E. Gutierrez); "SEA-5: Trends in Value-Added" (I. Ivaschenko); "SEA-5 Exports: Wind in the Sails from Global Growth?" (B. Lissovolik); "Are The SEA-5's Exports Moving to Markets with Less Competition?" (M. Moreno-Badia); "The Role of Imports—Structural Shifts and Economic Benefits" (W. Schule); "Outsourcing and Competitiveness in Southern Europe" (S. Tokarick); and "Role of FDI in Boosting Productivity and Exports in SEA-5 Economies" (Y. Xiao).

[3] This is similar to the approach taken by the EC's Competitiveness Report (see European Commission (2007a and 2007b)).

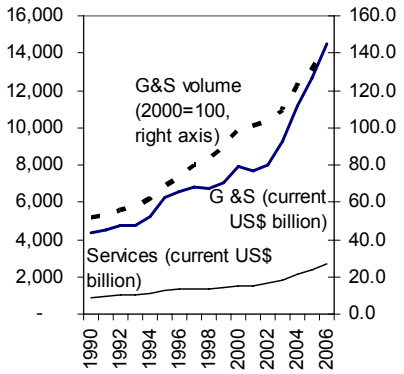
[4] See Kohli (2004) and Kehoe, et al (2007).

[5] Likewise, the expansion of FDI and international financial markets relaxes constraints on asset allocation and on the intertemporal reallocation of income and expenditure.

associated with adopting new technologies and with increasing participation in international markets are essentially the same: redeployment of resources across firms and sectors, restructuring of production and distribution chains, product innovation and quality upgrading, R&D and investment (including FDI), market development, etc. In this light, the ultimate test of competitiveness is productivity corrected for TOT effects[6]—over the long term, it closely tracks income per capita and other measures of living standards. Specifically, TOT-adjusted total factor productivity (TFP) is particularly pertinent to competitiveness as it epitomizes the efficiency of an economy in obtaining goods and services in a globalized world with its given resources.

The importance of this external sector "technology" relative to overall activity has grown rapidly as external trade increased. Over the 10 years to 2006, the volume of world trade doubled, and its value increased by 120 percent, rising from 22 to 30 percent of world GDP (Figure I.1). Like many other relatively mature economies, the SEA-5 countries have faced a large expansion of external markets (goods and services as well as financial and direct investment flows) that far exceeded the organic growth of their domestic markets—providing both opportunities for faster growth and a spur for economic change. Thus, not surprisingly, SEA-5 openness also increased during that period from 24 to 29 percent of GDP.[7]

Figure I.1. World Imports of Goods and Services



Source: IMF, *WEO*.

A. Overall Performance

The success of most SEA-5 countries in taking advantage of the expansion of international economic flows to achieve high growth has been lackluster (Table I.1). Only Greece has experienced robust per capita growth underpinned by commensurable productivity gains.[8]

[6] Real GDP, corrected for terms-of-trade effects, is computed by deflating exports with the import deflator rather than by their own deflator. Thus, TOT-adjusted GDP indicates the volume of goods and services that can be commanded by the goods and services produced by an economy (also called "command-basis GDP")—a concept arguably more relevant to the measurement of living standards in open economies than conventional GDP.

[7] Simple cross-country average of half the sum of exports plus imports in percent of GDP.

[8] The national accounts statistics referring to Greece in this and accompanying papers are based on data available before the revisions announced by the National Statistical Service of Greece on October 2007.

Spain's significant GDP per capita growth stems mainly from an upward shift in the occupation rate (which must stabilize in the medium term) rather than from productivity growth, which—despite some recent acceleration—remains low.[9] Other SEA-5 economies experienced lower real GDP per capita growth, below the U.S., U.K., or Canada, rooted in poor labor productivity and TFP growth.

Table I.1. Growth Indicators, 1996–2006
(Average annual change in percent)

	Real GDP per capita	Real GDP per capita adjusted for terms of trade	Labor productivity adjusted for terms of trade	Total factor productivity adjusted for terms of trade
France	1.8	1.9	1.3	0.9
Greece	3.6	3.7	3.0	2.2
Italy	1.1	1.0	0.1	0.1
Portugal	1.4	1.2	0.9	0.0
Spain	2.6	2.8	0.2	0.1
euro area	1.7	1.5	0.6	0.4
Germany	1.3	1.0	0.8	0.7
United Kingdom	2.3	2.6	2.1	1.5
United States	2.2	2.2	1.9	1.3
Canada	2.5	3.1	1.9	1.8

Sources: AMECO; OECD; and IMF staff estimates.

Aggregate competitiveness indicators point to substantial export market share losses in some SEA-5 countries (France, Italy, and Portugal) compared to peer economies. In contrast, Greece and, to a lesser extent, Spain performed relatively well (Tables I.2 and I.3). Over the past 10–15 years, the entry of new global markets participants resulted in a substantial reduction in the export market shares of advanced economies, notably in the markets for goods (Table I.4).[10] Thus, during 1996–2006, the OECD's export share in goods and services world trade declined by about 11 percent (13 percent in goods and 1 percent in services)—the euro area experienced similar market share losses. In this context, France and Italy had lower exportgrowth and sustained substantially larger market share losses, in both goods and services, than the OECD or euro area. More detailed analysis in subsequent chapters indicates that these share losses were fairly generalized across manufacturing branches, tourism, and travel, and in the case of France, also business services. Portugal sustained significant losses in manufactures (notably textiles and apparel) only partly mitigated by gains in services. In contrast, Spain was less specialized in the highly contested sectors of

Table I.2. Selected Competitiveness-Related Indicators, 1996–2006

	World export market share 1/			Export growth 2/			Terms of trade
	G & S	Goods	Services	G & S	Goods	Services	(G & S) 3/
France	-25.0	-23.3	-30.5	5.1	5.5	3.5	1.8
Greece	3.4	-36.0	68.0	8.5	3.7	13.0	3.8
Italy	-26.4	-25.0	-31.1	4.9	5.3	3.4	-3.0
Portugal	-14.3	-21.6	13.1	6.5	5.8	8.7	-5.1
Spain	-0.4	-6.0	17.5	8.1	7.7	9.1	4.5
OECD	-11.1	-13.4	-0.8	6.9	6.8	7.2	-1.7
Industrial economies	-13.8	-16.8	-0.6	6.6	6.4	7.3	-2.6
euro area	-10.7	-12.8	-1.2	7.0	6.9	7.2	-3.0
Germany	-1.4	-2.7	2.8	8.0	8.1	7.6	-6.2
United Kingdom	-11.9	-22.9	25.1	6.8	5.6	9.8	7.9
United States	-22.7	-25.3	-13.0	5.4	5.3	5.8	-1.1
Canada	-10.5	-12.6	-0.1	7.0	6.9	7.3	13.6
Japan	-28.7	-31.3	-14.6	4.6	4.4	5.6	-17.0
World imports	...	...	...	8.2	8.4	7.3	...

Sources: IMF, *WEO*; OECD; and AMECO.
1/ Change in percent of initial value. Nominal exports as percent of world imports.
2/ Annual percentage change of nominal value in U.S. dollars.
3/ Exports' deflator relative to that of imports. Change in percent of initial value.

[9] See Escolano (2006).

[10] Export growth and export market shares are widely used, including here, as a measure of success in external markets (ECB, 2005). These indicators, however, have limitations in the presence of regional trade expansion and changing trade patterns (see Bennett, 2008).

textiles, clothes, and apparel, and sustained relatively lower losses in manufactures (which were concentrated in the key car sector) while substantially increasing its share in services. During the 1990s, Greece drastically shifted its export structure away from textile and clothing sectors, in which it sustained significant share losses, and towards transport and tourism—resulting in a remarkable 68 percent market share increase in services. Later, during the recent global economic upswing after 2001, Greece was able to increase its market share of both goods and services (Table I.3).[11]

Table I.3. Selected Competitiveness-Releted Indicators: The Last Global Economic Upswing
(2001–06)

	World Export market share 1/			Export growth 2/			Terms of trade
	G & S	Goods	Services	G & S	Goods	Services	(G & S) 3/
France	-15.4	-14.8	-17.0	9.9	10.5	7.5	2.0
Greece	-1.7	1.6	4.1	13.2	14.4	12.5	4.1
Italy	-9.5	-11.9	1.5	11.3	11.2	12.0	2.5
Portugal	-4.2	-7.7	9.1	12.6	12.2	13.6	-3.2
Spain	-1.5	-4.6	9.8	13.2	13.0	13.7	4.2
OECD	-7.7	-9.5	0.2	11.8	11.8	11.7	0.0
Industrial economies	-8.6	-10.7	0.5	11.5	11.5	11.7	-0.9
euro area	-3.5	-5.2	4.3	12.8	12.8	12.5	-0.7
Germany	5.7	3.9	13.3	14.9	14.9	14.4	-1.3
United Kingdom	-8.5	-14.2	9.5	11.6	10.6	13.7	3.3
United States	-23.9	-26.2	-14.7	7.5	7.3	8.1	-4.6
Canada	-21.4	-23.4	-11.8	8.2	8.1	8.9	14.7
Japan	-13.4	-16.8	5.1	10.3	9.9	12.7	-8.8
World imports	...	...	...	13.6	14.1	11.6	...

Sources: IMF, *WEO*; OECD; and AMECO.
1/ Change in percent of initial value. Nominal exports as percent of world imports.
2/ Annual percentage change of nominal value in U.S. dollars.
3/ Exports' deflator relative to that of imports. Change in percent of initial value.

Table I.4. Change in Export Market Shares
(Goods), 1996–2006
(Percent of initial 1996 share, shares in current prices)

	Imports		
	World	Industrial-country	EU-country
France	-23.5	-23.2	-21.2
Greece	-15.3	-14.9	-23.2
Italy	-23.0	-20.7	-21.1
Portugal	-20.8	-24.3	-20.5
Spain	-5.2	-4.3	-1.7
Industrial countries	-18.6	-10.8	-14.4
Belgium/Luxembourg	0.9	9.7	9.4
Germany	-3.7	1.7	-3.2
Netherlands	6.8	13.1	12.6
United Kingdom	-29.7	-26.4	-24.2
United States	-33.9	-35.2	-34.2
Canada	-18.9	-23.0	-12.7
Japan	-32.4	-42.1	-38.8
Asia excluding Japan	31.6	33.6	24.7

Source: IMF, Direction of Trade Statistics.

Note: Differences in methodology and compilation systems result in discrepancies with national accounts-based data shown in other tables, e.g., Tables I.2 and I.3.

B. Exports of Goods

Goods export share losses appear associated with less SEA-5's flexibility relative to peers in the face of changing global trade patterns. With the exception of France, SEA-5 countries started off with an adverse manufacturing export specialization—subsequent performance in the different dimensions (sectoral, geographical, technological), analyzed in the accompanying studies, varies across countries. But overall, SEA-5 economies have been slower than relevant comparator groups (e.g., EU, OECD, or key trade partners) in redirecting activity and exports to fast-growing markets.[12] Specifically, the export shares of

[11] During this later period, however, Greece experienced a small loss of share in the combined goods and services export market. This apparently paradoxical result is due to the high weight of Greece's exports of services relative to goods—while the latter make up most of world exports and were the fastest growing sector.

[12] Rae and Sollie (2007) reach similar conclusions using a different methodology than the one employed in Chapter II by Lissovolik. Based on an analysis of revealed comparative advantage, it also documents the increased competition from emerging economies faced by southern European countries, particularly by Italy, Greece, and Portugal; and the weak (sometimes negative) correlation between SEA-5 exports and high-growth markets.

France, Italy, and Portugal declined particularly in some of their largest and world's fastest-growing export sectors, in contrast to Germany or Spain (Figure I.2). Regarding the geography of export markets, Spain, Portugal and France have been slower than the EU or OECD in redirecting their exports towards emerging Asia and eastern Europe. Overall, SEA-5 countries have a lower geographical diversification than Germany or the world average—particularly Portugal and Spain, whose exports remain concentrated in the EU-12. Other aspects, such as offshoring and inward FDI, which evidence suggests tend to support competitiveness, also lagged in the SEA-5.

SEA-5 countries faced high competition pressure in their goods export markets, which has generally increased—although often it increased less than for peer economies. Disaggregated product-level data[13] show that exporters from SEA-5 countries operate in markets with more intense competition levels (measured by the reciprocal of the degree of concentration) than the world average or Germany—particularly Portugal, Greece, and Italy, partly reflecting the weight of textile, apparel, leather, and related exports. Moreover, the effective[14] level of competition faced by SEA-5 exporters, except Greece, has risen during 1995–2005. This trend was shared by peer economies (Germany, U.K.) and by the world average. However, the increase in the level of competition faced by Spain and Portugal (and for Italy in the first half of the period) has been less pronounced than for the world average, Germany, or the U.K. Greece even reduced the overall level of competition it faced, partly owing to growing presence in southeast Europe markets. The increase in competition has been mainly driven by nonmanufacturing and low-tech manufacturing goods, while higher technology exports tended to palliate the increase in overall competition faced.

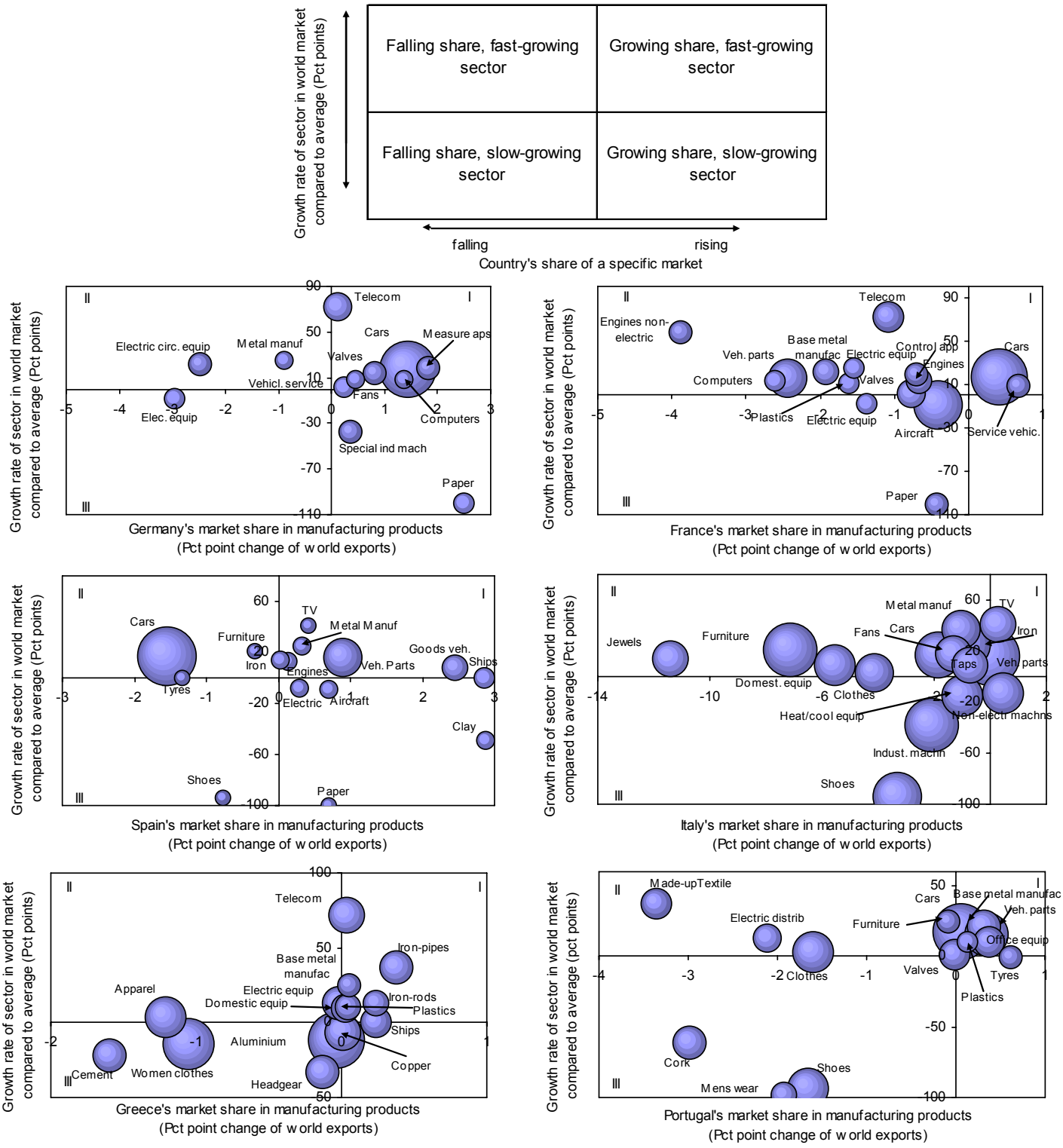
Analyses of SEA-5's nonprice competitiveness dynamics—such as gaining "niche" markets and enhancing product quality—indicate some success (particularly in the case of Italy) and highlight the importance of flexible redirection of resources within and across exports. The analysis of export unit values by product relative to other world market participants indicates that most SEA-5 countries have been able to moderately increase the quality of their exports but not relative to the EU-15. The maintained hypothesis here is that a sustained increase in relative export unit values[15] reflects upward shifts along a product's quality ladder,

[13] Goods, by product and destination country based on six-digit COMTRADE export data.

[14] Weighted by the value of exports to each market.

[15] Measured in each market as the export unit value relative to competitors, and aggregated according to the value of exports to that market.

Figure I.2. Manufacturing Exports in SEA-5 and Germany: 1995–2005 1/
(Size of bubbles proportional to share in total goods exports of each country, largest 15 SITC-3 sectors for each country)

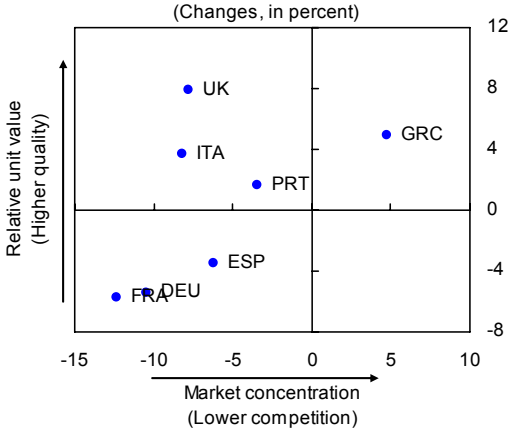


Source: UN Comtrade database; and Chapter II by Lissovolik.

1/ Excluding food and chemicals.

specialization, technological intensity, or other gains in market power.[16] A detailed market breakdown by product and country of destination—thus more specifically identifying actual direct competitors—points to a correlation between increased competition and declines in export unit values relative to competitors (Figure I.3) . Thus, Greece experienced both a decline in competition and an increase in relative export unit values and, at the opposite extreme, the converse is true for France and Germany. As it can be expected, increased competition tended to drive down prices. However, Italy substantially increased export unit values despite an equally substantial increase in the level of competition it faced; and to a lesser extent, the same applies to Portugal, pointing to successful nonprice competitive strategies. Generally among SEA-5 countries, the larger contribution to increased competition was the evolution in their traditional export markets. Entry and exit, and export reallocation across markets mitigated this effect in some cases. Regarding quality upgrading, the contribution of entry and exit was positive in all countries except Italy, indicating net entry in markets where exporters could charge a higher price than incumbent competitors. Greece, Portugal, and particularly Italy increased also the quality of exports to their traditional markets.

Figure I.3. Market Concentration and Relative Unit Values, 1995 and 2004
(Changes, in percent)



Sources: UN, COMTRADE; IMF staff calculations; and Chapter V by Moreno-Badia.

During 1994–2005, SEA-5 countries (except Spain) upgraded the technology composition of their exports and overall output. The technology content and diversification of exports (and overall manufacturing output) in Greece and Portugal increased rapidly. This was related to the catch-up process following EU and subsequently EMU memberships. The technology and diversification indices for Spain, however, did not materially change, which appears linked to weak investment in manufacturing for most of the period. Changes in France and Italy paralleled the evolution of the EU-12.

[16] Alternatively, an increase in relative unit values could also reflect losses in competitiveness and indicate that the country is in the process of being priced out of the market. Which hypothesis obtains is ultimately a factual matter. The interpretation of relative export unit values as indicating product quality is supported by the finding that higher export relative unit values are associated with market share gains (see Chapter IV by Fabrizio)—with this quality effect being even more significant than price competitiveness measured by the real effective exchange rate. The association between unit values and quality is also a common premise of recent trade literature (see Hallak and Schott, 2005).

C. Exports of Services

Services exports strongly enhanced the competitiveness of Greece, Spain, and Portugal with substantial gains in export revenue, market share, and TOT—in contrast to Italy and France, which performed poorly in this area. Sustained TOT gains (Table I.2) were often made possible by the idiosyncratic features of services markets. First, demand for travel and tourism (key for SEA-5 countries), and other services exhibits high income elasticity as reflected in the services' increasing share of spending in OECD countries (the main destination of SEA-5 services exports). And second, on the supply side, productivity growth was lower in services than in manufacturing and competition from low-cost competitors more limited. Greece, in addition, expanded its exports of maritime and other transport services by an impressive 76 percent in a market boosted by booming world trade.

Some high-growth, high value-added services exports have expanded rapidly in Greece, Italy, Portugal, and Spain—pointing to prospective productivity gains (Figure I.4). Service sectors with the highest growth and productivity include transport, insurance and financial activities, computer and communication services, and other business services. Increasing output and exports of many of these services would support productivity growth directly—as they typically have high productivity levels—and indirectly, as their output, particularly ICT and business services, increases efficiency in the production of other goods and services (including through outsourcing and offshoring). From the standpoint of export levels, SEA-5 countries are relatively underspecialized (except Greece) in the export of these high value-added services. This category of services exports, however, is showing strong dynamism in most SEA-5 countries, with the exception of France. The export growth of Greece in this area has been limited mainly to transport while in the case of Spain, it shows recently a broader base and rapid market share gains. Italy has gained share in other business services and communications. Performance in this group of high value-added services exports has been poor in France (except in communications).

D. Other Aspects of Competitiveness

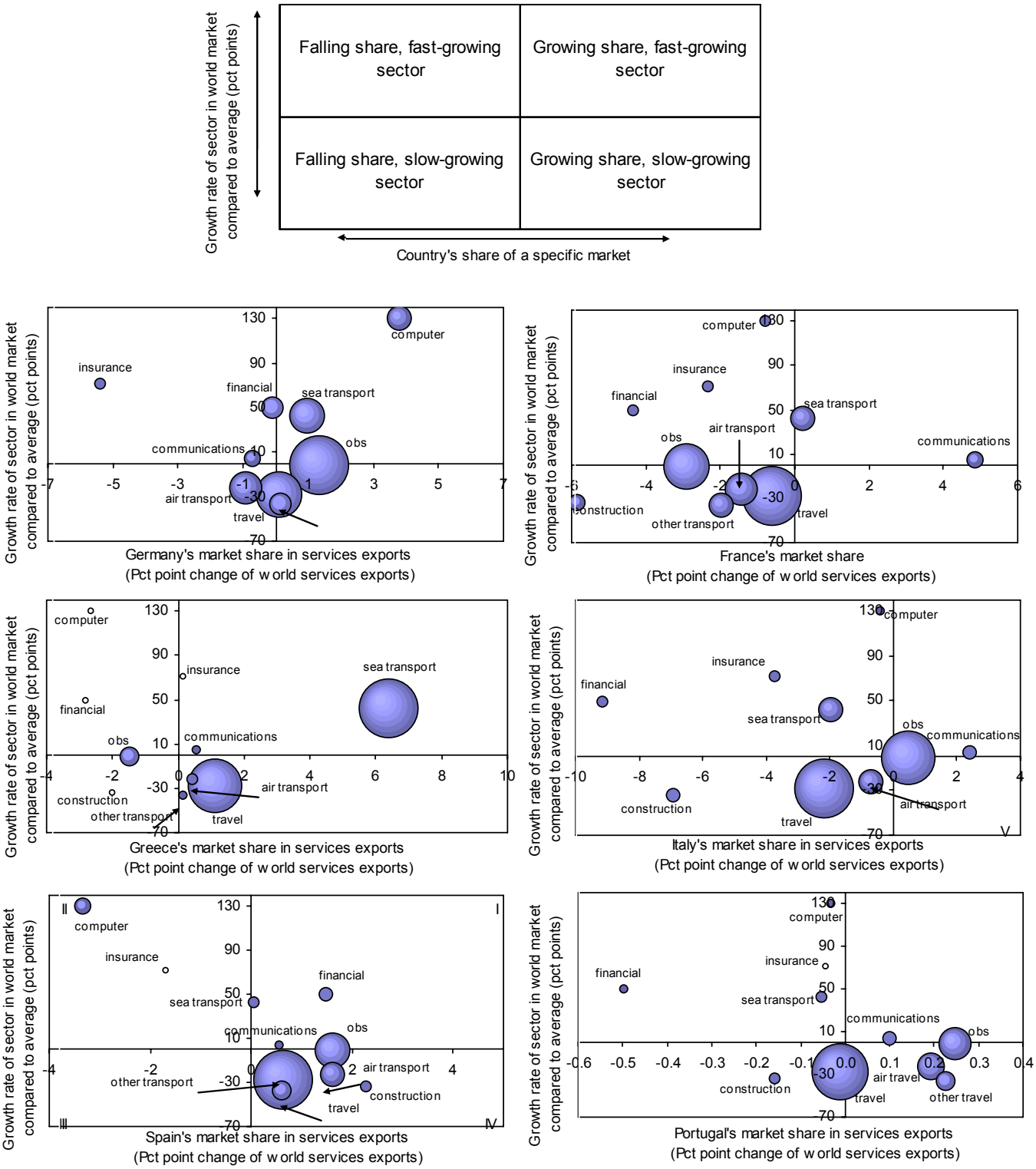
Price competitiveness appears to play a minor role (at least in the short term) on imports. Analyses of competitiveness typically assign a secondary role to imports; they are seen as determined mainly by the evolution of domestic demand. The statistical evidence for SEA-5 countries supports this view with a role for price competitiveness (as measured by real effective exchange rate) significantly lower than for domestic demand.

Imports, however, are relevant to an economy's competitiveness since they can reduce costs and increase production efficiency. They allow firms to focus on segments of the production chain for which they have a comparative advantage, while offshoring other segments or purchasing inputs in international markets. There may also be technology and know-how spillovers. Indeed, there is evidence of a positive correlation between sectoral import penetration and productivity growth in each of the SEA-5 countries. These effects are likely

to be strongest for intra-industry trade, which accounts for about 50 to 80 percent of all manufacturing imports in SEA-5 countries (except in Greece where it is below 30 percent). Intra-industry imports have increased significantly (as a percent of goods imports) in Spain where they have reached levels similar to those of Germany. In contrast, French intra-industry imports fell sharply after peaking at the end of the 1990s. Imports have also become more technology intensive across SEA-5 countries. Regarding specifically offshoring activity, the evidence points to a positive relationship with productivity and more depreciated real exchange rates, although sometimes with weak statistical significance. This activity, however, remains low in SEA-5 countries.

Inflows of FDI appear to have played only a minor role in fostering SEA-5 countries' competitiveness. FDI inflows to Greece and Italy were among the lowest in the OECD, while those to France, Portugal, and Spain were only about the OECD average. Moreover, FDI to Portugal and Spain was inversely correlated with the increase in world demand for those sectors. A large share of FDI targeted services sectors, where its distribution was largely uncorrelated with sectoral productivity. Only in the case of France, FDI into services was increasingly directed toward high productivity sectors.

Figure I.4. Services Exports in SEA-5 and Germany, 1996–2005
(Size of bubbles proportional to share it total services exports of each country)



Sources: IMF, BOP statistics; Eurostat; and Chapter VI by Gutierrez.
* Data for Greece for 1996–2004.

References

Bennett, H., 2008, "Export Market Shares," IMF Working Paper, forthcoming.

ECB, 2005, "Competitiveness and Export Performance of the Euro Area," Occasional Paper No. 30.

Escolano, J., 2006, *Spain's Productivity: A Cross-Country Perspective,* IMF Country Report No. 06/213.

European Commission, 2007a, *Communication from the Commission, Raising Productivity Growth: Key Messages from the European Competitiveness Report 2007*, COM 666.

———, 2007b, *Accompanying document to the Communication from the Commission, Raising Productivity Growth: Key Messages from the European Competitiveness Report 2007*, Commission Staff Working Document SEC 1444.

Hallak, J.C., and P.K. Schott, 2005, "Estimating Cross-Country Differences in Product Quality," Working Paper.

Kehoe, T. J., and K. J. Ruhl, 2007, *Are Shocks to the Terms of Trade Shocks to productivity?* Staff Report 391 (Federal Reserve Bank of Minneapolis, Research Department).

Kohli, U., 2004, "Real GDP, Real Domestic Income, and Terms of Trade Changes," Journal of International Economics No. 62, pp. 83–106.

Rae, D., and M. Sollie, 2007, "Globalisation and the European Union: Which Countries are Best Placed to Cope?" OECD Economics Department Working Paper, ECO/WKP(2007)46.

II. SEA-5 EXPORTS: WIND IN THE SAILS FROM GLOBAL GROWTH?[1]

A. Introduction

Exporting to fast-growing markets and sectors, especially in the current period of strong and varied world growth, is considered important for economic performance. For example, Arora and Vamvakidis (2004) showed that, controlling for convergence and other standard determinants, dynamic trading partners may substantially contribute to growth, with industrial countries particularly benefiting from trade with fast-growing developing countries. Recent literature also emphasizes the growth impact of export specialization (Plümper and Graff, 2001) compared to the more agnostic "traditional" view. And surging global export competition underscores the classic case for flexibility in reallocating to new, more promising, activities.[2]

The "high-growth" exports may also help external competitiveness, beyond their impact through standard aggregate measures. To be sure, past export gains in fast-growing markets/sectors are already part of overall export and balance of payments indicators. But many high-growing markets have been consistent high-performers and may be expected to stay so in the future, promising additional longer-term benefits to success there. Moreover, "adaptability" of exports may by itself be a factor in a better performance, even if growth patterns shift in the future. Thus, Fabrizio, et al (2007) find that partner growth favored the expansion of emerging economies' export shares, while Danninger and Joutz (2007) rank it higher than cost competitiveness in the export success of Germany.

This section suggests that the southern euro area (SEA-5) countries have so far taken comparatively little advantage of these channels to enhance competitiveness. Located mainly amid slow growers, these economies stand to benefit from diversifying their traditional (neighboring) export destinations toward more dynamic markets. Globalization is facilitating and prodding this process—through reducing transport costs and putting competitive pressure on traditional geographical or sectoral patterns. But while there is anecdotal evidence that the SEA-5 countries had some success in promoting their products or tailoring them to dynamic destinations, the magnitude and other characteristics of these trends often lag those of key industrialized comparators.

The paper investigates the SEA-5's geographical and sectoral export performance in "stock" (structure) and "flow" (reorientation) terms. The research is structured as follows. First,

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[1] Prepared by Bogdan Lissovolik.

[2] There may also be disadvantages to an export structure that is geared to high-growth destinations and sectors, for example due to a possibility of high volatility of this growth or of a less "sophisticated" quality of demand from the dynamic-but-not-yet advanced countries. However, there is no evidence yet that these disadvantages could be substantial enough to outweigh the advantages.

stylized facts of geographical export performance are analyzed, highlighting the role of fast-growing countries in the structure of SEA-5's trade and of changes in this structure. Several simple indicators (elaborated in Appendix II.A) permit relevant cross-country comparisons. Second, sectoral specialization and reorientation—from the point of view of fast-growing activities—are explored through an analysis of manufacturing market shares. The research is mostly focused on nominal export measures, to account for the view that measured real exports may misrepresent "true" performance.[3] Only trade in goods is considered; trade in services is analyzed separately as part of this project. With respect to the timeframe of the study, the main focus is on the decade of 1995–2005. The data for 2006–07 have generally not been used, partly reflecting incomplete and provisional nature of the information in key foreign trade databases (i.e., Comtrade) at the time of the preparation of this study.

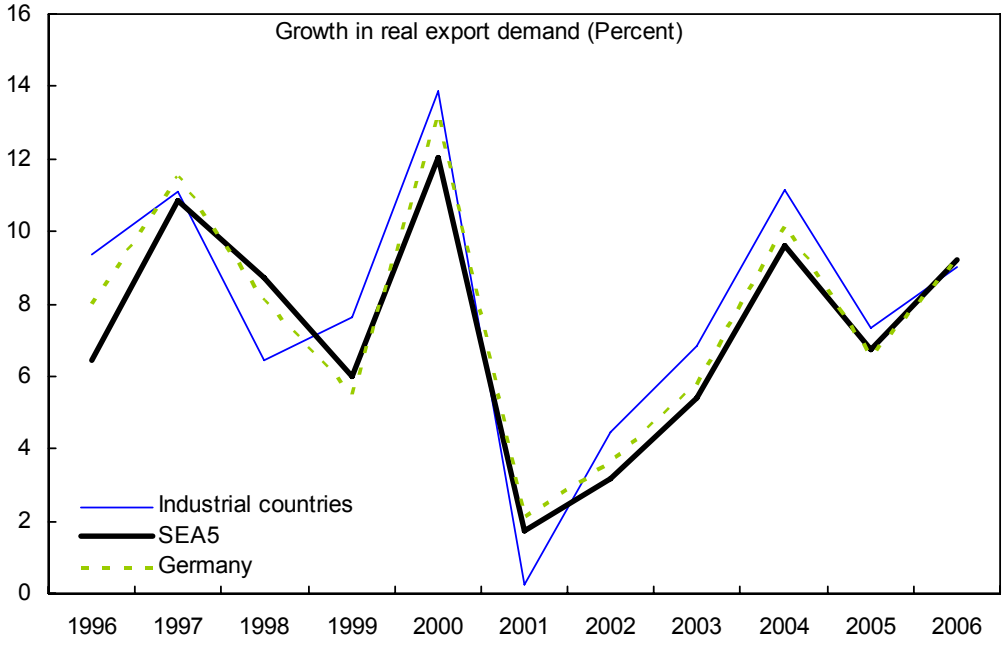
B. Are SEA-5's Exports Benefiting from Higher Partner Growth?

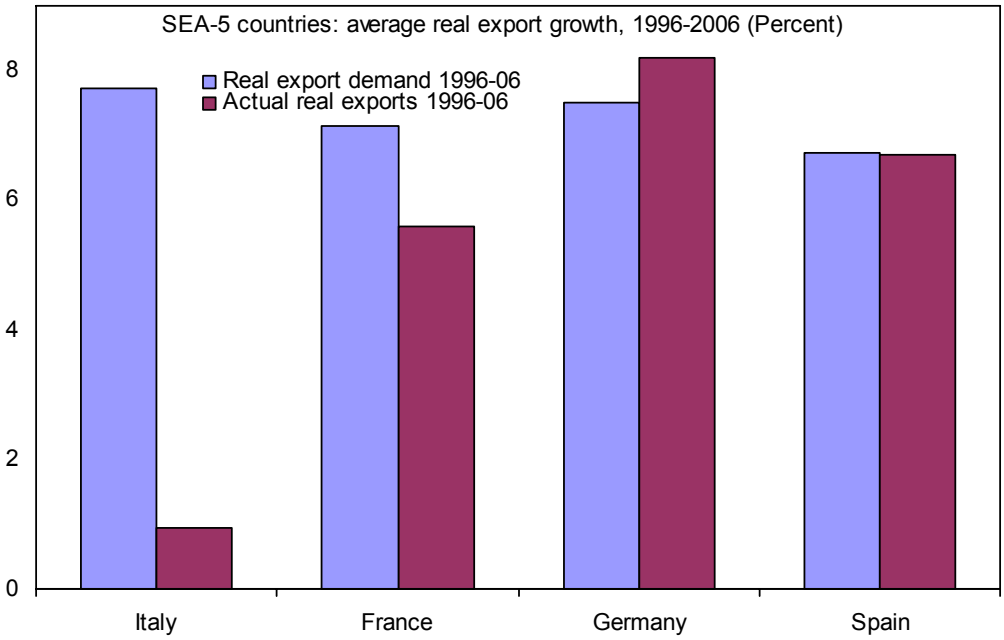
Total real export demand growth has been slightly lower for SEA-5 than for its key comparators. According to an index of trade-share weighted real import growth of trading partners (Figure II.1), SEA-5 countries have on average faced weaker export demand compared to that for industrialized countries or euro area (as a whole). While this measure is comprehensive (covers all countries), the effect of fast-growing markets cannot be disentangled from cyclical conditions or special factors in a country's economy or location, as exports are usually inversely dependent on distance between countries (as per the standard "gravity" model of trade). For example, SEA-5's negative export demand growth differential was volatile and tended to reverse during spells of EU's cyclical strength, notably in 2006. Among individual SEA-5 countries, Spain faced the lowest export demand growth, since some of its neighboring trading partners were particularly sluggish. But the relatively robust real growth in Spain (compared to other countries in the region) tended to be a comparatively positive influence on export demand for its SEA-5 trading partners. At the same time, data on actual real export growth suggest that capacity to get traction from the growth of partners varied markedly, with Spain benefiting the most and Italy the least.

A more detailed, albeit somewhat selective, approach involves an analysis of trade flows with a subset of dynamic economies, which are mostly emerging markets. Several definitions of such economies have been used (see Appendix II.A for details), with the key criterion being real medium-term GDP growth of at least 4 percent. These markets represent roughly 10–25 percent of world imports. (In what follows, the broader sample's results will be reported, since the key conclusions remain intact). Interestingly, not all of the 43 countries in the sample increased their share of world imports, and just nine large Asian and European countries fully explain the 4 percentage point increase in the sample's weight in world imports over 2000–05, with China alone accounting for 45 percent of this increase.

[3] For example, measured export deflators may well understate quality upgrading (important in at least some SEA-5 countries), while the use of unit value indices as proxies is a source of biases (see Silver, 2007).

Figure II.1. SEA-5 and Key Comparators, Export Indicators, 1996–2006

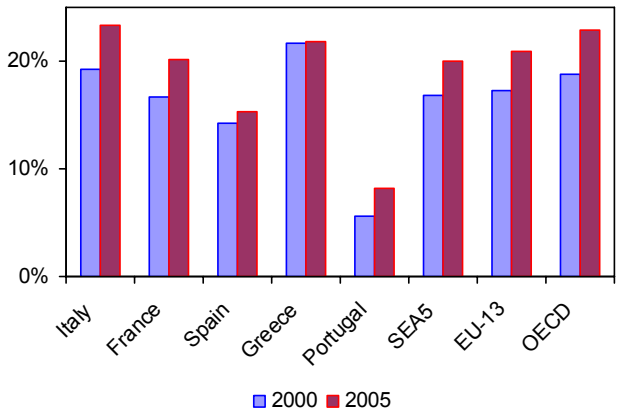




Source: IMF, WEO database.

