Europe's Coming Resurgence

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Americans tend to see Europe as one big theme park.[1] Europe is the land of castles, villas, three-hour dinners, and month-and-a-half-long vacations. It is not a hotbed of economic dynamism. To be sure, by 1995 or so Western Europe had substantially erased the gap in productivity and living standards between it and the United States.[2] Since then, however, its economic performance has lagged.[3] Output per hour worked, the most straightforward measure of economic performance, has grown at barely half of U.S. rates.[4] (See Figure 1.) Unemployment is high. Inflexible labor markets and heavy regulation make it difficult to incubate new technologies. The Old World is unrivaled for its elegant sidewalk cafes and fashionable beach resorts. But it is not economically vigorous. In terms of the capacity to produce goods and services, it is slipping further and further behind the United States.

So goes the conventional wisdom. But other observations fit uneasily with this picture of sub-par economic performance. In fact, Europe has actually been growing faster than the United States for the last couple of years.[5] European unemployment has

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[1] Just as Europeans tend to view the United States as one big shopping center.

[2] To be clear, my focus here is on Western Europe and the EU15 (the 15 members of the European Union prior to the 2004 enlargement to Eastern Europe), although I will have some observations in passing about the new EU members, below.

[3] And not only America. Growth has been faster in Canada, in Asia and even, recently, in Africa. Still, given similarities in levels of per capita income and stages of economic development, the United States is the obvious comparison.

[4] As is well known, for longer-term comparisons it is important to compare trends in output per hour with trends in output per worker, since hours worked annually have declined significantly in Europe since the 1970s while remaining more or less unchanged in the United States. Since 1995, in contrast, there has not been much difference in the development of hours worked per employed person in the U.S. and Europe. Since my focus in the first part of this paper is on the period since 1995, I mainly suppress discussion of the hours vs. workers distinction.

[5] Projections as of late 2007 suggest growth of real GDP in excess of 2 ½ per cent in 2006-7.

also been coming down, to less than 7 per cent as of mid-2007. (See Figure 2.) Here too the contrast with the United States is no longer so stark as it was, say 10 years ago. Europe has world-class companies such as Siemens and Philips that are global leaders in their industries. Its exports have been expanding vigorously, despite the headwinds created by a strong euro. It has higher savings rates than America, as a result of which it depends less on foreign central banks and governments to finance its investment.[6] It has a numerate and literate labor force. It has well functioning apprenticeship and vocational-training systems. It may do different things than the United States – by most measures it does more manufacturing and has fewer marketed services – but it does them well.

And if one looks beyond the value of goods and services bought and sold to broader measures of welfare, European societies have more to crow about. Americans visiting Europe see high-speed trains and painstakingly-preserved city centers with no counterparts at home. Europe has lower rates of infant mortality, reflecting the more extensive provision of prenatal care for expectant mothers and of health services for children from poor families. It has less income inequality. Rates of adult male incarceration are lower. Europeans work shorter hours and take longer vacations, on both counts enjoying more leisure time.

At some level, disagreement over how Europe is doing is inevitable, if only because there is no universally accepted metric of economic performance. Should comparisons be based on measured output, or should living standards be adjusted for the fact that Europeans enjoy more leisure time? There is more than one Europe, and economic performance differs among them. Northern Europe is doing better than

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[6] In other words, it does not run a substantial current account deficit with the rest of the world.

Southern Europe. Central and Eastern Europe is doing better than Western Europe. Not only does this variation complicate description, but it complicates explanation, since the institutions and policies that account for performance differ across economies as well.

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Economists typically decompose the growth of output per hour worked into the contribution of capital deepening (that is, rises in the capital/labor ratio indicating that the typical member of the labor force has more equipment and machinery, broadly defined, with which to work) and total factor productivity (increases in output not obviously attributable to increases in inputs of capital and labor).[7] Compared to the United States, Europe's slower labor productivity growth since 1995 is mainly due to slower TFP growth, not less capital deepening (Figure 3). To the extent that Europe has lagged, it is this slower rate of TFP growth that must be explained.

Admittedly, capital deepening in information technology (IT)-producing industries has been faster in the United States. Some will say that this reflects America's more flexible markets, which make it easier to capitalize on the opportunities afforded by IT. But others will attribute America's high levels of IT investment to NASDAQ bubble, which made it cheap for IT companies to invest. In light of the subsequent crash they will question the productivity of that investment. But, either way, the contribution of differential capital deepening in IT to the productivity growth gap must be small for the simple reason that the IT sector is small. It is at most a subsidiary part of the story.

