

The Euro and Structural Reforms

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2.1 Introduction

One of the arguments in favor of the introduction of the common currency area in Europe was that it would have pressured member countries to improve their macroeconomic policy and pursue “structural reforms,” the latter being defined as labor and product markets’ liberalization and deregulation. Has it worked? Have members of the euro area had a better policy performance after adopting the common currency?

High-inflation countries have gained a sound monetary policy with the adoption of the common currency and the European Central Bank. The euro does not have any direct implication for fiscal policy,¹ but its adoption was accompanied first by the imposition of converge criteria on budget deficits and public debt and then by the Stability and Growth Pact (SGP), which established some rules about deficits. For some high-debt countries (e.g., Italy, Belgium, and Greece), the threat of being left out served as an incentive to initiate fiscal adjustments. However, once the euro was intro-

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1. One possible indirect channel is through an interest rate effect caused by very large public debt of some (large) countries, but this effect is likely to be small.

1 duced, the threat of exclusion vanished,² large deficits reappeared in several
2 member countries, and the SGP was widely violated: chapter 8 in this volume
3 by Fatas and Mihov discusses fiscal policy in the euro area. In this chapter,
4 we focus on structural reforms.

5 Why should joining the common monetary area accelerate and facilitate
6 structural reforms? We can think of a few sound economic arguments
7 and some wishful thinking. On the former (and more solid) ground, more
8 competition due to the single market might increase the cost of regulation
9 in the product markets. The protection of insider firms and workers would
10 become more costly and more visible to consumers and voters. For example,
11 imagine a country that protects a national airline at the expense of a low-
12 cost one that flies in the rest of the union: the costs for the travelers and
13 taxpayers would be large and obvious. This would also weaken the insiders
14 of the protected national airline, from union workers to pilots to manag-
15 ers accumulating losses at the expenses of taxpayers. Of course, this argu-
16 ment presupposes that the euro per se is a necessary condition for having a
17 truly common market, a point which requires discussion. Second, the elimi-
18 nation of strategic devaluations shuts down a (possibly temporary) adjust-
19 ment channel for a country losing competitiveness. In the product market,
20 this means that firms and their organizations may demand deregulation of
21 the market for inputs such as nontradable services, energy, and transporta-
22 tion to contain costs. Also, if real wage growth is out of line with produc-
23 tivity, a nominal devaluation is not available any more as a solution (or a
24 palliative). This creates incentives for countries to free their labor markets
25 from regulations that create obstacles for real wage adjustments and labor
26 mobility and flexibility. In fact, those who were skeptical about the intro-
27 duction of the euro (see Obstfeld [1997], for instance) raised precisely the
28 issue of real wage adjustment and labor market rigidities: the elimination
29 of those was seen as a condition difficult to implement but necessary for the
30 euro to survive. It is interesting to note that the pre-euro economic debate
31 focused much more on labor market reforms and much less, or not at all,
32 on product markets, while in reality, as we will see later, the latter markets
33 were liberalized first.

34 The wishful thinking part was the rhetoric often too common in Europe,
35 according to which any step toward integration is “by definition” good and
36 brings about all sorts of wonderful achievements for the continent. More
37 seriously, many commentators viewed the adoption of the euro as essen-
38 tially a political move, a step toward some sort of United States of Europe.
39 Jacques Delors is quoted as saying, “Obsession about budgetary constraints
40 means that the people forget too often about the political objectives of the
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42 2. See chapter 1 by Barry Eichengreen in this volume on the low probability of a collapse
43 of the euro system.
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1 European constitution. The argument in favor of the single currency should
2 be based on the desire to live together in peace.”³

3 When we started this research project, we were rather skeptical that we
4 would find any effect of the euro on structural reforms. English-speaking
5 countries such as the United States, New Zealand, the United Kingdom,
6 and Ireland had started major deregulation processes way before the birth
7 of the euro; some Nordic countries (in and out of the euro area) had fol-
8 lowed more recently as a result of poor economic performance in the 1990s;
9 and some laggards such as Greece, Belgium, Italy, France, and Germany
10 were struggling to keep the pace. The euro did not seem to have much to do
11 with this timing. Much to our surprise, the empirical results were different.
12 We uncovered significant correlations between the speed of adoption of
13 structural reforms in the goods market and the adoption of the euro. With
14 respect to labor markets, the picture is more nuanced and complex. We find
15 no evidence that the adoption of the euro has accelerated labor market
16 reforms in the primary market. This result does not imply that *no* labor
17 market reforms have occurred in Europe but rather means that the adop-
18 tion of the euro has not accelerated reforms. However, in several countries
19 in Europe, we now have a secondary market of labor with temporary and
20 much more flexible contracts. (See Bertola [2008] for an assessment of the
21 role of the euro on labor market outcomes.) We still do not have good data
22 on a comparable international basis to examine the evolution of the markets.
23 Indirectly, however, one could look at whether nominal wages have reacted
24 more or less to past inflation and whether there has been wage moderation
25 and therefore a smaller second-round inflationary effect. We find that in
26 countries preparing to enter the euro during the period from 1993 to 1998,
27 there have indeed been signs of substantial wage moderation and a slowing
28 down of the adjustment of nominal wages to past inflation. This is likely to
29 have been part of the macroeconomic efforts to meet the criteria to enter the
30 monetary union. After the adoption of the euro, wage moderation seems to
31 have lost some steam, perhaps as a result of “fatigue.” However, in certain
32 countries such as Germany, wage moderation continued until recently. In
33 others, such as Italy and France, the evidence is mixed.

34 We also investigated the sequencing of goods and labor market reforms.
35 The former have generally come sooner than the latter. This important issue
36 has been raised by Blanchard and Giavazzi (2003) and empirically investi-
37 gated by Fiori et al. (2007). Our results show that the deregulation of labor
38 markets is made easier by product market deregulation. However, there are
39 features of the labor market that seem to be useful preconditions for product
40 market deregulation: namely, the reduction of firing costs, and even more,
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42 3. See Eichengreen (chapter 1 in this volume) for the original citation. See Alesina and Perotti
43 (2004) for a criticism of EU rhetoric.
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1 the existence of unemployment benefits. This makes sense, as the deregulation of product markets implies labor reallocations across firms and sectors, which require some labor market flexibility; any may lead, at least in the short run, to higher unemployment.