The SEA-5 exports relatively little to these dynamic countries. On aggregate, SEA-5's exports to fast growers as a share of own exports have been somewhat lower than for key comparators—EU and the OECD (Figure II.2). More specifically, as reflected in the indicator of "underexporting" (Table II.1), compared to EU-13 (minus Luxembourg and Ireland, which are fast-growers), the SEA-5 exported relatively less to new member states (as expected, gravity-wise) and to large emerging markets in Asia (cannot by and large be explained by gravity because the EU comparators are equidistant from Asian countries). The conclusions are similar in comparison to Germany or OECD, against which SEA-5's performance with Asia looks particularly weak. SEA-5 trades relatively more with some dynamic economies of North Africa and Latin America, but this offsets only a fraction of its underperformance in other markets.

Figure II.2. Exports to 43 Dynamic Economies, 2000–05
(Percent of own exports)



Source: UN Comtrade database.

Table II.1. SEA-5 Relative Underexporting Ranking, 2005 (Ratios)
(Higher value of the ratio means less exports compared to the reference group) 1/

Relative to EU-13		Relative to Germany		Relative to OECD	
Estonia	2.67	Czech Rep.	3.14	Philippines	4.11
Ireland	2.34	Slovakia	2.54	Indonesia	2.97
Latvia	1.83	Estonia	2.14	R. of Korea	2.95
Czech Rep.	1.68	Latvia	2.03	China	2.86
Luxembourg	1.67	Poland	2.00	Malaysia	2.48
Lithuania	1.50	Lithuania	1.92	Viet Nam	2.44
India	1.49	China	1.89	Thailand	2.32
Slovakia	1.42	Ukraine	1.87	Colombia	1.87
South Africa	1.35	South Africa	1.84	Singapore	1.77
Russia	1.32	Luxembourg	1.79	Estonia	1.72
Ukraine	1.27	Russian	1.71	Ireland	1.61
Poland	1.25	Malaysia	1.60	India	1.56
China	1.21	Rep. of Korea	1.57	Venezuela	1.38
Rep. of Korea	1.20	Philippines	1.50	Latvia	1.34
Philippines	1.19	Kuwait	1.35	Slovakia	1.34
Average for all 43 fast growers	1.09		1.18		1.30

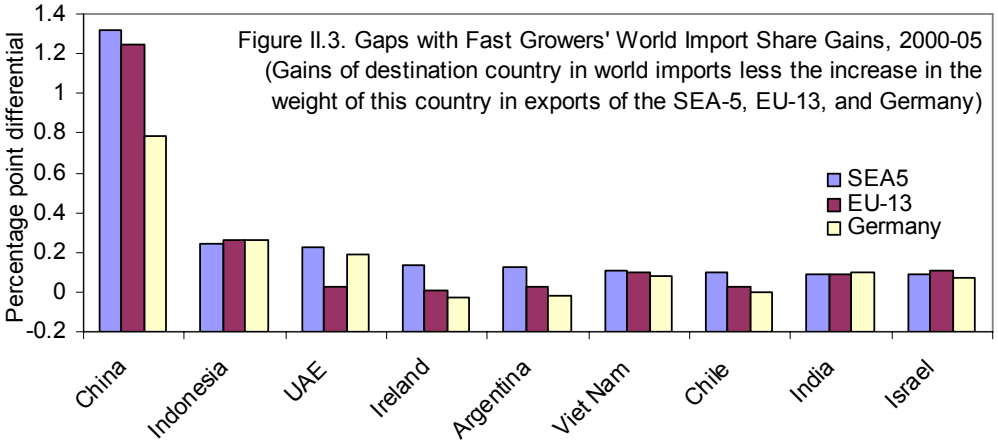
Source: UN Comtrade database.

1/ The indicator of SEA-5's "underexporting" denotes the ratio of market shares of a comparator group (EU-13) to SEA-5's market shares in a country's imports; for comparability these shares are adjusted for shares in total world imports (see formal definition in the appendix).

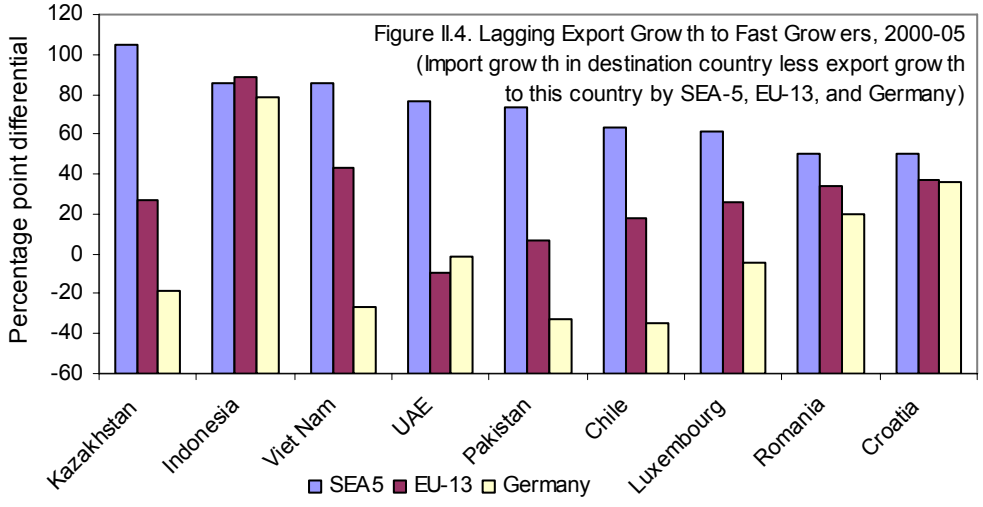
Among individual SEA-5 countries, Portugal, and to a lesser extent Spain, tended to export relatively less to "dynamic" countries. Other countries have done somewhat better but not exceptionally well: France's performance is close to the SEA-5 average and Italy's and Greece's above that average but in line with the OECD as a group.

Reorientation of SEA-5 exports toward high-growing economies has also lagged. While in absolute terms the SEA-5 has been shifting its exports toward fast growers—as reflected in the accelerated growth of its exports to these destinations relative to the rest of the world—in "adjusted" or comparative terms, its performance has been less impressive:

- **SEA-5 tends to underperform in emerging market countries that had the largest import market share gains.** Figure II.3 provides a ranking of the fast growers whose gains in world import share over the last five years have been the largest *relative* to the SEA-5's gains in these markets. Among specific destinations, China is a clear outlier; all advanced countries failed to "catch up," but the SEA-5 lagged there more than EU-13 or Germany. SEA-5's comparative underperformance is also perceptible in such markets as Ireland, Argentina, and Chile. In other Asian countries, it has roughly matched EU-13's and Germany's lack of catch-up.



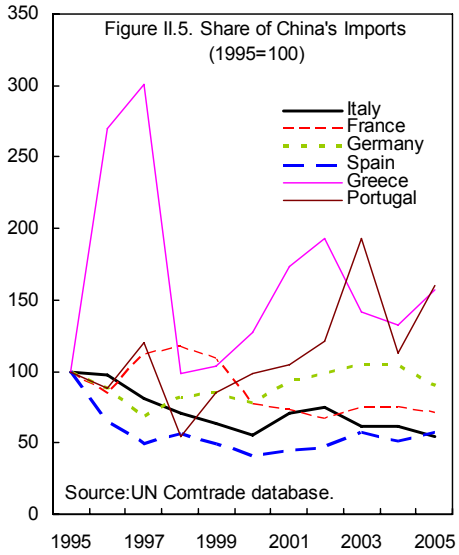
Source: UN Comtrade database.
Note: E.g., Share of China in world imports rose by 1.3 pp more than China's share in SEA-5 countries' exports.



Source: UN Comtrade database.
Note: E.g., Kazakhstan's total cumulative import growth exceeded SEA-5 countries' export growth to Kazakhstan by more than 100 percentage points.

- **SEA-5 countries also fail to take advantage of highly "dynamic" markets, regardless of their size.** Figure II.4 shows another indicator of trade reorientation, the cumulative difference in import growth of fast-growers and SEA-5's (as well as comparators') export growth. On average for the 43 dynamic economies, this difference is large and positive with the SEA-5 (16 percentage points), but negative for Germany and small for EU-13. While the SEA-5's performance is comparatively poor vis-à-vis all dynamic economies, the gap is particularly large with respect to some Asian countries (Kazakhstan, Vietnam, and Pakistan), as well as with Europe and Latin America.

The reorientation experience of individual SEA-5 countries has been mixed, and also differs by destination markets. China is clearly the most significant such market in terms of the increase of its world import share. Smaller countries (Portugal and Greece) had some gains in market shares there (Figure II.5), but from extremely low levels, which is underscored by the high volatility of their export growth to China (the levels are not shown in the figure). Large SEA-5 countries however have been steadily losing market shares in most important markets, including China, and these losses were larger than in Germany.

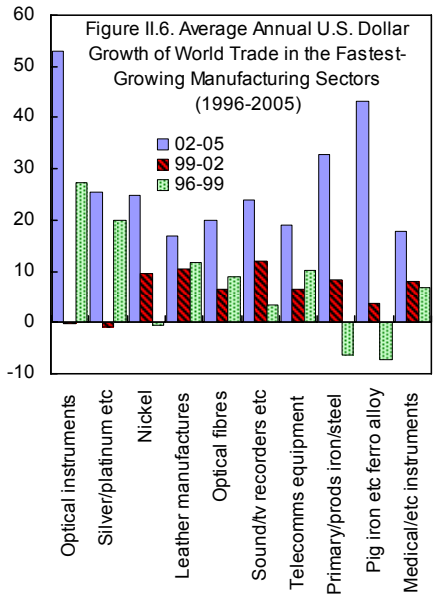


C. Are SEA-5's Exports Poised to Gain from Global Sectoral Export Trends?

It has been argued that SEA-5's specialization in traditional products may be largely undesirable. In particular, Faini and Sapir (2006) suggested that Italy's persistent, and at times increasing, specialization in traditional, more contested, and slower-growing sectors may be a drag on economic growth. On the other hand, it has been countered that such traditional sectors (i.e., textiles, clothing, leather, etc.) may well exhibit higher growth in unit values, including in luxury niches. This may offset at least some of the adverse effect on volumes from more intense competition (see Italian Ministry of Economy and Finance, 2007).

One way to approach this argument is by checking if the SEA-5 is specialized in "high-nominal-growth" activities. However, precisely defining the latter is difficult, as high growth is not always sustained. Judging by export growth in manufactured goods sectors, as indicated in Figure II.6, over the last decade the highest growth (in value terms) has been

observed in a number of high-tech-cum-auto sectors and some metals.[4] While export growth in metals was volatile as indicated by three-year periods that in high-technology and autos exhibited more stability and provided a significant contribution to total world trade growth. To minimize the impact of such volatility, a 10-year horizon is mostly considered, but shorter horizons have been tested as robustness checks.



Source: UN Comtrade database.

Based on past trends, SEA-5's manufacturing specialization appears to have been moderately adverse for subsequent (nominal) export growth. The negative result is quite strong for Italy, less so for other countries, while France's specialization appears to be marginally "beneficial." The SEA-5 countries are specialized in several large sectors that enjoyed high global growth over the past decade—motor vehicles/parts, telecom, and electrical equipment (Figure II.7).[5] But correlations for all manufactured goods sectors (Table II.2) suggest that Italy, and to a lesser extent Spain, Portugal, and Greece, had a sectoral specialization that was inversely related to subsequent nominal growth in "global" trade in these sectors. By contrast, in France (and also in Germany and the U.S.) specialization was (marginally) positively associated with ex-post growth in this trade. To check the robustness of this inverse relation to the possibility that the overall negative relationship is driven by small sectors, estimates were weighted by the share of each sector in country exports, leaving the results essentially unchanged.

Table II.2. Sectoral Specialization and Subsequent Growth 1/
(1995–2005, SITC manufacturing sectors)

	OLS t-ratios			WLS t-ratios 2/
	2-digit	3-digit	4-digit	3-digit
Italy 3/	-2.05*	-2.81**	-3.33*	-3.05**
France	1.04	0.13	1.70	0.06
Spain	-0.40	-2.16*	-1.01	-0.80
Portugal	-1.49	-1.28	n/a	-1.57
Greece	-0.92	-2.21*	n/a	-0.62
Germany	1.17	0.05	0.47	-0.93

Source: UN Comtrade database.

Note: ** (*) denote significance at 1 (5) percent level.

1/ Least squares between: (i) Balassa's RCA index in 1995, defined as country's world share of exports in a sector divided by its share of total world exports; and (ii) world trade growth in 1995–2005 in a sector in value terms. Coefficients and constants are not reported, given no clear hypothesis of causality.

2/ Weights are given by shares of the given sector in national exports.

3/ E.g., sectors in which Italy was specialized clearly tended to grow more slowly than other sectors (as the relationship is negative and statistically significant).

The SEA-5 countries are also lagging in reorientation toward fast-growing activities, as reflected in the loss of export shares in these sectors. As expected, SEA-5's own export structure has been shifting toward high-growth sectors (the

[4] The definition of fast-growing "sectors" may be sensitive to coverage and the level of disaggregation. The analysis is confined to "manufactured goods" exports (excluding food and chemicals sectors) given their core role in these countries. The conclusions are mostly reported based on a SITC three-digit classification, but the two- and four-digit classifications were also checked.

[5] The charts however, present somewhat limited information as they show only 15 out of 133 sectors, and this information gap is especially important for Italy, whose manufacturing export structure is very balanced.

sectoral correlations between the change as percent of own exports and the sector's growth are positive for all SEA-5 countries). But the SEA-5 countries—particularly France, Italy, and Portugal—have seen their shares of world exports decline particularly in some of their largest export sectors that had high (global) growth, in marked contrast to Germany and Spain (Figure II.7). The negative relationship is also suggested by a simple regression gauging the determinants of market shares, which shows that for the large SEA-5 countries a higher global growth in the sector had a negative effect on their export shares in the same sector (Table II.3). The result is robust to several controls, such as initial export shares or effects of competition from emerging markets.

Table II.3. Determinants of Market Shares in Manufacturing in Large 1/ SEA-5 Countries and Germany

Panel regressions sector-fixed effects: 1996–99; 1999–2002; 2002–05
Regressand: percentage change in country's value shares of world exports in sector SITC-3, 399 observations

	Italy	Germany	Spain	France
World export growth in sector	-0.36	-0.24	-0.92	-0.80
t-value	-2.75	-4.80	-1.84	-1.66
Level of country's initial sectoral market share	-6.46	-5.49	-50.94	-7.88
t-value	-3.77	-5.87	-2.95	-1.93
Increase in China's share of world exports in sector	-3.24	0.71	4.33	3.55
t-value	-2.38	1.70	1.17	0.96
R^2	0.27	0.33	0.09	0.05

Source: UN Comtrade database.

Note: Underlined variables are significant at the 5 percent level; all regressions include a constant (not reported).

1/ Regression results for Greece and Portugal were more erratic, likely because these small countries have too many special factors at the SITC-3 digit level in structure of the manufacturing exports.

SEA-5's lack of reorientation toward growing sectors may in part reflect expanding shares of emerging markets. Germany—despite its recent broad export success—also tended to systematically lose market shares in high-growing sectors. But if one restricts the analysis to manufacturing exports by OECD, such negative link for Germany is no longer statistically significant, while this continued to be so (only slightly weaker) for the SEA-5 (Table II.4). Interestingly, the U.S., unlike the SEA-5, did not have a perceptible "bias" against fast-growing sectors despite its overall loss of market shares. One potential explanation (not formally tested) is that the U.S. may be more flexible in reallocating resources across activities, including to nonmanufacturing (services) sectors.

Table II.4. Relationship Between Changes in Manufacturing Export Shares and World Export Growth, 1995–2005
(SITC 3-digit classification)

Coefficients	SEA-5	Germany	U.S.
World export growth	-0.13**	-0.08*	-0.06
OECD export growth	-0.10**	-0.05	-0.02

Source: UN Comtrade database.

Notes:
1) Regression of percentage changes of the (SEA-5/Germany/U.S.) share of world/OECD exports in sector on nominal world/OECD export growth in the sector and a constant (not reported).

2) ** and * denote significance at 1 and 5 percent level, respectively.

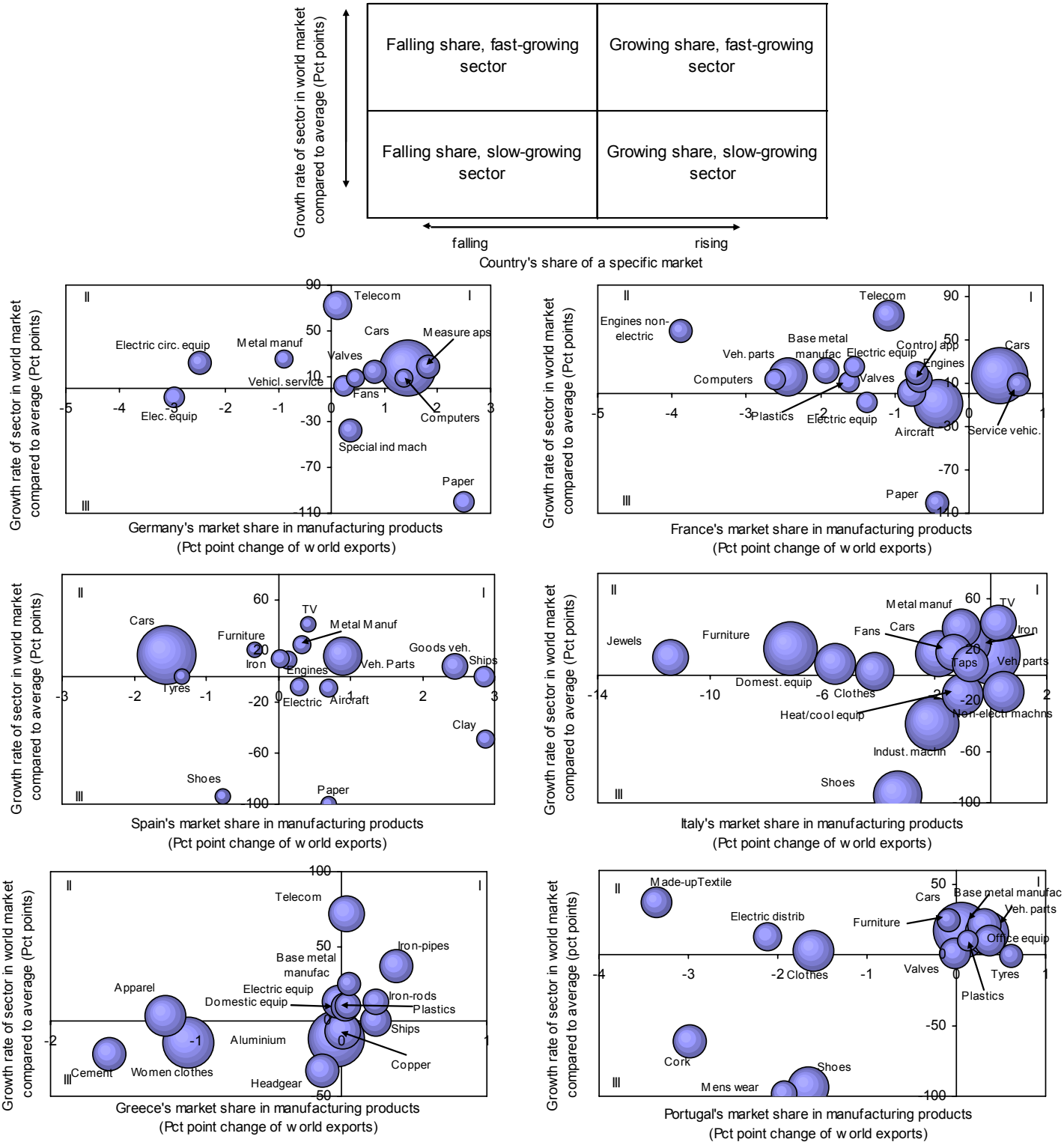
D. Conclusions

While the SEA-5 countries have been deriving some benefits from exports to high-growth markets, they seem to be comparatively limited (at least based on data through 2005).They underperformed the EU or OECD on most aspects of "pro-growth" export structure and reorientation. Only part of this gap may be ascribed to "gravity" factors. The destination market with the greatest absolute untapped potential is China, but these opportunities are

scattered across many emerging markets. From the perspective of high-growth sectors, SEA-5's indicators of manufacturing export specialization and reorientation were also subpar. The overall underperformance was distributed differently across individual countries, with Italy particularly lagging in "sectoral," and other countries on most "geographical," measures.

While there is a clear scope to improve the profile of export markets and sectors, realizing these benefits for the SEA-5 countries would not be easy. The share of high-growing countries in world imports is so far limited, and most of them are geographically remote from the SEA-5. But potential opportunities could be understated by recent data, given that dynamic countries on aggregate have further scope to increase imports in tune with their strong external positions. Rigidities to resource allocation and small firm size in most SEA-5 countries are some of the factors that may need to be investigated to better understand what has been inhibiting these gains.

Figure II.7. Manufacturing Exports in SEA-5 and Germany: 1995–2005 1/
(Size of bubbles proportional to share in total goods exports of each country, largest 15 SITC-3 sectors for each country)



Source:UN Comtrade database.

1/ Excluding food and chemicals.

Appendix II.A. Definitions and Information Sources

1. Selected measures of trade performance vis-à-vis fast-growing economies:

- Index of trade share weighted import growth of the trading partners—computed from the IMF WEO database;

- Indicator of the level of "underexporting" to country j for the SEA-5 and a comparator (EU-13, OECD, Germany) is reported in Table II.1 for 2005 and defined as: $\frac{MS(comparator)_j / MS(SEA5)_j}{MS(comparator)_{world} / MS(SEA5)_{world}}$ where MS stands for share of the comparator or SEA-5 in j's (or world's) total imports; SEA-5 would "underexport" to country j if the indicator is higher than unity;

- Indicator of falling behind relative to world import market share (WIMS) gains of country i between 2000 and 2005 is reported in Figure II.3 and defined as: $(WIMS_i^{2000} - SeaES_i^{2000}) - (WIMS_i^{2005} - SeaES_i^{2005})$ where SeaES is the share of country i in SEA-5's exports;

- Indicator of export dynamics gap between the SEA-5 and country i is reported in Figure II.4 and is given by: $impgr_i^{00-05} - \exp gr_{SEA-i}^{00-05}$ where impgr is cumulative nominal import growth of country i and expgr is the cumulative rate of nominal export growth from the SEA-5 to country i.

2. Lists of fast-growing economies:

Following Madariaga (2007), the definition of fast-growing economies is

- Forty-three economies whose average annual real growth in 2004–08 has been estimated/projected at 4 percent or higher according to the Spring 2007 IMF *World Economic Outlook* (accounting for some 25 percent of world imports); another constraint is that at least 500 French enterprises export to these markets—this makes the broader sample somewhat France-centered, but it includes all relatively large countries and in many ways would fit the SEA-5 due to its geographical proximity to France; Taiwan was dropped since there are no data in the Comtrade database, but Kazakhstan was added;

- Nineteen of the 43 economies above, whose average annual real growth in 2004–08 was estimated/projected at 6 percent or higher;

- Eighteen economies whose actual and projected average annual real growth in 2004–08 was 4 percent or higher and whose share in world trade is at least 0.5 percent;

- Eight economies whose actual and projected average annual real growth in 2004–08 was 6 percent or higher and whose share in world trade is at least 0.5 percent;

Note: Since Ireland and Luxembourg are listed as high-growing economies, they are excluded from the comparator market for the SEA-5.

3. Notes on data sources and definitions:

- Geographical structure and reorientation—WEO and UN Comtrade databases.

- Sectoral structure and reorientation—UN Comtrade data, SITC two–four digit classification, "manufactured goods" data (excludes food and chemicals).

4. Definition of "market shares" used here—share of a country's exports of a particular sector in world trade of this sector (this is different from the definition of "export market shares" that adjusts for own-country imports)

References

Arora, V., and A. Vamvakidis, 2004, "How Much Do Trading Partners Matter for Economic Growth," IMF Working Paper No. 04/26.

Balassa, B., 1965, *Trade Liberalization and Revealed Comparative Advantage*, The Manchester School, 33, 99–123.

Danninger, S., and F. Joutz, 2007, "What Explains Germany's Rebounding Export Market Share?" IMF Working Paper No. 07/24.

Fabrizio, S., D. Igan, and A. Mody, 2007, "The Dynamics of Product Quality and International Competitiveness," IMF Working Paper No. 07/97 (April).

Faini, R., and A. Sapir, 2006, "Un Modelo obsoleto? Crescita e specializazzione dell'economia italiana," mimeo.

Italian Ministry of Economy, 2007, "Economic and Financial Planning Document," pp. 130–8.

Madariaga, N., 2007, "La France s'est-elle adaptée aux tendances récentes du commerce mondial?" Trésor-Eco No 17.

Plümper, T., and M. Graff, 2001, "Export specialization and economic growth" Review of International Political Economy, Issue 4 (December). Available via the Internet: http://www.informaworld.com/smpp/title~content=t713393878~db=all~tab=issueslist~branches=8 - v8.

Silver, M., 2007, "Do Unit Value Export, Import, or Terms of Trade Indices Represent or Misrepresent Price Indices," IMF Working Paper No. 07/121.

III. SOUTHERN EURO AREA FIVE COUNTRIES: TRENDS IN VALUE-ADDED[1]

European companies compete more on differentiation, less on cost. Whereas 86 percent of them consider differentiation to be important, low cost is important for only 58 percent. Europe is focusing more and more on high value-added goods and services. *Best of European Business competition survey, 2006*

A. Introduction

This chapter analyzes whether the southern euro area five (SEA-5) countries changed their production structure in a "competitive" way and compares the pace of restructuring to that of other industrial countries over the past 15 years. This is defined as a reallocation of resources towards more dynamic (fastest growing) and higher-tech sectors, which are associated with stronger competitiveness and higher growth potential. Such restructuring that could boost overall competitiveness toward more dynamic and higher-tech sectors over the past 15 years. The dynamic sectors are defined as those with the highest growth of real value-added in the world, and the technological ranking of each sector is defined following the OECD classification. In order to compare relative restructuring performance across countries, indices of dynamism and technological intensity were also constructed.

The results indicate that since the second half of the 90s the SEA-5 countries had been relocating resources toward more dynamic sectors but starting from a lower level and at a slower pace than the EU peers and the United States. In addition, the share of high-tech sectors in their production had increased. However, the SEA-5 (except France) still remains specialized in "traditional," slow-growing and (generally) low-tech sectors. The slower pace of restructuring in the SEA-5 countries is found to be associated with the lower ability to respond to global growth opportunities.

B. Data and Methodology

The dynamics of the value-added is best seen in the firm-level data. However, since the aggregate trends are ultimately reflected in the industry-level despite firms' heterogeneity (Hawanini et al, 2003) and due to cross-country data limitations, industry-level data are used. The data are from the EU KLEMS data base, spanning EU countries, Japan, and the United States, 61 industries (defined in accordance with the NACE two-digit classification), and the period 1981–2004.[2] This paper will henceforth use terms industry and sector interchangeably. While the dataset contains both manufacturing and services sectors, this study concentrates on the tradable goods industries (manufacturing). In order to eliminate annual volatility, the analysis is performed using nonoverlapping five-year averages.

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[1] Prepared by Iryna Ivaschenko.

[2] See Timmer, et al (2007) for a detailed description of the dataset.

Changes in production structure are analyzed along two dimensions: dynamic and technological content, with respective indices constructed to evaluate relative performance across countries, as follows:

- **Dynamic content.** The dynamic industries are defined as those with the highest rates of real value-added (RVA) growth worldwide. Specifically, the average growth rate of RVA was calculated for every industry across all countries for each year. Then, industries were ranked according to their five-year average growth rates, in a descending order (see Table III.1 for examples of best and worst performers). The dynamic content of the country's domestic production was defined as a share of top 10 fastest growing sectors in country's total domestic output (in nominal terms) for each five-year period. The dynamic content is a useful concept to analyze changes in each country over time. However, for the cross-country comparison of the relative pace of restructuring the effects of changes in relative prices between products produced by the industries with high and low RVA growth need to be mitigated. For that, the *index of dynamism* is defined, for each country, as the aggregate share of country's top (bottom) 10 industries that grow faster (slower) than the world's average for that industry. Negative (positive) values of the index indicate that the country is relatively under (over) concentrated in fast (slow) growing industries.

Table III.1. Dynamic Ranking of Sectors: Top 10 Sectors by Real Value-Added Growth 1/
(Five-year annual averages)

Rank 1996–2000	Sector	Rank 2001-2004	Sector
1	Radio and TV receivers	1	Office, accounting, and computing machinery
2	Electronic valves and tubes	2	Radio and TV communication equipment
3	Radio and TV communication equipment	3	Telecommunication equipment
4	Telecommunication equipment	4	Water transport
5	Electrical engineering	5	Radio and TV receivers
6	Recycling	6	Motor vehicles, trailers, and semi-trailers
7	Office, accounting, and computing machinery	7	Electronic valves and tubes
8	Electrical and optical equipment	8	Other electrical machinery and apparatus, nec
9	Other electrical machinery and apparatus, nec	9	Electrical machinery and apparatus, nec
10	Electrical machinery and apparatus, nec	10	Electrical engineering
57	Chemicals, excluding pharmaceuticals	57	Food and beverages
58	Food and beverages	58	Textiles
59	Textiles	59	Wearing apparel/dressing/fur dying
60	Leather/footwear	60	Tobacco
61	Wearing apparel/dressing/fur dying	61	Leather/footwear

Sources: EU KLEMS database; and IMF staff calculations.

1/ Industries are defined in accordance with the NACE 2-digit classification.

- **Technological content.** The technological content of the economy is measured as a share of industries in four tech categories (high, medium-high, medium-low, and low) in domestic output. The technological classification of industries follows the OECD

methodology (see Bauman and di Mauro, 2007, and references therein and Table III.2). As in the case of dynamic content, to facilitate the cross-country comparison, the *index of technological intensity* is constructed mitigating the effects of changes in relative prices between tech and nontech goods on the production structure. The index is defined, for each country, as a difference between aggregate share of industries in each tech category and the share of each category in global production. The value of index above (below) zero indicates that the country is relatively more (less) concentrated in any particular tech category than the rest of the world.

Table III.2. Technological Classification of Industries 1/

High-tech	manufacturing of electrical machinery
	professional and scientific equipment
	aerospace
	office, accounting, and computing equipment
	drugs and medicines, pharmaceuticals
	radio, TV, and communication equipment
	medical, precision, and optical instruments
Medium-tech	
Medium-high tech	scientific instruments
	motor vehicles
	electrical machines excl. communication equipment
	transport equipment, motor vehicles, and railroad
	chemical excluding drugs
	non-electrical machinery
	manufacturing of transport equipment
	manufacturing of agricultural and industrial machinery
	chemical products
Medium-low tech	rubber and plastic products
	shipbuilding and repairing
	other manufacturing
	nonferrows metals
	nonmetallic minarl products
	ferrous metals
Low-tech	nonmetallic mineral products
	textile, apparel, and leather
	paper products and printing
	food, beverage, and tobacco
	wood porducts and furniture

Source: OECD, Bauman and di Mauro (2007).

1/ Industries are defined in accordance with the NACE two-digit classification.

C. Result Number 1: The SEA-5 is Moving in the Right Direction but Slower Than Others

Becoming more dynamic…

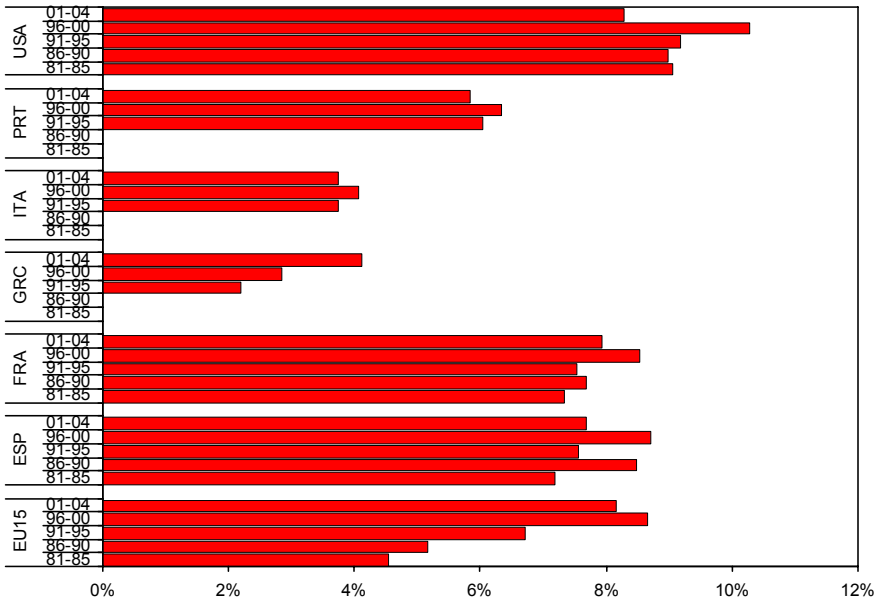
The concept of dynamism as defined in this study follows closely the approach adopted in the export growth literature (see ECB, 2005 and references therein) associating the higher past growth performance with the higher future growth. It also presumes that higher growth of value-added, especially if sustained over a period of time, should be associated with a "brownian motion" of industry's firms toward higher value-added products. Indeed, higher dynamic content is associated with better export performance (and ultimately, higher competitiveness), and the most dynamic industries include the most dynamic export sectors (defined in ECB, 2005), such as professional and scientific equipment, and manufacturing of electrical machinery.

The dynamic content of the SEA-5's production increased steadily over the sample period, although at a slower pace than that of the peer countries. In particular:

- The share of the most dynamic industries in the region's production increased in the 80s and the 90s, albeit edging down lately (Figure III.1). Specifically, the SEA-5 countries increased their specialization in industries such as electrical machinery and apparatus (Italy); medical, precision, and optical instruments (Italy, Portugal); computer and related activities (Spain); office, accounting, and computing machinery,

electronic valves and tubes, radio and TV receivers, and other instruments (France). Although the share of dynamic industries in the SEA-5 remained below the EU and U.S. averages (both above 8 percent), with high regional variance—from 3 percent in Portugal to 7½ percent in Spain and France—but the progress is obvious. Moreover, the weight of the least dynamic industries, the SEA-5's traditional specialization, declined steadily (Table III.3).

Figure III.1.The Dynamic Content



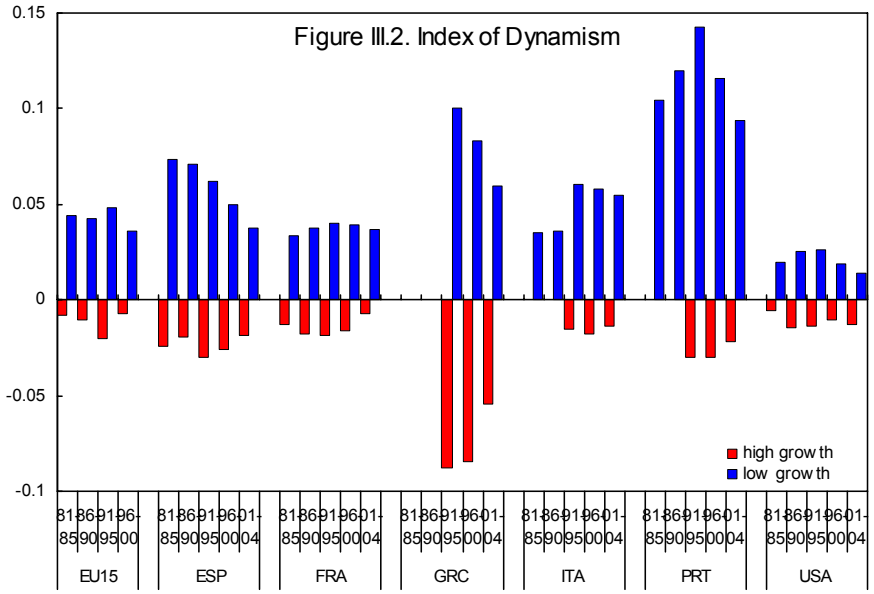
Sources: EU KLEMS; and IMF staff calculations.

Note: The dynamic content of the country's domestic production was defined as a share of top 10 fastest growing sectors in country's total domestic output (in nominal terms) for each five-year period.

- Moreover, the SEA-5 countries not only restructured across sectors but also boosted the dynamism within sectors (Figure III.2). In particular, the **index of dynamism** indicates that the region's dynamism gap vis-à-vis EU and U.S. peers declined, as growth rates increased within country's individual industries. Specifically, Italian clothing and footwear industry is one example of increased intra-industry dynamism, employing strategies for higher-growth, high-value-added products.

…and technologically advanced

The link between technological innovation, growth, and productivity is well-established (OECD, 2006), and hence higher technological content of a country's production would indicate an upgrade toward higher-value added products and processes. In fact, higher tech industries tend to experience higher growth of value-added (Tables III.1 and III.2). SEA-5 countries, except France, still score low in a number of indicators in this area (Figure III.3). Moreover, countries with the predominantly low-tech specialization of production—Greece and Portugal—are also found to have similar export structure (Bauman, di Mauro, 2007).



Sources: EU KLEMS; and IMF staff calculations.

Note: The index of dynamism is defined, for each country, as the aggregate share of country's top (bottom) 10 industries that grow faster (slower) than the world's average for that industry. Negative (positive) values of the index indicate that the country is relatively under (over) concentrated in fast (slow) growing industries.