[7] The *contribution* of capital deepening to the growth of output per hour will be *proportional* to the rate of capital deepening, where the coefficient of proportionality is the share of capital in the aggregate production function in the standard Cobb-Douglas formulation (say, one third). In contrast to the increase in the capital/labor ratio, which enters the standard formula with this coefficient before it, the rate of TFP growth enters without a scaling factor.

It can be argued that Europe was able to close the gap before 1995 by eliminating low-skilled, less productive workers from the labor force. High minimum wages priced unskilled workers out of jobs. Generous unemployment benefits weakened their incentive to seek work. Hence the same investment rate, combined with slower growth of the labor force, resulted in more capital deepening. With more unskilled workers leaving the labor force each year, measured productivity could rise simply as a result of this composition effect.

In contrast, since 1995, with labor-market reform, these trends have been reversed. Less skilled workers have found jobs in growing numbers. What was once job-poor growth (output growth without employment growth) has become job-rich growth. What was once Europe's artificial advantage in the productivity race has now become a disadvantage.

Again, there is something to the point. But saying that unskilled workers are less productive is not the same as saying that their productivity is rising more slowly. Indeed, recent advances in IT may have been especially effective in raising the productivity of less skilled workers in wholesaling, retailing and financial services (more on this below). While there are dissenters, most analysts believe that this is only part, and probably a small part of the story.[8]

It is widely assumed, as already noted, that Europe's slower productivity growth reflects its lesser facility in commercializing new information technology. This facility supposedly explains faster U.S. productivity growth not just in the IT-producing sectors but in all the other sectors where production can be reorganized to take advantage of the

[8] The most influential dissent is that of Ian Dew-Becker and Robert Gordon, "The Slowdown in European Productivity Growth: A Tale of Tigers, Tortoises and Textbook Labor Economics," *Economic Policy* (forthcoming).

efficiencies potentially afforded by IT. But, in fact, this generalization conceals as much as it reveals. Between 1995 and 2004 economy-wide TFP growth was actually faster in Finland, Sweden and Ireland than in the United States.[9] (See Figure 3.) These countries have also been every bit as fast as the United States to grow their IT industries.[10] In contrast, TFP growth was slower in Austria, Belgium, France, Germany and the UK than in the United States – although the magnitude of the differential should not be overstated. The European average is then dragged down by the truly disastrous performance of Italy, Spain, Portugal, Denmark and Belgium.

One can also examine these issues at the industry level. It turns out that in a variety of industries productivity-growth differentials are not particularly dramatic across European countries or between Europe and the United States. This is true of agriculture, mining, construction, utilities, nondurable manufacturing, transportation, communication and real estate alike. Even the IT-producing sector does not display dramatically different productivity growth rates across advanced countries.[11]

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[9] And also in Greece, although the story there is different: it is less a reflection of facility with IT than the fact that the country was still far behind most of the recent of the U.S. in terms of income and productivity levels, creating considerable scope for importing other, non-IT-related technologies and pursuing other efficiencies that had long been taken for granted in more advanced European countries.

[10] Of course, it is sometimes said that facility in applying IT matters more than facility in producing it. This is true in a purely arithmetic sense, since in most countries the IT sector is simply too small to drive productivity growth economy-wide. (Finland, where Nokia accounts for a significant share of the capitalization of the Helsinki Stock Exchange, may be an exception to the rule.) But the fact that not just Finland but also Sweden and Ireland are both big IT producers and big IT users suggests that the first characteristic (ability to apply IT) may not be unrelated to the second (ability to produce it). This is argued by Bart van Ark and Robert Inklaar, "Catching Up or Getting Stuck? Europe's Trouble to Exploit ICT's Productivity Potential," Research Memorandum GD-79, Groningen Growth and Development Centre (September). Dew-Becker and Gordon, "Slowdown," dissent from this view.

[11] More precisely, the difference between the U.S. and Europe over the 1995-2004 is less than a quarter of the U.S. rate of productivity growth. Of course, this is different from saying that IT doesn't matter for differential productivity levels or growth across countries, since not only is productivity growth relatively rapid in that sector but its share in output and employment is larger in the U.S. than the EU.