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5 We should be clear from the start that we are considering a handful of countries: eleven original members of the euro area (all but Luxembourg), a few EU but not euro members, and the remaining Organization for Economic Cooperation and Development (OECD) countries. We are also looking at a one-shot event: the introduction of the euro. It is possible that a certain timing of reforms across countries may lead to a spurious correlation that happens to coincide with the adoption of the euro.⁴ Or, it may be possible that it is not the euro per se but the membership in the European Union that creates incentives for product market deregulation, and there are simply not enough countries that are members of the European Union but not members of the monetary union to identify this difference.

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16 Finally, the decision to adopt the euro is clearly not exogenous, and we try to address issues of endogeneity. The recent literature on currency areas (Alesina and Barro 2002; Alesina, Barro, and Tenreyro 2002) offers insight about instruments that may have led to the decision of adoption. One should be aware, however, that various countries adopted the euro for different reasons. In some cases, it was done mostly for anchoring purposes (e.g., in Italy), while in other cases, the intention was to be at the core of the European integration process (e.g., in France and Germany). In fact, one theme of the pre-euro debate amongst economists was, what is the benefit for Germany? There seemed to be no big economic gains for this country, which seemed to provide the service of being an anti-inflation anchor without receiving an obvious benefit in return. However, the benefit was political. To put it differently, the decision was partly dictated by noneconomic factors, hard to capture with an instrument.

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30 We are not the first to investigate the relationship between the adoption of the euro and structural reforms. The International Monetary Fund (2004) suggests that belonging to the European Union accelerates the reform process in the product market but has no conclusive effect on the labor market. Yet, this paper fails to disentangle the effects of the adoption of the euro and of the European single market (ESM). Hoj et al. (2006) provide supporting evidence to these results. They find a positive effect of the ESM on product market reforms—particularly in the transportation and telecommunication sectors—but no impact on the labor market. However, they do not directly test for the effects of the euro. Duval and Elmeskov (2005) instead investi-

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4. For instance, some directives of the European Commission regarding some sectors decided in the mid-1990s implied actions to be taken in 1998 and 2000 for all members of the European Union. This timing coincided with the adoption of the euro. Note, however, that these directives do not apply only to EMU countries but to all the EU countries. Nevertheless, this timing may imply some spurious correlation.

1 gate this issue using a database of OECD countries in which they analyze
2 large structural reforms in the labor and product market. Stacking together
3 these (different) reform measures, they conclude that a lack of monetary
4 autonomy, which is defined as belonging to the European Monetary Union
5 (EMU) or to other fixed-exchange rate regimes,⁵ can have a negative, sig-
6 nificant impact of the probability of undertaking large structural reforms,
7 but only in large economies. In a database of 178 countries on a longer, yet
8 less-recent, time span (1970 to 2000), Belke, Herz, and Vogel (2005) obtain
9 different results. They find that a higher degree of monetary authority inde-
10 pendence, as measured by an index of exchange rate flexibility, has a posi-
11 tive impact on an overall index of reform effort, especially in the financial
12 and banking sectors. They find no robust evidence for an index of market
13 regulation in the sample of OECD countries.

14 This chapter is organized as follows. In section 2.2, we discuss the ratio-
15 nale for which the euro might favor structural reforms. Section 2.3 presents
16 our results on product market deregulation. Section 2.4 discusses results on
17 labor market reforms, while the last section contains the conclusion.

18 2.2 Structural Reforms and the Euro

19 2.2.1 Why Should the Euro Matter?

20 The adoption of the euro and the implementation of structural reforms
21 in the labor and product markets seem at first glance to be two largely unre-
22 lated events. However, the euro has always been portrayed as the final stage
23 of a process of economic integration among the country members of the
24 European Union that involved more trade, more labor, and capital mobility:
25 in a word, fewer restrictions on the mobility of goods, services, and people.
26 To achieve this goal, the introduction of the ERM in 1992 established a
27 legal framework to increase trade and competition in the European Union
28 and allowed the European Commission to rule against state aid or against
29 monopolistic practices to all EU members. Thus, it seems quite plausible
30 that the ERM would have had an effect on product and labor market reform.
31 But the subsequent adoption of the euro did not have direct legal effects on
32 competition policies. Did it have economic implications on them?

33 Several commentators have discussed various reasons why the adoption
34 of the euro may facilitate, or on the contrary, create obstacles to the adop-
35 tion of structural reforms.

36 On the proreform side, one may argue that entrance into the EMU acts as
37 an external constraint that pushes countries to reform. By relinquishing the
38 control of the monetary policy to an external authority (the ECB), mem-
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43 5. For instance, Austria is classified under a de facto fixed-exchange regime with the deutsche-
44 mark, even before the EMU.

ber countries become unable to use their monetary policy to accommodate negative shocks. This might have created incentives to liberalize the labor and product market in order to rely more heavily on market-based adjustments that take place through changes in prices and wages (Bean 1998; Duval and Elmeskov 2005).

A single currency may also increase price transparency and therefore facilitate trade. A larger European market increases competition and makes it more difficult for domestic monopolists to protect their rents. It is certainly true that Europe does not have a truly common market in every sector, especially in the service sector, where domestic protection, direct or indirect, is still widespread. Yet, the degree of competition and integration in the European product market has largely increased in the last two decades. To the extent that a larger common market makes it more difficult for local monopolists to dominate local markets, this might have created pressures to deregulate product markets. Yet, is this the result of the euro increasing the trading opportunities across member countries, or is it simply the impact of the ESM? In the empirical analysis, we try to disentangle these two effects.

The question of whether a monetary union is necessary for a common market and whether it reduces trade barriers across countries and facilitates commerce in goods, services, and financial assets has recently received much attention following a provocative paper by Rose (2000). This paper found that monetary unions have an extremely large effect on trade amongst members. Critics argued (amongst other things) that most monetary unions in Rose's sample involved very small countries and that the effects would have been much smaller in the euro area, an issue which chapter 5 by Frankel and Stein in this volume tackles.⁶ According to their chapter, the adoption of the euro appears to have facilitated trade among member countries, even though the order of magnitude of this effect is on a different scale relative to Rose (2000) and seems more realistic. Research applied to Canada and the United States showed that trade between Canadian provinces, even ones that were thousands of miles apart, was easier than trade between U.S. states and bordering Canadian provinces, suggesting that a single currency matters for trade.⁷

Note that these proreform arguments based on the role of trade imply that most action should take place in the tradable sector, where competition becomes stronger, rather than in the nontradable service sector. But firms in the tradable sector may react to an increase in competition by translating this pressure upstream onto the intermediate goods producers—and hence only on the service sector—and onto the labor market (see Nicoletti and Scarpetta 2005).