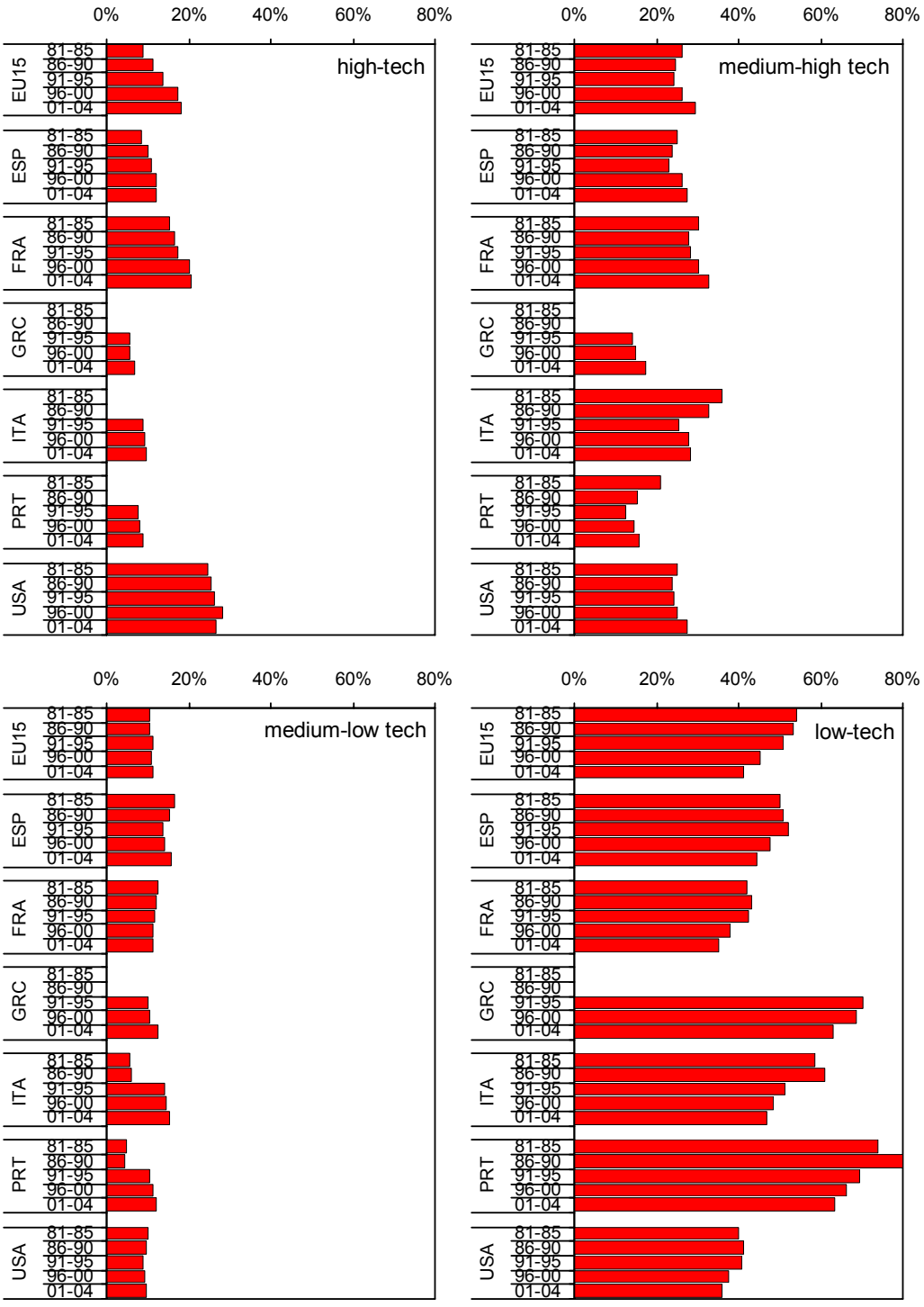
The results indicate that the technological content of the SEA-5 countries increased, but less so than in the peer group. In particular:

- The relocation of resources toward high-tech industries was much slower than in the peer group.[3] Indeed, while the EU average share in high-tech industries doubled in the last 20 years, SEA-5's average improved much less so (Figure III.3). As a result, as of 2004, 12 percent of region's output was produced by the high-tech industries, a far cry from the EU-15's average of 18 percent and the U.S.'s 27 percent. Within the region, France performed on par with the EU-15, while Greece and Portugal were below the SEA-5's average.

- The concentration in the medium high-tech industries increased in France, Spain (both from already relatively high base), and Greece (from a very low base), but declined in Italy and Portugal. However, the decline in Italy was from already relatively high base to the EU average. These developments are encouraging, given the positive contribution of the medium-tech sectors to export market shares of the euro area (ECB, 2005).

[3] This fact, however, may be also driven by the declining prices of some high-tech goods, since the mid-90s. To some extent, this concern is mitigated by the fact that the United States, which high-tech industry is likely more concentrated in computers than that of the SEA-5, did not experience a significant drop in its high-tech share.

Figure III.3. Technological Content 1/



Sources: EU KLEMS; OECD; and IMF staff calculations.

1/ The technological content of the economy is measured as a share of industries in four tech categories (high, medium-high, medium-low, and low) in domestic output. The technological classification of industries follows the OECD methodology.

- The share of low-tech industries declined notably during1991–2004 in all SEA-5 countries, with France dipping slightly below the U.S. level, and Spain and Italy almost reaching the EU average. While Greece and Portugal also made significant progress, low-tech industries remain important in these countries.

- The increase in the **technological intensity** of the SEA-5's production had been slow, while the EU-15 countries achieved notable increases in all directions—reducing underconcentration in high-tech, further boosting advantages in medium high-tech, and reducing overconcentration in low-tech industries (Figure III.4). It is only during the latest period that the SEA-5 countries slightly reduced their gap in high-tech industries and boosted medium low-tech content. On the bright side, their overconcentration in low-tech products declined during 1995–2004.

- The negative high-tech gap is common for all SEA-5 countries, but the degree varies, with France being least and Greece the most underconcentrated. As regards medium high-tech concentration, Greece and Portugal are the only two countries that remained in the negative territory, while Spain and Italy increased their already positive gap. Last but not the least, all countries lowered their overconcentration in low-tech industries over the last 15 years.

D. Result Number 2: Because of Slower Restructuring the SEA-5 May Be Missing Growth Opportunities

The ability of the country to restructure its production structure quickly is also associated with its ability to benefit from the industry-wide global growth opportunities. This hypothesis is formally evaluated using the results from the dynamic content section. In particular, the degree of restructuring is defined for each country and each period as a sum of a percent increase in the dynamic content and a decrease in the "nondynamic" content (calculated analogously to the dynamic content as a share of bottom 10 industries in terms of RVA growth in country's output). Then, adapting the approach from the "finance and growth" literature to measure responsiveness to global opportunities (see Fisherman and Love, 2003), the growth rate of real value-added is regressed on the lagged global growth component and the degree of restructuring, along with other control variables. The regression results—in particular, positive sign of the interaction term between restructuring and lagged global growth—indicate that countries with higher degree of restructuring tend to experience higher growth in response to global growth opportunities (Table III.3). The results are

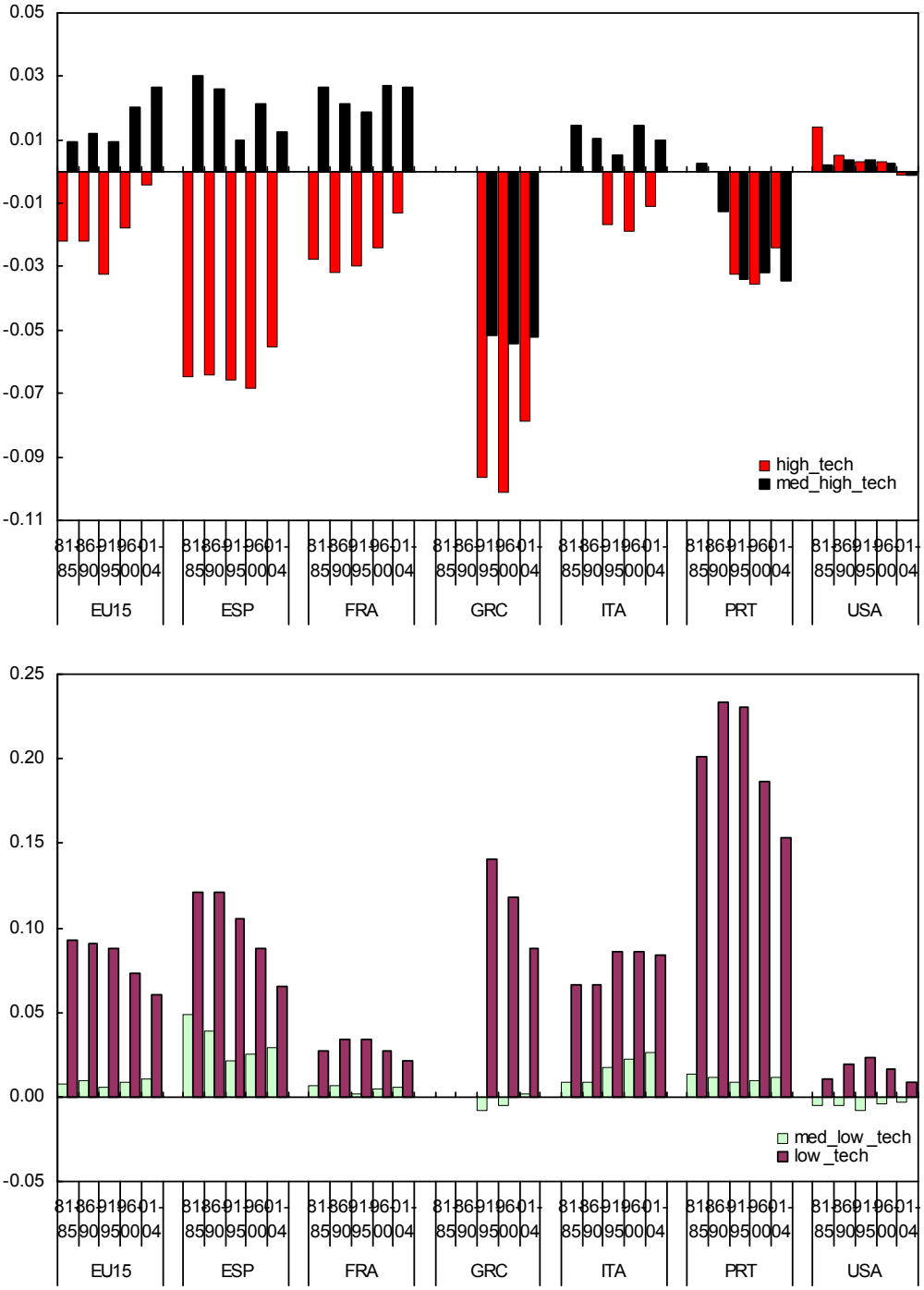
Table III.3. Restructuring and Response to Global Growth Opportunities

The dependent variable is growth of real or nominal value added. RESTR_R is the degree of restructuring is defined for each country and each period as a sum of a percent increase in the dynamic content and a decrease in the "nondynamic" content (calculated as a share of bottom 10 industries in terms of RVA growth in country's output), LWORLD is a lagged growth of an industry worldwide, TERM is an interaction term between restructuring and lagged global growth. REST_N is defined analogously to RESTR_R using growth rates of nominal value-added. Coefficienst are of panel data estimation, bolded coefficients are significant at a 5 percent level.

	A	B	C
Nominal VA			
lworld_gr	0.07	0.02	0.06
RESTR_N	0.04		0.04
TERM		0.06	0.09
_cons	0.14	0.02	0.14
R2	*0.21*	*0.11*	*0.21*
Real VA			
lworld_gr_r	0.07	0.04	0.09
RESTR_R	0.03		0.01
TERM		0.04	0.01
_cons	0.00	0.01	0.00
R2	*0.08*	*0.11*	*0.11*

similar for nominal value-added growth and are generally robust across industries, time periods, and country groups.

Figure III.4. The Index of Technological Intensity 1/



Sources: EU KLEMS; OECD; and IMF staff calculations.

1/ The index of technological intensity is defined, for each country, as a difference between aggregate share of industries in each tech category and the share of each category in global production. The value of index above (below) zero indicates that the country is relatively more (less) concentrated in any particular tech category than the rest of the world.

References

Bauman, U., and F. di Mauro, 2007, "Globalization and Euro Area Trade Interactions and Challenges," ECB Occasional Paper Series No. 55 (March).

European Central Bank, 2005, "Competitiveness and the Export Performance if the Euro Area," Occasional Paper No. 30 (June).

Hawanini, G., V. Subramanian, and P. Verdin, 2003, "Is performance driven by industry- or firm-specific factors? A new look at the evidence," *Strategic Management Journal*, No. 24, pp. 1–16.

McGahan, A., and M. Porter, 2002, "What do we know about variance in accounting profitability?" Management Science, No. 48, pp. 834–51.

OECD, 2006, *Economic Policy Reforms: Going for Growth*.

Timmer, M., M. O'Mahony, and B. van Ark, 2007, "EU KLEMS Growth and Productivity Accounts: An Overwiev" (Groningen Growth and Development Centre University of Groningen).

IV. Are the Southern euro area Countries Advancing in the Search for New and Better Products?[1]

A. Introduction

Globalization is posing major challenges to the southern euro area (SEA-5) countries[2]—new products of better quality can be an alternative to increase their competitiveness. In this context, the main finding of this chapter is that product quality has not shown a marked improvement over the last decade. This slow progress appears associated with a loss of market share.

The importance of product quality in international trade has been extensively documented in the recent theoretical and empirical literature. As countries become richer, their consumers tend to demand not only more goods but also goods of better quality. Copeland and Kotwal (1996, p. 1,746) emphasize this point, "…it is the quality of a differentiated good that responds to an income change: richer people buy fancier cars rather than more cars." Hummels and Klenow (1995) find that within product categories, richer countries export higher quantities at modestly higher prices. This, they infer, implies that rich countries sell higher quality products. At the same time, Hallack (2006) finds that rich countries tend to import relatively more from countries that produce higher quality goods. Therefore, improving exports' quality, which, to some extent, is associated with technology upgrading, is crucial for export competitiveness. In this context, using a sample of 54 countries, covering almost 94 percent of world trade, Fabrizio, Igan, and Mody (2007) show that, controlling for the initial market share and the initial quality, an increase of export quality helps expand market share with, as one can expected, diminishing returns.

In this context, this chapter analyzes the evolution of these countries' export structure from different angles, focusing particularly on technology and quality upgrading. The export structure is analyzed using six-digit data for export of manufacturing goods from COMTRADE (a description of the data and methodologies is reported in the Appendix), which implies a breakdown of exports into more than 4,000 differentiated product categories on average per country per year. This chapter assesses to what extent SEA-5 countries' exports have been subject to a shift in composition, quality, and technology intensity during the period 1994–2005, and if there is the scope for further enhancing the relative sophistication of their exports.

The empirical analysis shows that the export structure of the SEA-5 countries changed over the last decade. Greece and Portugal, which had the highest export concentration in a few

[1] Prepared by Stefania Fabrizio.

[2] SEA-5 countries comprise France, Greece, Italy, Portugal, and Spain.

sectors in mid-1990s, diversified their export substantially between 1994 and 2005, while Italy and France, whose exports were more diversified at the beginning of the period. Spain, which had already diversified its export before 1994, as it joined the European Union, maintained broadly the same level of diversification. In general, countries tended to shift away from textile to chemicals and fabricated metals.

SEA-5 countries also moved up the technology ladder. SEA-5 countries upgraded export technology over the past decade, with the exception of Spain, which presented already a relative high degree of technology content during the second half of the 1990s and broadly maintained the same share of low- medium low-tech exports during 2000–05. Technology upgrading was particularly rapid in Greece and Portugal, the exports of which were mostly of a low-tech content in the mid-1990s. Although technology tends to improve together with quality, this is not always the case. Moreover, when considered together with quality upgrading as possible determinants of competitiveness, the primary factor in gaining market share appears to be quality improvement (Fabrizio, Igan, and Mody, 2007).

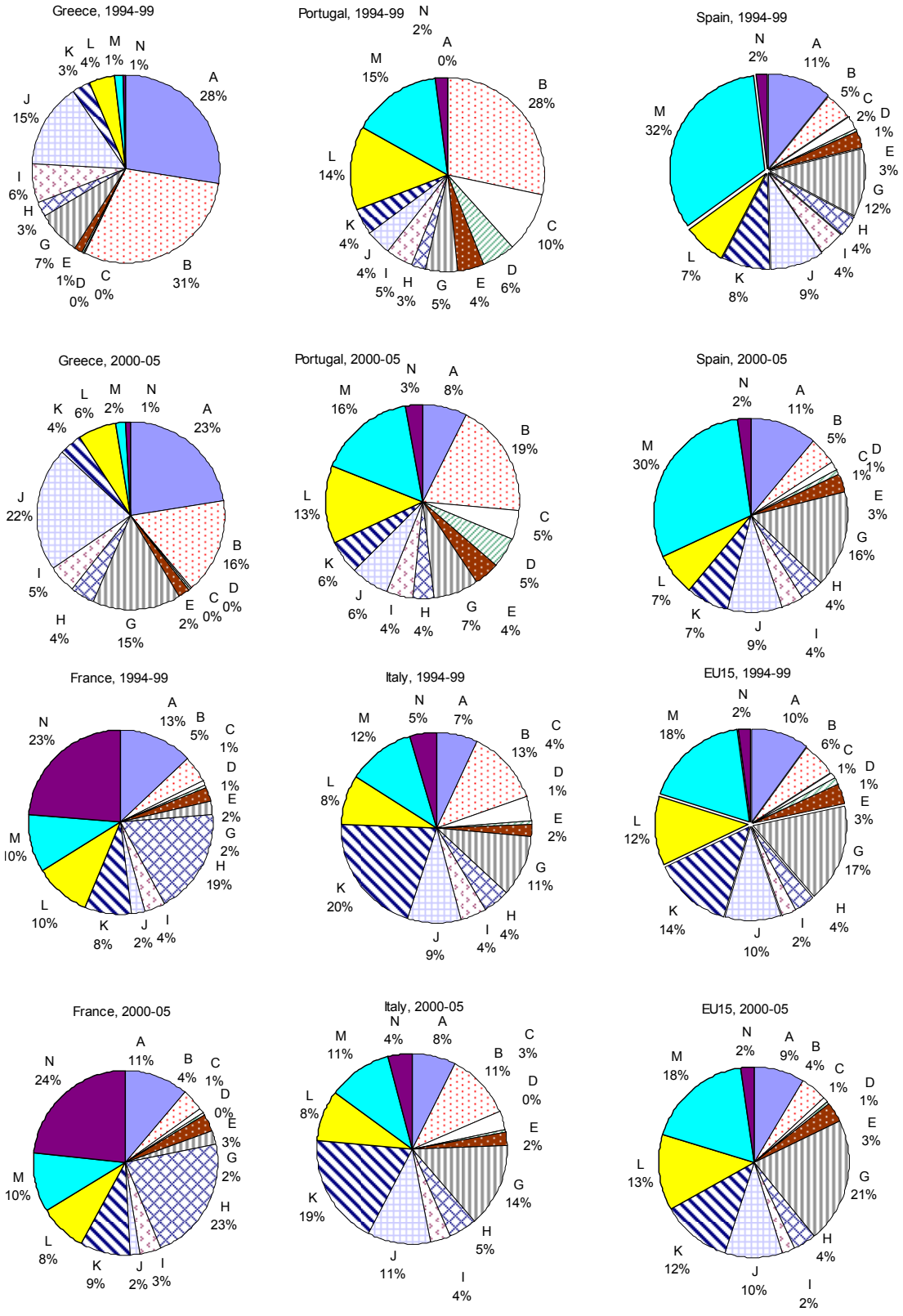
But improvements in export quality were limited. SEA-5 countries did not increase their export quality relative to their main competitors, the other European Union (EU-15) countries, over the last decade, although they improved it somewhat relative to the pool of other competitors. Furthermore, quality did not increase for goods with higher potential. Looking to the extent at which new products have affected the overall relative quality of exports, the results suggest that Greece, Portugal, and Spain and, to a lesser degree, Italy shifted to products of higher quality than the goods traditionally exported, while France moved to products of slightly lower quality. At the same time, these countries discontinued products of relatively higher quality, and, comparing the contribution to overall quality of newly exported goods with that of products discontinued during the period under consideration, only for Greece and Portugal does the change in export structure appears to have been favorable during 1994–2005.

The rest of this chapter is organized as follows. Section B studies the evolution of exports by industry. Section C presents the results of the analysis of technology and the quality of exports. Section D concludes.

B. Did the Export Structure of SEA-5 Countries Evolve Over the Last Decade?

Export structure by industry changed during 1994–2005; in particular, in countries with an initial high concentration in a few sectors. Though export structure differs across SEA-5 countries, some similarities in the evolution of this structure can be identified (Figure IV.1). With the exception of France, all countries increased their proportion of exports of chemical and chemical products, which have became an important share of their manufacturing

Figure IV.1. Has the Structure of Exports of Manufacturing Products Changed?
Share of Nominal Exports of Manufacturing Products by Industry, 1994–2005



A - food, beverage; and tobacco; B - textiles and textile products; C - leather and leather products; D - wood and wood products; E - paper and paper products; G - chemicals and chemical products; H - rubber and plastic products; I - other and plastic mineral products; J - basic metals and fabricated metal products; K - machinery and equipment nor elsewhere classified; L - electrical and optical equipment; M - transport equipment; N - not elesewhere classified.

Sources: COMTRADE; and IMF staff calculations.

exports. The export share of basic and fabricated metals also increased in Greece, Italy, and Portugal. While exports of food, beverages, and tobacco increased in Portugal, Spain, and Italy, they declined substantially in Greece and France. All SEA-5 countries, but Spain, saw their textile exports dwindle.

The change in export structure translated in a higher diversification of exports for some countries. Greece and Portugal (Table IV.1), which had the highest concentration in a few sectors in the mid-1990s (namely, textile in both countries and food and beverages in Greece) diversified substantially their export, as measured by the Herfindahl index.[3] Spain also had a high concentration of exports in a few sectors in the mid-1990s, with transport equipment and food and beverages representing more than 40 percent of manufacturing exports, but its export structure did not diversify much over the last decade. France and Italy, which presented the lowest concentration in the mid-1990s, maintained, or slightly reduced, export diversification, following the evolution of export of group of the EU-15 countries.

Table IV.1. Diversification of Exports of Manufacturing Products, 1994–2005
(Herfindahl index) 1/

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
France	0.14	0.13	0.14	0.14	0.14	0.15	0.14	0.15	0.15	0.15	0.15	0.16
Italy	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12
Greece	0.24	0.22	0.20	0.19	0.19	0.18	0.16	0.16	0.16	0.16	0.16	0.15
Portugal	0.16	0.14	0.14	0.13	0.13	0.13	0.11	0.12	0.11	0.11	0.10	0.11
Spain	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.16
EU-15	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.14	0.14

Sources: COMTRADE; and IMF staff calculations.

1/ A lower value of the index represents more diversification.

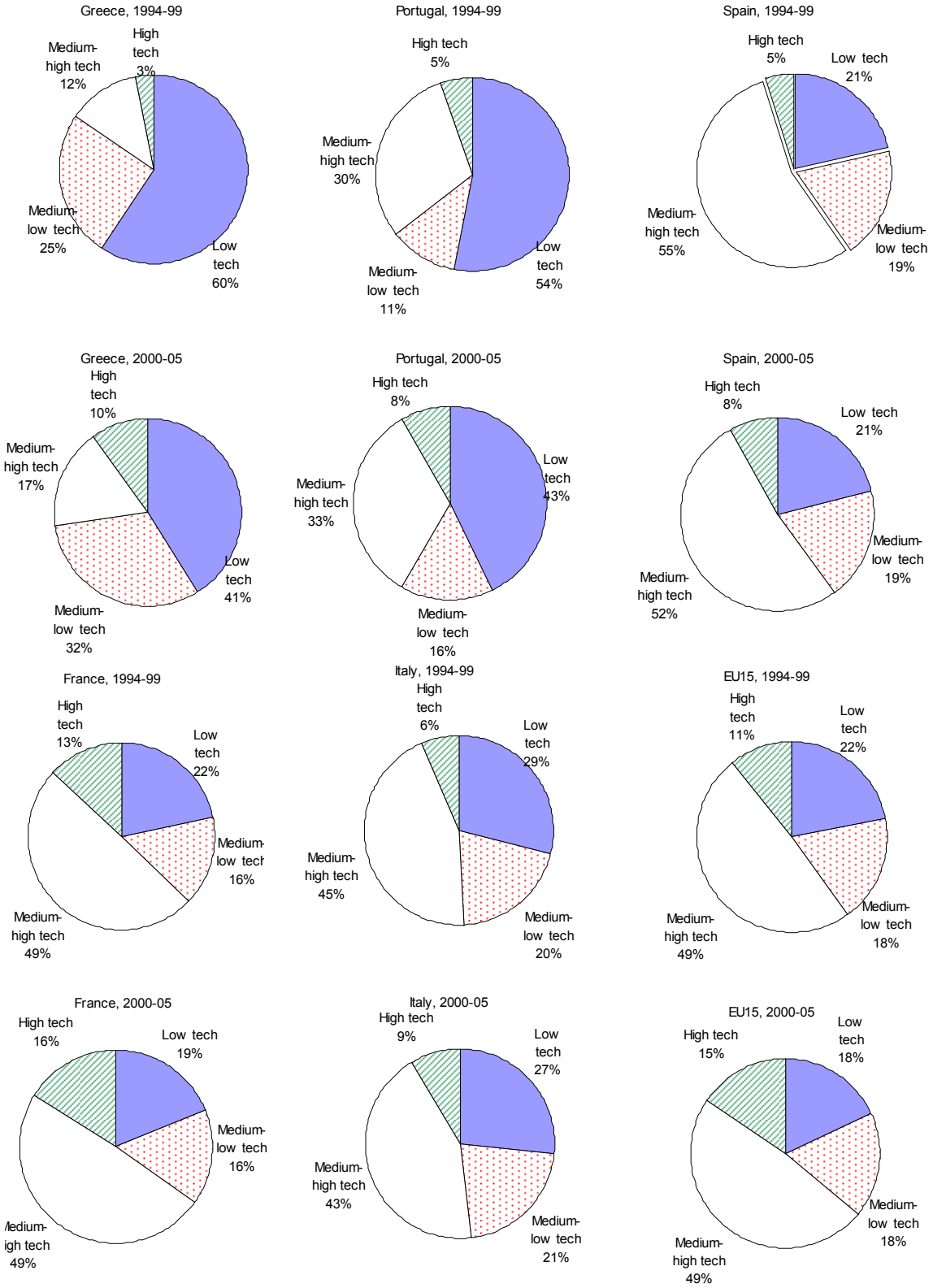
C. Have the Product Quality and the Technological Intensity of Exports Increased?

While the pace and timing of the shift once again varied across countries, technology changes also occurred. All SEA-5 countries, but Spain, experienced a shift from low-tech to higher-tech exports (Figure IV.2). Technology upgrading was impressive in Greece and Portugal, which presented a high concentration of low-tech export in the mid-1990s, 50 percent and 41 percent, respectively. The share of high-tech products increased, although at different pace, in all countries, while the direction of change in medium low- and medium high-tech export varied across countries.

Turning to export quality, the unit value of a country's exports relative to the unit value of competitors' exports is used to measure quality. The unit value of each product that

[3] The Herfindhal index is calculated as the sum of the squares of the shares of exports of each industry. The index ranges in value from 0 (in the case of very diversified exports) to 1 (if the exports are concentrated in only one sector).

Figure IV.2. To What Extent SEA-5 Countries Have Experienced Technology Upgrading?
Shares of Nominal Exports of Manufacturing Products by Technology Intensity, 1994–2005



High technology—aerospace, computers, office machinery, electronics-communications, and pharmaceuticals.

Medium-high technology—scientific instruments, motor vehicles, electrical machinery, chemicals, other transport equipment, nonelectrical machinery.

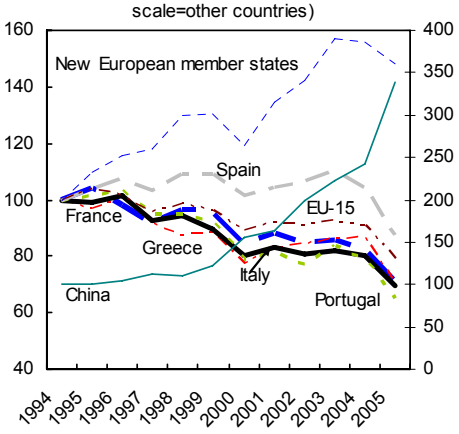
Medium-low technology—rubber and plastic products, shipduilding, other manufacturing, nonferrous metals, nonmetallic minaral products, fabricated metal products, and ferrous metals.

Low technology—paper printing, textile and clothing, food, beverages, and tabacco, wood and furniture.

Sources: COMTRADE; and IMF staff calculations.

a specific country exports is calculated by dividing the export value by the quantity. Then, the competitors' unit value for the same basket of goods is calculated. The country's unit value for each product in the basket is then divided by the competitors' unit value for the corresponding product. Finally, the product unit value ratios are aggregated into a single unit value ratio (UVR), using the weights of each product in the overall exports of the country. The reported UVR takes the logarithm of this ratio. The basic idea of this measure is that consumers will be willing to pay more for the same product if they perceive it to be of better quality. Although the UVR is extensively used in the literature as a proxy of product quality on the premise that a higher price reflects higher quality, caution must be applied in interpreting results, as concerns remain that the UVR can pick up other influences, in particular if monopolies exist and competition does not arbitrate away differences in quality-adjusted prices.[4]

Market Shares of World Import of Manufacturing Products in Nominal Terms, 1994-2005
(Index, 1994=100; right scale= China; left scale=other countries)



Sources: COMTRADE; and IMF staff calculations.

Quality improvements in SEA-5 countries' exports have been limited, and market shares have declined. Findings suggest that SEA-5 countries did not increase their export quality relative to their main competitors, the other EU-15 countries, between 1994 and 2005 (Figure IV.3), although they moved a little bit ahead of the pool of other competitors in the world on the quality ladder (Figure IV.4).

The limited upgrading in quality would partly explain the loss of market shares experienced by these countries since the mid-1990s. In this regard, a panel data analysis performed for the SEA-5 countries suggests that recent broad findings in the empirical literature apply also to these countries.[5] Specifically, countries benefit from higher product quality when trading in international markets (Hallak, 2006; Dulleck and others, 2005; Fabrizio, Igan, and Mody, 2007). The results are reported in Table IV.2. Controlling for the initial market share, both higher

Table IV.2. SEA-5 Countries: Does Quality Help Increase Competitiveness?

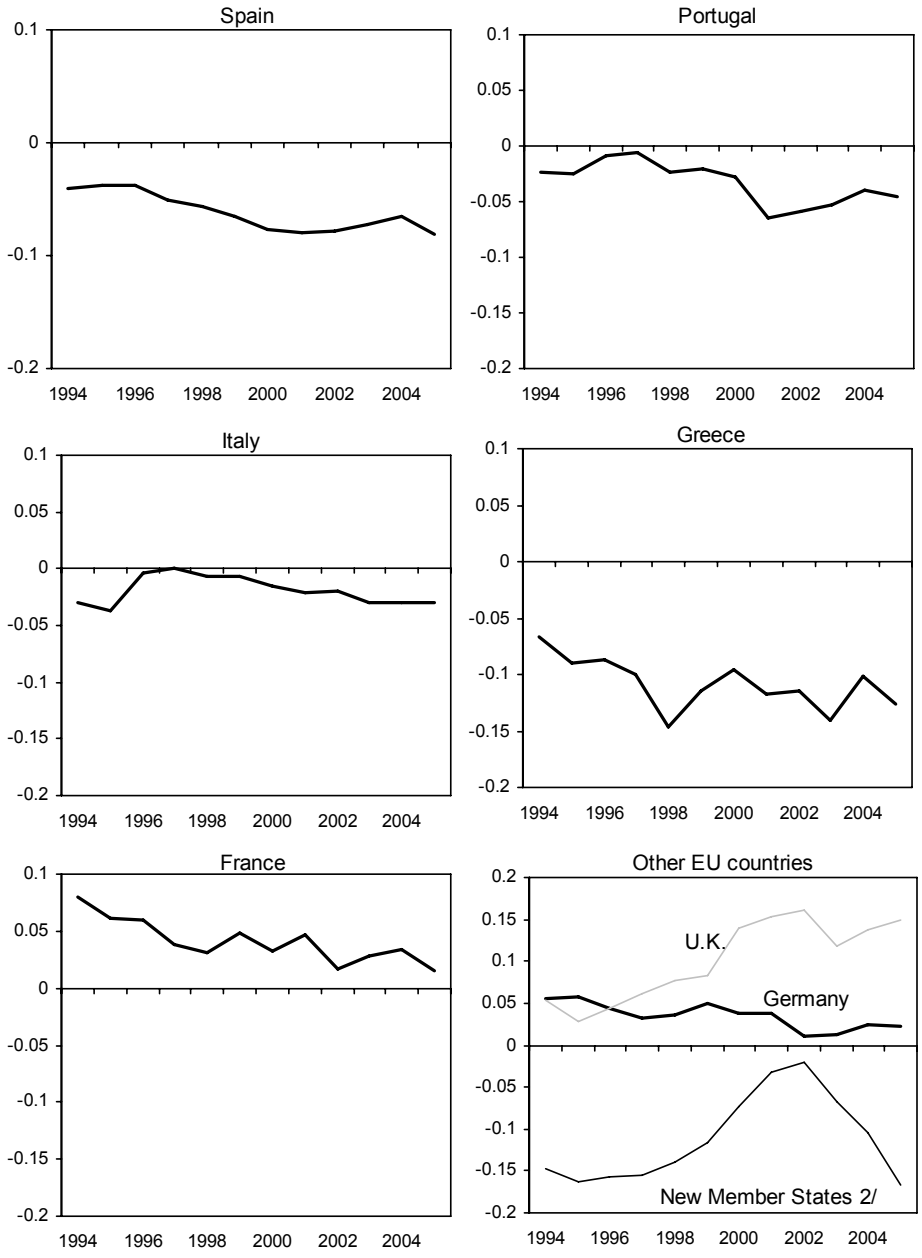
	Ratio of end-of-period market share to beginning-of-period share		
	(1)	(2)	(3)
Initial share	-0.15	-0.42	-0.49
	(0.34)	(0.24)	(0.25)*
Initial UVR	0.92	3.31	3.29
	(0.94)	(0.92)***	(0.85)***
UVR change		2.66	2.58
		(0.56)***	(0.53)***
REER change			-0.14
			(0.26)
Observations	15	15	15
Number of countries	5	5	5
R-squared	0.11	0.59	0.61

Notes: Standard errors in brackets: * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent. All variables are in logarithms.

[4] See Fabrizio, Igan, and Mody (2007) for a more detailed discussion about the limitations of using UVR as proxy for product quality.

[5] The results should be considered with caution, given the limited number of observations available.

Figure IV.3. Are SEA-5 Countries Upgrading the Quality of Their Exports?[6]
Unit Value Ratios (in logarithms) Relative to EU-15 Competitors 1/



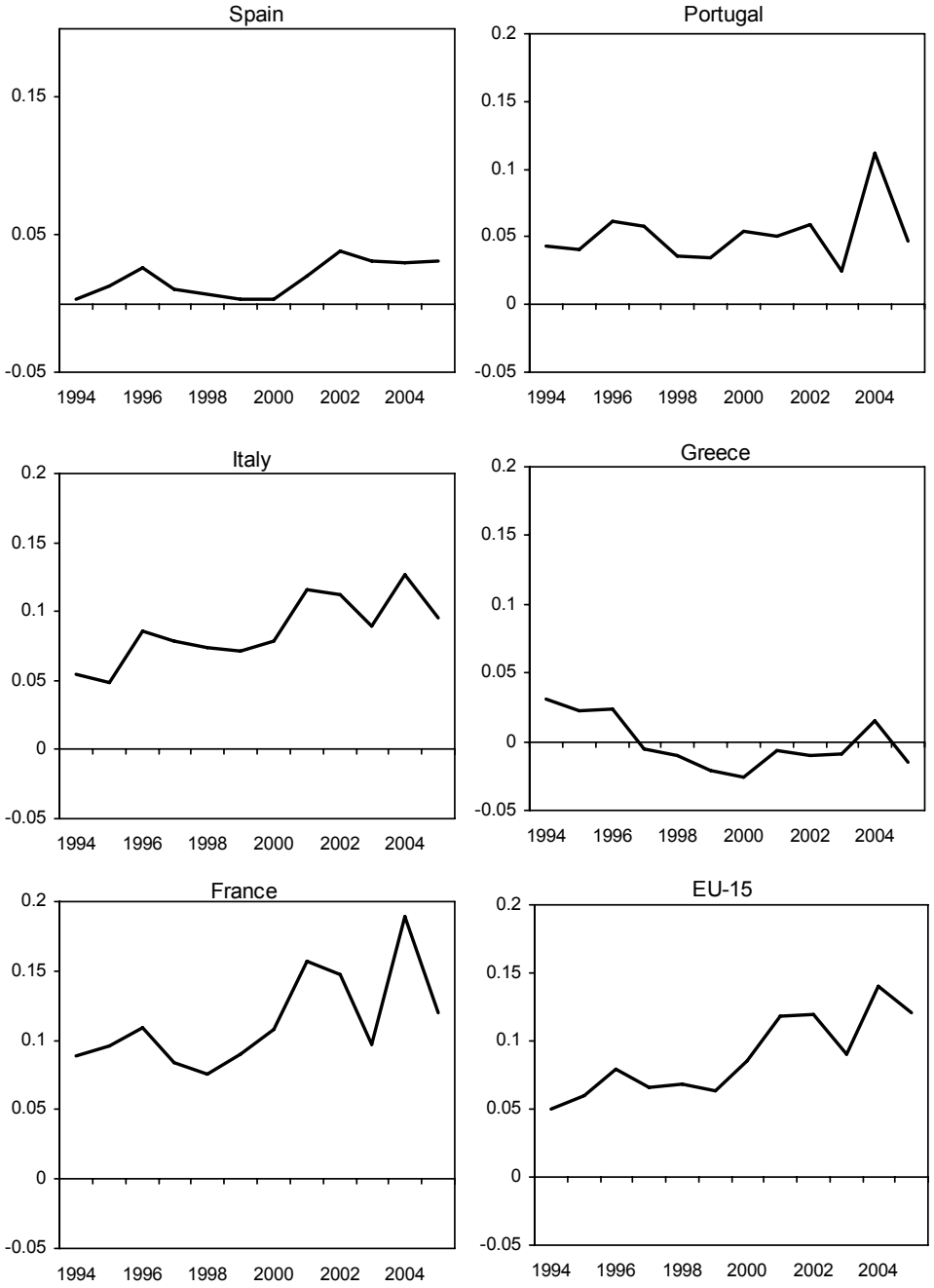
Sources: COMTRADE; and IMF staff calculations.

1/ The unit value (UV) of each product that a specific country exports is calculated by dividing the trade value by the quantity. Then, the competitors' UV are calculated for the same basket of goods. The country's UV for each product in the basket is then divided by the competitors' unit value for the corresponding product. Finally, these product UVRs are aggregated into a single UVR, using the weights of each product in the overall exports of the country. The reported UVRs are the logarithm of this ratio. Hence, a negative UVR corresponds to a quality lower than comparators' standards.

2/ Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romenia, Slovak Republic, and Slovenia.

[6] Findings for 2005 should be interpreted with caution, as COMTRADE data for that year are still very preliminary.

Figure IV.4. Are SEA-5 Countries Upgrading the Quality of Their Exports?
Unit Value Ratios (in logarithms) Relative to The World Competitors 1/ 2/



Sources: COMTRADE; and IMF staff calculations.

1/ UVRs are calculated as indicated in footnote 1 of Figure IV.3.

2/ U.S. is excluded from the pool of world competitors, because the UVR appears to be affected by the exchange rate, in particular, during the period 2000–04.