Where differences are pronounced is in wholesale trade, retail trade, and financial services.[12] Evidently, these three sectors offer exceptional scope for boosting productivity by combining information technology with the fundamental reorganization of production. In finance, computers have been used to automate securities trading previously conducted over the telephone, allowed households to manage their bank accounts and pensions on the internet, and made it easier for banks to keep track of transactions and offer new services (think debit cards). Some of these IT-based innovations have allowed capital (broadband, computers, and the associated software) to be substituted for less cost-effective labor. Fewer people are employed teaching commercial tax preparation courses and filling out other people's tax returns now that individuals can download tax-preparation software from the web. Other IT-based innovations boost the productivity of that labor. Thus, accountants preparing more complicated tax returns use the more sophisticated "professional" version of the same software marketed to households. The tax-preparation industry has had to radically reorganize itself to capitalize on these innovations.

Retailers and wholesalers, for their part, have been able to automate inventory control and link information generated at the check-out stand to the assembly line. Since installing these innovations entails substantial up-front costs, while then extending them to more check-out lines or stores is then relatively inexpensive, productivity gains in retailing have been associated not just with the use of IT but also with the growth of

[12] This is the common finding of consultancies like McKinsey and the Conference Board and of academics like Dale Jorgenson and Bart van Ark. See Dale W. Jorgenson, "Information Technology and the G7 Economies," *Revista di Politica Economica* 95 (2005), pp.25-56. Bart van Ark, "Europe's Productivity Gap: Catching Up or Getting Stuck?" unpublished manuscript, Groningen Growth and Development Centre, University of Groningen (June 2006); R.H. McGuckin, M. Spiegelman and B.van Ark (2005), *The Retail Revolution: Can Europe Match U.S. Productivity Performance?* Research Report R-1358-05-RR, New York: The Conference Board.

chains and the proliferation of big-box stores. Firms have had to fundamentally reorganize how they do business.

This perspective on the locus of IT-fueled productivity growth also points to the obstacles to raising efficiency in Europe. Restrictive land-use regulations have prevented the construction of big-box stores in historic city centers. Regulations requiring firms to negotiate with unions and works councils before laying off employees and then obligating them to continue paying their salaries for a period of years have discouraged firms from restructuring their work force. Firms perceiving IT-related opportunities and contemplating whether to ramp up production are similarly deterred by the fact that expanding the labor force now might saddle investors with expensive obligations to workers later. Regulation also makes it more time consuming (and costly) to start a new business than in the United States (an average of 47 days in, say, Spain, compared to only 5 in the United States).[13]

Solving these problems is straightforward in principle. Where restrictive regulation discourages the adoption of new technologies, that regulation needs to be relaxed and reformed. But established interests are deeply entrenched. Existing institutions are embedded in the social fabric. Trade unions accustomed to industry-wide bargaining will not happily acquiesce to the decentralization required to accommodate the rapidly changing circumstances of a more fluid, high-tech world. Industries accustomed to government handouts will be reluctant to back away from the trough. Reform is easier in theory than practice.

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[13] According to the Heritage Foundation's Index of Economic Freedom calculations.

Not surprisingly, different countries have had different degrees of success in remaking their economies. In some, deep economic and financial crises delegitimized old arrangements, discredited existing interest groups, and allowed charismatic leaders to push through radical reforms. Decades of disappointing economic performance, capped by an inflationary crisis, allowed Prime Minister Thatcher to do so in the UK. Slow growth and exploding debts also precipitated painful reforms in Ireland in the 1980s. Devastating banking crises and currency collapses prompted similar reactions in Finland and Sweden in the 1990s. Aside from the UK, which is a special case (growth had been exceptionally disappointing for exceptionally long – and there was only one Mrs. Thatcher), that these were all small countries with homogeneous populations may have made it easier to build a consensus for reform. Common features of their reforms were the privatization of public enterprise, deregulation of product markets, streamlining of labor-market regulation, and more efficient delivery of welfare-state programs.