6. Alesina and Barro (2002); Alesina, Barro, and Tenreyro (2002); Persson (2001); Thom and Walsh (2002); and Tenreyro (2007) address theoretically and empirically a host of issues relating the effect of monetary unions on trade.

7. See, for instance, McCallum (1995).

1 The economic literature also provides some arguments suggesting that the
2 euro may hinder structural reforms. Saint-Paul and Bentolila (2000) argue
3 that under the EMS, the up-front cost of structural reforms may increase.
4 Some labor market reforms may have positive long-term effects but entail a
5 negative short-term impact in terms of higher unemployment. For this reason,
6 several commentators have favored a two-handed approach: structural
7 reform on the supply side, accompanied by expansionary aggregate demand
8 policies. Under the euro, this two-handed policy may be more difficult,
9 because aggregate demand is more constrained at the national level, and
10 monetary policy is in the hands of the ECB. A similar argument may apply
11 to pension reforms. They may provide long-term savings for the social security
12 funds but may also imply short-term budget deficits, which may violate
13 the limits imposed by the Stability and Growth Pact.

14 Obstfeld (1997), in his early and wide-ranging review of the pros and cons
15 of the euro, emphasized that the euro would eliminate a major channel of
16 adjustment to macroeconomic shocks—namely, a nominal devaluation of
17 the exchange rate—to regain competitiveness by reducing real wages for
18 given (rigid) nominal wages. He suggested that this might put pressure on
19 the unions to be more flexible about allowing adjustments to nominal and
20 real wages and argued that this was a necessary condition for the euro to
21 survive. The pessimists argued that unions would not be so flexible in Europe
22 and that on the contrary, they would fuel political momentum against the
23 euro project, leading to its collapse.

24 Reality turned out to be more creative than economists' predictions. There
25 have certainly been complaints and political rumblings against the euro,
26 mainly in countries that felt they were especially in need of devaluation, as
27 chapter 1 by Barry Eichengreen in this volume documents, but the euro has
28 not collapsed and does not seem even close to doing so. Sure enough, the
29 political battle with the unions for labor market reforms in many countries
30 is still in place, and the next few years may be critical.

31 Because in many European countries the labor unions have effectively
32 become unions of old workers, public employees, and pensioners (in Italy,
33 for instance, the majority of union members are retired), it should not come
34 as a surprise that they tolerated or even endorsed the introduction of temporary
35 job contracts, in which young, entry-level workers would be hired
36 without much or any protection at low wages and could be fired at will by
37 the employers. In exchange, they kept a very high degree of protection for
38 older workers in the traditional labor markets. Spain, Italy, and France are
39 prime examples.⁸ In Italy, around a third of the newly created jobs are temporary
40 contracts, and in Spain, the percentage reaches 50 percent. In the
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8. See Saint-Paul (1996, 2000) for an early discussion of reforms that avoid touching the interests on incumbent workers and focus only on new entrants and also for a comparison of French and Spanish early reform attempts.

1 short run, this has worked in terms of increasing employment. In the last
2 ten years in Europe, about 18 million jobs have been created—just as many
3 as in the United States. But in the medium run, lacking further reforms, this
4 situation may become explosive, because such a two-tier market might be
5 unsustainable.

6 One may argue that as these temporary workers became a large minor-
7 ity of the workforce, they will put pressure on the workers in the tradi-
8 tional sector to abandon some of their privileges, creating a momentum in
9 favor of deregulation of the entire labor market.⁹ However, there is another
10 possibility. These temporary workers may demand to enter the traditional
11 labor market, with all its implied protection and rules against firing. If all
12 these workers are simply shifted into the traditionally rigid labor market of
13 union-protected elderly workers, Europe will move back ten years. In sum-
14 mary, labor markets in several European countries are then in a precarious
15 position: half-baked reforms have created a two-tier labor market that is
16 economically inefficient and politically unsustainable.

17 Finally, this discussion relates to issues of sequencing of reform; that
18 is, is it more politically feasible to move first with product market deregu-
19 lation or with labor market deregulation? Blanchard and Giavazzi (2003)
20 argued that European countries should first deregulate the product market,
21 claiming that this would make labor market reforms easier. The reasoning
22 is that product market regulation creates rents, which are enjoyed both by
23 incumbent firms and by labor unions. Unions would strenuously oppose
24 labor market reforms that reduce their rents. Product market reforms would
25 curtail rents, reducing the benefits for the unions from the status quo in the
26 labor market and thus reducing their opposition to labor market reforms.

27 The argument is compelling, and as we will see next, European countries
28 have indeed moved faster on product market liberalizations than on labor
29 market ones. There is, however, one important caveat. Deregulation of prod-
30 uct markets sometimes implies closures or reductions in size of incumbent
31 firms in favor of new entrants, and more generally, reallocation of labor force
32 from firm to firm and sector to sector. This process of “creative destruction”
33 generates temporary unemployment. In countries in which firing is costly, if
34 not virtually impossible, this process is difficult. In this respect, the elimina-
35 tion or reduction of firing costs is then a prerequisite in order for product
36 market liberalization to work. The elimination of firing costs requires some
37 well-designed system of unemployment compensation, but not all European
38 countries have this—a case in point being Italy. Inefficiencies in the system
39 of unemployment compensation give the unions ammunition to defend
40 existing jobs and oppose restructuring. So in this respect, a labor market
41 reform that reduces firing costs and introduces unemployment compensa-
42 tion systems seems like a prerequisite for a well-functioning product market
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44 9. See Saint-Paul (1999) for a formalization of this argument.

deregulation. Denmark is an example of a country in which labor market reforms have moved exactly in this direction.¹⁰

2.2.2 When Do Reforms Occur?

In addition to the adoption of the euro, other factors may create incentives for governments to adopt structural reforms. On the one hand, one needs to take such factors into account as controls, and they are interesting in their own right. One commonly held view is that governments reform when they are in a crisis and when they have their backs against the wall. For the case of fiscal reforms, one can easily identify a crisis as a runaway deficit, and in fact, Alesina, Ardagna, and Trebbi (2006) show evidence consistent with this hypothesis. Using a large sample of OECD and developing countries, they show that fiscal adjustments and stabilization of inflation are more likely to occur when this kind of macroeconomic imbalance degenerates into a crisis of runaway (hyper) inflation or of very high budget deficits.¹¹ The case of structural reforms is more complicated. The lack of reforms may lead to a slow decline that does not degenerate into a sudden crisis. However, when the decline, evaluated in terms of prolonged periods of low growth, begins to become front page news, then reform blockers may lose some of their political clout. Recent discussions of relative decline in Europe (and particularly of Italy) may be leading in that direction.¹² However, the recent financial crisis may have generated a political movement in some countries against deregulation and in favor of a return to easy and long-term state intervention. At the time of this writing (October 2008), it is hard to predict how much the tides will move toward reregulation.