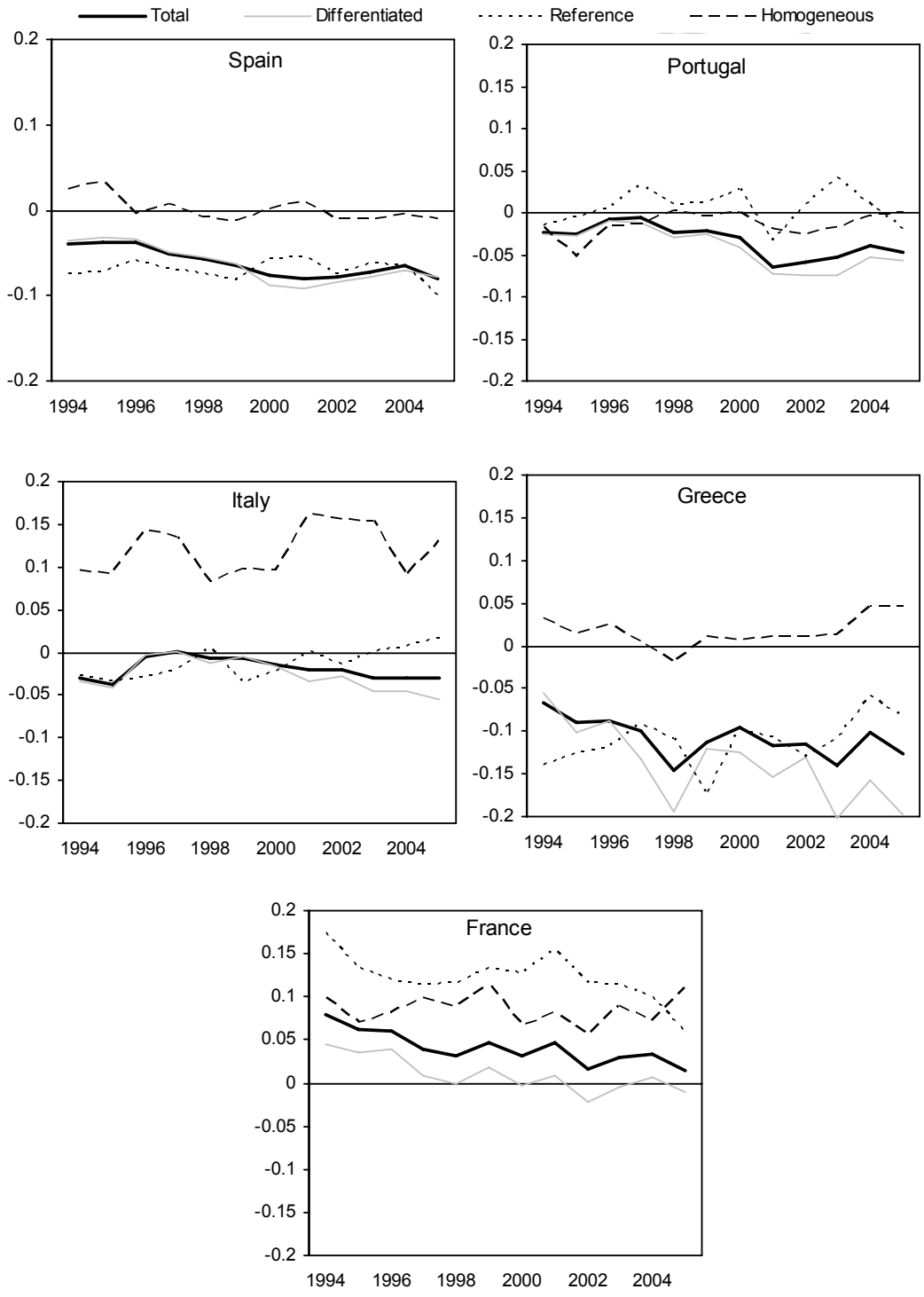
starting product quality and quality upgrading have been important determinants of market share changes for SEA-5 countries over the last decade.

Furthermore, quality did not increase for goods with higher potential. As presumably quality matters more for some products than for others, it is relevant to analyze whether SEA-5 countries have improved quality for goods for which there is more scope to increase quality. Following Rauch (1999), who identifies the degree to which product varieties are differentiated within a product group, we classified goods into three categories, reflecting the differences in their price-setting mechanisms. Differentiated products, which do not have well-defined product standards and are not traded on specialized exchanges, and carry the largest potential for quality variation (e.g., soya sauce). Reference-priced products, which have referable standards with reference prices available in specialized publications, allow for quality variation but less so than for differentiated goods (e.g., soya bean flour). Homogenous products, which have clearly defined standards and/or are internationally traded on organized exchanges, have smallest potential variation in quality, e.g., soya beans, (see the Appendix for details). The results suggest that, compared to the other EU-15 countries, SEA-5 countries slightly deteriorated the quality of differentiated products between 1994 and 2005, the goods with higher potential, while they somewhat improved it for homogeneous products, for which there is a more limited scope for price differentials (Figure IV.5).
New products helped maintain higher overall quality of exports in four countries out of five. The export structure of SEA-5 countries changed over the last decade, which could imply that either the export of some products increased/decreased or that these countries have started to export new products/discontinued the exports of other products (or both). Hence, the question is, To what extent did the change in export structure help increase the overall relative quality of exports of the SEA-5 countries? Comparing the quality of "traditional" products (goods exported since the beginning of the period) with that of the new goods, Greece, Portugal, Italy, and Spain shifted to products of higher quality than the goods traditionally exported, while France moved to products of slightly lower quality (Figure IV.6). At the same time, all countries, but France, discontinued the export of products that also had better quality than the traditional goods.

But the shift in export structure from goods, discontinued during 1995–2005, to new products was not always favorable. Comparing the contribution to overall quality in 1994 (at the beginning of the sample period) of products the export of which was discontinued during 1995–2005 with the contribution to overall quality of new products by the end of the sample, only for Greece and, to a lesser extent, Portugal does the switch in export appear to have been favorable (Figure IV.7).[7] Regarding France, the fact that the country discontinued

[7] In the comparison, it is important to consider that the overall quality of exports depends on the quality of the products as well as on their weight in the export basket. As such, not only quality but also quantity matters of the single product to determine the overall quality of exports.

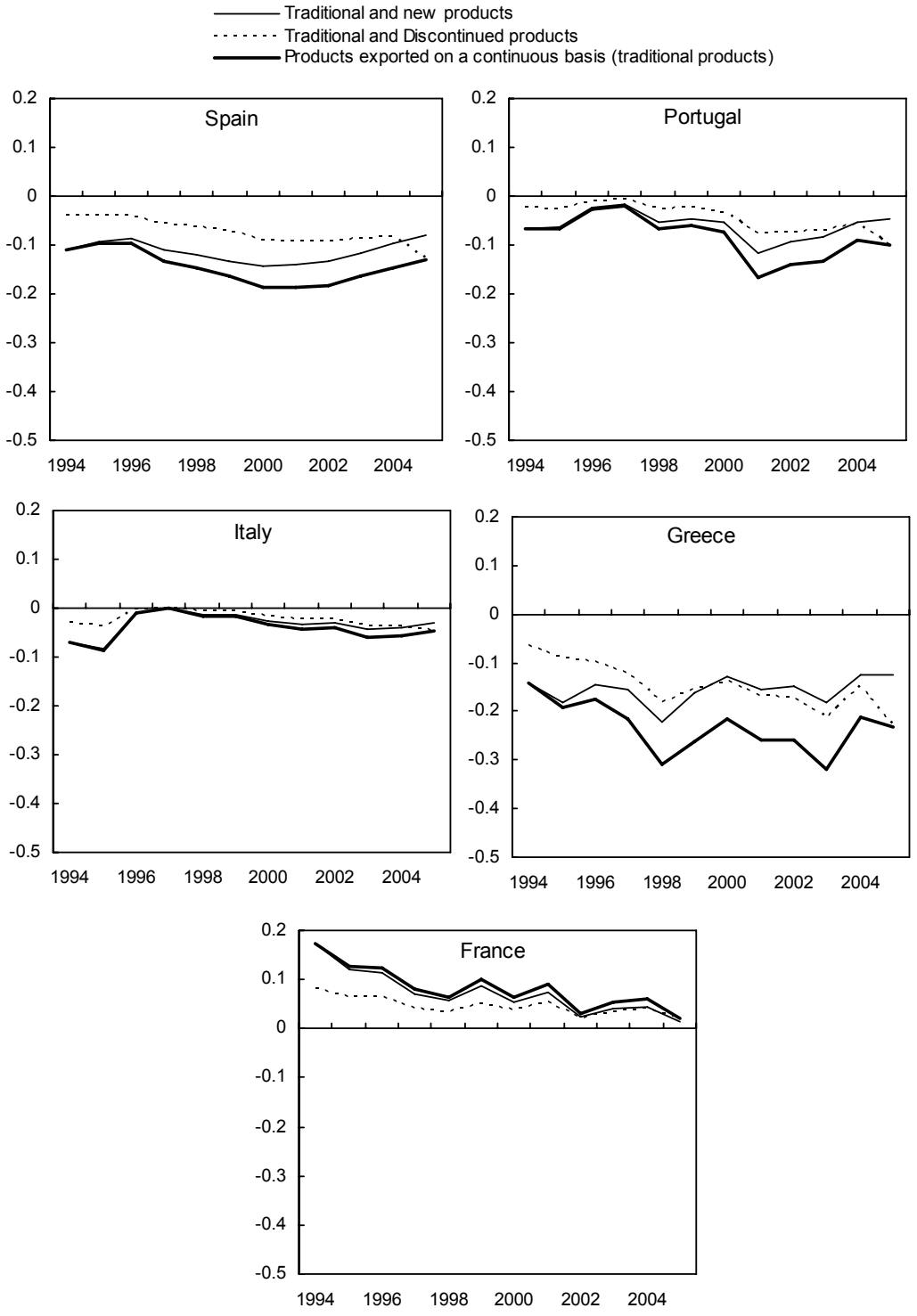
Figure IV.5. Have SEA-5 Countries Increased the Quality of Their Export in Sectors with High Potential? UVRs According to Potential Quality Differentiation, 1994–2005 1/



Sources: COMTRADE; and IMF staff calculations.

1/ UVRs relative to EU-15 competitors and calculated as indicated in footnote 1 of Figure IV.3.

Figure IV.6. Have Exports Shifted to Higher Quality Products? Quality (UVRs) by Products 1/ 2/

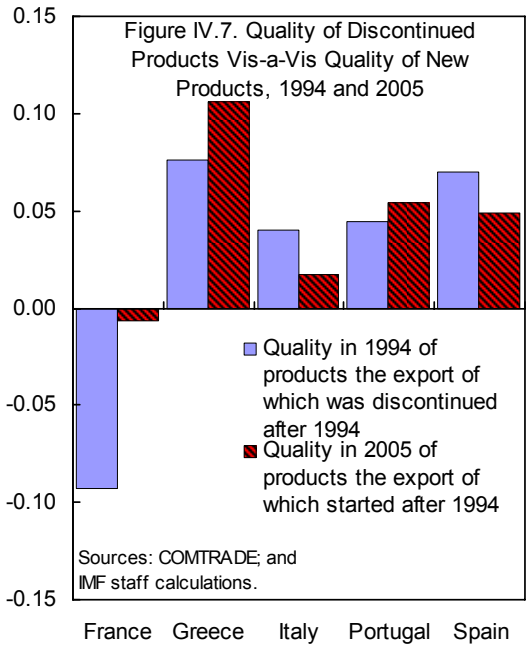


Sources: COMTRADE; and IMF staff calculations.

1/ UVRs are calculated as indicated in footnote 1 of Figure IV.3. In the comparison, it is important to consider that the overall quality of exports depends on the quality of the products as well as on their weight in the export basket. As such, not only quality but also quantity matters of the single product to determine the overall quality of exports.

2/ Unit value ratios relative to EU-15 competitors.

products of lower quality than that of new goods, but both kinds of products had lower quality than the traditional goods, would suggest that the overall quality of its export could have been even worse if the country had maintained the structure of export as in 1994.



D. Conclusions

Are the SEA-5 countries advancing in exporting higher value products? The evidence is mixed. SEA-5 countries are making progress. The export structure has changed, and the countries with higher concentration in a few sectors, are diversifying their exports, although the switch in production has not been always favorable in terms of adding to overall quality. SEA-5 countries, at different pace, have also moved up to the technology ladder. However, not much progress was made in upgrading quality of exports, in particular vis-à-vis their main competitors, the other EU-15 countries. Furthermore, quality has increased more for goods with a limited scope for price differentials than for goods with higher potential.

Looking ahead, the task is clear but challenging. An alternative way to remain competitive is to produce new products of better quality, and the empirical evidence suggests that SEA-5 countries have room for upgrading their products. However, as technology and quality competition becomes stronger, the task will become harder. Therefore, continued policy efforts to raise productivity will also be needed.

Appendix IV.A

The Appendix reports on the data sources, industry taxonomies, construction of the UVR, and selected products under the Rauch classification of goods.

Data sources

The trade data are from the UN Comtrade database and consist the trade values and quantities of export flows. The export data are at the six-digit product level, according to the Harmonized System (HS) classification. For each product, an observation consists of the country of origin, time, trade value in dollars, quantity, and units in which the quantity is expressed.

Construction of variables

We construct measures of technology and quality change at the country level using the detailed trade data at the product level. As in similar studies, the sample of products is limited to those of the manufacturing sectors. We use the Classification of Economic Activities in the European Community (NACE). Manufactures of coke products, refined petroleum products, and nuclear fuel are excluded from the analysis.

The technology content of products is based on the taxonomy provided by Hatzichronoglou (1997). Products are classified into four groups: high technology, medium-high technology, medium-low technology, and low technology. This classification is based on a cutoff procedure using R&D intensities in select OECD economies in two-digit International Standard Industrial Classification (ISIC) product categories.

The measure of product quality is the relative unit value of a country's exports with respect to the unit value of competitors' exports to a given market. Referred to as the "unit value ratio (UVR)" and commonly used in the trade literature, this concept of measuring quality by relative unit value has its basis in the idea that consumers would be willing to pay more for the same product if they perceive it to be of better quality.

We first calculate the unit value of each product that a specific country exports by dividing the trade value by the quantity. Then, we calculate the competitors' unit value for the same basket of goods. We then divide the country's unit value for each product in the basket by the competitors' unit value for the corresponding products. Finally, we aggregate these product unit value ratios into a single unit value ratio, using the weights of each product in the overall exports of the country. The reported UVR takes the logarithm of this ratio. Hence, a negative UVR corresponds to a quality lower than world standard.

Note: First, to calculate the UVR, we considered quantities expressed in the same units across the sample of countries. Second, the weights used in aggregating the country's product unit values change as the export composition changes. Hence, the aggregated unit value reflects not only the quality but also the composition of exports. Third, the UVRs are calculated considering three groups of products. Products that appear consistently in a

country's export basket (products that the country has been exporting on a continuous basis, "traditional" exports). Products that appear at the beginning of the period and present at least two consecutive observations afterward (products the export of which has discontinued). And products that appear at the end of the period and for which there are at least two consecutive observations prior 2005 (new products that the country has started to export during the sample period). Finally, market shares are calculated using the whole basket of goods.

Following Rauch (1999), we classify goods into three categories, reflecting the differences in their price-setting mechanisms: 1) differentiated products do not have well-defined product standards and are not traded on specialized exchanges. They carry the largest potential for quality variation; 2) reference-priced products are goods that have referable standards with reference prices that are available in specialized publications; however, they are not traded on organized exchanges. Quality variation is possible but less so than for differentiated goods; and 3) homogenous products are goods that have clearly defined standards and/or are internationally traded on organized exchanges. Hence, they have well-defined prices and the smallest potential variation in quality.

Partial List of Products in Rauch Classification

Differentiated	Reference Period	Homogenous
Soya sauce	Soya bean flour and meal	Coffee, not roasted nor decaffeinated
Vitamins and their derivatives	Tar distilled from coal or lignite	Barley
Beauty, make-up, skincare	Propane, liquefied	Rice in the husk (paddy or rough)
Artificial waxes	Mercury	Soya beans
Chemical preparations for photography	Sulphates of copper	Crude soya-bean oil
Activated carbon	Methanol (methyl alcohol)	Raw cane sugar, in solid form
Prepared rubber accelerators	Ionones and methylionones	Raw beet sugar, in solid form
Articles of apparel and clothing accessories	Vaccines for human medicine	Cocoa beans, whole or broken, raw
Vulcanized rubber thread and cord	Plates of polymers of ethylene	Tobacco, not stemmed/stripped
Hygienic or pharmaceutical articles	Cellulose and its chemical derivatives	Ores and concentrates
Articles of apparel of leather	Medicaments of alkaloids or derivatives	Lignite, not agglomerated
Wooden frames for painting and photographs	Gummed or adhesive paper	Petroleum oils and oils
Textile wall coverings	Woven fabrics of cotton	Carbon
Articles of gold or silversmith	Woven fabrics of synthetic fibers	Aluminum oxide, other than artificial
Flanges, stainless steel	Asphalt or similar material article	Natural rubber latex, in primary form
Chain, roller, iron or steel	Ferro-alloys	Latex of synthetic rubber
Table knives having fixed blades	Flat-rolled products of stainless steel	Cotton, not carded or combed
Carbon or graphite electrodes	Rails, iron or steel	Wood in rough form
Electrical insulators	Pipes and tubes, copper-zinc base	Diamonds unsorted whether worked or not
Rail locomotives	Chain and parts thereof of copper	Silver in unwrought forms
Automobiles	Plates, sheet, strip and foil, nickel	Gold in unwrought forms, nonmonetary
Aircraft undercarriages and parts	Foil, aluminum	Platinum, in unwrought or in powder forms
Optical devices, appliances, and instruments	Tin bars, rods, profiles and wire	Iron, unrefined
Clocks and watches	Molybdenum and articles thereof	Copper-zinc base alloys, unwrought
Ballpoint pens	Magnesium and articles thereof	Nickel, unwrought, not alloyed
Playing cards	Nickel-iron electric accumulators	Powders, molybdenum
		Magnesium

1/ See Rauch (1999).

References

Copeland, B. R., and A. Kotwal, 1996, "Product Quality and the Theory of Comparative Advantage," *European Economic Review*, Vol. 40, pp. 1745–60.

Dulleck, U., and others, 2005, "Dimensions of Quality Upgrading," *Economics of Transition*, Vol. 13 (No. 1), pp. 51–76.

Fabrizio, S., D. Igan, and A. Mody, 2007, "The Dynamics of Product Quality and International Competitiveness," IMF Working Paper No. 07/97.

Hallak, J.C., 2006, "Product Quality and the Direction of Trade," *Journal of International Economics*, Vol. 68 (January), pp. 238–65.

———, and P. Schott, 2005, "Estimating Cross-Country Differences in Product Quality," Working Paper (University of Michigan, Ann Arbor and Yale University).

Hatzichronoglou, T., 1997, "Revision of the High-Technology Sector and Product Classification," OECD Science, Technology and Industry Working Papers 1997/2, (Paris: OECD, Directorate for Science, Technology and Industry).

Hummels, D., and P. Klenow, 2005, "The Variety and Quality of a Nation's Exports," *American Economic Review*, Vol. 95, pp. 704–23.

Landesmann, M., 2003, "Structural Features of Economic Integration in an Enlarged Europe: Patterns of Catching-Up and Industrial Specialization," European Commission DG-EcoFin Economic Papers No. 181.

Murphy, K., and A. Shleifer, 1997, "Quality and Trade," *Journal of Development Economics*, Vol. 53, pp. 1–15.

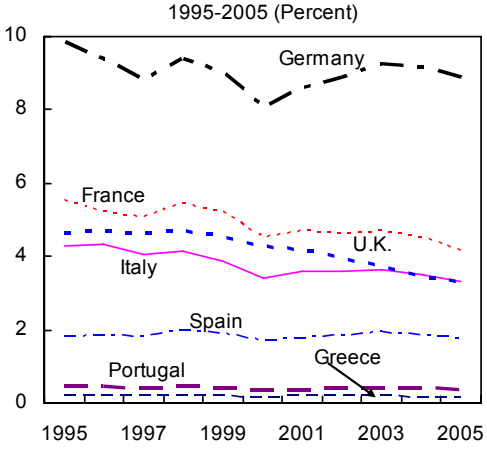
Rauch, J. E., 1999, "Networks versus Markets in International Trade," *Journal of International Economics*, Vol. 48 (No. 1), pp. 959–73.

V. Are the Southern Euro Area's Exports Moving to Markets with Less Competition?[1] [2]

A. Introduction

Globalization has resulted in increasingly integrated markets across the world. As a result, competition may become tougher, and incumbent players may lose market share. Moreover, classical trade theory predicts a reduction in prices and margins, although the empirical evidence is mixed (see for example, Chen, Imbs, and Scott, 2004; and Boulhol, 2005). In the face of increasing competition, incumbent firms can adjust by increasing their productivity, and since this may prove difficult in mature industries, by diversifying toward markets with fewer competitors or higher-value-added products, where competition from new entrants could be weaker. However, shifts toward less competitive markets could indicate that exporting firms are not really adjusting but have been competed out of their traditional markets and forced to retreat into more protected but less profitable ones. Although all southern euro area five (SEA-5) countries have suffered a decline in their shares of world exports over the last decade (Figure V.1), it is not clear whether some adjustment has already taken place in response to the emergence of new global competitors.

Figure V.1. Share in World Exports of Goods, 1995-2005 (Percent)



Sources: UN, COMTRADE; and IMF staff calculations.

The purpose of this chapter is to analyze to what extent SEA-5 exporters are facing stiffer competition, and how they have tried to readjust to the new global environment. In particular, this chapter explores the following questions: (a) where are the SEA-5 countries exporting to, and with whom are they competing in those markets; (b) how has the intensity of competition evolved in those markets; and (c) have the SEA-5 countries reallocated their exports toward markets with lower degree of competition and higher relative unit values. In order to analyze these issues, we use six-digit data for export of goods from the United Nations Commodity Trade Statistics Database (COMTRADE), which implies a breakdown of exports into more than 4,000 differentiated product categories (a description of the data and definitions used in this paper are reported in Appendix V.A). We conventionally define competition as larger

[1] Prepared by Marialuz Moreno-Badia.

[2] For the purpose of this paper, we focus on France, Greece, Italy, Portugal, and Spain (the southern euro area five, henceforth).

number of suppliers with more evenly distributed shares—measured by a Herfindahl index of each market separately and aggregated for each country according to the weight that the market in question has in its total exports.

The analysis shows that, despite some diversification, the main markets of the SEA-5 exporters are EU countries. In general, all SEA-5 countries are underdiversified compared with Germany, but Portugal and, to a lesser extent, Spain stand out because of their low degree of diversification relative to their peers. Greece, however, is highly diversified, thanks to the expansion of its exports into southeastern Europe. Contrary to expectations, the main export competitors of the SEA-5 countries are G-7 countries.

In line with global trends, all SEA-5 countries, except for Greece, faced increasing competition in their export markets during the last decade (1995–2005). Moreover, SEA-5 countries confront higher competition levels than Germany and the world as a whole. The average market share for the SEA-5 countries is smaller than for Germany and declined over the last decade. Nevertheless, some countries have been able to raise their relative unit values, probably indicating some quality upgrading.

In response to these challenges, there has been some reallocation of exports toward markets with less competition. In particular, France, Greece, and Portugal have entered into markets with lower levels of competition than those of the markets they have abandoned. Also, the combined effect of entry and exit from markets has raised relative unit values for most SEA-5 countries. And, although in general SEA-5 countries have not reoriented their exports toward markets with less competition, all SEA-5 countries, except for Greece, have shifted their exports toward markets where they have larger market shares.

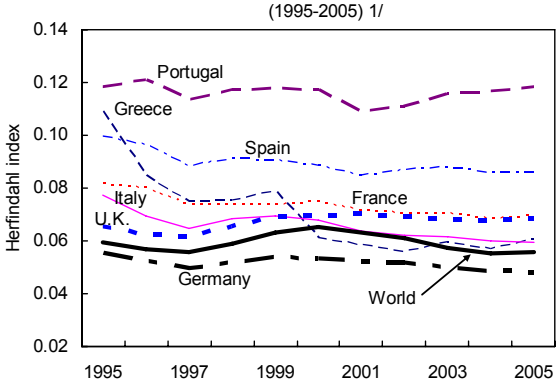
Going forward, additional adjustments will be needed. First, SEA-5 countries can further diversify their export markets and profit from the opportunities presented by new markets. By being the first movers into markets with high growth potential, they can gain knowledge and consolidate their positions before competitive pressures arise in these markets. To a certain extent, this is the strategy being followed by some Greek exporters. Second, although competition may depress prices, there is certain scope to increase the quality of exports, as discussed in Chapter IV. Finally, productivity improvements can help firms maintain their competitive position.

B. Where are the Exports Going, and Who are the Main Competitors?

SEA-5 countries have diversified their exports across geographic markets since the mid-1990s, but the European Union remains the most important export destination (Table V.1). Although all SEA-5 countries are underdiversified compared with Germany, there are considerable differences among them (Figure V.2). Greece, which had one of the highest levels of export concentration in 1995, has become the most diversified country of the SEA-5 countries, thanks to its entry into southeastern Europe. By contrast, Portugal, which was the least diversified at the beginning of the period, is still lagging behind, partly due to its

dependence on the Spanish market. Spain, despite improvements, has also a low degree of diversification compared with its peers, while Italy and France have increased their diversification, and are now close to world market averages.

Figure V.2. Geographic Diversification (1995-2005) 1/



Sources: UN, COMTRADE; and IMF staff calculations.
1/ A higher Herfindahl index indicates less diversification.

The SEA-5's main export competitors are G-7 countries. However, China is among the top five competitors for Greece, Portugal, and Italy (Table V.2). In order to measure the overlap between SEA countries' export bundles and those of their main competitors, we use the export similarity index developed by Finger and Kreinin (1979). This index takes a value of 1 if two countries have identical exports and a value of 0 if their export patterns are totally dissimilar. Based on this measure, Greece, Italy, and Spain's overlap with their main competitors decreased over the last decade while the opposite applied to Portugal (Figure V.3). France's export similarity with its main competitors—the highest among the SEA-5—remained broadly unchanged.

Table V.1. Southern euro area Five: Main Geographic Destinations of Exports, 1995–2005 1/
(Share, in percent)

France		Greece		Italy		Portugal		Spain	
Destination	Share 2005 2/	Destination	Share 2005 2/	Destination	Share 2005 2/	Destination	Share 2005 2/	Destination	Share 2005 2/
BEL	8.7	ALB	2.7	AUT	2.4	AUT	1.3	BEL	3.2
CHE	2.7	BEL	1.5	BEL	3.0	BEL	4.8	DEU	12.5
CHN	2.1	BGR	5.7	CHE	3.9	DEU	13.6	FRA	18.9
DEU	15.7	CYP	6.8	CHN	2.1	ESP	25.4	GBR	9.8
ESP	9.7	DEU	13.6	DEU	13.3	FRA	12.4	ITA	9.1
GBR	8.8	ESP	4.0	ESP	7.3	GBR	9.2	MEX	1.9
ITA	9.0	FRA	4.1	FRA	12.2	ITA	4.7	NLD	2.8
JPN	2.0	GBR	7.8	GBR	6.6	NLD	3.3	PRT	9.9
NLD	3.3	ITA	12.0	GRC	2.0	SWE	1.0	TUR	2.0
USA	8.3	NLD	2.1	JPN	2.0	USA	6.6	USA	5.1
		ROM	2.9	NLD	1.9				
		RUS	1.2	POL	2.1				
		TUR	4.5	ROM	1.9				
		USA	6.3	TUR	2.2				
				USA	9.6				

Sources: UN, COMTRADE; and IMF staff calculations.

1/ Top geographic markets accounting for at least 70 percent of the corresponding southern euro area five country's exports during 1995–2005.

2/ Percentage of the corresponding southern euro area five country's exports that went to a particular geographic destination in 2005.

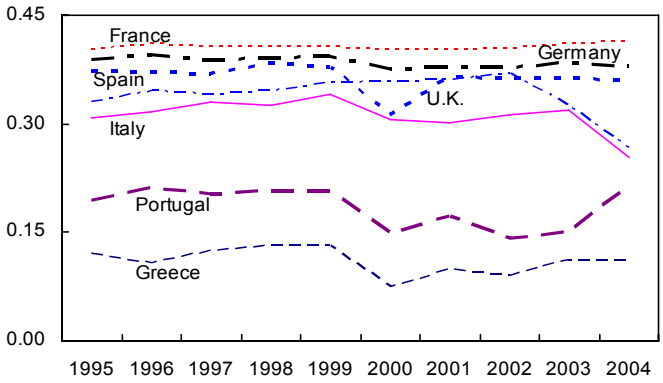
Table V.2. Top Competitors 1/

France	Italy	Greece	Portugal	Spain
DEU	DEU	DEU	DEU	DEU
NLD	CHN	ITA	FRA	FRA
USA	FRA	FRA	CHN	USA
GBR	USA	NLD	ITA	NLD
ITA	NLD	CHN	NLD	ITA
JPN	GBR	USA	GBR	
			USA	

Sources: UN, COMTRADE; and IMF staff calculations.

1/ Countries that were among the top five competitors during 1995–2005. Importance of a competitor is determined by its export share in each geographic destination/industry (double weighting). Competitors are sorted in order of importance (as of 2005), starting from the top.

Figure V.3. Index of Export Similarity, 1995-2004 1/



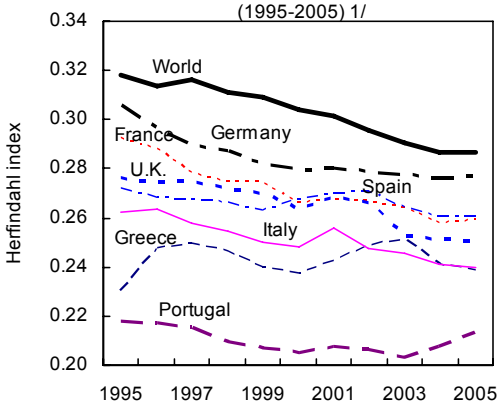
Sources: UN, COMTRADE; and IMF staff calculations.
1/ Weighted average of the indices of export similarity with main competitors. A higher index indicates greater export similarity.

C. Is Competition Becoming Tougher?

Concentration among exporters in a given market is measured by the Herfindahl index. This index has been extensively used in the literature to convey information about the distribution of market shares among firms in a specific market (Hennessy and Lapan, 2007; and Mirza, 2006). For this analysis, we define a market as a pair consisting a geographic destination and a product. The indicator of overall concentration is the sum of Herfindahl indices across all markets, weighted by the export shares of each market. Similar results are obtained using entropy as a measure of market concentration. The basic idea of this measure is that the higher the number of countries exporting into a market and the smaller their market share (lower Herfindahl index), the stiffer will be the competition in that market. However, caution must be applied in interpreting results, since we focus on the competition among exporters in a given market without considering domestic producers, the number of firms involved, or the evolution of markups.

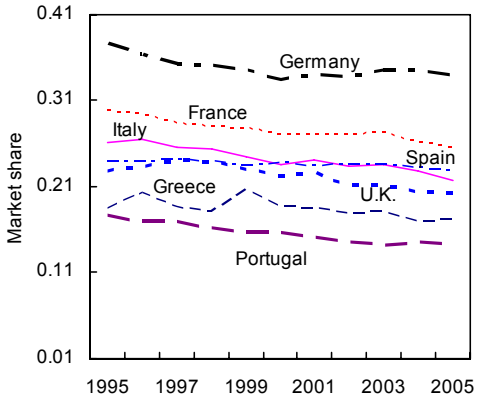
Based on the Herfindahl indices, all SEA-5 countries, except for Greece, faced increasing competition in their export markets during the last decade. This trend is similar to that of other large European countries (Germany and the U.K.), although the increase was smaller for Italy, Spain, and Portugal (Figure V.4). SEA-5 countries face stiffer competition than Germany and the world as a whole, but the difference is not large for Spain and France. The average market share for the SEA-5 countries is lower than for Germany and, not surprisingly, has declined over time, even in the case of Greece, where the intensity of competition has declined as well (Figure V. 5).

Figure V.4. Market Concentration (1995-2005) 1/



Sources: UN, COMTRADE; and IMF staff calculations.
1/ A higher Herfindahl index indicates higher market concentration and w eaker competition.

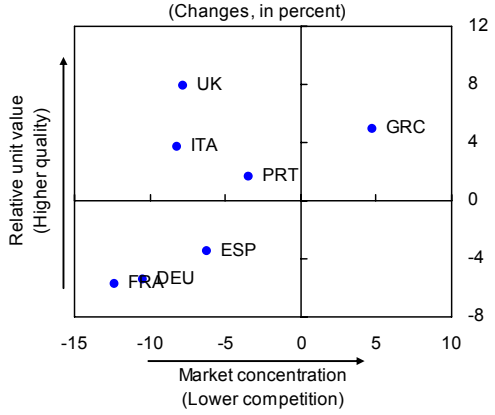
Figure V.5. Market Shares, 1995-2005 1/



Sources: UN, COMTRADE; and IMF staff calculations.
1/ Weighted average market share across all markets. Markets are defined as pairs of products and geographic destinations.

Despite this more intense market competition, some countries have managed to increase their relative unit values.[3] In particular, Italy and Portugal seem to have upgraded their export quality in response to the emergence of new competitors (Figure V.6).[4] Greece has also benefited from an increase in its relative unit value, probably aided by weaker market competition, while France and Spain have experienced just the opposite.

Figure V.6. Market Concentration and Relative Unit Values, 1995 and 2004 (Changes, in percent)



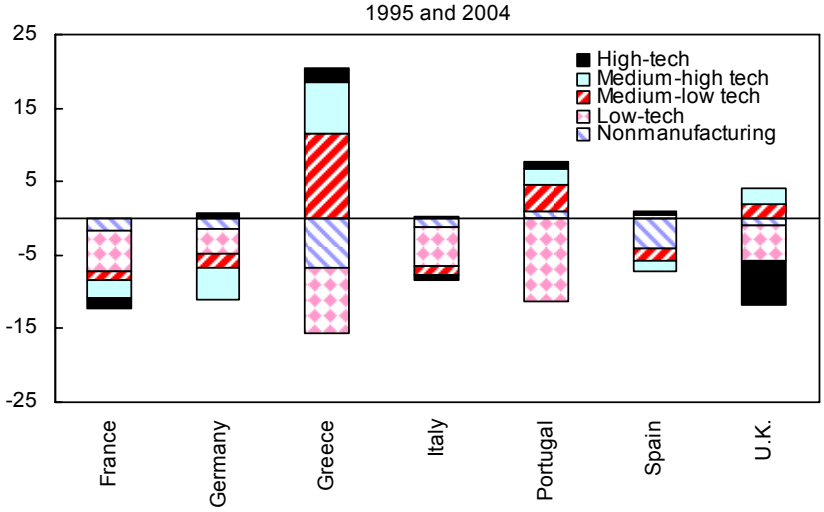
Sources: UN, COMTRADE; and IMF staff calculations.

This increase in competition has been mainly driven by nonmanufacturing and low-tech manufacturing goods (Figure V.7). Within the low-tech category, the textile industry is responsible for a large part of the increase in market competition in Italy and Portugal. In addition, some goods with higher-technology intensity have also led to higher competition in France, Italy, and Spain. Technology upgrading has, however, decreased the intensity of competition faced by Greece and Portugal.

[3] The relative unit values in this paper compare each country's unit values with those of its direct competitors. Therefore, results are not comparable to those reported in Chapter IV.

[4] Although relative unit values have been used extensively in the literature as a proxy of product quality on the premise that a higher price reflects higher quality, caution must be applied in interpreting results, as unit values may capture other effects, in particular, market power.

Figure V.7. Contributions to Changes in Market Concentration, 1995 and 2004



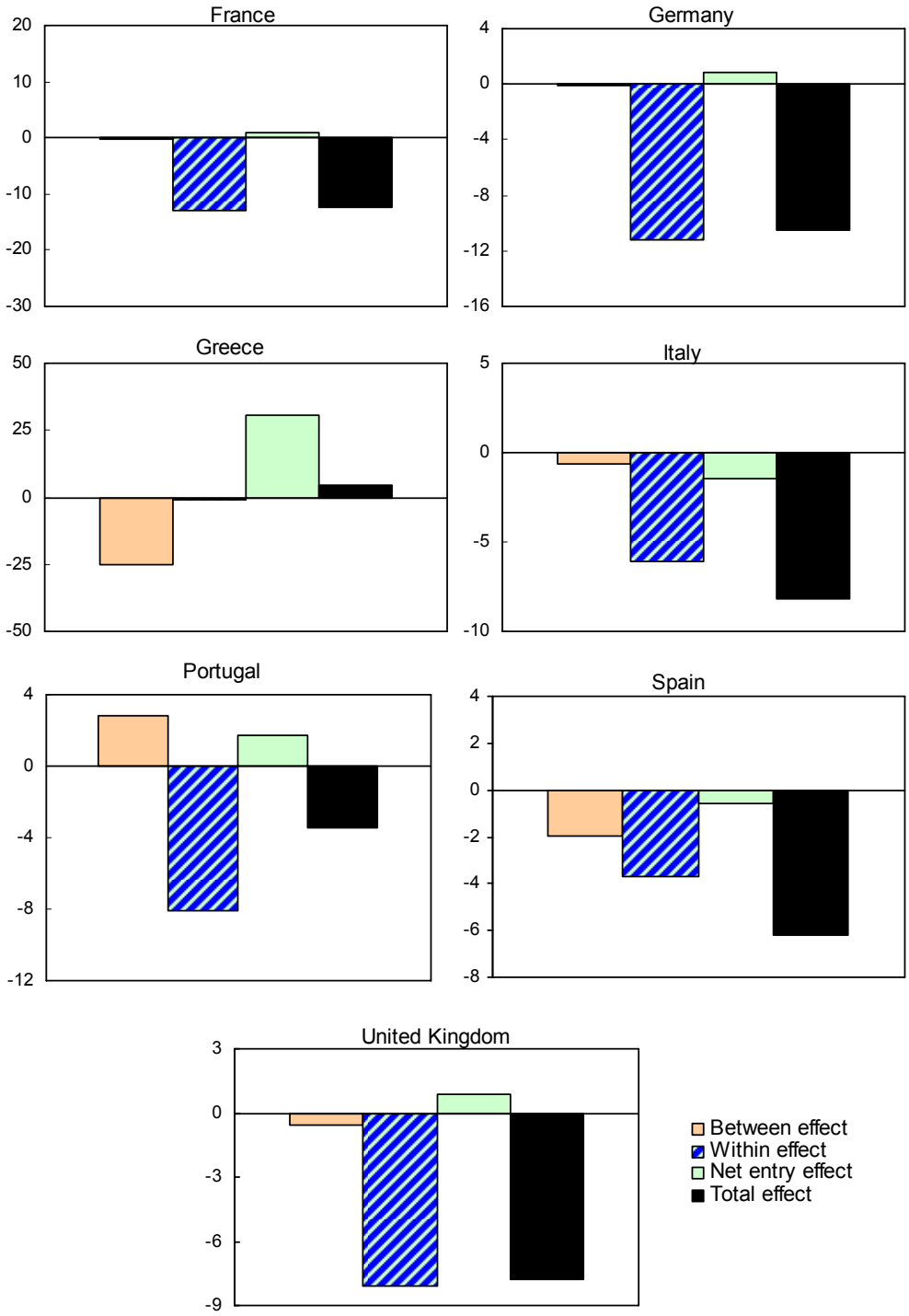
Sources: UN, COMTRADE; and IMF staff calculations.