Other European countries have had neither equally dramatic crises to catalyze reform nor circumstances as conducive to consensus building. Because responses have varied, observers now speak not of one but of a set of European models.[14]

- There is the Anglo-Saxon Model of the UK and Ireland, characterized by flexible labor markets, light regulation, and limited social welfare. Here exceptionally deep crises precipitated the wholesale dismemberment of restrictive regulation. In adjusting to this new setting, these countries had a number of distinctive advantages. The fact that the labor force spoke English made them attractive production platforms for firms with global reach. Ireland had already put in place

[14] The taxonomy that follows comes from Andre Sapir, "Globalization and the Reform of European Social Models," *Journal of Common Market Studies* 44 (2006), pp.369-390.

far-reaching educational reforms, while the UK was already a well-developed financial center, something that worked to its advantage in an era of financial liberalization.

- There is the Scandinavian model, which applies to varying degrees to Finland, Sweden, Denmark and the Netherlands. These countries had long attached high value to welfare-state services. But crises of slow growth led them to reform those systems to deliver essential social protections more efficiently. The essential feature of their reformed systems is that they protect the worker and not the job. Employment protection legislation has been scaled back, reducing costs of hiring and firing. But workers separated from their previous employment receive generous state support for a limited period, extensive placement services for individuals with specific skills, and the opportunity to participate in retraining programs.[15] Married women and other "secondary workers" have been drawn into the labor force, often in the form of part-time employment, generating additional tax revenues with which to pay for social programs.[16] The greater ease of adjusting employment has facilitated new firm formation, while the maintenance of essential social protections makes higher labor market turnover palatable for the workers. The resulting labor market flexibility, in conjunction with well educated labor forces and rapidly privatized telecommunications systems, has facilitated movement by these countries into high-tech industries.

[15] Known as "active labor market policies."
[16] This also explains why measured labor productivity has, in some of these countries, the Netherlands for example, risen relatively slowly. (To return to the earlier discussion, there are cases, in other words, where changes in the composition of the labor force do matter.)

- Then there is the Mediterranean model of Italy, Spain, Portugal and Greece. Their economies are relatively inflexible; adjusting employment levels, for example, is exceedingly costly. Reform of restrictive regulations has been at best halting. Their public sectors are inefficient. Their medium-tech specialization leaves them vulnerable to Chinese competition.
- Finally there is the Franco-German model, which is the most difficult to characterize.[17] These countries have done more reform than their Mediterranean counterparts but less than the Anglo-Saxon and Nordic countries. They have eliminated hiring and firing costs for new workers but not for existing employees. There has been partial but incomplete decentralization of economy-wide wage negotiations. They do vocational training and high quality manufacturing well, although whether they can compete with high quality labor in Eastern Europe, much less China, is unclear, and how they will do if they have to move out of metal bending into product design remains an open question.

It will be evident that some of these models are better suited than others to the imperatives of a high-tech world. The Anglo-Saxon Model, whatever its other demerits, offers the flexibility required by high-tech firms operating in a fluid economic environment. The same is true of the Scandinavian Model, which offers flexibility in return for the generous provision of collective goods and social protections. The Franco-German model remains between the two banks of the river. And the Mediterranean countries have done relatively little reform and have relatively little to show for it.

[17] If forced, I would also put Austria under this heading.

To be sure, one can tell special stories about each of Europe's national successes.[18] The Irish spoke English.[19] Finland benefited from the fact that one company, Nokia, was at the right place at the right time.[20] And so on. Still, one can't help but think that more systematic factors lie behind these cross-country differences in performance.

But adaptation does not imply convergence to a single model. While the Irish welfare state is limited, the Scandinavian one remains generous. Tax rates continue to differ significantly across Europe without causing all economic activity to flee to the low tax jurisdictions.[21] Higher taxes are no deterrent to investment when the programs they finance produce a more productive labor force. Evidently there is more than one way to crack a nut. Within limits, it would appear that labor market, capital market and public sector arrangements can be combined in several different, equally efficient ways.

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As noted above, it is especially hard to characterize how Germany and France are doing in the course of this process. The German economy, after more than a decade of disappointment, has expanded more robustly in recent years. The difficulty of digesting six new east German states is now largely behind it. Industry-wide wage negotiations have been partially decentralized, better accommodating the need of individual firms (including those in Germany's east). Until recently, the country's unions have shown

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[18] And, for that matter, about each of its failures.
[19] Which made the country an attractive place for foreign companies to establish call centers and back-office operations. In addition, tax holidays encouraged inward foreign investment, transferring advanced technology, but also overstated the growth of GNP by encouraging transfer pricing.
[20] Nokia had experience in producing telephone and telegraphic cable and moved into producing communications equipment for the military, which valued mobility. And the rest, as they say, is history.
[21] Evidently, high taxes that pay for productivity enhancing services are viable in the face of low-tax competition abroad. This is the finding of Peter Lindert's *Growing Public: Social Spending and Economic Growth Since the 18th Century* (Cambridge University Press, 2004).

restraint in wage negotiations and accepted radical changes in work organization. Labor productivity has risen faster than wages, and the resulting improvement in international competitiveness has ignited an employment and export boom.