Much has also been written about the political cycle and reforms.¹³ Conventional wisdom suggests that governments should not introduce reforms close to elections and that in general, liberalizing and/or fiscally conservative reforms lead to electoral losses. Thus, if a government has a chance of introducing reforms, it ought to do so soon after it is appointed, for two possible reasons: first, to take advantage of the honeymoon period, and second, because the short-term costs of reforms will be gone before the next election. We examine the timing of reforms in relation to the electoral cycle, and we do find some evidence that reforms tend to occur at the beginning of a new term. As for the likelihood that the reforming government will lose the next election, one has to maintain a healthy dose of skepticism with

10. See, for instance, Alesina and Giavazzi (2006) for some discussion of the Danish case and the applicability to other European countries.

11. See Alesina and Drazen (1991) and Drazen and Grilli (1993) for models consistent with this hypothesis, and see Drazen and Easterly (2001) for empirical evidence. See also Drazen (2000) for an extensive discussion of the political economy of stabilization policies.

12. See Alesina and Giavazzi (2006) for a recent discussion of potential European decline due to insufficient reforms.

13. See Alesina, Roubini, and Cohen (1997) for work on the political business cycles, and see Brender and Drazen (2005) for a political budget-cycle model.

1 regard to conventional wisdom. For instance, Alesina, Perotti, and Tavares
2 (1998) show that governments that engaged in sharp fiscal adjustments have
3 often been reappointed.
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5 **2.3 Product Markets: The Evidence**

6 **2.3.1 The Data on Regulation**

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9 We use yearly data on twenty-one OECD countries (Australia, Aus-
10 tria, Belgium, Canada, Switzerland, Germany, Denmark, Spain, Finland,
11 France, the United Kingdom, Greece, Ireland, Italy, Japan, the Netherlands,
12 New Zealand, Norway, Portugal, Sweden, and the United States), covering
13 a maximum time span from 1975 to 2003. The data come from a variety of
14 different sources. In the next sections, we describe the regulatory, macro-
15 economic, and political data; the appendix includes the exact definition and
16 source of each variable we use in the empirical analysis.

17 We use time-varying measures of regulation for seven nonmanufacturing
18 industries in twenty-one OECD countries for the period from 1975 to 2003.
19 The data have been collected by Conway and Nicoletti (2007) from both
20 national sources (by means of specific surveys) and published sources and
21 are described in detail by Nicoletti and Scarpetta (2003). The regulatory
22 indicators measure, on a scale from 0 to 6 (from least to most restrictive),
23 restrictions on competition and private governance in the following indus-
24 tries: electricity and gas supply, road freight, air passenger transport, rail
25 transport, post, and telecommunications (fixed and mobile).

26 The summary index of regulation includes information on entry bar-
27 riers, public ownership, the market share of the dominant players (in the
28 telephone, gas, and railroad sectors), and price controls (in the road freight
29 industry). Entry barriers cover legal limitations on the number of compa-
30 nies in potentially competitive markets and rules on vertical integration of
31 network industries. The barriers to entry indicator takes a value of 0 when
32 entry is free (i.e., a situation with three or more competitors and with com-
33 plete ownership separation of natural monopoly and competitive segments
34 of the industry) and a value of 6 when entry is severely restricted (i.e., situa-
35 tions with legal monopoly and full vertical integration in network industries
36 or restrictive licensing in other industries). Intermediate values represent
37 partial liberalization of entry (e.g., legal duopoly, mere accounting separa-
38 tion of natural monopoly and competitive segments). Public ownership
39 measures the share of equity owned by central or municipal governments
40 in firms of a given sector. The two polar cases are no public ownership (a
41 value of 0 for the indicator) and full public ownership (a value of 6 for
42 the indicator). Whenever data are available (i.e., telecoms, air transport),
43 intermediate values of the public ownership indicator are calculated as an
44 increasing function of the actual share of equity held by the government in

1 the dominant firm. In some cases (e.g., the energy industries), a simpler scale
2 is used, pointing to full or majority control by the government (a value of
3 6), various degrees of mixed public/private ownership (intermediate values),
4 and marginal public share or full private ownership (a value of 0).

5 The construction of the indicators by the OECD involved the following
6 steps. First, they separated indicators for barriers to entry, public owner-
7 ship, and market share of new entrants, and price controls were created at
8 the finest available level of industry disaggregation (e.g., mobile and fixed
9 telephony). Second, they aggregated indicators at the industry level, taking
10 simple averages or revenue-weighted averages (when aggregating horizontal
11 segments of industries, such as mobile and fixed telephony). Third, they
12 computed the index of overall regulation by averaging, in each of the seven
13 industries, the indicators of barriers to entry, public ownership, market share
14 of new entrants, and price controls.

15 Here, we used simple averaging of the indices to reach the level of industry
16 aggregation for which macroeconomic data (value added, labor costs, and
17 employment) are available. More specifically, we have aggregated the regula-
18 tion indices for the seven sectors in three broader sectors: energy (electricity
19 and gas), communication (telecommunications and post), and transporta-
20 tion (airlines, road freight, and railways).

21 In our benchmark regressions, we use the regulatory indicator REG, which
22 includes all dimensions except public ownership. In the sensitivity analysis,
23 we also consider three other indicators of regulation: the overall indicator,
24 including all the regulation dimensions; one indicator that summarizes bar-
25 riers to entry (comprising legal restrictions and vertical integration); and one
26 indicator that includes only public ownership information.