D. Are the SEA-5's Exports Moving to Markets with Less Competition?

To assess whether the SEA-5 countries have tried to shift their exports to markets with less competition, we look at "traditional," "entry," and "exit" markets. *Traditional markets* are those markets where the SEA-5 have been present since 1995 and throughout the sample period; *entry markets* are those the SEA-5 countries have entered since 1995; and *exit markets* are those they have exited since 1995. The change in market competition between 1995 and 2004 can be then decomposed into three categories: (a) *within effect*: changes due to increased competition in traditional markets, keeping the export shares fixed; (b) *between effect*: changes due to a shift of export shares across traditional markets; and (c) *net entry effect*: changes due to differences in the level of competition between entry and exit markets.

The positive impact from the entry and exit markets have helped mitigate the intensity of competition for some SEA-5 countries but not enough to offset the negative impact from traditional markets. In particular, the degree of competition in new markets has been lower than that of exit markets in France, Greece, and Portugal (Figure V.8). However, only in Greece has this effect been large enough to offset the stronger competition in traditional markets. In fact, what sets Greece apart from the other SEA-5 countries is its entry into southeastern Europe, where markets are highly concentrated (Table V.3). The intensity of competition in traditional markets has increased across the board (negative within effect), and, with the exception of Portugal, there has not been an overall reorientation of exports toward markets with less competition (negative between effect). This is in line with developments in Germany and the U.K.

Figure V.8. Contributions to Changes in Market Concentration, 1995 and 2004 1/
(Percent)



Sources: UN, COMTRADE; and IMF staff calculations.

1/ A negative between effect indicates that exports have shifted toward traditional markets with stronger competition; a negative within effect indicates that the degree of competition in traditional markets has increased; a negative net entry effect indicates that the degree of competition in entry markets is higher than that of exit markets.

Table V.3. Net Entry: Contribution to Changes of Market Concentration by Geographic Destination, 1995 and 2004
(Percent)

France		Greece		Italy		Portugal		Spain	
Destination	Contribution	Destination	Contribution	Destination	Contribution	Destination	Contribution	Destination	Contribution
CHE	0.7	ALB	8.4	AUT	0.0	AUT	-0.1	DEU	-0.2
CHN	0.3	BGR	14.3	CHE	0.1	DEU	-0.3	FRA	-0.1
DEU	-0.9	CYP	3.9	CHN	0.1	ESP	1.0	GBR	-0.1
ESP	-0.1	DEU	0.1	DEU	-0.9	FRA	-0.9	ITA	0.1
GBR	0.8	ESP	0.4	ESP	0.0	GBR	1.2	MEX	0.4
ITA	-0.2	FRA	-1.4	FRA	-0.2	ITA	0.6	NLD	0.2
JPN	-0.4	GBR	-0.1	GBR	0.1	NLD	-0.2	PRT	-1.0
NLD	0.0	ITA	-1.0	GRC	-0.1	SWE	-0.2	TUR	0.4
USA	0.7	NLD	0.2	JPN	-1.0	USA	0.6	USA	-0.2
		ROM	0.9	NLD	-0.3				
		RUS	1.8	POL	0.2				
		TUR	2.0	ROM	0.2				
		USA	1.1	TUR	0.0				

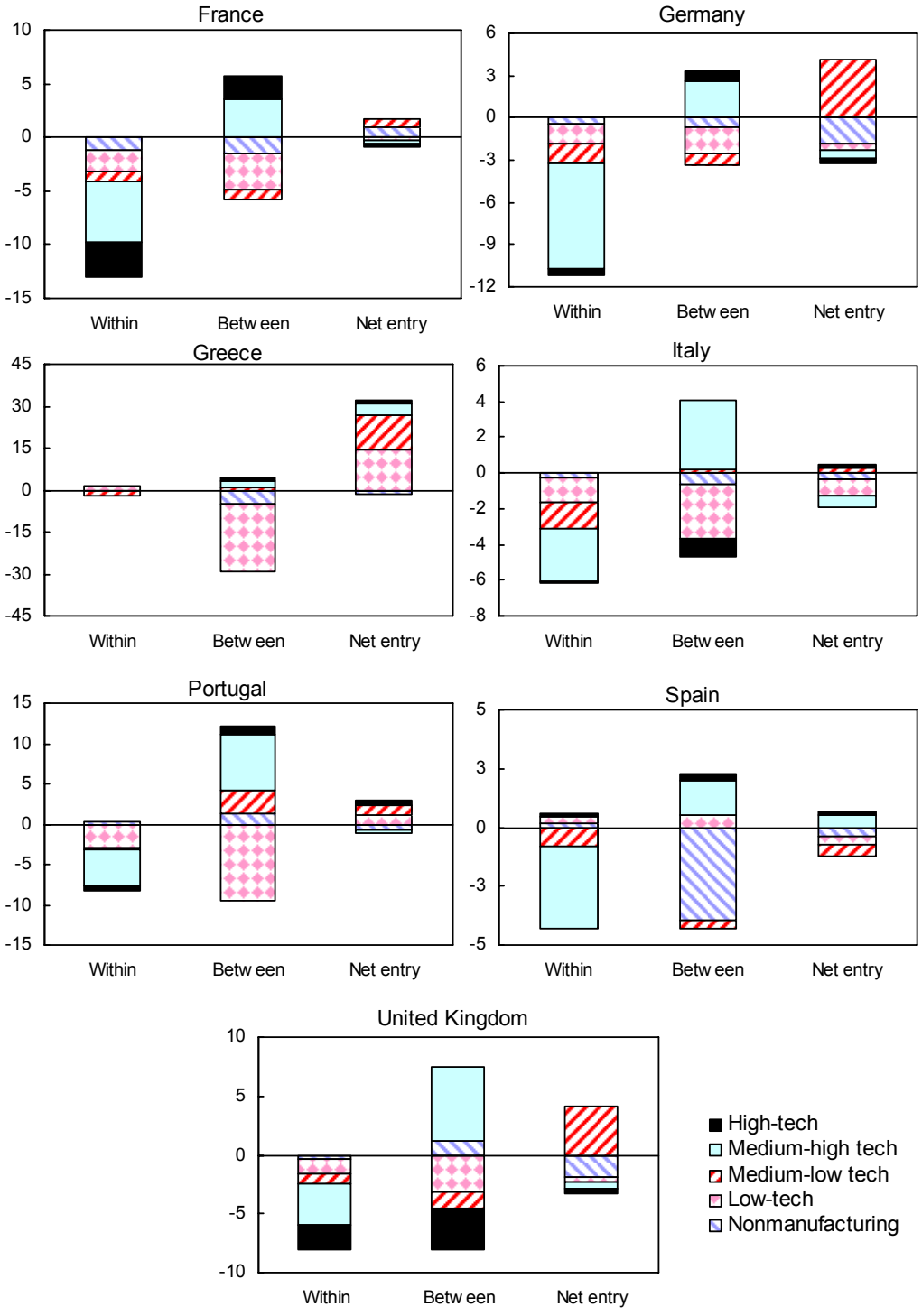
Sources: UN, COMTRADE; and IMF staff calculations.

Also, the shift in exports within the higher-technology markets has helped weaken competition. As expected, the intensity of competition faced by SEA-5 countries in their traditional markets has generally increased for all levels of technology intensity (negative within effect),[5] as in Germany and the U.K. (Figure V.9). But the reorientation of exports within the medium high-tech markets has reduced competition in all SEA-5 countries (positive between effect), and, barring Italy, the same is true for high-tech markets. By contrast, the shift within the low-tech and nonmanufacturing exports has in general increased competition. Finally, for most SEA-5 countries the net entry effect of nonmanufacturing markets on competition has been negative while that of high-tech and medium-low tech markets has been positive.

Moreover, there has been some reallocation of exports toward markets with larger average market shares and higher relative unit values. SEA-5 countries, with the exception of Greece, have tried to shift their exports toward those traditional markets where they enjoy larger market shares (positive between effect); overall, however, the emergence of new players has dampened market shares (Figure V.10). The entry and exit from markets have also boosted the average market share of Greece and, to a lesser extent, France. Although SEA-5 countries have not shifted their exports to traditional markets with higher relative unit values, the entry and exit from markets have raised relative unit values in all countries except for Italy (Figure V.11). Furthermore, Greece, Italy, and Portugal have succeeded in raising their relative unit values in traditional markets (positive within effect) despite stronger competition in those markets.

[5] Except for low-tech products in Greece and Spain and high-tech product in Spain, for which the intensity of competition in traditional markets has declined slightly.

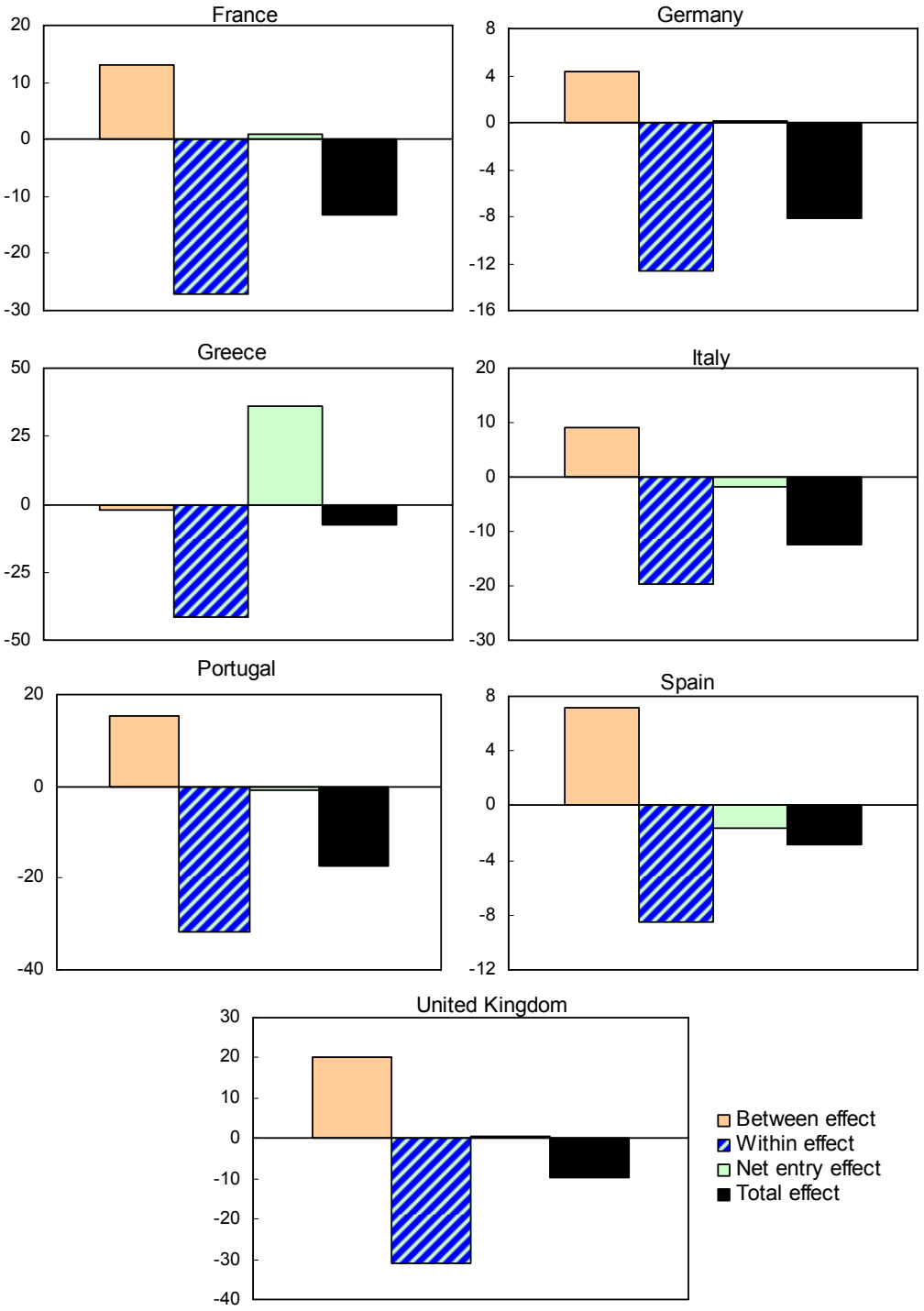
Figure V.9. Contributions to Changes in Market Concentration by Technology Groups, 1995 and 2004 1/
(Percent)



Sources: UN, COMTRADE; and IMF staff calculations.

1/ A negative within effect indicates that the degree of competition in traditional markets has increased; a negative between effect indicates that exports have shifted toward traditional markets with stronger competition; a negative net entry effect indicates that the degree of competition in entry markets is higher than that in exit markets.

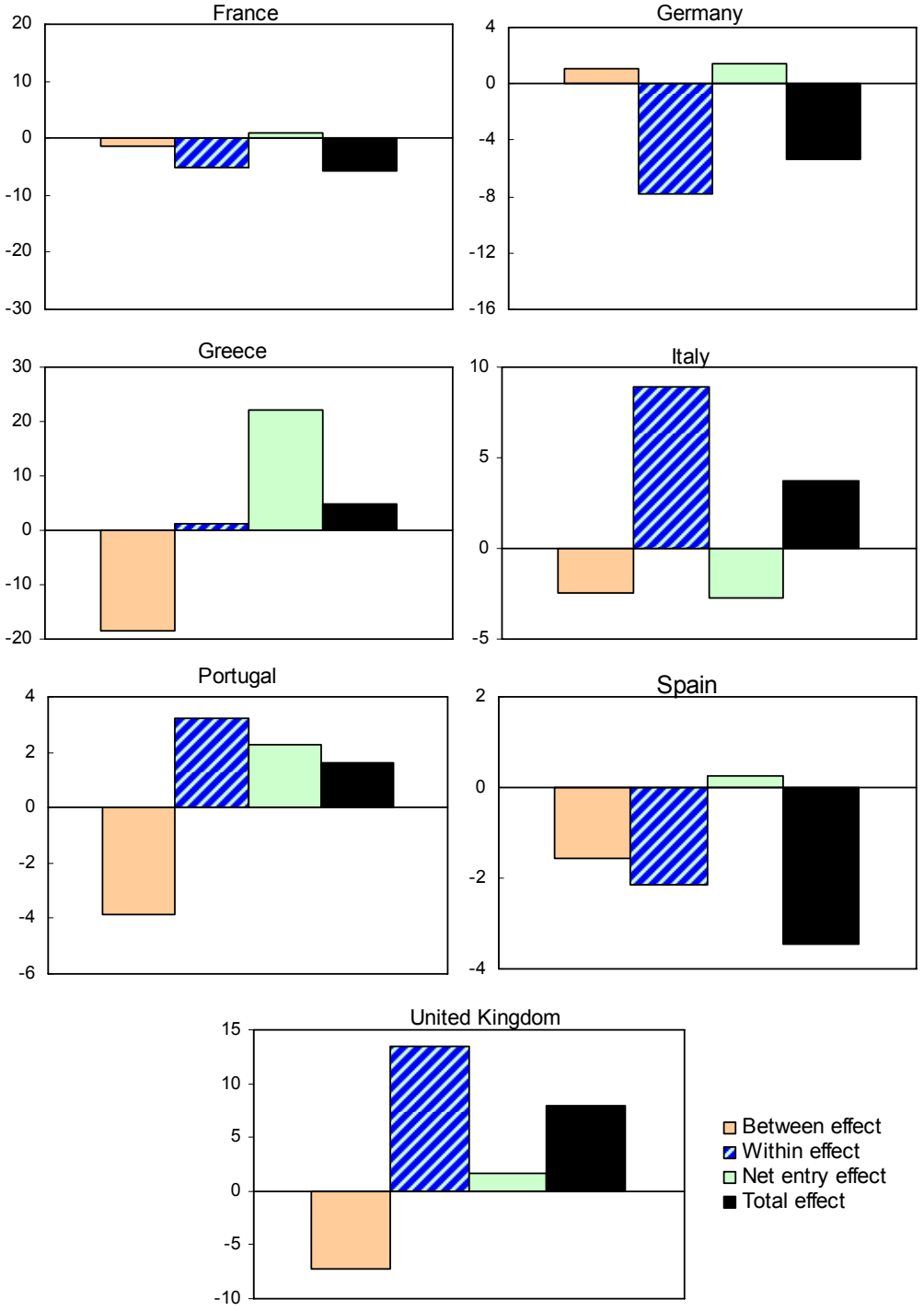
Figure V.10. Contributions to Changes in Market Share, 1995 and 2004 1/
(Percent)



Sources: UN, COMTRADE; and IMF staff calculations.

1/ A negative between effect indicates that exports have shifted toward traditional markets with lower market shares; a negative within effect indicates that market shares have declined in traditional markets; a negative net entry effect indicates that market shares in entry markets are lower than those of exit markets.

Figure V.11. Contributions to Changes in Relative Unit Values, 1995 and 2004 1/
(Percent)



Sources: UN, COMTRADE; and IMF staff calculations.

1/ A negative betweeen effect indicates that exports have shifted toward traditional markets with lower relative unit values; a negative within effect indicates that relative unit values have declined in traditional markets; a negative net entry effect indicates that the relative unit values of entry markets are lower than those of exit markets.

Appendix V.A. Data Sources and Definitions

Data sources

The trade data are from the UN COMTRADE database and consist the trade values and quantities of import flows. We include all goods (not just manufacturing) and use import flows because reporting of imports is generally more reliable than that of exports. The import data are at the six-digit product level, according to the Harmonized System (HS) classification. For each product, an observation consists the reporter, country of origin, time, trade value in dollars, quantity, and units in which the quantity is expressed.

Our database covers the period 1995–2005, but we have excluded from most of our analysis the year 2005 because COMTRADE data for that year are still preliminary. In order to create our sample we follow two steps. First, for each country, we focus on the top geographic destinations of its exports that account for at least 70 percent of exports during the period 1995–2005. We have excluded Belgium in many instances because prior to 1999 there are no data for Belgium disaggregated from the Benelux countries. Second, we exclude outliers and unrealistic observations to calculate the relative unit values.

Definitions

The export similarity index for any two exporters *c* and *d* to country X in year *t* is defined as follows:

$$ESI_{tcd} = \sum_{p} \min\left(s_{tpc}, s_{tpd}\right),$$

where s_{tpc} is the value share of country *c*'s exports in product *p* in year *t*. This index is bounded by zero and unity: it will be zero if countries *c* and *d* do not have any products in common in year *t* and will be one if their exports are distributed identically across products.

We define a market as a pair consisting a geographic destination and a product. For a given country *c*, we define the index of concentration in market *m* as

$$H^{c}_{m,t} = \sum_{\forall \text{ exporter}} s^{2}_{n,t},$$

where $s_{n,t}$ is the market share of exporter *n* in market *m* at period *t*. Aggregating across all markets, we obtain the overall index of market concentration:

$$IC^{c}_{t} = \sum_{\forall m} H^{C}_{m,t} * \beta^{C}_{m,t},$$

where $\beta^{C}_{m,t}$ is the share of market *m* in total exports of country *c* in period *t*.

Traditional markets (*T*) are those markets where the SEA-5 have been present since 1995; entry markets (*EN*) are those the SEA-5 countries have entered since 1995; and exit markets (*EX*) are those they have exited since 1995. Changes in the overall index of concentration between 1995 and 2004 can be then decomposed as follows:

$$\Delta IC^C = \underbrace{\sum_{m \in T} \beta^C_{m,95} * \Delta H^C_m}_{Within} + \underbrace{\sum_{m \in T} \Delta \beta^C_m * H^C_{m,04}}_{Between} + \underbrace{\sum_{m \in EN} \beta^C_{m,04} * H^C_{m,04} - \sum_{m \in EX} \beta^C_{m,95} * H^C_{m,95}}_{Net\ entry}.$$

The technology content of manufacturing products is based on the taxonomy provided by OECD (2005). Manufacturing products are classified into four groups: high technology, medium-high technology, medium-low technology, and low technology. This classification is based on a cutoff procedure using R&D expenditure and output in 12 OECD countries according to International Standard Industrial Classification (ISIC) Rev. 3 and covering the period 1991–99.

For each country *c*, we compute the unit value in market *m* by dividing export value by export quantity. We only consider those markets in which quantities are expressed in the same unit across the sample of exporters for that market. Relative unit values in market *m* are then calculated dividing the unit value of country *c* by the weighted average of the unit values of its competitors in that market. The overall relative unit value of country *c* is the weighted sum of the relative unit values across all markets, with weights equal to export shares.

References

Boulhol, H., 2005, "Why Haven't Price-Cost Margins Decreased with Globalization?" unpublished (Paris: Université Panthéon-Sorbone).

Chen, N., J. Imbs, and A. Scott, 2004, "Competition, Globalization, and the Decline of Inflation," CEPR Discussion Papers No. 4695, (London: Centre for Economic Policy Research).

Fabrizio, S., 2008, "Are the Southern euro area Five Countries Advancing in the Search for New and Better Products?" Competitiveness in the Southern euro area: France, Greece, Italy, Portugal, and Spain, Chapter IV, forthcoming (Washington: International Monetary Fund).

Finger, J. M., and M. E. Kreinin, 1979, "A Measure of Export 'Similarity' and Its Possible Uses," *Economic Journal,* Vol. 89 (No. 356), pp. 905–12.

Hennessy, D. A., and H. Lapan, 2007, "When Different Market Concentration Indices Agree," *Economics Letters*, Vol. 95 (May), pp. 234–40.

Mirza, D., 2006, "How Much Does Trade Contribute to Market Structure?," *Economica,* Vol. 73 (February), pp. 59–74.

OECD, 2005, *OECD Science, Technology, and Industry Scoreboard 2005* (Paris: Organization for Economic Cooperation and Development).

VI. SERVICES EXPORTS IN SEA-5: PERFORMANCE AND RESTRUCTURING[1]

A. Introduction

Economic development is accompanied by increased specialization in services at the expense of industrial production. But while services account for over 60 percent of world production, they make up only 20 percent of world trade. International trade in services is limited by the nontradable nature of many services, which require physical interaction between producers and consumers. In addition, liberalization of trade in services has lagged with respect to liberalization of trade in goods. However, new technologies such as the internet facilitate the delivery of services, and increasing trade liberalization has created new opportunities for trade in services. Specialization in trade in services could result in improvements in the terms of trade; services prices typically grow faster than good prices and raises income as productivity in services exceeds productivity in manufacturing.

This section analyzes the pattern of trade in services specialization in the southern euro area five (SEA-5) countries and the performance of the sector during the last decade.[2] In particular, it explores whether SEA-5 countries have improved their competitiveness by increasing their specialization in exports of fast growing sectors and markets and high value-added services. The section also analyzes the impact of increased trade in services on terms of trade and discusses the factors that could hamper further growth in exports of services.

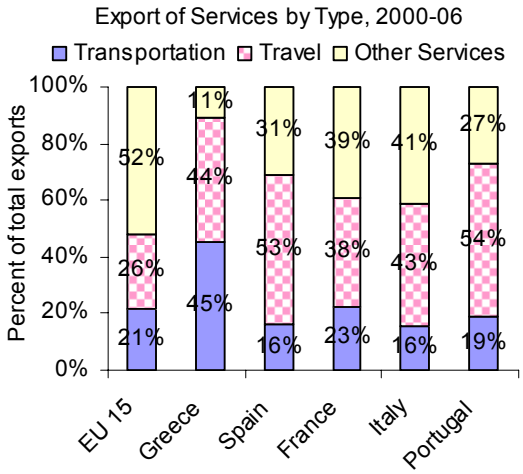
The degree of specialization on services exports and the performance of the sector varied across the SEA-5 countries. Traditionally, these countries have been specialized in relatively low-growth and low-productivity sectors, such as tourism, which hampers services export growth. The best performers among the SEA-5, Greece and Spain, relied on a strong growth in the tourism sector and increasing specialization in fast growing and/or high value-added sectors—sea transport in the case of Greece and business services in the case of Spain. However, performance lagged behind that of some other countries in Europe (notably Ireland and some Nordic countries). Services market liberalization and increased research intensity in the services sectors would further increase productivity growth and improve export performance in these sectors.

[1] Prepared by Eva Gutiérrez.

[2] SEA-5 countries comprise France, Greece, Italy, Spain, and Portugal.

B. Trade in Services Specialization and Performance in the SEA-5 Countries

The degree of specialization in trade in services and its evolution varies considerably across SEA-5 countries. Compared to the EU-15, Greece is clearly specialized in trade in services, and Italy and France are underspecialized according to a variety of indicators (Figure VI.1). France is the most service-intensive economy, as measured by the share of services value- added in total value-added; however, the low propensity to export services results in services trade underspecialization. In the case of Italy, both the size of the service sector in the economy and the propensity to export services are small compared to EU-15 countries while the opposite applies to Greece. Regarding the evolution in the degree of specialization, it only appears to have increased substantially in the case of Greece. All SEA-5 countries are relatively specialized in travel services (mostly tourism), Greece is specialized in transport services as well, and all countries are underspecialized in "other services," which includes business and financial services.



Sources: National Central Banks; and Eurostat.
Note: Data for EU 15 and Greece exclude 2006.

Increased specialization in trade in services will result in a positive terms of trade shock as service sectors are typically more sheltered from competition due to trade and physical restrictions. Indeed the behavior of export deflators for goods and services in most countries confirm this hypothesis although with some exceptions; notably Italy, where export deflators for goods grew faster than in any of the other non-oil producing economies, as well as Greece and the U.S. in the recent period.

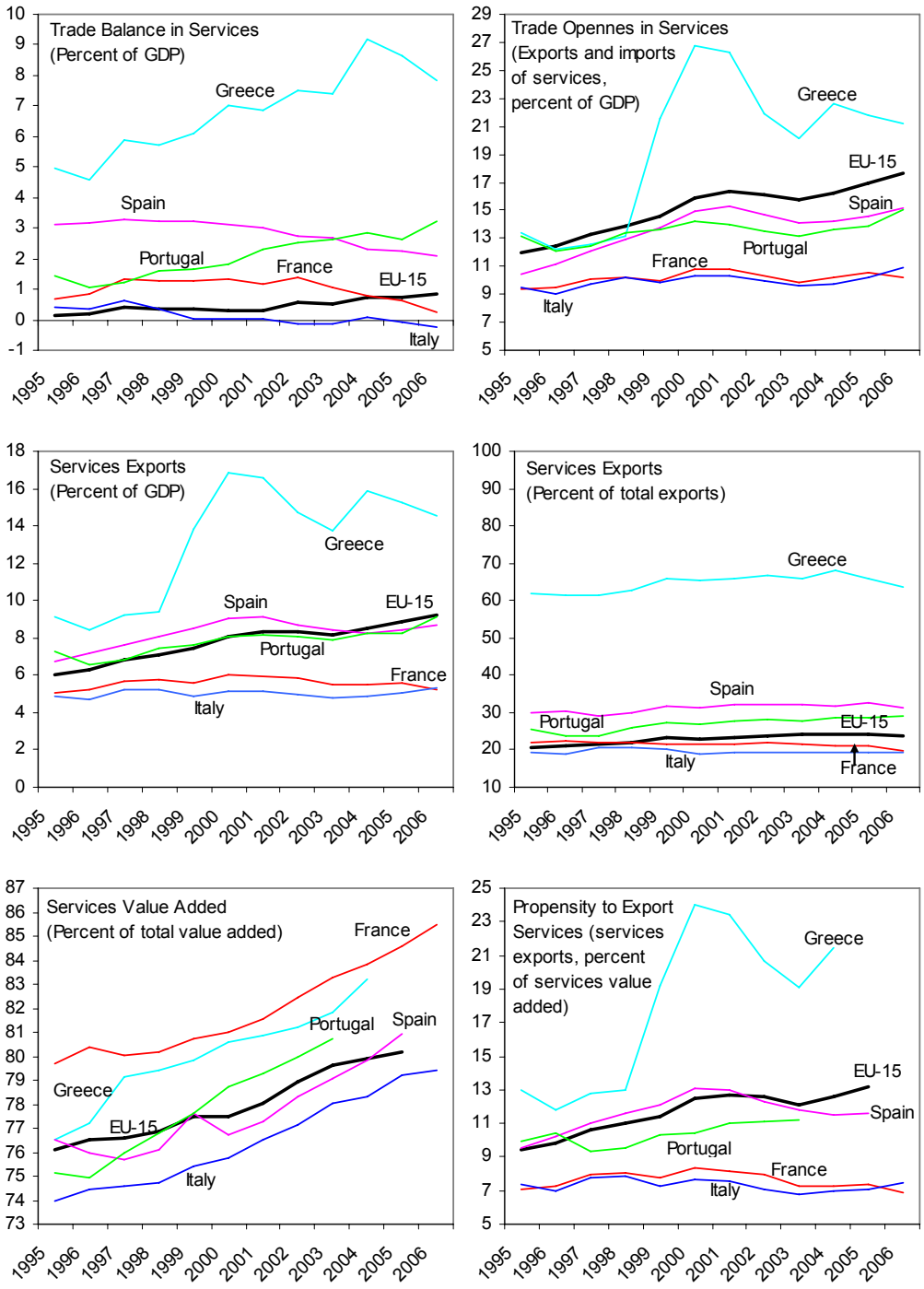
Selected Countries: Average Growth in Exports Deflators
(euro terms)

	Services		Goods	
	1996–2006	2000–06	1996–2006	2000–06
SEA-5				
France	1%	2%	0%	0%
Greece	3%	3%	3%	4%
Italy	3%	2%	5%	5%
Portugal	3%	3%	1%	1%
Spain	3%	4%	2%	2%
Other industrial countries				
EU-15	2%	2%	1%	1%
Finland	1%	2%	-1%	0%
Germany	0%	0%	0%	0%
Ireland	4%	4%	1%	0%
Norway	5%	6%	9%	13%
Sweden	1%	1%	0%	0%
United Kingdom	4%	2%	1%	0%
United States	2%	-1%	2%	1%

Source: Eurostat, National Accounts.

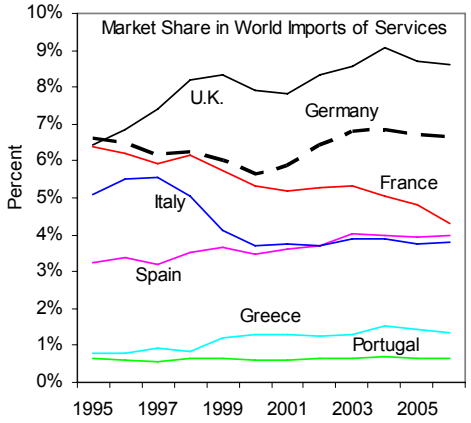
Services exports performance, as measured by market shares, varies greatly among the SEA-5 countries. Spain and Greece exploited their catch-up potential and increased their market share in total world imports of services while that of Portugal remained stable**.** The share of Italy and France declined over time, although other large European countries (U.K. and Germany) maintained or increased their market share. Indeed, growth rates of export services

Figure VI.1: Specialization in Trade in Services



Sources: Eurostat; National Central Banks; and IMF, *WEO*.

in Italy and France have lagged behind growth rates in most European countries. The strong growth in transport exports in Greece is the main factor behind the increase in market share, while in Spain exports of services other than transport and travel have grown strongly, contributing decisively to bring the Spanish service market share to a similar level to that of France or Italy. Total services export growth rates in Spain and Portugal compare favorably with growth rates in the EU-15 but are below growth rates in Ireland and the Nordics.



Source: IMF, WEO.

Selected Countries: Average Growth in Services Exports
(euro terms)

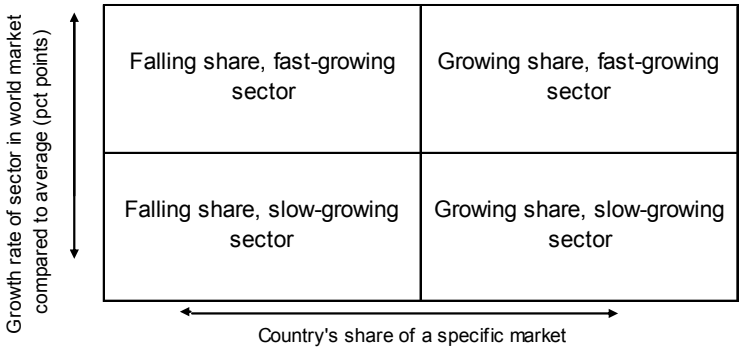
	1996–2006				2000–06			
	Services	Transport	Travel	Other	Services	Transport	Travel	Other
SEA-5								
France	4%	3%	5%	4%	3%	2%	4%	4%
Greece	15%	76%	15%	-2%	11%	22%	5%	2%
Italy	6%	2%	5%	11%	5%	6%	2%	9%
Portugal	8%	10%	6%	11%	7%	13%	4%	9%
Spain	10%	11%	7%	15%	8%	10%	5%	14%
Other industrial countries								
EU-15	8%	6%	6%	11%	7%	4%	4%	10%
Finland	9%	4%	4%	16%	14%	4%	4%	25%
Germany	8%	6%	6%	8%	8%	7%	7%	8%
Ireland	30%	9%	9%	49%	22%	8%	8%	26%
Norway	9%	5%	5%	20%	8%	4%	4%	18%
Sweden	12%	10%	10%	15%	11%	10%	10%	13%
United Kingdom	11%	6%	6%	15%	8%	4%	4%	9%
United States	7%	4%	4%	6%	3%	1%	1%	4%

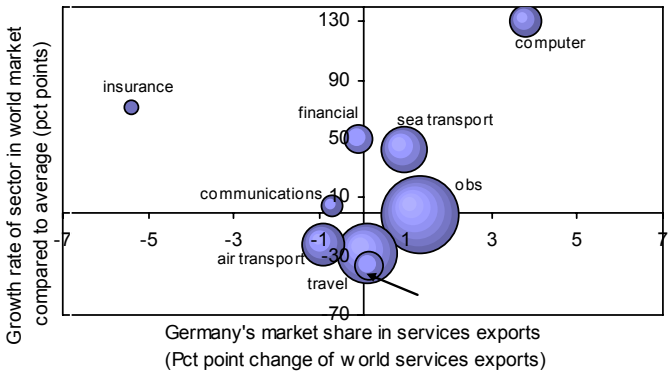
Sources: National Central Banks; and Eurostat.

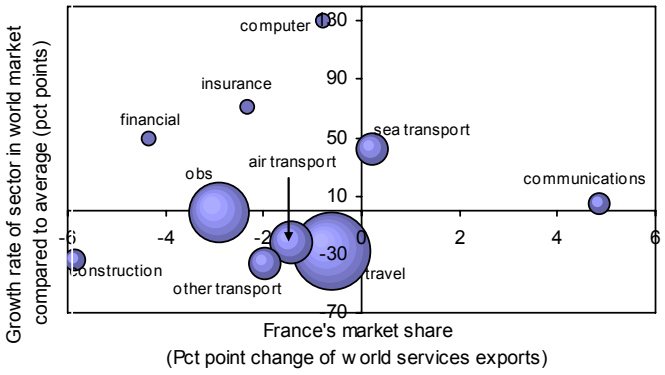
C. Dynamic Sectors and Markets Services Exports

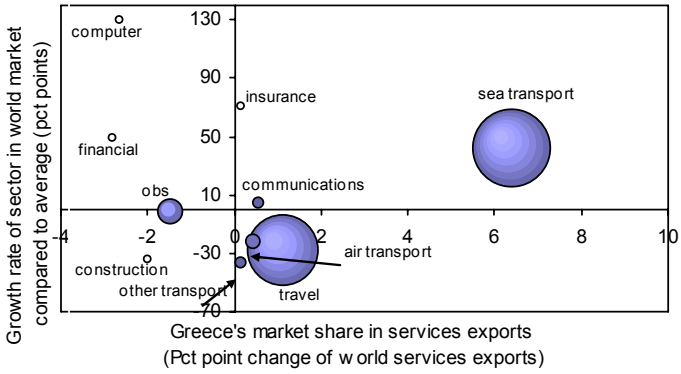
SEA-5 countries have not increased specialization in dynamic sectors. Increased specialization in sectors and markets with strong growth opportunities results in improved export performance for a given level of price competitiveness. Figure VI.2 reveals that the most dynamic services sectors (as measured per the increase in the share of world exports of services) include computer services, royalties, insurance and financial services, and sea transport. On the other hand, the less dynamic sectors include air and other transport, construction, and travel. SEA-5 countries tend to be specialized in the less dynamic sectors (sectors in the bottom quadrants in Figure VI.2), therefore curtailing their export growth potential. The only exception is Greece, which is specialized in sea transport. In general, SEA-5 countries have lost market share in high-growth services sectors, with exceptions (Greece increased its market share on exports of sea transport services and Spain on exports

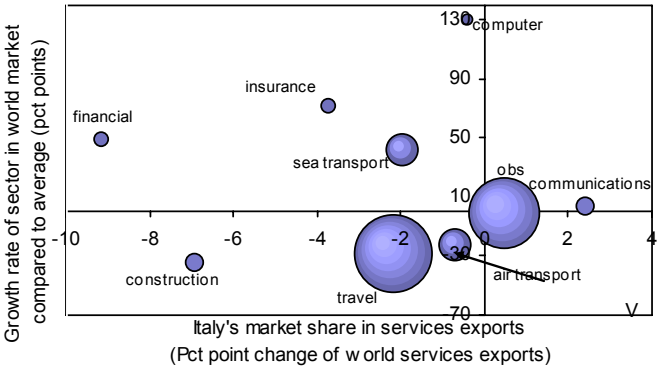
Figure VI.2. Services Exports in SEA-5 and Germany, 1996–2005
(Size of bubbles proportional to share it total services exports of each country)

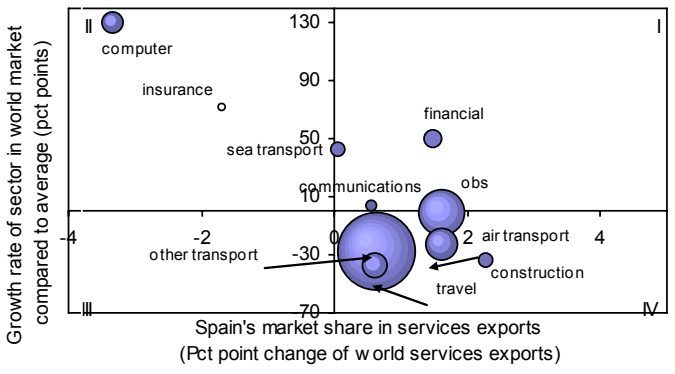


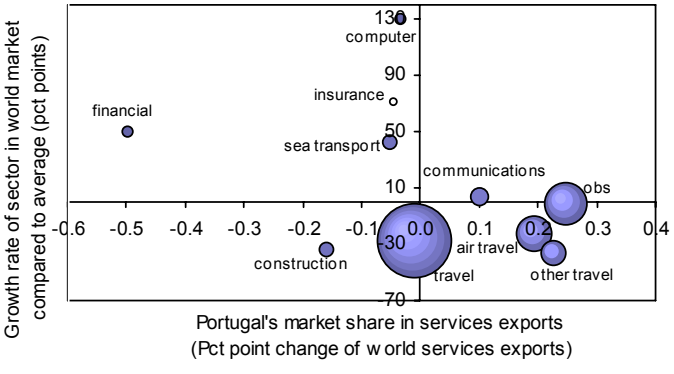








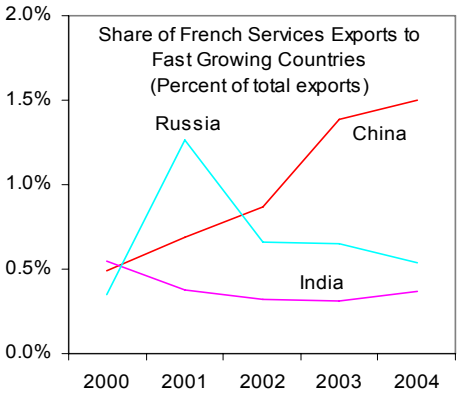




Sources: IMF, BOP statistics; and Eurostat.
* Data for Greece for 1996–2004.

of financial sector services). Despite unfavorable specialization patterns, Spain and Portugal have improved their performance in most low-growth sectors (measured by the increase in the market share), while France has lost market share in those same sectors. Poor performance of Italian travel exports is the main factor behind the decline in the Italian market share in world imports of services.