The question is whether this improvement is permanent. Wage pressure is now building again. Some of the recent improvement in economic performance may simply reflect the global investment boom, given that Germany specializes in the production of investment goods. And there is also the challenge of China, which has begun entering motor vehicles, machine tools and other traditional German preserves.

France is even harder to characterize. The French labor market has been made more flexible for new workers but not for existing employees. New workers are not entitled to lavish compensation if separated during an initial nine month period, but for long-standing workers employers must still pay heavy social charges. While employers have been given more ways around the law limiting working hours to 35 a week, that requirement continues to burden many. Unemployment exceeds 8 per cent – and 20 per cent for workers under the age of 25.[22]

While productivity has risen strongly in high-end manufacturing, it has lagged in industries like automobiles where the government has tended to step in and prop up the weak, reducing competitive pressure. Deregulation, while proceeding in product markets, has barely touched the service sector. Not surprisingly, productivity is dismal in services, public services in particular. The new French president, Nicholas Sarkosy, has promised a more concerted effort to restructure the French economy, but his actions so far have sent mixed signals.

[22] Due largely to the impact of a high statutory minimum wage.

Continental Europe's economic future depends disproportionately on the performance of the two big economies at its center. And while there are promising signs, their prospective performance remains exceptionally difficult to foresee.

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Careful readers will have observed that this discussion has proceeded without reference to the European Union. This is not an inadvertence. Reform-minded coalitions must be built at the national level. Reform laws must be passed by national legislatures. Insofar as the institutional inheritance shaping and constraining the prospects for reform differs across countries, so must the agenda for reform. To be sure, the EU can proselytize for reform. By bringing together reform-minded governments, it can apply peer pressure for change. But structural reform is first and foremost a national competence.

Where the EU has most obviously made a difference is in intensifying product market competition. In competitive markets, firms are under constant pressure to cut costs and raise product quality.[23] Enhancing product market competition has been a focus of the EU virtually from its foundation. This started with the removal of barriers to intra-European trade in the 1960s. It continued with the Single European Act in the 1980s, which removed regulatory barriers behind the border, mandated the mutual recognition of national product standards, and authorized pursuit of a vigorous competition policy by the European Commission. It culminated with the creation of the

[23] A series of studies by the OECD have shown that product market competition plays a key role in productivity growth. See inter alia G. Nicoletta, A. Basani, E. Ernst, S. Jean and P. Santiago, "Product and Labour Market Interactions in OECD Economies," Working Paper no. 312, Economics Department, OECD (December 2001).

euro, which enhanced price transparency, ratcheting up competitive pressures one more step. Creation of a single European market has prevented firms from securing protection against competition from their national governments. It forced producers to raise efficiency or die. That the intensification of product market competition has been the EU's signal achievement bodes well for the future.[24]

Other initiatives have been less helpful. The EU's budget, which exceeds one per cent of the member states' GNP, is dissipated on agricultural price supports and regional transfers that range from ineffective to counterproductive. The hyper-regulatory strand of Europe's economic inheritance has been enthusiastically taken up in Brussels. The European Commission issues some 3,500 directives each year, regulating recycling, noise pollution and a host of other practices. In the area of labor market regulation alone, there is a dizzying array of agencies ranging from the European Commission for Employment and Social Affairs and the European Agency for Safety and Health at Work to the EU Parliamentary Committee on Employment and Social Affairs and the Committee of the Regions Commission on Employment. Members of the European Parliament receive perks out of all proportion to their responsibilities. The parliament itself rotates between Brussels and Strasbourg because of the members' inability to agree on where it should reside. Publics everywhere complain about their politicians, but Europeans have reason.