27 In the augmented regressions, we introduced two additional sectors: retail
28 and professionals. Data on regulation in these two sectors in twenty-one
29 OECD countries are available only for two years: 1996 (for professionals)
30 or 1998 (for retail) and 2003. These regulatory indicators range from 0 to 6
31 (from least to most restrictive). In the retail sector, they capture three com-
32 ponents: barrier to entry, operational restrictions, and price control. For the
33 professionals, indicators measure entry regulations and conduct regulations
34 in four sectors: accounting, architecture, engineering, and legal services. For
35 a detailed description, see Conway and Nicoletti (2007).

36 2.3.2 The Macroeconomic and Political Data

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38 The economic data on value added, labor costs, and total employment at
39 the country-sector-year level for the period from 1975 to 2003 come from
40 the OECD STructural ANalysis (STAN) database for industrial analysis,
41 revision 3 (ISIC rev. 3). This database covers both services and manufactur-
42 ing sectors for the OECD countries. The macroeconomic data for the non-
43 manufacturing sectors for which we have indices of regulation are available
44 at the following level of industry aggregation: (a) electricity, gas, and water;

(b) communications and posts; and (c) transport and storage. From now on, we will name the sectors defined in (a), (b), and (c) as energy, communications, and transport, respectively. We merge the data from the STAN data set with the database containing the regulation indices. As mentioned previously, because data on value added, labor costs, and total employment are not available for each single industry for which regulation indices exist, we mapped the industry-level regulatory indicators into the nonmanufacturing aggregates covered by the STAN database.

Macroeconomic data at the country-year level are from the OECD *Economic Outlook* number 80 database. Finally, the Database of Political Institutions (DPI) of the World Bank, compiled by Beck et al. (2001) and updated in 2004, contains all the political variables employed in the analysis.

2.3.3 Patterns of Product Market Deregulation

Beginning in the late 1970s, OECD countries have initiated a broad-based process of deregulation. They were not all starting from the same initial position, however. Generally speaking, Anglo-Saxon countries (the United States, in particular) were less regulated than continental European countries, and they started to deregulate early: the United States and the United Kingdom in the early 1980s, New Zealand in the late 1970s, and Ireland in the late 1980s. In the last two decades, there has been convergence: the difference in the degree of regulation of product markets (at least for the sector for which we have data) is lower now than it was in the early 1980s. The laggards are catching on.

In what follows, we divide the countries into three groups: (a) those that adopted the euro (the EMU group); these countries are Austria, Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, Portugal, and Spain; (b) those that are part of the European Union but did not adopt the euro (the European single market group, or ESM); these countries are Denmark, Sweden, and the United Kingdom; and (c) those that are not in the European Union and obviously do not have the euro; these countries are Australia, Canada, Japan, New Zealand, Norway, Switzerland, and the United States.

Figure 2.1 shows that all sectors have deregulated—communications more than any other and energy less than any other. Figure 2.2 shows that non-EU countries have deregulated less, but as we said before, they were starting from a much lower average level of regulation. The single market group has deregulated most, but in the period from 1999 to 2003, the EU countries have picked up momentum, having done very little until then, especially given their high initial level of regulation. With the exception of Ireland, very few EU countries did much in terms of deregulation in the 1980s, so leaving Ireland out, the pattern for the EU countries would be even more skewed toward the recent period. The ESM group includes the

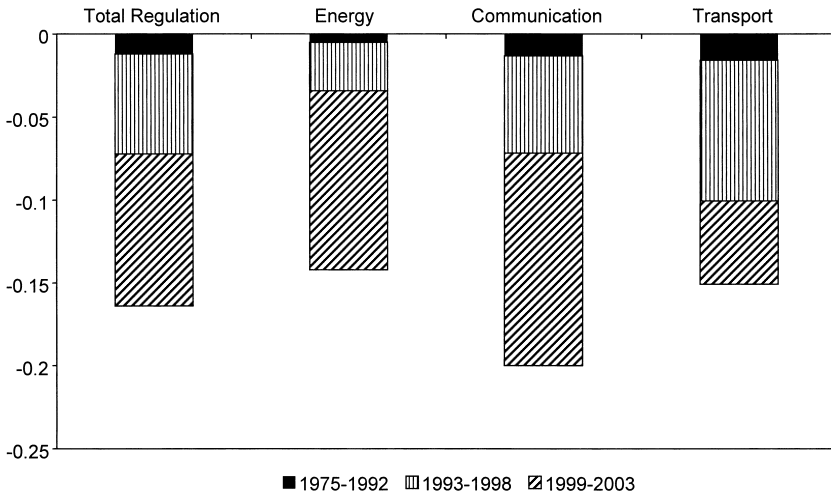


Fig. 2.1 Deregulation by sector

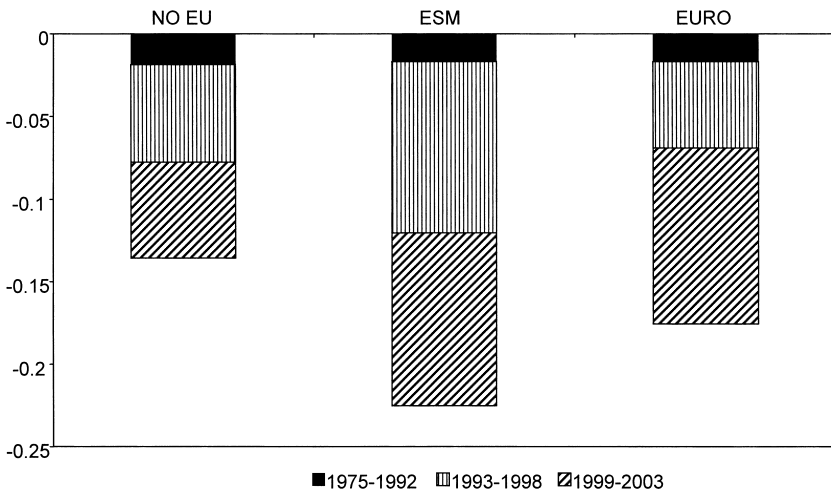


Fig. 2.2 Product market deregulation

United Kingdom, which started deregulation early, as did other English-speaking countries, and also includes Nordic countries, which have deregulated quite a lot, and this shows in these pictures. Figure 2.3 shows some pattern of convergence in the deregulation process: since 1999, the countries that deregulated more were clearly those that had higher degrees of regulation until the mid-1990s.