Exports to dynamic markets such as India, China, and Russia do not appear to have grown significantly. Exports to OECD countries account for the bulk of services exports in all European countries, and the share has been stable. The only exception is France, where it declined by 6 percentage points from 2000–04. However, the share of exports to the most dynamic markets only increased by 1 percent during the period.



Sources: OECD; and Trade in Services by Partner.

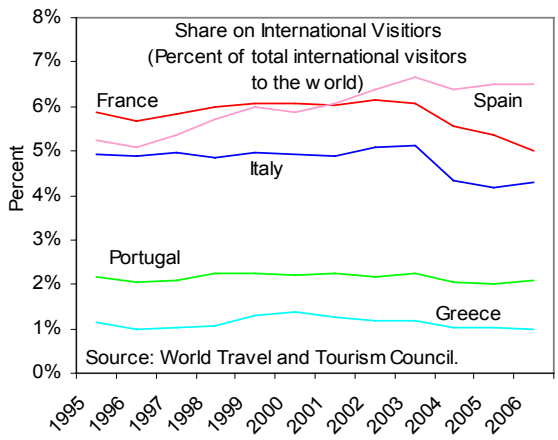
Selected Countries: Services Exports to OECD
(Share of total services exports)

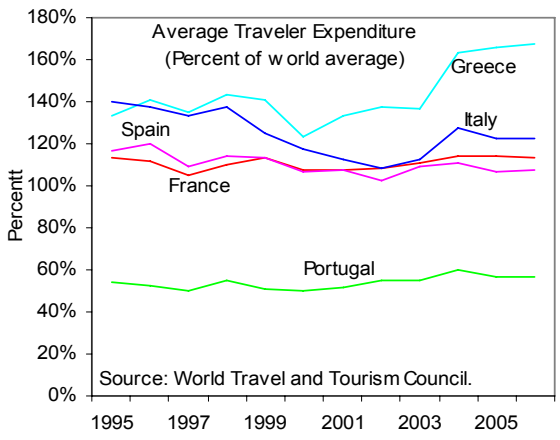
	2000	2001	2002	2003	2004
SEA-5					
France	84%	81%	80%	78%	78%
Greece	84%	83%	85%	85%	83%
Italy	83%	84%	84%	85%	84%
Portugal	91%	90%	90%	91%	90%
Spain	93%	93%	92%	93%	93%
Other industrial countries					
Germany	87%	86%	87%	86%	85%
Ireland	n.a	n.a	79%	83%	81%
Finland	72%	73%	71%	74%	72%
Sweden	87%	87%	87%	86%	87%
United Kingdom	79%	78%	79%	78%	77%

Sources: OECD; and Trade in Services by Partner Country.

D. Exports of Travel Services

As all SEA-5 countries are specialized in tourism, strong overall performance of services exports requires strong growth in travel services exports. Figure VI.2 shows that Greece and Spain increased their market share in world imports of travel services, France and Portugal maintained it, while it declined in Italy. Spain increased its share in the number of visitors while the average traveler expenditure increased considerably in Greece. Both the market share of visitors and the average expenditure declined in Italy.





Poor tourism export performance in Italy can be explained by structural factors. The travel and tourism competitiveness index published by the World Economic Forum, highly correlated both with the number of visitors and the average expenditure for visitor, found that Italy ranked lowest among the Mediterranean EU countries. Restrictions to foreign ownership and participation on the sector, poor railroad and port infrastructure, low level of professional qualification among sector employees, and lack of government policies prioritizing the sector are the main factors driving down Italy's rank.

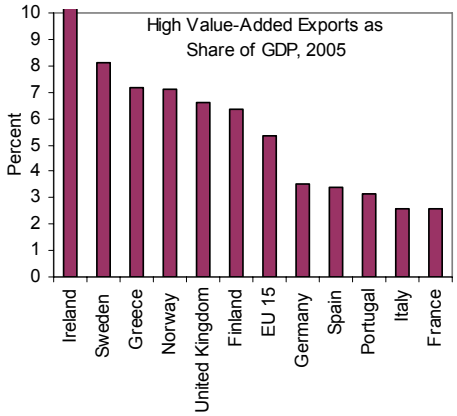
The Travel and Tourism Competitiveness Index, 2007

	Overall index	Regulatory framework	Bussines environment and infrastructure	Human cultural and natural resources
SEA-5				
France	12	13	5	28
Greece	24	20	32	15
Italy	33	42	30	32
Spain	15	25	7	19
Portugal	22	11	22	30
Other countries				
Croatia	38	58	40	11
Cyprus	20	29	23	3
Czech Republic	35	40	37	22
Malta	26	23	31	21
Turkey	52	53	63	48

Source: World Economic Forum.

E. Exports of High Value-Added Services

SEA-5 countries are not specialized in high-value added sectors, with the exception of Greece. Restructuring production towards high productivity sectors raises the competitiveness of the economy, which in the long run is associated with productivity. Data from Klems database indicates that high productivity services, measured by nominal value-added per worker, include insurance and financial sector activities; computer and communication services; business services such as leasing, legal technical, and advertising; and water and air transport. By and large, these sectors are also the most dynamic, discussed in the previous section, except for communication and business services. Overall, only Greece is specialized in high value-added sectors, thanks to the importance of sea transport. All SEA-5 countries increased their market share in communications, and only France and Greece lost market share in other business services (Figure VI.2).



Sources: Eurostat; and National Central Banks.

In the last decade, SEA-5 countries (with the exception of Greece) have restructured their exports towards these high valued-added services at a lower pace than the EU-15, as indicated by the increase in the share of exports of high value-added services on GDP. However, Greece specialized in high value-added transport services at the expense of reducing its specialization in financial and other business services. Among the rest of the SEA-5 countries, Spain and Portugal increase their specialization on high value-added

services by more than France mostly due to their better performance in other business services, which include marketing, legal, and advertising activities. While the performance of Italy in this sector was comparable to that of Portugal and Spain, the decline in services of sea transport exports explains the overall worse performance.

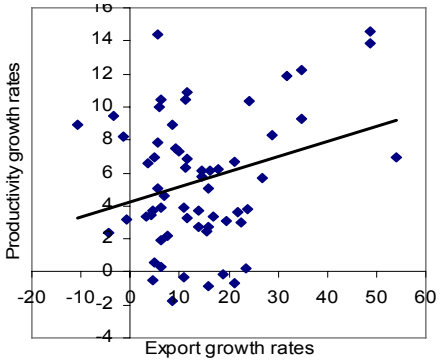
Evolution of Specialization in High Value-Added Sectors
(Increase in services exports in percentage points of GDP, 1996–2005)

	Total	Financial services	Insurance	Communi-cations	Computer services	Other business	Air transport	Water transport
SEA-5								
Greece	3.4	-0.7	0.1	0.1	-0.2	-1.7	0.1	5.6
Spain	1.1	0.1	-0.1	0.0	0.1	0.8	0.2	-0.1
France	0.2	-0.1	0.0	0.1	0.0	-0.1	0.0	0.2
Italy	0.5	-0.1	0.0	0.1	0.0	0.8	0.2	-0.4
Portugal	1.1	-0.1	0.0	0.1	0.0	0.8	0.2	0.0
Other countries								
EU-15	2.0	0.4	0.0	0.1	0.4	0.8	0.1	0.3
Germany	1.5	0.1	0.0	0.0	0.2	0.7	0.1	0.4
Ireland	22.3	2.7	4.2	0.1	9.2	5.9	-0.4	0.7
Finland	5.0	0.3	0.1	0.3	0.7	3.4	0.0	0.1
Sweden	1.9	0.9	-0.2	0.1	0.3	0.7	-0.2	0.2
United Kingdom	0.3	0.1	-0.2	0.0	0.2	0.9	-0.1	-0.6

Sources: National Central Banks; and Eurostat.

Structural reforms are needed to boost productivity and enhance export performance in high-value added sectors. Higher productivity growth rates are associated with higher export growth rates in high value-added services for the countries in our sample**.** Thus, restructuring towards these sectors will require faster productivity growth in the SEA-5 countries vis-à-vis other European countries. Structural reforms to liberalize these sectors would help boost productivity.[3] While the investment rate in these sectors in the SEA-5 countries compares favorably with that of countries with better export performance, lower R&D intensity could also help explain the lower productivity.

Productivity and Export Growth Rates in High-Value Added Sectors in European Countries*
(Average growth rate, 1996-2005)



Source: Klems
* Greece, Spain, France, Italy, Portugal, Germany, Ireland, Sweeden, and the U.K.

Selected Countries: Total Investment and R&D Expenditures
(Average, 1991–2003)

	Gross fixed capital	R&D Intensity (Ratio of R&D expenditures to production, percent) 1/			
	Total business services 2/	Transport and storage	Post and comuni-cations	Financial interme-diation	Other business activities
	(Percent of GDP)				
France	10.2	0.0	1.6	n.a	0.2
Italy	8.1	0.0	0.1	0.1	0.1
Spain	10.3	0.0	0.7	0.0	0.3
Finland	9.4	0.1	2.7	n.a	0.3
Norway	7.7	0.0	1.0	0.4	0.9
Sweeden	7.3	0.0	1.6	0.7	0.1

Source: OECD, Stan database.

1/ Missing values: Finland 1992,1994,1996; Norway 1994; Spain 1991–94 and 2001–03; and Sweden 1991–94, 2003.

2/ Includes trasnsport and storage, post and commnunications, financial intermediation, and other business activities. Data for France and Spain are average (1991–2002).

[3] See ECB, 2006.

References

Bang, R., 2005, "Trade in Services: A Review," *Global Economic Journal,* Vol. 5, Issue 2, Article 3.

European Central Bank, 2006, "Competition, Productivity and Prices in the Euro Area Services Sector," Occasional Paper No. 44.

Freund, C., and D. Weinhold, 2002, "The Internet and International Trade in Services," *American Economic Review*, Vol. 92, Issue 2, pp. 236–40.'

Lipsey, R., "Measuring International Trade in Services," NBER Working Paper No. 12271.

Stern, R., 2005, "The Place of Services in the World Economy," RSIE Discussion Paper No. 530.

VII. The Role of Imports—Structural Shifts and Economic Benefits[1]

Imports increase consumer choices, exert competitive pressures on domestic producers, and facilitate industrial restructuring. In studies of cross-country differences in external performance, imports have drawn considerably less attention than exports, and typically have been assigned a passive role. For example, Allard, et al (2005) found imports to be largely determined by final demand while competitiveness has been playing a minor role. However, the benefits of imports are well known: they increase the supply of goods and services available to meet final demand, enable a national economy to bring forward consumption and investment, offer an enlarged product variety, and facilitate the global division of labor. This chapter looks at the role of imports in restructuring the economies of the five southern euro area (SEA-5) countries—France, Greece, Italy, Portugal, and Spain—and, for the purpose of comparison, the euro area average and Germany.

Looking for structural shifts in disaggregated data. We will briefly revisit the main macroeconomic determinants of imports but focus on structural shifts and the economic benefits of imports. More specifically, we will look at the changes over time in trade openness, trade motivation, their technology content, and finally at the relation between import penetration and labor productivity. Most of the concepts used here require highly disaggregated data. The United Nations Commodity Trade Statistics Database (Comtrade) provides data on product groups up to the six-digit level (SITC classification), while the EU KLEMS data bank provides data on productivity by sectors of production (NACE classification).

The main macroeconomic determinants of imports are final demand and price/cost competitiveness. Simple long-linear regressions broadly confirm results that can be found in the literature.[2] Imports are very sensitive to changes in final domestic demand, while the impact of relative prices (the ratio of import to GDP prices) is generally weaker. The estimated elasticity of imports with respect to final demand ranges from 2.3 in Spain to 1.5 for Greece; all demand elasticities were highly significant (Table VII.1). Price elasticities are found to be significant but much smaller in four countries (France, Greece, Portugal, Spain) ranging from

Table VII.1. Import Elasticities, 1973–2006
(Goods and services)

	France	Greece	Italy	Portugal	Spain	Germany
Final domestic demand	1.92**	1.48**	1.97**	1.55**	2.28**	1.71**
Relative import price	-0.35*	-0.77**	-0.09	-0.51**	-0.28*	0.04

Source: National Accounts.
Notes:
* significant at the 1 percent level
** significant at the 5 percent level

[1] Prepared by Werner Schule.

[2] Hooper and others (2000).

-0.8 to -0.3, but are not significantly different from zero in Italy and Germany. Without robustness test, these results should be interpreted prudently. Nevertheless, the estimates can serve at least illustrative purposes.

Openness to trade has increased dramatically over the past 30 years. The SEA-5 countries have become more open to trade, though progress toward opening up was uneven. Spain and Portugal are leading the field, with an increase in the openness measure (the sum of exports and imports in percent of GDP) from about 20 percent in the early 1970s to more than 70 percent in 2005. Italy and Greece have raised their degree of openness more than twofold during that period (Figure VII.1). Openness in Spain and Portugal has leapfrogged after EU accession, and the introduction of the EU single market (completed in 1992) has made a visible difference for all EU member countries. The positive effect of the single currency (euro) on trade that was found in a number of studies, however, is not evident for the SEA-5 countries probably because of the global cyclical slowdown around 2003 and structural demand weakness from Germany, their main trading partner.[3] Contrary to the rule of thumb that smaller economies tend to export and import more than large countries relative to GDP, there does not seem to be a clear-cut relation between country size and openness within the SEA-5. For example, despite its larger size, external trade weighs more in Germany's economy than in any of the SEA-5. Likewise, while the size of GDP in Portugal is close to that of Greece, Portugal is now significantly more open to trade. The experience of these two countries, which set off from a similar starting point in the early 1970s, also indicates that the speed of convergence toward a high degree of openness is not necessarily higher for countries with a lower initial position.

Most imported goods and services of the SEA-5 originate in the EU. During 2000–05, between 55 and 70 percent of imports to the SEA-5 were supplied by partner countries in the EU and between 50 and 65 percent by euro area countries. While the share of intra-EU imports has remained relatively stable, intra-euro area imports gained importance. Germany is clearly the most important provider of imported goods with a share ranging from 13 percent (Greece) to 28 percent (Portugal). While increasing, the role of China has remained small; the share of imports from China ranged from 1 percent (Portugal) to 3.7 percent (Italy). The United States is the most important non-European supplier of imported goods to the SEA-5—its share ranging between 2.5 percent in Portugal and 6 percent in France. While the weight of emerging market economies has been increasing fast, particularly in the past five years, products of advanced industrialized countries account for more than three-fourths of nonenergy imports.

[3] Econometric work, controlling for these and other factors found that currency unions boost trade significantly. Frankel and Rose (2000) have estimated very large effects of EMU on trade. Follow-up work by others confirmed the positive effect on trade but found it to be of smaller magnitude.

Imports have become more technology intensive. Contrary to a common perception that highly advanced EU countries are specializing in the production and export high technology (or highly capital-intensive) products while importing predominantly low technology (or labor intensive products), the SEA-5 (and Germany) have moved away from importing low technology while increasing imports of high and medium-high technology products. The decline in the share of low-tech imports has been strongest where their level was particularly high in 1988 (France, Greece, Germany). The structure of imports by technology content has become more similar across the SEA-5 and with that of Germany: between 50 and 60 percent of imports are high- and medium-high technology goods.

The share of intra-industry trade is high and has increased in some countries.[4] Following the literature, the fraction of trade that is intra-industry—more precisely, the fraction of external trade in very similar products in percent of aggregate external trade—is measured here by the Grubel-Lloyd Index (GLI).[5] The index has a straightforward interpretation: if trade is balanced industry by industry (or better product by product), it equals one and all trade is intra-industry; if there is complete international specialization so that every industry is either an export or import industry, it equals zero (Krugman, 1981). To be meaningful, the index requires a sufficiently narrow definition of product families. For all SEA-5 countries, with the exception of Greece, intra-industry trade accounts for 50 to 80 percent of overall trade at the four-digit industry classification (SITC revision 3) level. The relative importance of intra-industry trade is not necessarily linked to country size (compare Portugal with Greece), although it's more important in very large areas, such as the EU-15. In countries where the initial share of intra-industry trade has been relatively low (Greece, Portugal, Spain), it has become relatively more important over the period under review. More intra-industry trade may reflect a number of factors, including:

- Increasing demand for greater variety of products, as consumers have become wealthier. The change in consumers' taste implies that strong market positions in specialized products have become more important.

- Intensified economic integration and cross-border production. Within Europe the creation of the EU single market and EU enlargement have been particularly import factors driving cross-border division of labor.

[4] Delozier and Montout (2007) found that intra-industry has bounced back recently in the U.S. and the euro area. We did not find a similar rebound in the five countries under consideration.

[5] $GLI = \left[1 - \frac{\sum_i \left| X_i - M_i \right|}{\sum_i \left(X_i + M_i \right)} \right]$, where X_i, M_i are exports and imports of product family i.

Import penetration and labor productivity are positively correlated. Import penetration is defined as the part of domestic demand directed to the output of a particular sector that is satisfied by imports. To calculate import penetration, the EU KLEMS data bank, which provides sector data in NACE classification, was used for domestic production (gross output) and labor productivity, while Comtrade import and export data were reclassified to match the sectors in KLEMS.[6] Import penetration has increased in all manufacturing sectors, though at different speeds—fastest in textiles (trade liberalization) and office machines (technical progress), and slowest in low-tech sectors, such as paper and pulp, and basic materials. With the exception of Germany, import penetration has also grown fast in transport equipment (mainly cars). On average, in sectors where import penetration has increased most, labor productivity has risen fastest. The trend line in Figure VII.4 shows a positive relation between (increases in) import penetration and labor productivity by sector. Given the small number of data points per country, however, this trend line should only be taken as suggestive evidence. Rigorous statistical analysis would not be suitable. Import penetration can be expected to be positively linked to labor productivity growth for a number of reasons, including (i) better performing foreign suppliers compete out weak domestic performers; (ii) foreign competition exert pressure on domestic producers to streamline production processes, and become more innovative; and (iii) domestic industries profit from imported technologies and know-how. The relative role of the various channels through which imports affect domestic performance is hard to quantify. However, while the short-run implications for employment may differ, in the long run these channels are complementary—resources are used more efficiently.

A. Conclusions

While demand and relative prices remain the main determinants of imports, structural factors have also been important.

- We found that the SEA-5 (France, Greece, Italy, Portugal, and Spain) have become much more integrated in the European single market and the global economy. The volume of trade has increased dramatically in percent of GDP since the 1970s, and in particular with the introduction of the EU's single market and single currency. In the process, the degree of import penetration has risen.

- For some countries, increased openness and catching-up went hand-in-hand, transforming domestic production and patterns of external trade, while reducing the role of historical specializations. However, within this narrow group of SEA-5, no

[6] In each sector (j) it is measured as:
import penetration in sector (j) = imports of sector (j) products/(gross output of sector(j)+imports of sector (j) products -exports of sector (j) products).

clear pattern was discernible between the distance to the frontier (Germany) and speed of transformation.

- International division of labor and the demand of consumers for more varieties—typical when countries are getting richer—have been identified as drivers of this transformation of production structures. The SEA-5 countries are importing and exporting more products of the same product family. In the process, the composition of imports has shifted away from low-technology products and the demand for innovative, high-quality products has increased.

- Finally, there is evidence of a positive relation between import penetration and productivity growth. While more empirical work would be needed to identify the relative importance of the channels through which imports contribute to higher efficiency, a positive relation has been found in each of the SEA-5—as well as in Germany.

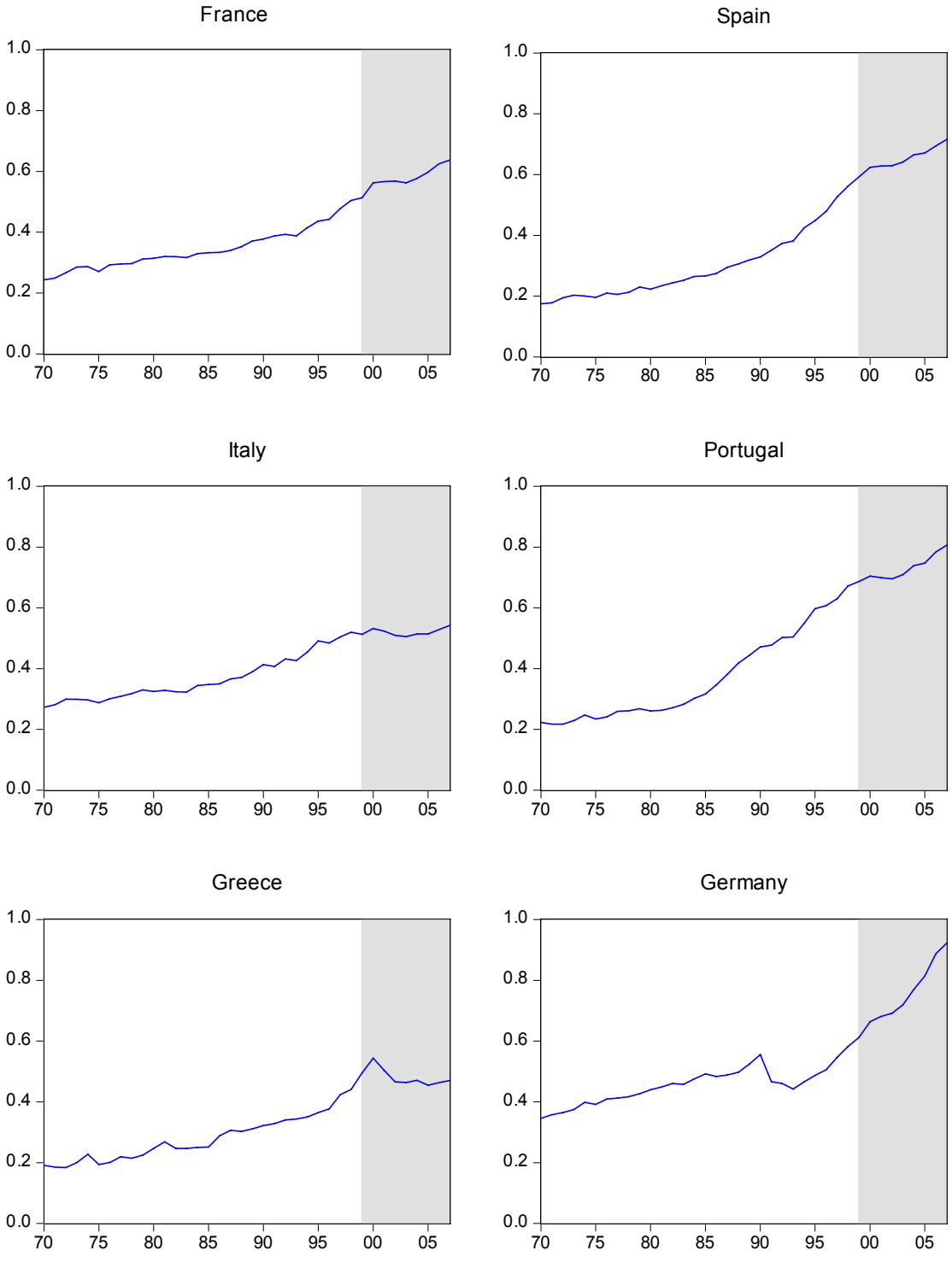
VII.2. Where do imports come from?

	France		Greece		Italy		Portugal		Spain	
World		100		100		100		100		100
Country rank										
1	Germany	19	Germany	13	Germany	18	Spain	28	France	16
2	Belgium	10	Italy	12	France	11	Germany	14	Germany	16
3	Italy	9	France	6	Netherlands	6	France	10	Italy	9
4	United Kingdom	7	Russia	6	United Kingdom	5	Italy	6	United Kingdom	6
5	Spain	7	Netherlands	6	Spain	4	United Kingdom	5	Netherlands	5
6	Netherlands	7	United Kingdom	4	Belgium	4	Netherlands	5	Belgium	4
7	United States	6	United States	4	Africa	4	Belgium	3	China: Mainland	3
8	China: Mainland	3	Korea	4	United States	4	United States	3	United States	3
9	Switzerland	3	Spain	4	China: Mainland	4	Nigeria	2	Portugal	3
10	Japan	2	Belgium	4	Switzerland	3	Japan	2	Japan	2
11	Russia	2	Saudi Arabia	3	Russia	3	Brazil	2	Russia	2
12	Norway	2	China: Mainland	3	Austria	3	Norway	1	Algeria	2
13	Ireland	1	Japan	3	Libya	2	Sweden	1	Switzerland	1
14	Portugal	1	Iran, I.R. of	3	Japan	2	Russia	1	Ireland	1
15	Sweden	1	Turkey	2	Algeria	2	China: Mainland	1	Sweden	1

Source: Direction of Trade

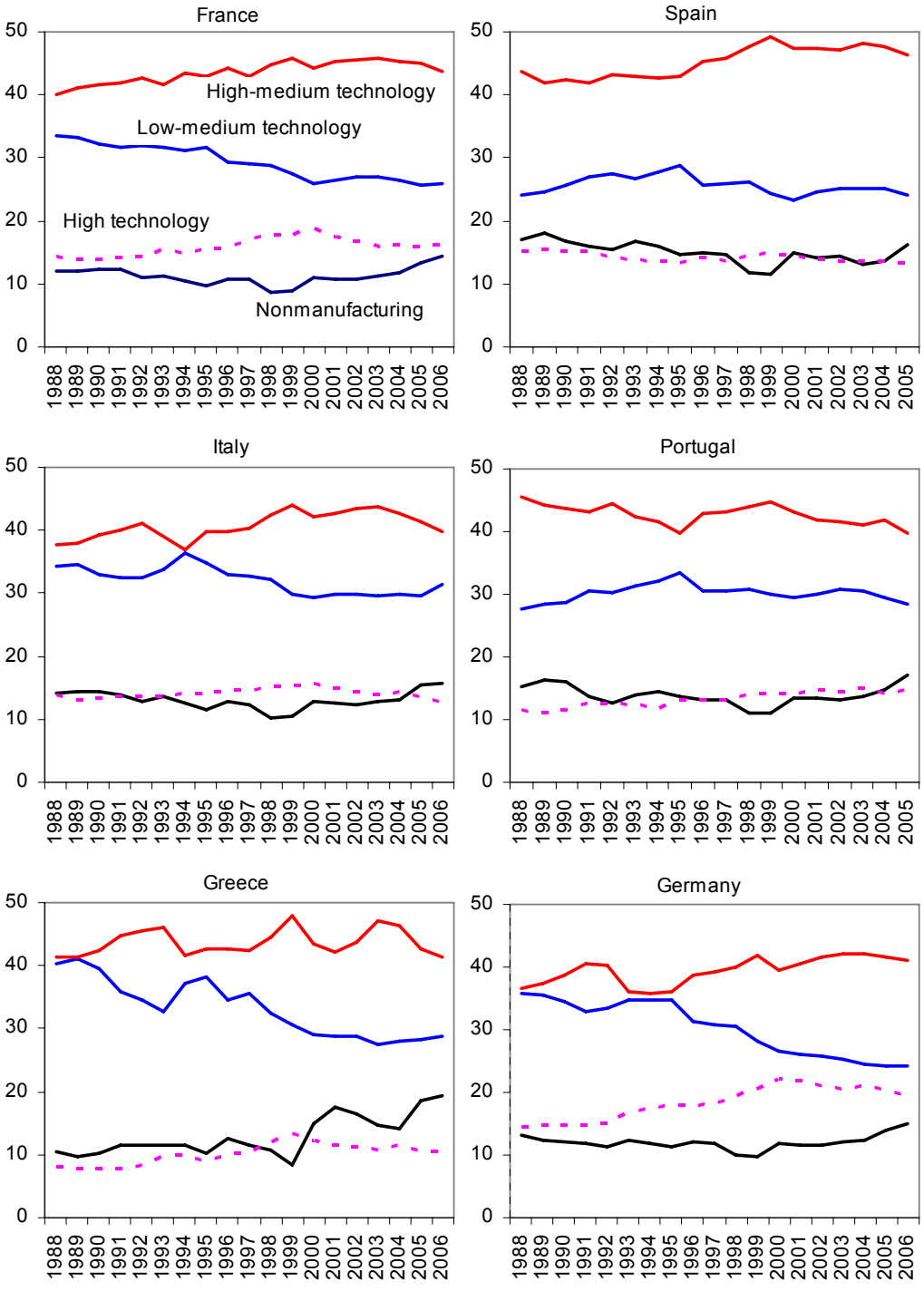
Figure VII.1. Openness to Trade (in volumes)

(Sum of exports and imports in percent of GDP)



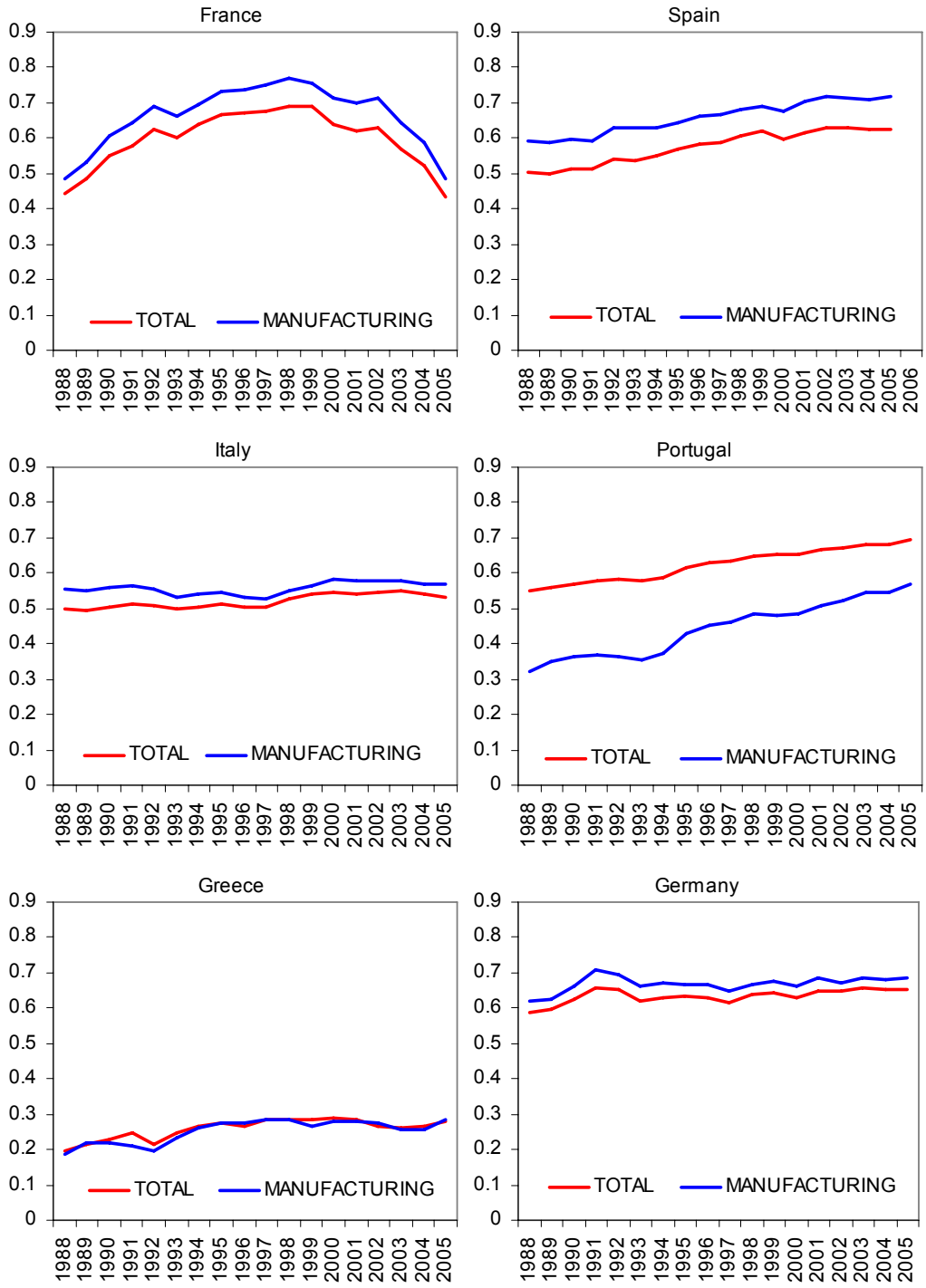
Source: National Accounts.

Figure VII.2. Product Structure of Imports by Technology
(OECD technology classification)



Source: COMTRADE.
Note: Trade data cover goods only.

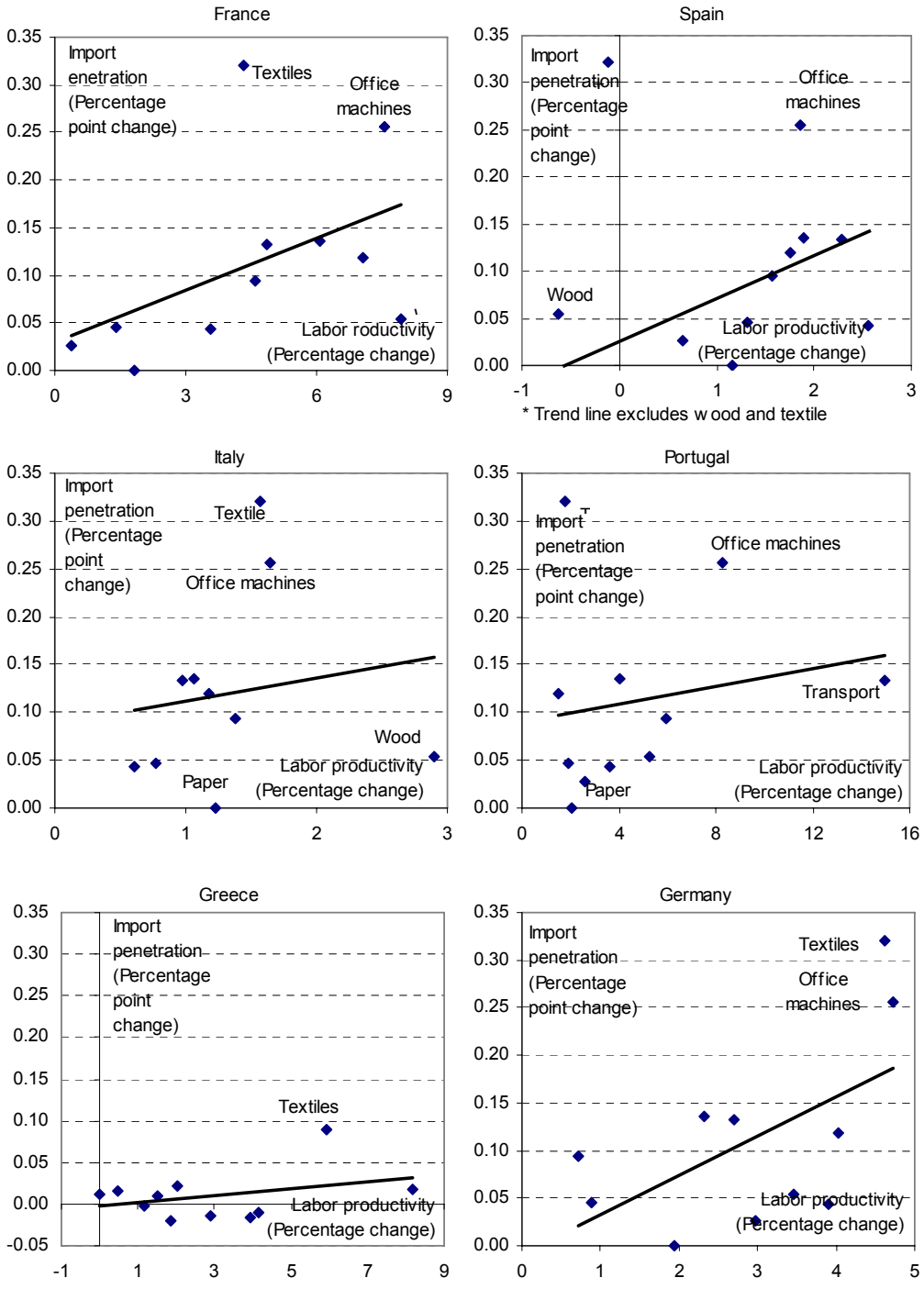
Figure VII.3. Intra-Industry Trade
(Grubel-Lloyd Index)



Source: COMTRADE (four-digit SITC rev 3).
Note: Trade data cover goods only.

Figure VII.4. Import Penetration and Labor Productivity

(1988–2004, manufacturing)



Sources: KLEMS; and COMTRADE.

References

Artus, P., and L. Fontagné, 2006, "Évolution récente du commerce extérieure français," *Rapport du Conseil d'Analyse Économique*, *La Documentation française* (Paris).

Baumann, U., and F. di Mauro, 2007, "Globalization and Euro Area Trade-Interactions and Challenges," ECB Occasional Paper No 55 (March).

Delozier, B., and S. Montout, 2007, "New trends in globalization and the international division of labor: Consequences for Europe?" Documents De Travail De La DGTPE, No 2007/03.

EU KLEMS, 2007, "Productivity in the European Union: A Comparative Industry Approach," Available via the Internet: http://www.euklems.net/.

Fontagné, L., and M. Freudenberg, 1997, "Intra-Industry Trade: Methodological Issues Reconsidered," CEPII document de travaille, No. 97-01.

Fontagné, L., G. Gaulier, and S. Zignago, 2007, "Specialization across varieties within products and North-South competition," CEPII Working Paper No. 2007–06.