What about monetary union? In addition to enhancing price transparency and boosting competition, the euro has lent impetus to the development of Europe's securities markets. It is cheaper to float bonds when they are denominated in a single currency and

[24] Pessimists will point to the fact that the new French president, Nicholas Sarkosy, insisted that a reference to the promotion of "free and undistorted competition" as part of the EU's mandate be dropped in last summer's negotiations over how to revise the Union's constitutional treaty. As for how this aspect of the Union's mandate develops, only time will tell.

traded on an integrated European market than when they are divided among more than two dozen different currencies and national markets. The result has been lower funding costs for European firms, which has been a competitive advantage. The euro also seems to have had the desired effect of ring-fencing Europe from financial instability. While the exchange rate has moved up and down, there have been no currency crises like those which riddled Europe in the 1980s and 1990s.

How painful has it been to saddle a dozen and more different European countries with a single monetary policy? Ireland and Finland have complained that ECB policy has been too loose. Other more slowly growing countries have complained that it is too tight. But it is hard to see how growth and productivity performance Europe wide would have been significantly superior with a different monetary policy. The main way that monetary policy supports employment and output growth is by delivering price stability, which simplifies decision making and brings about a more efficient allocation of resources. And the policies of the ECB have done just that.

What of fiscal policy? The countries of Western Europe have succeeded in bringing budget deficits down to levels that the United States can only envy.[25] The remaining problem is that national budgets are procyclical. Because debt ratios are high, governments are forced to cut back on spending or raise taxes in recessions, when revenues decline, to avoid exciting investors. Because deficits are sometimes dangerously close to the 3 per cent ceiling imposed by the Stability and Growth Pact of the European Union, the authorities have little room to cut taxes during slowdowns.

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[25] Public debt stocks, which are inherited from the past, remain excessive in much of "Old Europe," but the worst fiscal profligacy appears to be over. Some Central and Eastern European governments, in contrast, continue to run larger deficits.

Here too the question is whether solutions should be sought at the level of the EU or the individual country. The Stability and Growth Pact instructs countries to maintain budgets in surplus or at least in balance in good times so that they have room for increases in deficit spending during slowdowns. The Pact threatens sanctions and fines against governments that violate its provisions. But it has not been a resounding success; in most cases where governments have violated it, the sanctions and fines have been waived, robbing the procedure of credibility.[26]

One suspects that support for fiscal consolidation, like support for structural reform, will have to be grown at home. There is no substitute for building domestic support for fiscal responsibility. Relying on the EU to enforce fiscal responsibility may only allow national governments to shift the blame and neglect their fundamental obligations.[27] This is another example of the importance of thinking carefully about what the EU should and should not do.

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Thus, the process of re-making Europe's institutions to meet the needs of a high-tech, innovation-based, intensely competitive globalized world is underway. The booming Irish economy, the thriving Scandinavian economies, and the tolerably well performing German and French economies all provide evidence for this conclusion. To be sure, the productivity payoff has been a bit disappointing. But much of Europe

[26] The main problem has been that several member states have tended to violate the SGP at the same time. Its rules require the member state in question to recuse itself when its case is discussed, but other member states also a risk of violating the pact are not required to do the same. Hence there is scope for the violators to form a coalition – to say "I'll vote against sanctions on you if you vote against sanctions on me."

[27] Now that Germany has apparently put its recent history of excessive deficits behind it, its government is reportedly pushing to strengthen the SGP. This perspective suggests that this initiative is unlikely to make a substantive difference and may even be counterproductive.

remains between the two banks of the river; in other words, the reform process remains incomplete. Financial markets have been substantially restructured, but labor markets have not. Systems of vocational and apprenticeship training have been dismantled, but an efficient university system has yet to be put in its place. Reforming an advanced economy is a little bit like trying to overhaul a car's engine while the vehicle is running. One has to expect a bit of sputtering.

The unfinished agenda is extensive. European manufacturing needs to be restructured to take advantage of the opportunities of EU enlargement by concentrating more product design in high-wage countries and assembly operations in lower wage countries. German observers point to the Cayenne, Porsche's luxury SUV, as evidence of Germany's problems.[28] While the car is fit and finished in Leipzig, most of its parts are sourced abroad. Even the basic assembly is done in Bratislava. Domestic content is only a third of final product. But, in fact, this is an example of the solution, not the problem. But it is understandable that workers who have spent their lives on automobile assembly lines do not see things this way.