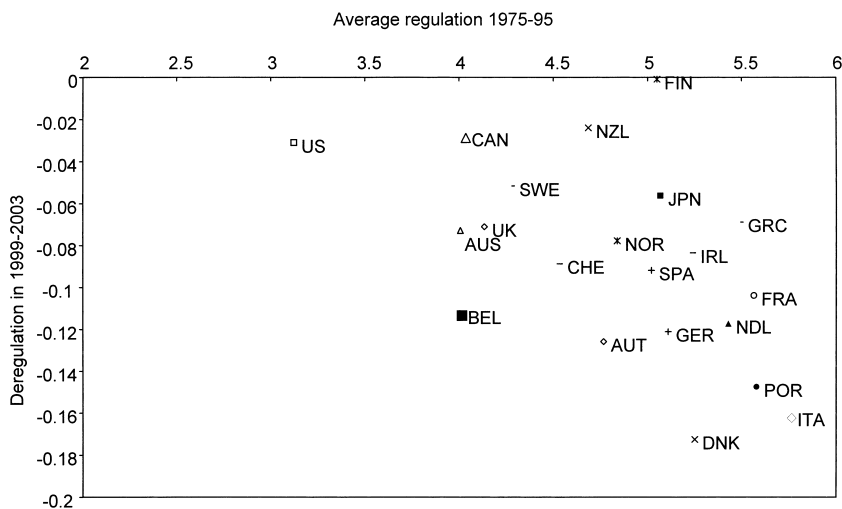


Fig. 2.3 Convergence in regulation

2.3.4 The Euro and Product Market Reforms: Benchmark Specifications

All our regressions in this section and in the tables discussed in the next sections are estimated with generalized least squares, allowing for heteroschedasticity of the error term; they include the lagged value of the left-hand side variable, as well as country, sector, and time dummies. Sensitivity analysis confirms that all the results are robust to controlling for country-sector-specific dummies, time trends, and country-specific time trends.

In table 2.1, we estimate our basic specification of the level of regulation (measured by the indicator variable REG). The first three columns include data on the three sectors of transportation, energy, and communications; columns (4) through (6) also include the two additional sectors: retail and professionals. We measure the impact of the single market program and of the euro on regulation with the dummy variables ESM and EMU. Specifically, ESM is an indicator variable equal to 1 from 1993 onward for all countries that belong to the European Union (i.e., Austria, Belgium, Denmark, Germany, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom) and equal to 0 otherwise. The indicator variable EMU is equal to 1 from 1999 onward only for those countries of the European Union that have adopted the euro (i.e., Austria, Belgium, Germany, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal, and Spain) and equal to 0 otherwise.

Column (1) shows that both the single market and the euro have accelerated deregulation: the coefficients of ESM and EMU are negative (equal to -0.064 and -0.18 , respectively) and statistically significant at the 5 percent

Table 2.1 The euro and product market reforms

	Three Sectors			Five Sectors		
	REG (1)	REG (2)	REG (3)	REG (4)	REG (5)	REG (6)
REG(-1)	0.94 (109.60)***	0.93 (107.19)***	0.95 (104.66)***	0.93 (112.17)***	0.93 (108.13)***	0.95 (104.96)***
ESM	-0.06 (-2.28)**			-0.06 (-2.05)**		
EMU	-0.18 (-5.28)***			-0.15 (-4.83)***		
ESM*ENERGY		0.02 (0.61)	0.01 (0.23)		0.03 (0.70)	0.01 (0.24)
ESM*COMMUNICATIONS		-0.03 (-0.81)	-0.03 (-0.81)		-0.03 (-0.72)	-0.03 (-0.74)
ESM*TRANSPORT		-0.16 (-4.35)***	-0.15 (-4.05)***		-0.16 (-4.32)***	-0.15 (-4.02)***
ESM*RETAIL					-0.26 (-2.07)**	-0.27 (-2.54)**
ESM*PROFESSIONAL					0.22 (2.74)***	0.24 (2.87)***
EMU*ENERGY		-0.43 (-9.07)***	0.04 (0.49)		-0.43 (-8.95)***	0.11 (1.23)
EMU*COMMUNICATIONS		-0.28 (-5.74)***	0.02 (0.31)		-0.29 (-5.79)***	0.06 (0.86)
EMU*TRANSPORT		0.11 (2.39)**	0.46 (6.26)***		0.11 (2.35)**	0.50 (6.98)***
EMU*RETAIL					0.52 (4.16)***	0.85 (5.75)***
EMU*PROFESSIONAL					-0.09 (-1.14)	0.29 (2.94)***
EMU*REG(-1)			-0.12 (-6.24)***			-0.14 (-7.34)***
Observations	1,764	1,764	1,764	1,802	1,802	1,802

Notes: Generalized least squares regressions allowing for heteroschedasticity of the error term and including country, sector, and time dummies. *T*-statistics in parentheses.

REG: indicator of regulatory impediments to product market competition, excluding public ownership; ENERGY, COMMUNICATIONS, TRANSPORT, RETAIL, and PROFESSIONAL: sectorial dummy variable that equals 1 for the corresponding sector; ESM: dummy variable equal to 1 from 1993 onward for the countries that enter the European Union's single-market Program; EMU: dummy variable equal to 1 from 1999 onward for the countries that enter the EMU. Columns (1) through (3) include the following three sectors: ENERGY, COMMUNICATIONS, and TRANSPORT. Columns (4) through (6) include all five sectors in our database: ENERGY, COMMUNICATIONS, TRANSPORT, RETAIL, and PROFESSIONAL. See also the appendix for the exact definition of the variables.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

level or better. Interestingly, the adoption of the euro has had a larger (about three times as large) impact on regulation than that of the single market program, and for a country that participated in the single market and adopted the euro, our estimates imply that the level of regulation decreased by about -0.25 points.

In column (2), we check whether these results hold for each sector in

our sample. The adoption of the euro was especially important for energy and communications, while the single market was key for transportation and had no statistically significant effect in the energy and communications sectors.¹⁴

Finally, we investigate whether the effect of the single market program and the adoption of the euro depends on the initial level of regulation by adding the variables $ESM*REG(-1)$ and $EMU*REG(-1)$ to the specification of column (2). The effect of the single market is independent of the level of regulation: the coefficient of the interaction term between the single market dummy and the level of regulation lagged one is not statistically significant, both in a specification in which we exclude the variable $EMU*REG(-1)$ and in one in which we include it. (Results are not shown but are available upon request.)