Frankel, Jeffrey A., and A.K. Rose, 2000, "Estimating the Effect of Currency Unions on Trade and Output," CEPR Discussion Paper No. 2631 (December).

Hatzichronoglou, T., 1997, "Revision of the High-Technology Sector and Product Classification," OECD Science, Technology and Industry Working Paper 1997/2.

Hooper, P., K. Johnson, and J. Marquez, 2000, "Trade Elasticities for the G-7 Countries," Princeton Studies in International Economics, No. 87 (August).

Krugman, P., 1981, "Intraindustry Specialization and the Gains from Trade," *The Journal of Political Economy*, Vol. 89, No. 5, pp. 959–73 (October).

———, and M. Obstfeld, 2003, International Economics, 6th edition (Addison-Wesley).

Madariaga, N., 2007, "Has France adjusted to recent trends in world trade?" Trésor-Economics, DGTPE, No 17, (September).

OECD, 2007, "Staying Competitive in the Global Economy-Moving up the Value Chain."

———, 2002, "Intra-industry and intra-firm trade and the internationalization of production," Economic Outlook 71, Chapter VI.

VIII. OUTSOURCING AND COMPETITIVENESS IN SOUTHERN EUROPE[1]

As a result of globalization, firms in countries around the world have been engaged in a "fragmentation" of the production process, i.e., breaking the production process into smaller tasks and carrying them out where they can be accomplished most cheaply. This process has been referred to as "outsourcing" and it can take a variety of forms. Outsourcing can take place domestically, as when a firm procures the services of an supplier who is located in the same country, or internationally, as when a foreign firm provides the service. When the latter occurs, it is termed "offshoring" and this practice has received a great deal of press attention in recent years because it is sometimes alleged that it leads to job losses in the home economy. Both domestic outsourcing and foreign outsourcing give rise to trade, either domestically between firms or internationally.

In terms of the simplest possible model of international trade—the Ricardian model—offshoring is beneficial to the economy that engages in it, based on the logic of comparative advantage. If an activity can be undertaken at a lower cost abroad rather than at home, it is beneficial for the home country to let a foreign provider produce the good or service and then import it. The home country benefits since it would enjoy gains from specialization and trade. To the extent that a country is able to reduce its production costs by importing components or services from countries where they can be produced at lower costs (for the same level of quality), industries in the importing country become more competitive—they can then produce the same level of output as they did prior to engaging in offshoring but at a lower cost. Exporters who use imported intermediate inputs would enjoy a cost advantage, relative to exporters who do not engage in offshoring. Offshoring should then improve the competitiveness of the country that engages in offshoring.

In addition to reducing production, i.e., inputs costs, offshoring may affect the competitiveness of the home economy through positive productivity spillovers. One reason why a domestic firm may engage in offshoring is that a foreign provider can produce a good or service with a superior technology. By offshoring an activity to a foreign provider and then importing the good or service, the domestic firm could learn from the better technology and eventually adopt it at home. Thus, offshoring could raise productivity at home to the extent that the domestic firm benefits from "spillovers" that arise from exposure to a better production activity.[2] For example, a foreign firm may use a type of computer software that accomplishes a task more efficiently than the domestic firm. As a result of offshoring, the domestic firm may adopt this software, which would improve the technology of the domestic firm and the productivity of its workers.

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[1] Prepared by Stephen Tokarick.

[2] Positive productivity spillovers may also arise as a result of direct foreign investment. For a discussion of this, see Gordo, Martin, and Patrocinio (2008).

This chapter examines how offshoring has affected the competitive position of the southern euro area five countries (SEA-5): France, Greece, Italy, Portugal, and Spain. This chapter is divided into two parts. Part one reviews available data on the extent to which these five countries, along with a number of other European countries, engage in offshoring. Part two reports the results of some empirical work that investigated the role of offshoring in influencing developments in productivity and competitiveness in the countries noted above. In short, it turns out that while offshoring has been growing in most of these countries over the period 1995–2003, the overall level of offshoring is rather small. Notwithstanding this, there is some empirical evidence to suggest that offshoring has improved the competitive situation of these countries.

A. Offshoring in Five European Countries: What Do the Data Say?

There is no one definitive indicator of offshoring activity, as it is a complex phenomenon, and no country keeps statistics specifically designed to capture offshoring. Previous empirical literature, e.g., Amiti and Wei (2005) and Feenstra and Hanson (1996), used two indicators of offshoring activity. The first involves examining trends in imports of business and computer services using balance of payments statistics. These two categories represent activities in which offshoring is likely to take place. For example, when a country offshores customer service to a foreign provider, this represents an import of a business service by the home country.

Table VIII.1 presents data on imports of business and computer and information services for EU-15 countries for 2005, except for Denmark. The data reveal that the five EU countries of interest had rather modest levels of imports of business and computer and information services in 2005. Imports of business services varied between 0.5 and 1.8 percent of GDP for France, Greece, Italy, Portugal, and Spain in 2005. In relation to the other 132 countries for which data exist, these five countries ranked toward the lower half of the distribution. Imports of business services were particularly small for Greece (0.5 percent of GDP)—it ranked one-hundred fifth out of 132 countries. Some EU countries had very large levels of imports of business services, such as Ireland, Luxembourg, and Austria.

Table VIII.1. Measures of Offshoring: Imports of Business and Computer Services in EU-15 Countries, 2005

	Business services 1/	Overall ranking 2/	Computer and information services 1/	Overall ranking 2/
Austria	-7.8	9	-0.2	36
Belgium	-3.7	23	-0.5	4
Denmark	na	na	na	na
Finland	-2.2	51	-0.6	2
France	-1.3	74	-0.1	55
Germany	-1.7	64	-0.3	17
Greece	-0.5	105	-0.1	56
Ireland	-10.3	5	-0.2	26
Italy	-1.7	63	-0.1	54
Luxembourg	-9.0	8	-1.9	1
Netherlands	-4.2	17	-0.6	3
Portugal	-1.2	81	-0.1	43
Spain	-1.8	62	-0.2	34
Sweden	-3.4	28	-0.4	9
United Kingdom	-1.4	73	-0.2	35

Source: IMF, Balance of Payment Statistics.

1/ Percent of GDP.
2/ Out of 132 countries.

Also shown in Table VIII.1, imports of computer and information services were quite small for all 132 countries in the dataset, and Luxembourg ranked first, with imports of 1.9 percent of GDP. For the five EU countries of interest, they actually had levels of imports of computer

and information services that exceeded most other countries—these five countries ranked between thirty-fourth and fifty-sixth overall. The overall magnitudes were small, however, at about 0.1–0.2 percent of GDP.

Table VIII.2 demonstrates that with few exceptions, imports of business and computer services grew more rapidly than imports of all goods and services over the period 1995–2005 for EU-15 countries. For comparison, the United States is included in Table VIII.2. In two countries—Finland and Greece—the average annual growth rate of all imports of goods and services outpaced the average growth rate of imports in business and computer services. For France and Luxembourg, imports of business services grew more slowly than total imports, but imports of computer services grew more than twice as fast as total imports of goods and services. For Ireland, imports of computer services grew much more slowly than total imports of goods and services.

Table VIII.2. Growth of Trade in Business and Computer Services in EU-15 Countries, 1995–2003
(Average annual growth rates in percent)

	Imports of goods and services	Imports of business services	Imports of computer services
Austria	6.2	8.9	13.6
Belgium 1/	5.6	8.0	7.4
Denmark 2/	7.0	14.8	na
Finland	6.5	3.4	4.3
France	5.7	5.0	13.0
Germany	5.4	6.2	15.9
Greece 3/	7.2	1.4	2.0
Ireland 4/	12.3	16.3	2.0
Italy	6.5	6.7	12.9
Netherlands	5,4	8.6	21.3
Portugal	5.8	7.2	12.8
Spain	10.0	13.2	10.7
Sweden 5/	6.2	17.0	26.4
United Kingdom	7.5	12.7	24.0
United States	8.4	10.7	24.1

Source: IMF, *International Financial Statistics*.

1/ Data on business and computer services are for 2002–05.
2/ Data on business services are for 1995–2004.
3/ Data on business and computer services are for 1999–2005.
4/ Data on computer services are for 1998–2005.
5/ Data on computer services are for 1997–2005.

A second frequently used indicator of offshoring activity is constructed using two pieces of data: (i) data on input-output linkages in an economy; and (ii) trade data. Feenstra and Hanson (1996), Amiti and Wei (2005), IMF (2007), OECD (2007) and Molnar, Pain, and Taglioni (2007) constructed an indicator of offshoring intensity within an economy given by the following formula:

$$OSS_i = \sum_j \left[\frac{input\ purchases \text{ of good j by industry i}}{total \text{ non-energy inputs used by industry i}} \right] * \left[\frac{imports \text{ of good j}}{\text{production}_j + \text{imports}_j - \text{exports}_j} \right],$$

where OSS_i is a measure of offshoring intensity within sector *i*. The first bracketed term on the right-hand side of this formula is obtained from country input-output tables. For any given sector *i*, the input-output table reveals how much of the output of each sector in the economy is used as an intermediate input by sector *i*. The various sectors denoted by *j* represent the activities that would be considered as offshoring activities. Amiti and Wei (2005) considered five: (i) telecommunications; (ii) insurance; (iii) finance; (iv) business services; and (iv) computing and information services. To arrive at a measure of the extent to which a given sector *i* used imported inputs, data on imported inputs by sector would be needed, but this is not generally available. As an approximation, researchers commonly apply an economy-wide average import share to each industry. The second bracketed term is the share of imported service *j* in total demand for service *j*. The product of the two bracketed

terms gives a measure of offshoring in industry *i*. For example, if 10 percent of the total inputs of sector *i* come from service sectors, which could be outsourced, and if in the economy as whole, total imports of service *j* is 40 percent of domestic demand, then the measure of offshoring intensity is (0.1)*(0.4) = .04. In the absence of data on imported inputs by sector, this measure of offshoring intensity assumes that a given sector *i* uses imports of service *j* in the same proportion as the economy as a whole uses imports of service *j*.

Using input-output data, an aggregate measure of offshoring intensity was calculated for a number of advanced economies and presented in IMF (2007). Somewhat surprisingly, two countries—the United Kingdom and France—exhibited a decline in their overall offshoring intensity over this period. Italy, Greece, Portugal, and especially Spain exhibited increases in offshoring intensity. Although the measure of offshoring intensity rose for most countries between 1995 and 2003, offshoring intensity peaked in 2000/01 and declined thereafter until 2003.

B. Offshoring, Productivity, and Competitiveness

The overarching question posed in this chapter is how does offshoring affect the competitiveness of an economy. This section reports the results of two ways of answering this question: (i) it presents a series of charts that depict movements in a commonly used indicator of competitiveness—real effective exchange rates based on consumer prices—and the indicator of offshoring intensity using input-output information; and (ii) it reports the results from regressions that try to uncover a systematic relationship between offshoring and competitiveness. Generally speaking, greater offshoring seems to be associated with a more depreciated real exchange rate for many countries, although the evidence that offshoring *causes* this result is somewhat tentative. A key issue is the extent to which offshoring affects productivity and the evidence of a systematic relationship between these two variables is weaker. While it has not been possible to uncover very strong evidence of a causal relationship between offshoring and competitiveness, this does not mean that one does not exist.

Data on real effective exchange rates (REERs) based on consumer prices indices (CPIs) and unit labor costs (ULCs) in manufacturing, productivity (labor and total factor), and offshoring were collected for 16 advanced economies.[3] These countries were chosen mainly based on the availability of data on offshoring intensity. The data on real effective exchange rates were obtained from the IMF and Eurostat. Data on productivity (both total factor and labor productivity) were taken from the OECD's productivity database. Data on offshoring intensity were constructed from input-output tables available from the OECD and were published in IMF (2007). Data on all variables were obtained for the period 1995–2003.

[3] The countries included Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Italy, Japan, the Netherlands, Portugal, Spain, Sweden, the United Kingdom, and the United States.

Figure VIII.1 depicts the relationship between competitiveness and offshoring for France, Greece, Italy, Portugal, and Spain. This figure reveals that between 1995 and 2003, a greater offshoring intensity was associated with a more depreciated real exchange rate based on CPIs for all countries except France. When real effective exchange rates based on ULCs were used as an indicator of competitiveness, a greater offshoring intensity was correlated with a more depreciated real exchange rate for all countries with the exception of France and Portugal.

To explore the relationship between competitiveness and offshoring further, the change in the (log) of the real effective exchange rate was regressed on the change in the log of the measure of offshoring intensity:

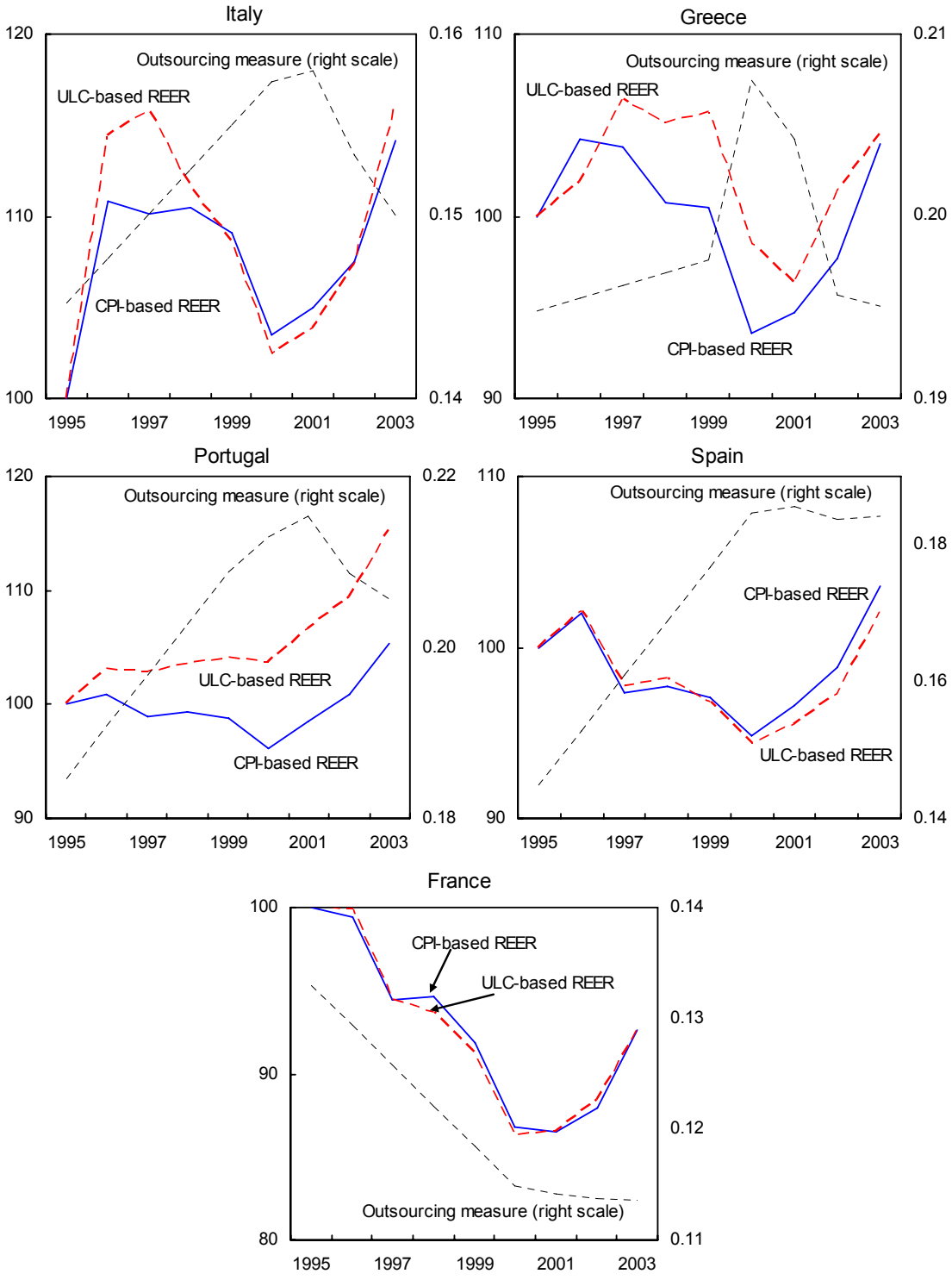
$$\Delta \ln reercpi_{kt} = \beta_0 + \beta_k \Delta \ln outs_{kt} + \varepsilon_{kt} .$$

Pooling the data, i.e., estimating a value for β that is common across all countries, yielded a value for β that had the expected sign and was statistically significant at the 5 percent level. That is, greater offshoring was associated with a more depreciated real effective exchange rate. This result obtained for both measures of the real effective exchange rate. The dataset was also used to estimate a separate β for each country. Of the 16 countries in the dataset, the coefficient on the measure of offshoring intensity was of the correct sign for 13 countries, but statistically significant at the 5 percent level for only Belgium, Finland, Germany, Japan, and the United Kingdom. The coefficient on the measure of offshoring intensity was of the wrong sign for Denmark, France, and the Netherlands.

A key question regarding the impact of offshoring is the extent to which it affects both labor and total factor productivity (TFP). The relationship between total factor productivity and offshoring is depicted in Figure VIII.2 for France, Greece, Italy, Portugal, and Spain. These simple charts show that developments in total factor productivity follow movements in offshoring fairly closely for Italy, Portugal, and Spain. However, the correlation between changes in total factor productivity and offshoring is much weaker for Greece and especially France.

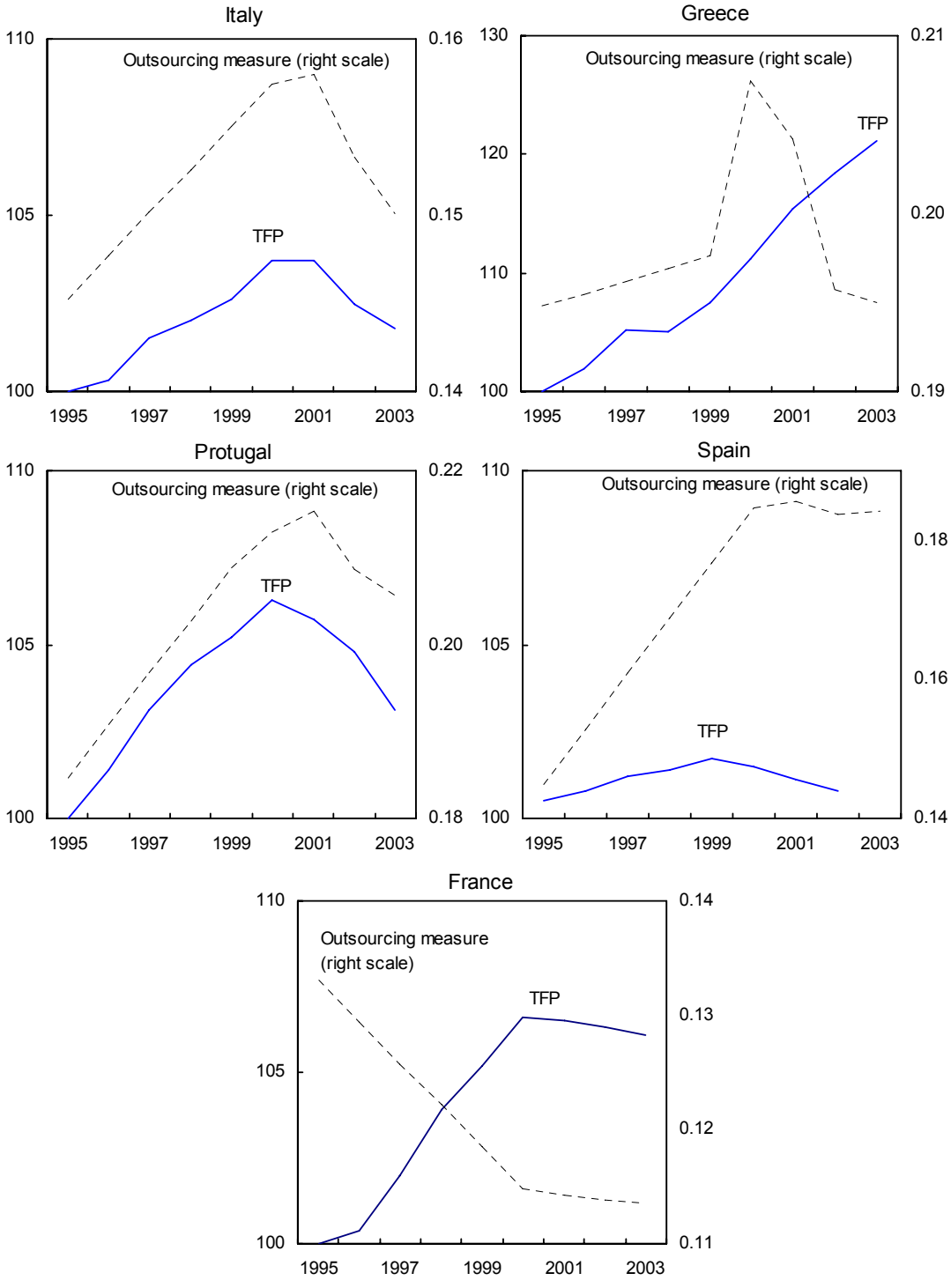
If offshoring causes productivity to increase at a faster rate in the traded sectors compared to the nontraded sectors, the real exchange rate could appreciate, due to a Balassa-Samuelson type effect. To investigate the relationship between total factor productivity and offshoring more systematically, the log change in both total factor and labor productivity was regressed on the log change in the offshoring intensity for the 16 countries in the dataset. As before, two sets of regressions are run—one that estimates a common coefficient for all countries and one that estimates a country-specific coefficient for the measure of offshoring intensity. In estimating a common coefficient for the measure of offshoring intensity, the results revealed that greater offshoring was associated with both higher TFP and labor productivity, but the results were not statistically significant for either type of productivity. Estimating a country specific impact of offshoring revealed a positive relationship between offshoring and

Figure VIII.1. Relationship Between Offshoring Intensity and Competitiveness



Sources: Eurostat; and IMF, *IFS*.

Figure VIII.2. Relationship Between Offshoring Intensity and Total Factor Productivity (TFP)



Source: Ameco.

total factor productivity for 10 countries, but only two were statistically significant at the 5 percent level: Finland and the Netherlands. For labor productivity, the results were similar. For 10 countries, the estimated relationship between offshoring intensity and labor productivity was positive but statistically significant at the 5 percent level for only Portugal and the Netherlands.

Existing studies of the impact of offshoring on productivity have failed to find convincing evidence of a causal relationship. For example, Egger and Egger (2006) examined the impact of materials offshoring in the manufacturing sector of the EU-12 on labor productivity and found that in the short run, the effect was negative but positive in the long run. One possible explanation for this is the low degree of flexibility in European labor markets. In the short run, it is difficult to reduce employment, so offshoring does not generate an improvement in labor productivity that would come from a reduction in employment. In a study of just Austria, Egger, Pfaffermayr, and Woldmayr-Schnitzer (2001) found that offshoring raised TFP in the manufacturing sector but less so in low-skilled sectors and more so in high-skilled sectors.

Finally, a much more complex set of regressions were run using the specification adopted in the IMF's CGER exercise. Specifically, the "equilibrium exchange rate approach" was adopted, which uses panel regression techniques to estimate a relationship between real exchange rates a set of fundamentals.[4] The equilibrium approach regresses the real exchange rate on the following variables: (i) the productivity of tradables to nontradables relative to trading partners; (ii) the commodity terms of trade; (iii) the ratio of net foreign assets to trade; and (iv) the ratio of government consumption to GDP. To this list was added the measure of offshoring intensity described above.

This empirical strategy reveals several strong results. First, when pooling data and estimating a common coefficient for the measure of offshoring intensity, the results showed that greater offshoring leads to a more depreciated exchange rate, and this relationship was highly significant. However, the inclusion of the measure of offshoring intensity in the regressions caused the sign of the coefficient on the relative productivity variable to switch from positive to negative—to contradict the Balassa-Samuelson effect. This same result occurred when a country-specific coefficient for the offshoring intensity was estimated.

C. Conclusions

The phenomenon of offshoring has received a great deal of attention in recent years as it has been growing in many advanced economies, albeit from low levels. Economic theory would suggest that offshoring would benefit an economy because it allows domestic producers to contact out various sub-activities of the production process to foreign providers who can

[4] See "Methodology For CGER Exchange Rate Assessments," 2006, for details.

produce the activity or component more cheaply and then import it. Thus, offshoring reduces production costs for domestic firms and makes them more efficient. Also, there are reasons to believe that offshoring can raise productivity at home.

For most European countries—the EU-15—offshoring activity has generally grown over the period between 1995 and 2003 and quite rapidly for some countries, although there has been a bit of a slowdown since 2000. Levels of offshoring activity—as measured by imports of business and computer services—are generally small: less than 2 percent of GDP for imports of business services and around 0.2 percent of GDP for imports of computer and information services for France, Greece, Italy, Portugal, and Spain in 2005. Data also suggest that changes in offshoring activity over the period between 1995 and 2003 have been associated with more depreciated real effective exchange rates for most of the countries examined, but this relationship is statistically significant for only five of 16 countries examined.

The data also reveal a positive relationship between offshoring and productivity (both TFP and labor productivity) for most countries over this same period, but this relationship is not statistically significant. The lack of very strong evidence of a positive relationship between offshoring and competitiveness and productivity could be due to a number of factors, including the lack of a direct measure of the extent to which a country engages in offshoring. All of the measures of offshoring used in this analysis were of an indirect nature. Also, data on offshoring intensity are only available for a relatively short time period for most countries. A longer time series might reveal a stronger relationship. Nevertheless, there is some empirical evidence to support at least some relationship between offshoring and improved competitiveness.

References

Amiti, M., and S.J. Wei, 2005, "Service Offshoring, Productivity, and Employment: Evidence From the United States."

Egger, H., and P. Egger, 2006, "International Outsourcing and the Productivity of Low-skilled Labour in the EU," *Economic Inquiry*, Vol. 44, Issue 1, pp. 98–108.

Egger, P., M. Pfaffermayr, and Y. Wolfmayr-Schnitzer, 2001, "The International Fragmentation of Austrian Manufacturing: The Effects of Outsourcing on Productivity and Wages," *North American Journal of Economics and Finance*, Vol. 12, Issue 3. pp. 257–72.

Feenstra, R., and G. Hanson, 1996, "Globalization, Outsourcing, and Wage Inequality," *American Economic Review*, Vol. LXXXVI, pp. 240–45.

Gordo, E., C. Martin, and T. Patrocinio, 2008, "La Internacionalizacion de las empresas espanolas a través de la inversion extranjera directa," *Boletin Economico* (Bank of Spain, January).

International Monetary Fund, 2006, "Methodology For CGER Exchange Rate Assessments."

———, 2007, "The Globalization of Labor," *World Economic Outlook: Spillovers and Cycles in the Global Economy*, Chapter 5.

Molnar, M., N. Pain, and D. Taglioni, 2007, "The Internationalisation of Production, International Outsourcing, and Employment" Working Paper 561 (Paris: Organization For Economic Cooperation and Development, Economics Department).

Organization For Economic Cooperation and Development, 2007, *OECD Employment Outlook* (Paris).

IX. Role of Foreign Direct Investment in Boosting Productivity and Exports in the Southern Euro Area Economies [1]

A. Introduction

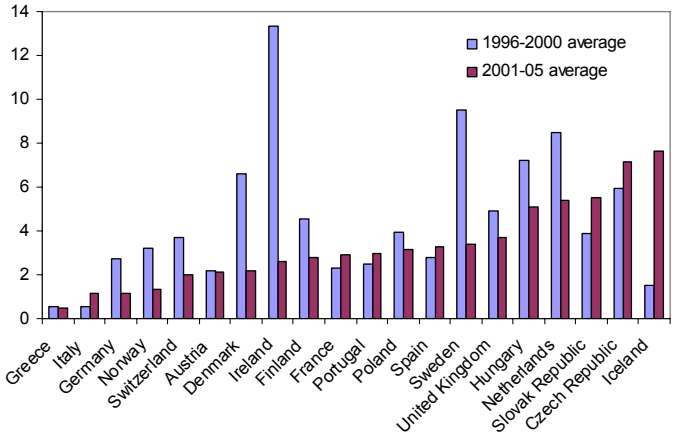
The consensus view of the literature is that foreign direct investment (FDI) in general has a favorable impact on productivity and exports.[2] FDI can be resource-seeking or market-seeking, and the former type boosts exports directly. But both types of FDI also have indirect impacts through positive externalities and spillover effects: they may bring capital and know-how to domestic industries, have positive externalities on domestic companies through competition and reduced costs of inputs, and help host country exporters to gain access to foreign market. Although in theory FDI could adversely affect domestic producers by competing for markets and skilled employees, empirical evidence tends to support that the benefits of FDI significantly outweigh its costs for host countries.

In the current context of weak external performance of the five southern euro area economies (SEA-5),[3] studying FDI becomes especially important since it is a forward-looking indicator. Investment undertaken in the past continues to affect future economic performance. Therefore the patterns of FDI to the SEA-5 economies in recent years provide signs of how productivity and trade are expected to evolve in the future. The literature has also identified a set of policy variables, which influence FDI. Examining these indicators not only helps explain the recent trend of FDI in the SEA-5 economies, but also points to how FDI performance could be improved, thus contributing to the competitiveness of these countries.

B. Recent Trends of FDI in SEA-5 Countries

The SEA-5 economies have experienced increasing FDI inflows in recent years, but the distribution was not even, and, in particular, Greece and Italy have been lagging (Figure IX.1). From 1996 to 2005, FDI inflows to France, Portugal, and Spain as a percent of GDP were at the average OECD level, while those to Greece and Italy were the lowest among the OECD countries. This

Figure IX.1. FDI Inflows (Percent of GDP)



[1] Prepared by Yuan Xiao.

[2] See Lim (2001) for a survey.

[3] France, Greece, Italy, Portugal, and Spain (southern euro area five, or SEA-5, henceforth).

pattern implies that FDI in general has not benefited the economies of Greece and Italy in the same way as might have happened in the other countries, and there is scope for promoting further FDI in Greece and Italy. It is worth noting, however, that FDI to Italy roughly doubled in 2001–05 compared with 1996–2000, while FDI in Greece remained stagnant.

Much of the FDI to the SEA-5 economies has been in the service sector, in line with the experience of other OECD countries. In particular, manufacturing FDI to Portugal was smaller than to the other SEA-5 countries. Since service is largely nontradable, this would imply that the direct impact of FDI on Portugal's exports was more limited. Italy had relatively large FDI inflows to the quarrying sector. The main source countries for these FDI flows are the U.S., European countries, and Japan.

Share of FDI Inflows
(Percent of total)

	Primary	Manufacture	Services	
France	0.2	24.3	75.5	1996–2005
Greece	1.4	20.1	78.5	2001–2004
Italy	6.0	32.4	61.6	1996–2004
Portugal	0.4	12.8	86.8	1994–2003
Spain	0.8	22.1	77.0	1996–2004
Germany	0.2	7.7	92.2	1996–2005

C. Could FDI Help Productivity and Exports? A Sectoral Analysis

Although FDI inflows to France, Portugal, and Spain have been at about the OECD average, their impact on productivity and exports depends on the sectoral distribution of FDI. The technological level of domestic industry could benefit more from FDI with a higher technological content, which could result in better export performance. If the FDI is targeted toward the sectors facing rapid growth in world demand, it could help the host country to gain market shares in those markets. Furthermore, as FDI is largely in the service sectors and these areas, e.g., infrastructure, often provide inputs to the tradable goods production, it would be desirable for FDI inflows to locate in service areas with higher levels of productivity, which would then have a stronger positive effect on the productivity of the tradable sector.

Has the technological content of FDI to the SEA-5 economies been rising?

While the SEA-5 countries in general received larger amounts of medium-tech FDI than low-tech and high-tech FDI, with the exception of Spain, there is no evidence that the overall technological composition was upgraded. Figures IX.2 and IX.3 show the trends of the technological content of FDI inflows to the manufacturing sector, based on the classification of OECD (2005).[4] In France, medium low-technology FDI was replacing low-tech FDI, but

[4] Since FDI flows are extremely volatile, the FDI shares in Figure IX.3 are computed by first estimating a linear trend for each category over the sample period. Greece is excluded due to the short sample (2001–04).

Figure IX.2. Cumulative Inward FDI in Manufacturing (Millions of euros)

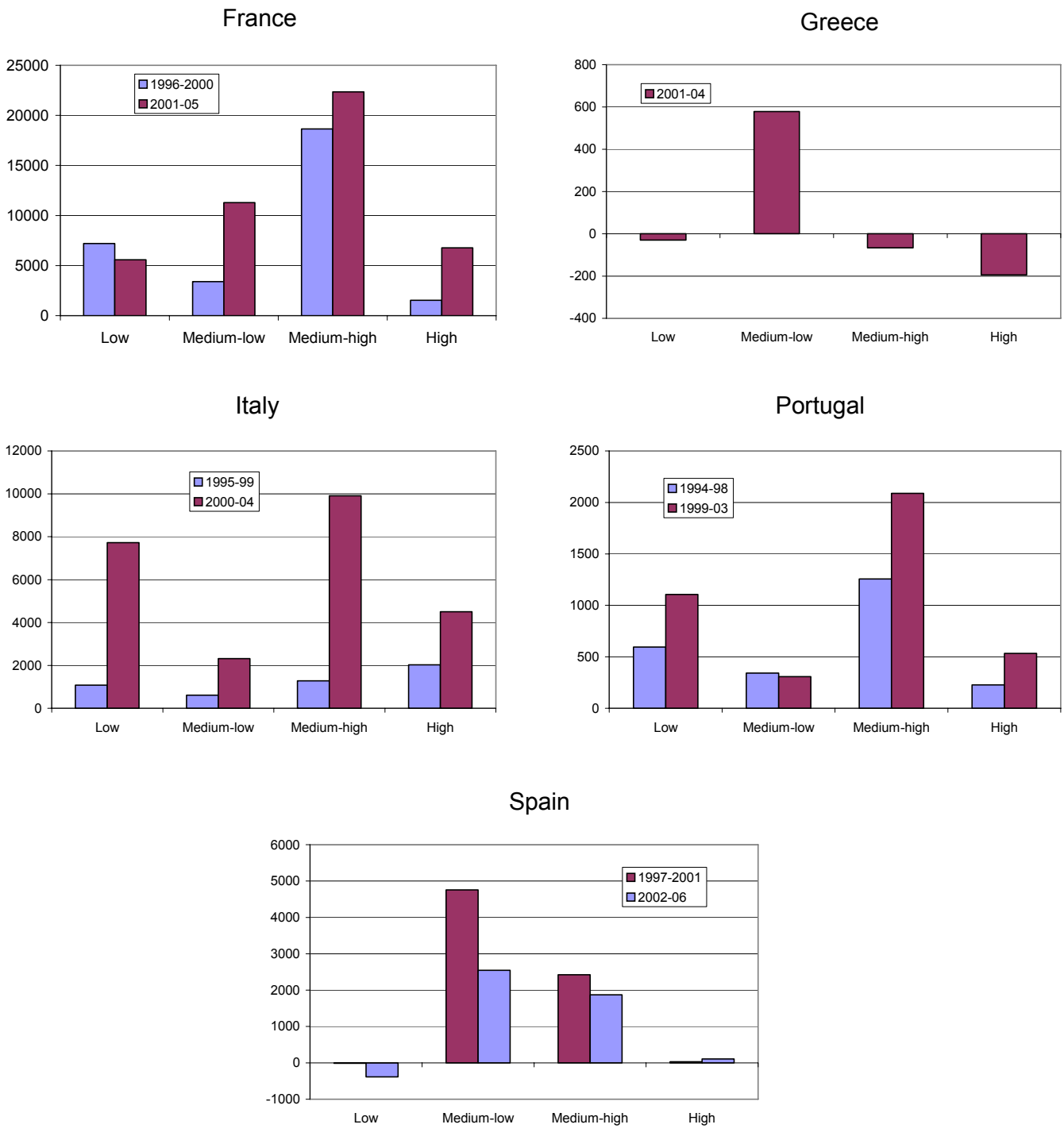
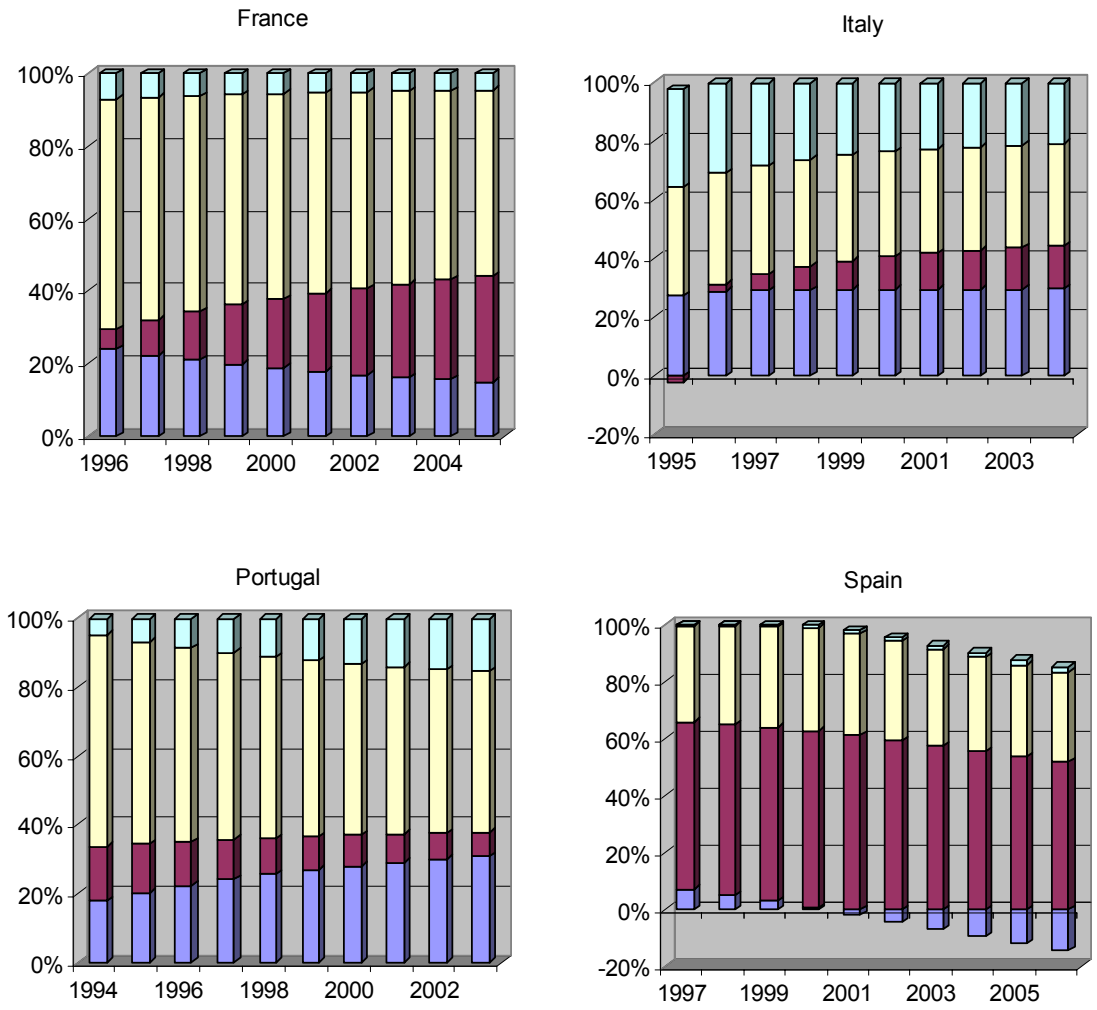


Figure IX.3. Technological Content of FDI Inflows in Manufacturing



Sources: OECD; UNCTAD; and national authorities.