More generally, there is a reluctance on the part of those whose livelihood is tied to manufacturing to appreciate the implications of China's emergence. China has already moved into the production of relatively sophisticated consumer goods, challenging the viability of Italian luxury-goods industries. Germany, which has specialized in the production of sophisticated machine tools and capital goods, should understand that it too will soon be in China's sights.[29] Responding will mean specializing further in product

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[28] See for example Hans-Werner Sinn, *Can Germany Be Saved? The Malaise of the World's First Welfare State* (MIT Press, 2007).
[29] The recent news that the Chinese automotive firm Syuanghuan Automobile has produced a clone of BMW's Z5 sport utility vehicle is a case in point.

design and development while leaving the manufacturing to other places where costs are lower.

Adapting will also require developing the service sector. Many Europeans have a visceral aversion to service sector jobs. Providing a service to someone else makes one feel like the customer's inferior, unlike a solid and respectable job in manufacturing. Because of the continent's recent history, prosperity continues to be associated with manufacturing. Indeed, one worries that some European countries' recent success in boosting exports of manufactures may only cause further delay in recognizing that they will need a very different specialization and thus a very different set of supporting institutions to compete in the 21st century.

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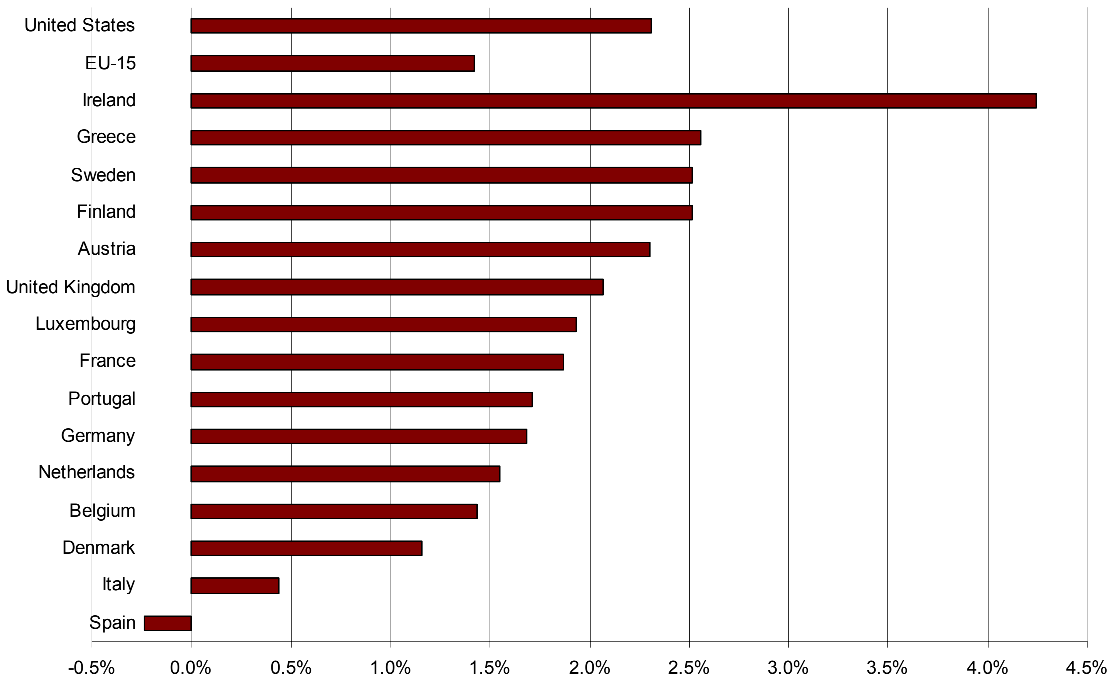
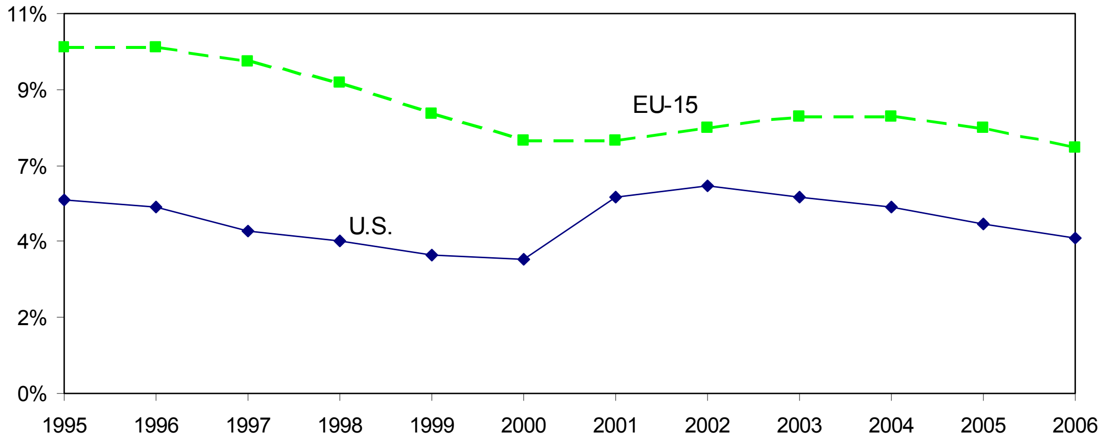
Figure 1: ANNUAL GROWTH OF GDP PER HOUR, 1995-2006