On the contrary, column (3) shows that the effect of the euro was larger when the initial level of regulation was larger, reemphasizing the process of convergence mentioned previously. Note that in column (3), the coefficients of the dummy variable EMU in the energy and communication sectors become positive but insignificant (see column [3]). However, the magnitude of the coefficients of the variables $EMU*ENERGY$ and $EMU*COMMUNICATION$ and of $EMU*REG(-1)$ imply that for each value of $REG(-1)$ observed in the energy and communications sectors, adopting the euro is always associated with deregulation.

The last three columns of table 2.1 reestimate the specifications of columns (1) through (3) in the sample in which the two additional sectors, retail and professionals, are also included. The estimates show that the single market, not the euro, was important for the retail sector and that the professionals sector has not been deregulated at all.

Finally, the regulatory variable that we are using (REG) looks at all aspects of regulation, except the one of public ownership. Results hold when we use the indicator of regulation that only measures barriers to entry and vertical integration and the more general indicator that also looks at public ownership.

Summarizing, the introduction of the euro has contributed to structural reforms in the product markets. This effect is above and beyond the effect of membership in the European Union from 1993 onward. Moreover, deregulation was stronger in EMU country-sectors with higher initial levels of regulation. This may give some *prima facie* and indirect support to the idea that deregulation was most needed once countries could not rely on exchange rate devaluations to boost competitiveness. In fact, the more heav-

14. We also checked whether the countries that deregulated after the adoption of the euro in the years following 1999 had experienced a delay in deregulation because they were too busy achieving the target criteria to join the monetary union. More specifically, we tested what happened to EU countries in the run-up to the euro during the period from 1993 to 1999. We did not find any evidence of an effect of postponement.

ily regulated (and less productive and competitive) country-sectors may have been those suffering the most from the loss of competitive devaluations and hence the ones that were forced to liberalize the most. In the next section, we investigate this idea in more detail.

2.3.5 Why Should the Euro Matter? Empirical Evidence

One of the reasons why a country joining the EMU may want to adopt structural reforms is that the competitive devaluation channel is not available anymore as a tool (or a palliative) to regain competitiveness.¹⁵ In table 2.2, we explore this idea. Lacking competitiveness indicators at the country-sector-year level for the period from 1975 to 2003 for the energy, communications, and transport sectors, we measure competitiveness with variables varying only along the country-year dimension. We use two different indicators: the growth rate of the Consumer Price Index (CPI) relative to competitors at $t - 1$ —COMPET1(-1)—and the growth rate of the export goods deflators relative to competitors at $t - 1$ —COMPET2(-1). We include the linear and quadratic terms to capture for possible nonlinearities; we add the interaction term of the competitiveness indicators and the EMU dummy variable to investigate whether the loss of exchange rate devaluation as a policy instrument to boost competitiveness leads to structural reforms. The coefficients of the variables COMPET1(-1) and COMPET2(-1) and their squares are not statistically significant at conventional critical values, suggesting that deregulation reforms do not generally occur in countries that are losing competitiveness. However, this is not true for countries that adopted the euro. In fact, the interaction terms of the competitiveness indicators and the EMU dummy variable are negative and statistically significant at the 5 percent level, suggesting that for EMU countries, the higher the growth rate of CPI and export goods deflators relative to competitors at $t - 1$, the larger the decrease of the regulatory index. Finally, in columns (3) and (6), we control for the number of devaluations that countries that adopted the euro experienced in the period from 1979 to 1993. Our idea is that only countries that de facto used the exchange rate as a tool to regain competitiveness should suffer from its loss and liberalize markets. The variable N. OF DEVALUATIONS FROM 1979–1993 is equal to 5 for France, 1 for Belgium, 7 for Italy, and 3 for Ireland. It is equal to 0 otherwise. For the EMU countries, the more devaluations a country did from 1979 to 1993, the larger the decrease of the regulatory index (but the coefficient is statistically significant only at the 10 percent level).

Two caveats are worth mentioning. First, we are treating our competitiveness indicators as exogenous. While this clearly may not be the case, note that

15. Chapter 3 by Bugamelli, Schivardi, and Zizza in this volume presents some microeconomic evidence suggesting that sectors that have gone through deeper transformations and that enjoyed more productivity gains are exactly those that benefited more from pre-1999 devaluation.

Table 2.2 The euro, product market reforms, and competitiveness

	Three Sectors			Five Sectors		
	REG (1)	REG (2)	REG (3)	REG (4)	REG (5)	REG (6)
REG(-1)	0.95 (101.60)***	0.94 (92.94)***	0.95 (104.17)***	0.95 (101.85)***	0.94 (93.51)***	0.95 (104.47)***
ESM*ENERGY	0.00 (0.12)	0.00 (0.08)	0.01 (0.23)	0.00 (0.10)	0.00 (0.02)	0.01 (0.24)
ESM*COMMUNICATIONS	-0.03 (-0.84)	-0.02 (-0.65)	-0.03 (-0.83)	-0.03 (-0.75)	-0.02 (-0.52)	-0.03 (-0.76)
ESM*TRANSPORT	-0.16 (-4.37)***	-0.15 (-3.89)***	-0.15 (-4.05)***	-0.16 (-4.31)***	-0.15 (-3.82)***	-0.15 (-4.02)***
ESM*RETAIL				-0.27 (-2.44)**	-0.26 (-2.18)**	-0.27 (-2.52)**
ESM*PROFESSIONAL				0.23 (2.71)***	0.22 (2.76)***	0.24 (2.87)***
EMU*ENERGY	0.23 (2.38)**	0.20 (1.92)*	0.03 (0.30)	0.31 (3.42)***	0.28 (3.05)***	0.10 (1.10)
EMU*COMMUNICATIONS	0.14 (1.95)*	0.12 (1.56)	0.02 (0.28)	0.19 (2.76)***	0.17 (2.41)**	0.06 (0.84)
EMU*TRANSPORT	0.56 (7.37)***	0.54 (6.66)***	0.44 (6.06)***	0.61 (8.43)***	0.59 (8.09)***	0.49 (6.84)***
EMU*RETAIL				1.01 (6.73)***	0.95 (5.99)***	0.85 (5.83)***
EMU*PROFESSIONAL				0.51 (4.91)***	0.46 (5.08)***	0.27 (2.74)***
EMU*REG(-1)	-0.18 (-7.94)***	-0.17 (-7.08)***	-0.11 (-5.51)***	-0.20 (-9.62)***	-0.19 (-9.56)***	-0.13 (-6.79)***