Note: Each column, from bottom to top, consists the shares of FDI to low-, medium-low-, medium-high-, and high-technology industries, computed from the trend of FDI in each category. The classification is based on OECD (2005).

medium high-technology FDI was also shrinking.[5] In Italy, medium low-technology FDI was replacing high-tech FDI, while low-tech FDI remained stable. In Portugal, rising high-tech FDI was offset by increasing low-tech FDI. Overall, the technological compositions of FDI to these countries remained largely the same in the last decade. In Spain, however, there was a trend of disinvestment in low-tech industries and increasing medium-technology FDI.

Have the sectors facing fast growing world demand received expanding FDI inflows?

FDI appeared not to be targeted toward sectors with booming demand. Other things being equal, fast growing demand makes the investment more profitable. We calculate the sectoral trend of world demand based on COMTRADE data between 1997 and 2006. The fastest growing export markets in the world in the last decade are refined petroleum, metal products, chemical products, and certain high-tech sectors (medical, precision and optical instruments, electronic and communication equipments), while the demands for low-tech products (food, textile and footwear, and wood product) and computers have been growing slower. For each sector, Figure IX.4 plots the percent change of the sector's share in FDI against the percent change of its share in world export demand. As can be seen, in all countries, there are no clear signs showing that sectors with faster growing demand received increasingly larger shares of FDI. Rather the opposite happened in Portugal and Spain, suggesting that FDI is not likely to contribute to boosting export performance in the most dynamic sectors.[6]

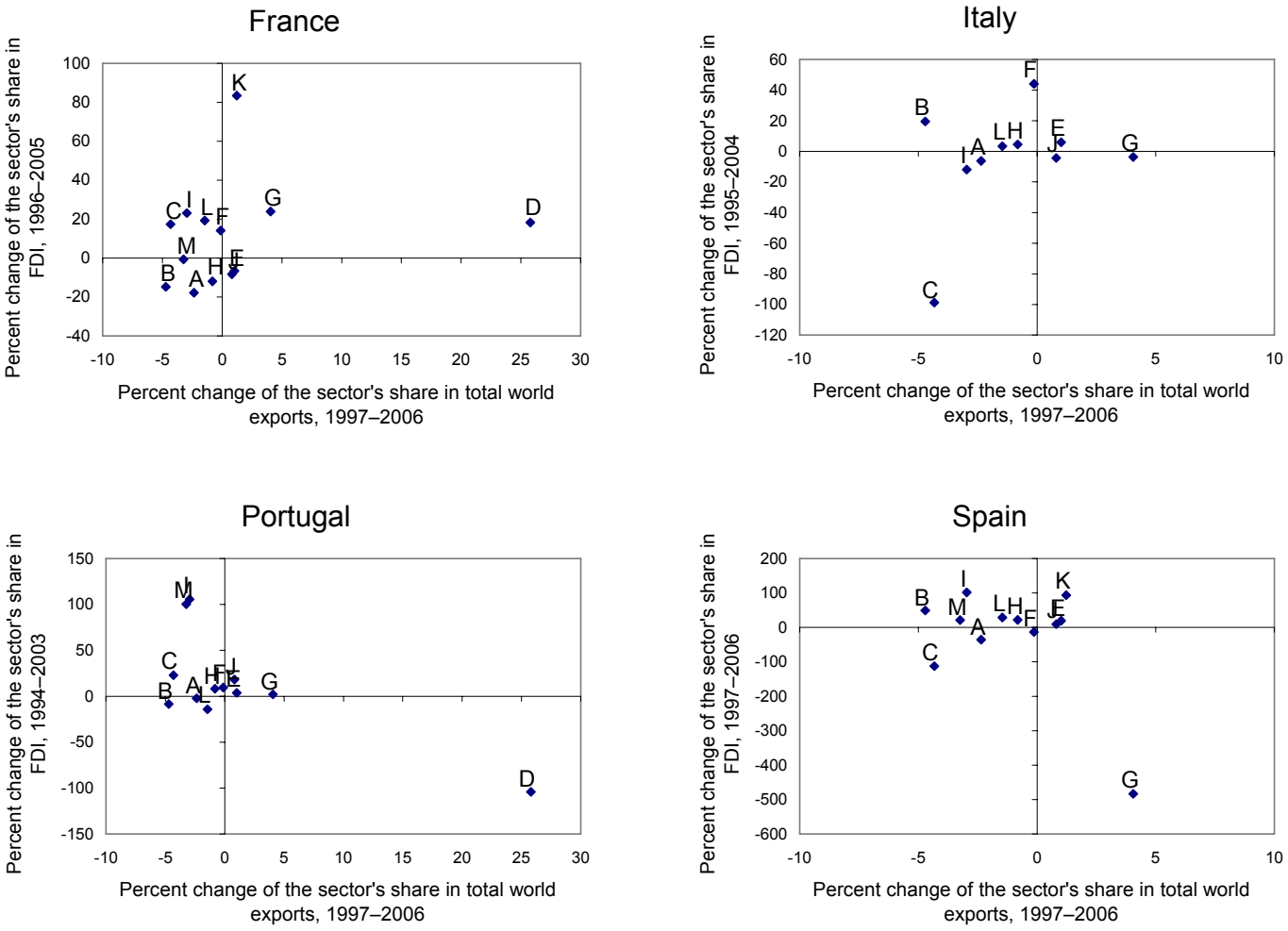
Have service FDI inflows been associated with higher productivity sectors?

The share of FDI flows in the service sectors with high levels of productivity has largely remained the same in the SEA-5 economies (except France and Spain). In Figure IX.5, we split service sector FDI inflows into two groups, those in the sectors with intrinsically high productivity and with low productivity. Based on the data from the Klems database, the service sectors with the highest value-added per worker in EU-15 are identified as: insurance and financial sector activities; computer and communication services; business services, such as leasing, legal technical, and advertising; and water and air transport. It appears that in Greece, Italy, and Portugal, FDI inflows were rising at similar paces in both high- and low-productivity sectors. In France, and to some extent Spain, there is evidence that FDI was increasingly concentrated in the high-productivity service sectors.

[5] However, the high-tech FDI in France could have been rising as France received FDI inflows in the aircraft industry in recent years. But the missing data for earlier years prevent this category to be included in Figure IX.3.

[6] The caveat here is that high productivity firms could increase market shares in slower growing markets.

Figure IX.4. FDI Inflows to Manufacturing Sectors



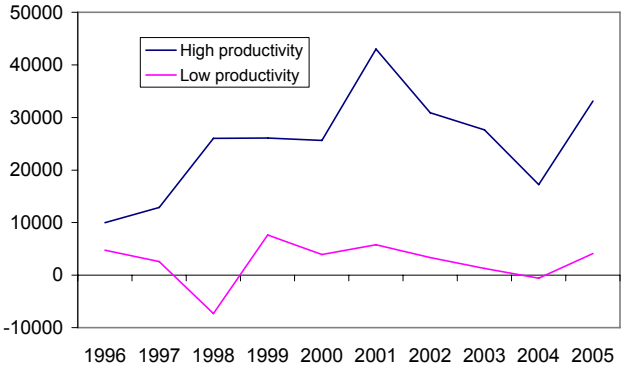
Sources: OECD; UNCTAD; and national authorities.

Note: The sectors are:

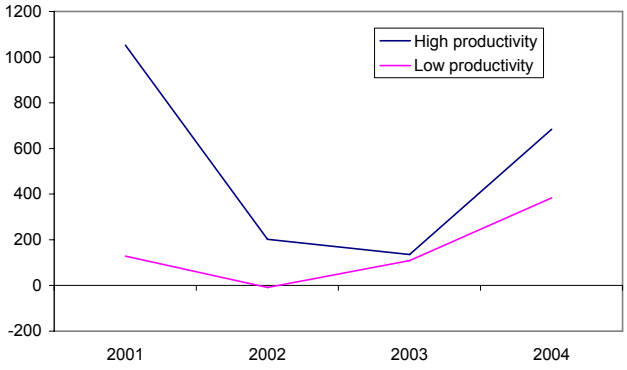
A	=	Food products
B	=	Textiles and wearing apparel
C	=	Wood, publishing and printing
D	=	Refined petroleum and other treatments
E	=	Chemical products
F	=	Rubber and plastic products
G	=	Metal products
H	=	Mechanical products
I	=	Office machinery and computers
J	=	Radio, TV, communication equipments
K	=	Medical, precision and optical instruments, watches and clocks
L	=	Motor vehicles
M	=	Other transport equipments

Figure IX.5. Service Sector FDI (Millions of euros)

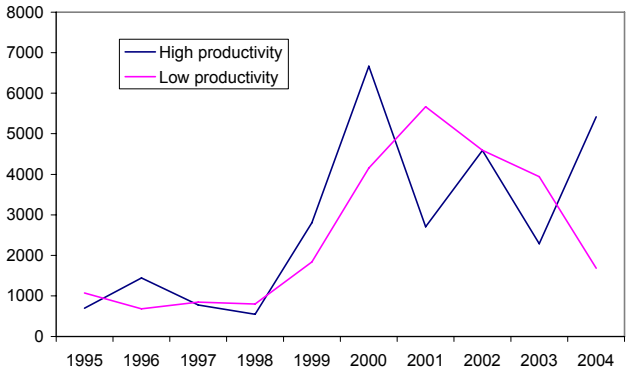
France



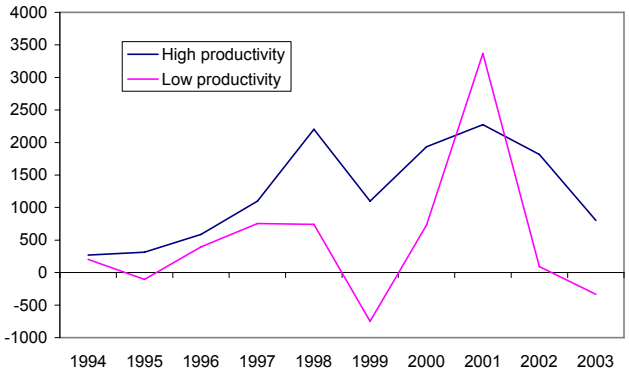
Greece



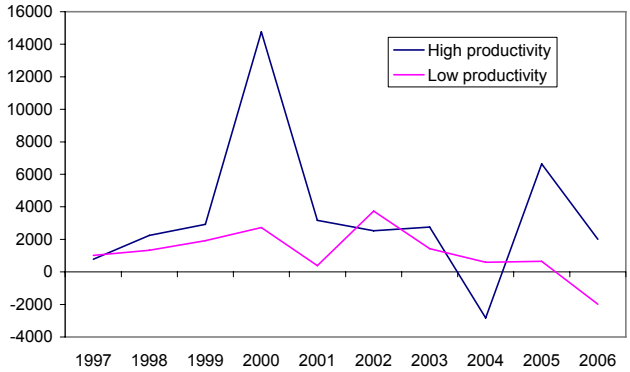
Italy



Portugal



Spain



D. Scope for Further Attracting FDI in the SEA-5 Economies

What has contributed to low FDI inflows to Greece and Italy, and is there scope for further attracting FDI in all the SEA-5 countries? There is a vast literature on the determinants of FDI,[7] suggesting that two types of factors are at play: nonpolicy factors (a country's size and its distance to the source country) and policy variables, such as regulatory restrictions on FDI, labor market arrangements, product market regulations, and the business environment. A more restrictive policy environment would raise the production costs of the foreign and domestic firms and hamper competition and the flow of resources.

A salient observation is that the SEA-5 countries, especially Greece and Italy, score unfavorably in most of these indicators, suggesting a possible area for improvement. Figure IX.6 plots the main policy factors for the advanced OECD economies. The SEA-5 countries constitute the lowest five among OECD countries in the World Bank Ease of Doing Business Index. The bottom two—Italy and Greece—also ranked 82 and 109 among the 175 countries covered in the 2007 index. In the Economist Intelligence Unit's Business Environment ratings, Italy and Greece ranked 40 and 43 among the 82 countries covered. OECD's employment protection legislation indicator shows that the SEA-5 countries are among the strictest, and France and Italy are among the countries with very high tax wedges.[8] OECD's product market regulation index again shows that the SEA-5 countries are at the bottom, although these countries do not appear to have very high restrictions on FDI. These findings imply that the SEA-5 countries could make themselves more attractive to FDI by improving their business environments. For instance, the simulation in Nicoletti, et al (2003) suggests that lowering the product market restrictiveness to the level of the U.K. could result in 45–80 percent increase of their FDI positions from the levels in the 1990s for Portugal, France, Italy, and Greece.

E. Conclusions

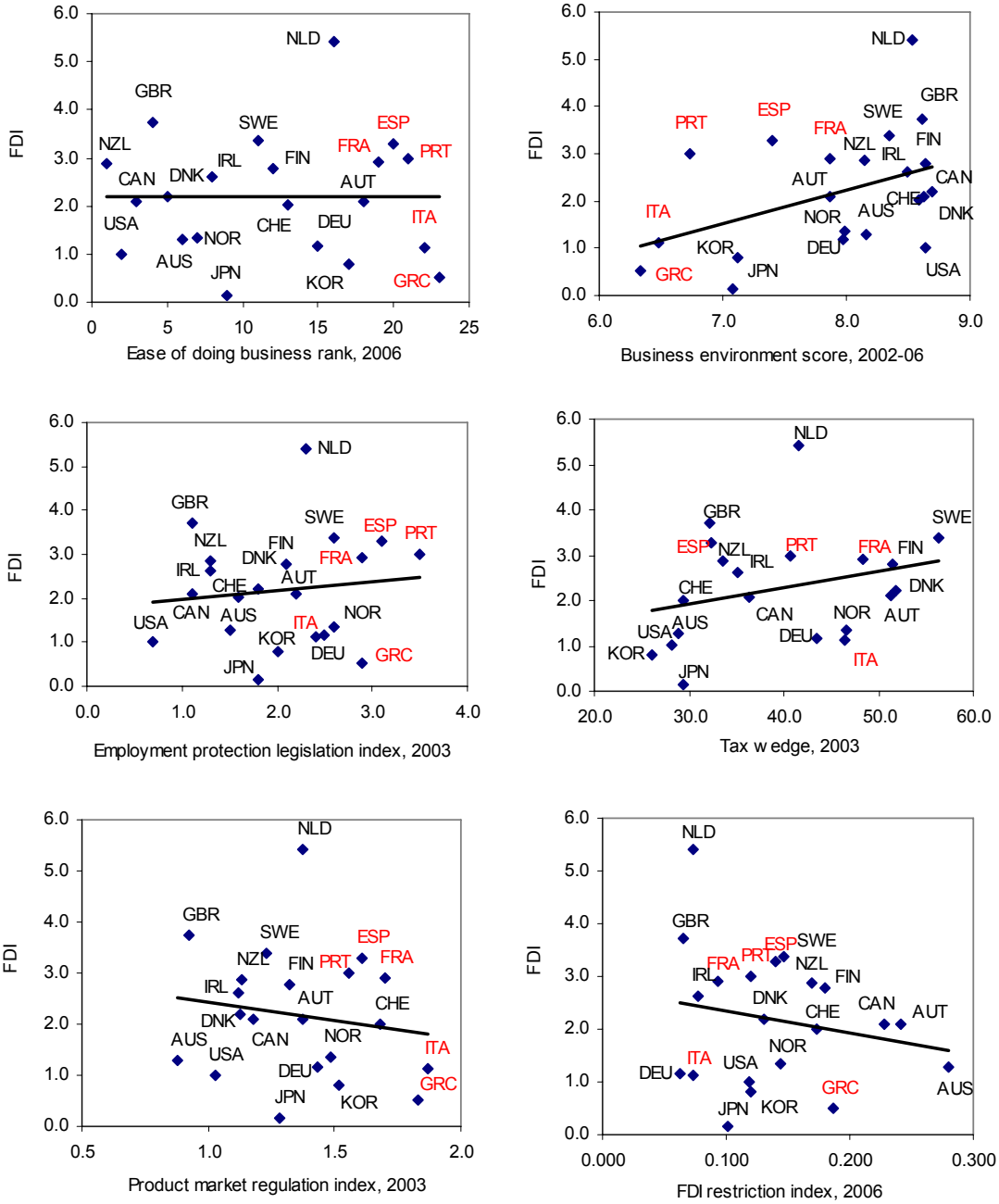
With the exception of France and Spain, FDI patterns of the SEA-5 countries cast doubts on whether FDI has played as significant a role as it could be in boosting external performance. Although FDI inflows have been rising, the patterns were different among the five countries. France and Spain appear to be relatively well positioned. FDI flows to Greece and Italy were the lowest in the OECD. As a result, they are likely to have had only limited externalities on

[7] For a review of the literature, see Lim (2001) and Blonigen (2005). Nicoletti, et al (2003) estimate the determinants of FDI in the OECD countries using panel regression.

[8] The simple correlation between labor market indexes and FDI shown in the figure is biased because of missing factors. Rigorous econometric work in Nicoletti, et al (2003) finds that the correlation is negative when all the relevant variables are taking into account in the regression.

productivity and trade. Portugal, although being able to attract larger inflows, did not seem to have a sectoral distribution conducive to future growth and also had lower manufacturing FDI than the rest. Furthermore, scope exists in improving the policy environment for FDI, as the SEA-5 countries score unfavorably on most of the policy criteria.

Figure IX.6. Policy Environment and FDI 1/



Sources: World Bank, Economist Intelligence Unit; and OECD.
1/ FDI, percent of GDP (2001–05).

Reference

Blonigen, B. A., 2005, "A review of the empirical literature on FDI determinants," National Bureau of Economic Research Working Paper No. 11299, pp. 1–37.

Demekas, D. G., B. Horváth, E. Ribakova, and Y. Wu, 2005, "Foreign Direct Investment in Southeastern Europe: How (and How Much) Can Policies Help?" IMF Working Paper No. 05/110.

Economist Intelligence Unit, 2007, *World investment prospects to 2011*.

Lim, E-G, 2001, "Determinants of, and the Relation Between, Foreign Direct Investment and Growth: A Summary of the Recent Literature," IMF Working Paper No. 01/175.

Nicoletti, G., S. Golub, D. Hajkova, D. Mirza, and K.Y. Yoo, 2003, "Policies and international integration: influences on trade and foreign direct investment," OECD Economics Department Working Paper No. 359.

OECD, 2005, *Science, Technology and Industry Scoreboard 2005*.

X. INTERNATIONAL COMPETITIVENESS: LOOKING AT DIRECT COMPETITORS[1]

A. Introduction

The common pattern of real appreciation observed during recent years in Greece, Italy, Portugal, and Spain has created concerns in policy and academic circles (Bini-Smaghi, 2007; EC, 2007; Roubini, 2007; and Papademos, 2007). It is argued that this real appreciation is associated with a loss of international competitiveness and could lead to a persistent period of slow growth, which has already materialized in the case of Italy and Portugal (Blanchard, 2006a and 2006b).

This study evaluates the evolution of international competitiveness, as measured by the ULC-based real effective exchange rate (REER[2]), incorporating two distinctive elements not considered in the current literature: a microbased approach of the structure of competitors and exports of services. For this purpose, we develop a complete methodology to estimate the REER that incorporates these two elements, and we take a closer look at their importance in France and in the four Mediterranean countries mentioned above (SEA-5). Our approach enriches the REER analysis by identifying more accurately each country's direct competitors and providing an aggregate view of international competitiveness that encompasses the complete export sector.[3]

With respect to the structure of competitors, our methodology relaxes the common assumption used in the literature that all (or most) exported goods compete with each other in the destination market; we call this the homogenous-product approach (HPA). By contrast, we take a more microbased approach that analyzes countries' international price competitiveness by defining different markets for different types of products and destinations, and aggregating market-level REER indices to obtain a country-level REER; we call this the differentiated-product approach (DPA).

Under the DPA, we identify each country's direct export competitors at disaggregated categories of goods and services differentiating them by geographical markets at the country level. To illustrate the significance of the DPA, assume that country A exports textiles to country C, while

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[1] Prepared by Herman Bennett and Ziga Zarnic (LICOS – KU Leuven).

[2] The concept of REER is the most commonly used measure of international competitiveness and is frequently used in policy and academic discussions. See Agenor (1995), Catao (2007), Chinn (2006), Fung and Klau (2006), Marsh and Tokarick (1996), Neary (2006), and Rogoff (1996) for further references to the concepts of REER and real exchange rate.

[3] This study is based on Bennett and Zarnic (2007), which presents the complete description of the methodology, data and the full set of results. Due to lack of consistent data across countries, our analysis centers on the external markets where each country competes with local producers as well as with other foreign exporters. Our analysis suggests that incorporating internal market competition to this framework does not change the conclusions of this study (differences are below 1 percent).

country B exports cars to country C. In line with the HPA, focusing on competitors at an aggregate level—in the manufacturing sector for example, as this is the most common case in the literature—would suggest that countries A and B compete in market C, even though exporters of cars are not necessarily the relevant competitors of textile exporters. Furthermore, the HPA would imply that all manufacturing goods produced in country C are competitors of exporters to country C, regardless of the type of good that is produced in and exported to country C.

With respect to services, our approach incorporates the exports of services into the analysis of international competitiveness identifying competitors at disaggregated categories of services and markets, as in the case of goods. The importance (weight) of each product category is determined by its share in total exports.[4]

Our main findings suggest that the effect of considering both the more microbased structure of competitors (DPA) and export of services implies a modest lower real appreciation from 1998 to 2006 in the order of 2 percent to 3 percent for all Mediterranean countries, no significant change for France, and a somewhat lesser real depreciation of 1.2 percent for Germany—Germany is included in the analysis for comparison purposes (Table X.1).

Table X.1. Net Appreciation Differential Since 1998: the Aggregate Effect of DPA Including Exports of Services

	Greece	Italy	Portugal	Spain	France	Germany
1999	-0.30	0.04	-0.08	0.15	0.20	-0.15
2000	-2.69	0.25	-0.30	0.27	-0.03	-0.17
2001	-3.00	0.21	-0.37	0.21	-0.01	0.00
2002	-2.00	-0.18	-0.46	-0.15	0.02	0.08
2003	-0.86	-1.07	-0.71	-0.53	0.38	0.37
2004	-0.87	-2.00	-1.20	-1.29	0.38	0.68
2005	-1.32	-2.50	-1.97	-1.86	0.15	1.03
2006	-1.96	-2.82	-2.44	-2.27	-0.11	1.21

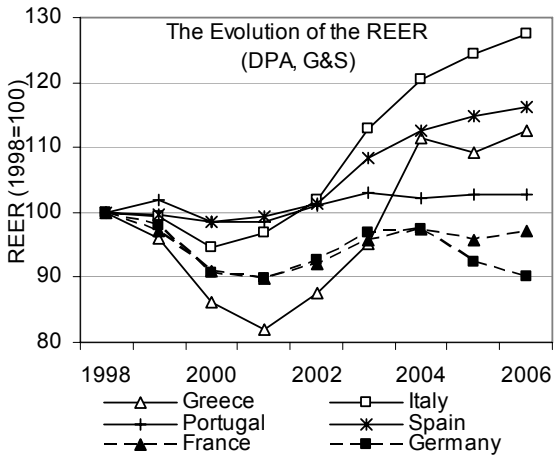
Note: (a) figures are presented in percent; (b) these results are based on a difference in difference estimator that controls for the equivalent effect in the rest of 11 euro area countries (see Bennett and Zarnic, 2007).

B. The Evolution of REER

The evidence based on our methodology suggests that the REER in Greece appreciated by 12.7 percent from 1998 to 2006, in Italy by 27.6 percent, in Portugal by 2.6 percent, and in Spain by 16.3 percent, while in France, it depreciataed by -2.9 percent, and in Germany, it depreciated by

[4] The available data on disaggregated bilateral trade in services is not as complete as the data for trade in goods, and therefore, our estimates of the REER in services are limited to the sample of trade flows available. The average coverage of bilateral trade is 89 percent of services exports for Greece, 70 percent for Italy, 83 percent for Portugal, 59 percent for Spain, 80 percent for France, and 54 percent for Germany. The coverage for goods is above 90 percent for all countries. Note also that the share of total exports of services in total exports is 66 percent for Greece, 20 percent for Italy, 28 percent for Portugal, 32 percent for Spain, 21 percent for France, and 14 percent for Germany. Our complete data set has over 36 million observations and includes prices data from 1995 until 2006; bilateral trade data for goods from 1995 to 2005; and bilateral trade data on services from 1999 to 2004. We compute the results for services from 1998 to 2006, for which we extrapolate the information observed in trade of services during 1999 and 2004 into 1998 and 2005, respectively.

-9.8 percent. These figures are broadly in line with the figures computed by other sources.[5]



In particular, the marginal effect of considering a more microbased structure of competitors in goods (DPA), in comparison with the observed appreciation under the HPA, implies a lower real appreciation of the order of 2 percent for Italy, Portugal, and Spain; 7 percent for Greece; and a lower real depreciation of 1 percent for France and Germany. When comparing the REER for goods with the REER for services, the results indicate that the REER for the latter appreciated less for Italy (3.4 percent), Portugal (2.1 percent), and Spain (0.9 percent), appreciated more for Greece (6.8 percent) and depreciated more for France (3.2 percent) and less for Germany (0.7 percent). As shown in Table X.1, the aggregated effect of incorporating both a microbased structure of competitors (DPA) and exports of services implies a lower appreciation of the REER for Greece (2.0 percent), Italy (2.8 percent), Portugal (2.4 percent), and Spain (2.3 percent), a marginally higher depreciation for France (0.1 percent) and lower depreciation for Germany (1.2 percent). These results are robust to a variety of additional tests and controlled for the equivalent effect observed in the rest of eleven euro area countries (see Bennett and Zarnic, 2007 for more details).

We perform a robustness check of our results comparing our estimate of the REER under the HPA with the standard IMF-WEO estimates of the REER, which is the closest source to our methodology that includes the latest developments in the literature and uses the HPA. The results for all six countries suggest a minimal difference of less that 1 percent

C. The Profile of Competitors

The microbased methodology proposed in our study also allows a quantitative assessment of each country's profile of competitors. Such evidence provides information about the exposure of each country to its key competitors around the world—for example, the exposure to emerging competitors like China, a country that has shown a strong pattern of productivity and trade growth, or the exposure to countries facing significant changes in their cost structure, such as the wage moderation observed recently in Germany or the realignment of the exchange rates observed in the U.S. during recent years. Our definition of markets also captures the potential

[5] The standard IMF-WEO estimates of the REER (based on Bayoumi, et al 2005)—the closest source to our methodology that includes the latest developments in the literature and uses the HPA—indicate a real appreciation of 13.6 percent for Greece between 1998 and 2006, 28.9 percent for Italy, 3.6 percent for Portugal, 18.6 percent for Spain, and a real depreciation of 3.5 percent for France, and of 11.3 percent for Germany. Our estimates as well as the IMF estimates reported include ULC data as of August 23, 2007.

vulnerability of each country's sectors to altering market conditions in competitors' sectors beyond country-level conditions.

For all six countries, the bulk of competition comes from the advanced and emerging economies, representing on average 95 percent in goods (except for Greece, 92 percent) and 98 percent in services (except for Germany, 96 percent). Since the late 1990s, there has been a change in the composition towards greater importance of emerging economies, which represented in 2005 14 percent of overall exposure to competition in goods for Spain, 16 percent for France, 18 percent for Germany, 19 percent for Italy and Portugal, and 22 percent for Greece (Table X.2). China appears as the most important competitor in goods for all countries, representing at least half of the increase in the importance of emerging economies.

Table X.2. The Structure of Competitors: Goods

	Greece	Italy	Portugal	Spain	France	Germany
Euro area, 1998	47.5%	49.7%	60.0%	59.9%	48.9%	42.6%
Euro area, 2005	47.0%	48.6%	58.6%	58.5%	48.6%	41.1%
Advanced economies, 1998	72.4%	81.4%	83.7%	85.9%	85.7%	84.5%
Advanced economies, 2005	69.9%	75.7%	77.0%	81.5%	80.1%	77.4%
Emerging economies, 1998 (1)	18.6%	14.7%	12.7%	11.1%	11.7%	11.8%
Emerging economies, 2005 (2)	22.0%	19.2%	19.0%	14.4%	15.9%	17.7%
Change in percentage points (2)-(1)	3.4%	4.5%	6.3%	3.3%	4.3%	5.9%
Change in percentage points due to China	3.5%	3.4%	3.4%	1.8%	2.3%	2.6%

Note: (a) change in percentage points refers to the change in importance of competitors between 2005 and 1998.

Among the advanced economies, the euro area countries represent 59 percent of the competition in goods faced by Spain and Portugal, 49 percent for Italy and France, 47 percent for Greece, and 41 percent for Germany—exhibiting a declining trend since 1998 in the range of 1 percent point for all countries, which is less than the pattern observed for the aggregate of advanced economies. This indicates that Spain and Portugal are more exposed to euro area competition and therefore less exposed to changes in the value of the euro.

From a disaggregated point of view, the four Mediterranean countries compete mainly in low- to low-medium technology sectors with China—the main emerging market competitor—while France and Germany’s competition with China is balanced between low- to low-medium technology sectors and medium-high to high technology sectors.

In services, emerging markets represent on average about one-third of their importance in goods, showing a similar increase in recent years although to a lesser extent; see Table X.3. From 1999 to 2004, the composition has shifted to emerging economies in the range of 3 percent for Germany, Greece, and Italy, 2 percent for France and Portugal, and 1 percent for Spain. The data suggest that China does not appear as an important competitor in services.

Table X.3. The Structure of Competitors: Services

	Greece	Italy	Portugal	Spain	France	Germany
Euro area, 1999	37.4%	49.6%	60.3%	54.4%	42.8%	46.0%
Euro area, 2004	37.2%	50.2%	60.3%	48.1%	42.5%	40.7%
Advanced economies, 1999	95.9%	94.1%	97.1%	95.8%	95.1%	93.6%
Advanced economies, 2004	92.0%	89.7%	94.7%	93.5%	91.1%	87.8%
Emerging economies, 1999 (1)	3.5%	4.9%	2.4%	3.5%	4.2%	5.0%
Emerging economies, 2004 (2)	6.4%	7.5%	3.9%	4.7%	6.7%	8.6%
Change in percentage points (2)-(1)	2.9%	2.6%	1.5%	1.2%	2.5%	3.6%
Change in percentage points due to China	0.3%	0.2%	0.1%	0.1%	0.2%	0.3%
Change in percentage points due to top five emerging economies	2.0%	1.6%	0.6%	0.5%	1.8%	2.3%

Note: (a) The key five EE competitors for Greece are South Korea, Turkey, Hungary, Czech Republic, Hong Kong; for Italy are Hungary, Turkey, Czech Republic, South Korea, Hong Kong; for Portugal are Turkey, Czech Republic, Egypt, Hungary, Mexico; for Spain are Turkey, Czech Republic, Egypt, Hungary, South Africa; for France are South Korea, Turkey, Hong Kong, Hungary, Czech Republic; and for Germany are South Korea, Hong Kong, Czech Republic, Turkey, and Hungary.

Among the advanced economies, the euro area countries represent 60 percent of competition in services faced by Portugal, 50 percent for Italy, 48 percent for Spain, 42 percent for France, 41 percent for Germany, and 37 percent for Greece—exhibiting a nil trend since 1998 for all countries except for Spain and Germany for which euro area competition has declined by 6 and 5 percentage points, respectively. These figures should be read with caution given the incomplete availability of the data for bilateral trade of services (see footnote 4).

See Table X.4 (goods) and Table X.5 (services) for the list of the top 10 competitors for each country with their corresponding weights.

In conclusion, we find that our REER estimates broadly follow the standard measures available in the literature, which neither account for a microbased structure of competitors nor the services sector. However, our results suggest a common pattern of higher international competitiveness in the range of 2–3 percent for Italy, Portugal, and Spain and substantial differences for Greece of the order of 7 percent for each of these two elements analyzed separately. With regard to the profile of competitors, the bulk of competition still comes from the advanced economies, especially from the euro area. Nonetheless, the importance of China as competitor is growing substantially. With respect to services, the profile of competitors is much more distributed towards advanced economies and has shown less dynamism towards emerging countries.

Table X.4. Main Competitors in 2005: Goods

Rank	Greece	Italy	Portugal	Spain	France	Germany
1	Italy	Germany	Spain	Germany	Germany	US
	(11.84%)	(18.63%)	(15.76%)	(16.92%)	(18.82%)	(13.40%)
2	Germany	France	Germany	France	US	France
	(11.50%)	(11.60%)	(12.52%)	(16.46%)	(12.20%)	(11.68%)
3	France	US	France	Italy	Italy	Italy
	(7.13%)	(9.72%)	(12.20%)	(9.98%)	(9.62%)	(9.37%)
4	US	Spain	Italy	US	UK	UK
	(6.54%)	(6.26%)	(8.52%)	(7.23%)	(7.76%)	(7.70%)
5	UK	UK	US	UK	Spain	Japan
	(6.14%)	(6.25%)	(5.81%)	(6.49%)	(6.82%)	(6.85%)
6	China	China	UK	Belgium	Japan	Netherlands
	(5.76%)	(5.95%)	(5.63%)	(4.29%)	(4.46%)	(4.78%)
7	Spain	Japan	China	Netherlands	Belgium	Spain
	(4.51%)	(4.33%)	(5.41%)	(4.06%)	(4.24%)	(4.71%)
8	Belgium	Belgium	Belgium	Portugal	Netherlands	Belgium
	(4.15%)	(3.71%)	(3.65%)	(3.95%)	(4.10%)	(4.14%)
9	Netherlands	Netherlands	Netherlands	Japan	China	China
	(3.93%)	(3.23%)	(3.35%)	(3.37%)	(3.80%)	(3.83%)
10	Turkey	Austria	Japan	China	Korea	Sweden
	(3.59%)	(2.23%)	(2.41%)	(3.23%)	(1.96%)	(2.73%)

Table X.5. Main Competitors in 2004: Services

Rank	Greece	Italy	Portugal	Spain	France	Germany
1	US	US	UK	UK	US	US
	(29.57%)	(15.85%)	(17.73%)	(26.40%)	(16.20%)	(15.97%)
2	UK	Germany	Spain	Germany	UK	France
	(16.20%)	(14.45%)	(17.49%)	(13.79%)	(16.16%)	(10.38%)
3	Germany	France	France	France	Italy	Japan
	(9.60%)	(13.12%)	(14.53%)	(11.74%)	(10.38%)	(10.20%)
4	Italy	UK	US	US	Germany	UK
	(7.87%)	(11.47%)	(9.24%)	(8.75%)	(9.68%)	(9.71%)
5	France	Spain	Germany	Italy	Japan	Italy
	(7.33%)	(6.04%)	(8.98%)	(7.63%)	(8.60%)	(9.38%)
6	Spain	Japan	Italy	Portugal	Spain	Netherlands
	(2.89%)	(5.21%)	(6.77%)	(3.79%)	(5.88%)	(4.89%)
7	Netherlands	Austria	Belgium	Austria	Belgium	Spain
	(2.67%)	(5.06%)	(3.81%)	(2.67%)	(4.78%)	(4.12%)
8	Austria	Belgium	Netherlands	Netherlands	Netherlands	Austria
	(2.57%)	(2.92%)	(2.79%)	(2.54%)	(3.36%)	(3.77%)
9	Japan	Netherlands	Austria	Sweden	Austria	Belgium
	(2.51%)	(2.76%)	(1.95%)	(2.52%)	(2.65%)	(3.41%)
10	Belgium	Greece	Japan	Belgium	Sweden	Denmark
	(2.17%)	(2.66%)	(1.71%)	(2.36%)	(2.23%)	(3.16%)

References

Agenor, P.R., 1995, "Competitiveness and External Trade Performance of the French Manufacturing Industry," IMF Working Paper No. 95/137, pp. 1–23.

Bayoumi, T., et al, 2005, "New Rates from New Weights," IMF Working Paper No. 05/99, pp. 1–55.

Bennett, H.Z., and Z. Zarnic, 2007, "International Competitiveness of the Mediterranean Quartet: Looking at Direct Competitors," IMF mimeo, pp. 1–45.

Bini-Smaghi, L., 2007, "Asymmetric Adjustment in Monetary Unions: Evidence from the euro area," presented at the EMU Conference, The Eurozone under Stretch? Analyzing Regional Differences in EMU (Berlin).

Blanchard, O., 2006a, "A Macroeconomic Survey of Europe," MIT, pp. 1–26 (September).

———, 2006b, "Portugal, Italy, Spain, and Germany: The Implications of a Suboptimal Currency Area," WEL-MIT, pp. 1–26 (April).

Catao, L.A.V., 2007, "Why Real Exchange Rates?," *Finance and Development*, pp. 46–47 (September).

Chinn, M.D., 2006, "A Primer on Real Effective Exchange Rates: Determinants, Overvaluation, Trade Flows and Competitive Devaluation," *Open Economies Review*, Vol. 17, pp. 115–43.

European Commission, 2006, "Adjustment Dynamics in the euro area: Experiences and Challenges," *The EU Economy Review 2006*, ECFIN REP.56908-EN, pp. 79–107.

Fung, S.S., and M. Klau, 2006, "The New BIS Effective Exchange Rate Indices," *BIS Quarterly Review*, pp. 1–16 (March).

Marsh, I.W., and S.P. Tokarick, 1996, "An Assessment of Three Measures of Competitiveness," *Weltwirtschaftliches Archiv*, Vol. 132, pp. 700–22.

Neary, P., 2006. "Measuring Competitiveness," IMF Working Paper No. 06/209, pp. 1–21.

Papademos, L., 2007. "Inflation and Competitiveness Divergences in the euro area Countries: Causes, Consequences and Policy Responses," The ECB and its Watchers IX (Frankfurt: ECB).

Rogoff, K., 1996, "The Purchasing Power Parity Puzzle," *Journal of Economic Literature*, Vol. 34, No. 2, pp. 647–68.

Roubini, N., 2007, "Le differenze che frenano l'Europa dell'euro - l'analisi," *La Repubblica* (August). English version is available via the Internet: http://www.rgemonitor.com/blog/roubini.