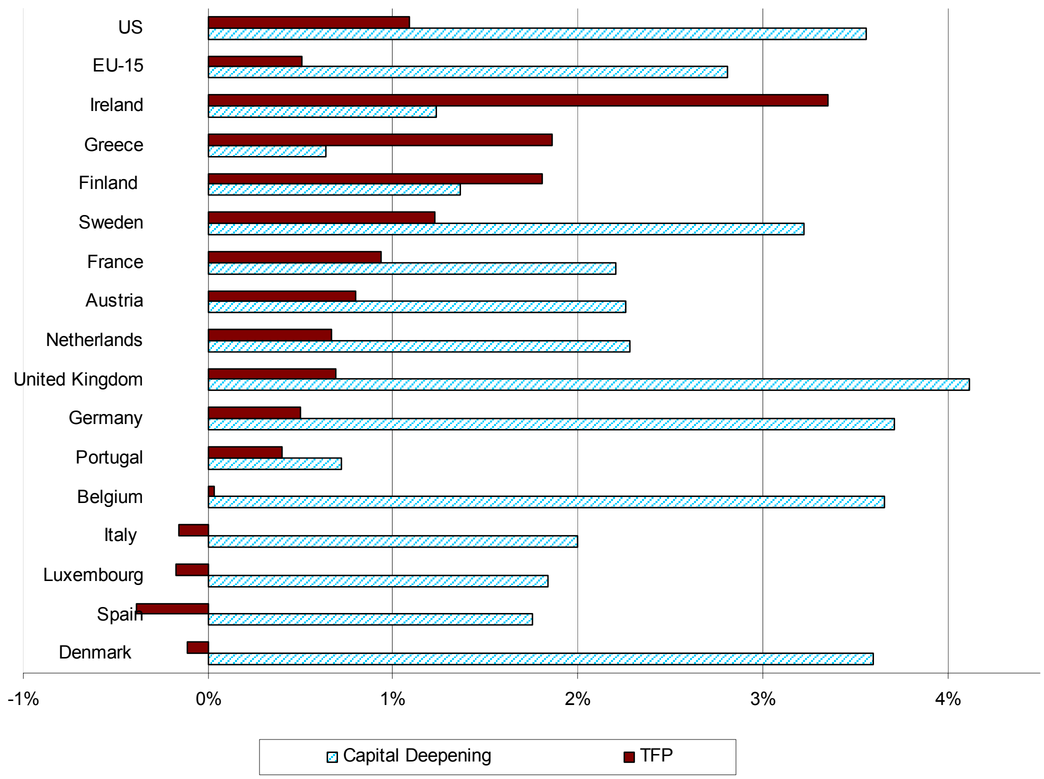
Source: Groningen Growth and Development Centre, Total Economy Database, January 2007

Figure 2: HARMONIZED UNEMPLOYMENT RATE (%), SEASONALLY ADJUSTED, 1995-2006



Source: Eurostat, General and Regional Statistics - Labor Market

Figure 3: ANNUAL GROWTH OF TOTAL FACTOR PRODUCTIVITY (TFP) AND OF CAPITAL DEEPENING, 1995-2006



Source: Groningen Growth and Development Centre, Total Economy Database, January 2007