COMPET1(-1)	-0.11			-0.10	
	(-0.96)			(-0.86)	
COMPET2(-1)	-0.57			-0.56	
	(-0.55)			(-0.53)	
EMU*COMPET1(-1)	-2.76			-2.64	
	(-2.81)***			(-2.78)***	
COMPET2(-1)	0.05			0.05	
	(0.38)			(0.36)	
COMPET2 ² (-1)	-0.15			-0.06	
	(-0.11)			(-0.04)	
EMU*COMPET2(-1)	-1.97			-1.96	
	(-2.77)***			(-2.78)***	
N. OF DEVALUATIONS FROM 1979-1993		0.02			-0.01
		(3.46)***			(-1.89)*
EMU* N. OF DEVALUATIONS FROM 1979-1993		-0.02			-0.01
		(-1.83)*			(-1.33)
Observations	1,680	1,572	1,764	1,717	1,609

Notes: Generalized least squares regressions allowing for heteroschedasticity of the error term and including country, sector, and time dummies. *T*-statistics in parentheses.

REG: indicator of regulatory impediments to product market competition, excluding public ownership; ENERGY, COMMUNICATIONS, TRANSPORT, RETAIL, and PROFESSIONAL: sectorial dummy variable that equals 1 for the corresponding sector; ESM: dummy variable equal to 1 from 1993 onward for the countries that enter the European Union's single-market program; EMU: dummy variable equal to 1 from 1999 onward for the countries that enter the EMU; COMPET1: growth rate of the CPI relative to competitors; COMPET2: growth rate of the export goods deflators relative to competitors; N. OF DEVALUATIONS FROM 1979-1993: number of devaluations that a country that belonged to the European Monetary System did from 1979 to 1993. See also the notes to table 2.1 and the appendix for the exact definition of the variables.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

1 here, we are not really interested in the effect of competitiveness on regula-
2 tion but instead on its differential effect among EMU and other countries.
3 Hence, even if the competitiveness indicators were not exogenous, it is not
4 clear why the bias in our estimates should differ among EMU and other
5 countries. Second, the coefficient of the variable $EMU*REG(-1)$ remains
6 negative and statistically significant, as in table 2.1, suggesting that: (a) our
7 competitiveness indicators are not capturing the loss of competitiveness,
8 and hence the need of reforms, very well when the exchange rate instrument
9 cannot be used anymore; (b) the euro is important for structural reforms
10 in product markets for other reasons beyond the fact that the competitive
11 devaluation channel is not available anymore; (c) what we are identifying as
12 a euro effect is just picking up the impact of some omitted variable; and (d)
13 any combinations of (a), (b), and/or (c).

14 2.3.6 Other Determinants of Product Market Reforms

15
16 In this section, we investigate other possible determinants of product
17 market reforms. We also check that accounting for other critical elements
18 that drive reforms does not alter the results we discussed so far on the effect
19 of the euro on the deregulation of product markets.

20 We begin by testing whether various variables that measure the macroeco-
21 nomic conditions of each sector matter. Specifically, in table 2.3, we include
22 the sectors' value added, labor expenses, and total employment at time
23 $t - 1$, measured as a share of country's total value added, labor expenses,
24 and total employment at time $t - 1$. Blanchard and Giavazzi (2003) suggest
25 that in the short run, product markets' deregulation reforms generate costs
26 for both incumbent firms and their workers. Hence, incumbents tend to
27 oppose such reforms. When rents are lower, however, resistance to deregula-
28 tion falls, as the incumbents' short-term losses can be easier outweighed by
29 the future benefits of deregulation. Results in table 2.3 support this argu-
30 ment. In fact, we find that regulation decreases when value added and labor
31 costs of the sector fall—that is, when the sector's rents decrease. We also find
32 that product markets are deregulated in country-sectors-years with lower
33 employment. Hence, in less labor-intensive sectors, governments can meet
34 less resistance and can more easily implement deregulation measures. In
35 columns (4) through (6), we also investigate whether there are differential
36 effects between EMU and non-EMU countries relative to the effects of value
37 added, labor costs, and employment on regulation, but on this score, we
38 found no differences between EMU and non-EMU countries.

39 Second, in table 2.4, we augment the specifications of table 2.3 with several
40 macroeconomic and political controls. We investigate the crisis hypothesis,
41 the role of the countries' fiscal conditions, the timing of reforms in rela-
42 tion to the electoral cycle, the interaction between reforms in the product
43 and labor markets, and the effect of reforms occurring in trading partners'
44 countries. All variables are measured at time $t - 1$, both to allow for the

Table 2.3 Other determinants of product market reforms (sectors indicators)

	Three Sectors			Five Sectors		
	REG (1)	REG (2)	REG (3)	REG (4)	REG (5)	REG (6)
REG(-1)	0.94 (84.13)***	0.93 (75.86)***	0.93 (73.56)***	0.94 (84.06)***	0.93 (75.82)***	0.93 (73.43)***
ESM*ENERGY	-0.02 (-0.52)	-0.02 (-0.59)	-0.03 (-0.71)	-0.02 (-0.52)	-0.03 (-0.66)	-0.03 (-0.73)
ESM*COMMUNICATIONS	-0.05 (-1.36)	-0.06 (-1.65)*	-0.12 (-2.70)***	-0.05 (-1.35)	-0.06 (-1.66)*	-0.12 (-2.76)***
ESM*TRANSPORT	-0.18 (4.25)***	-0.18 (-4.02)***	-0.20 (-4.28)***	-0.18 (-4.26)***	-0.18 (-4.07)***	-0.20 (-4.34)***
EMU*ENERGY	0.27 (2.48)**	0.19 (1.73)*	0.19 (1.65)*	0.15 (1.20)	0.07 (0.51)	0.05 (0.36)
EMU*COMMUNICATIONS	0.13 (1.68)*	0.09 (1.13)	0.13 (1.55)	0.00 (0.02)	-0.04 (-0.30)	-0.06 (-0.45)
EMU*TRANSPORT	0.59 (7.08)***	0.54 (6.40)***	0.54 (5.95)***	0.32 (1.70)*	0.28 (0.97)	0.05 (0.20)
EMU*REG(-1)	-0.19 (-7.46)***	-0.18 (-6.80)***	-0.17 (-6.56)***	-0.19 (-7.50)***	-0.18 (-6.78)***	-0.17 (-6.25)***
COMPET1(-1)	-0.06 (-0.45)	-0.04 (-0.27)	0.03 (0.22)	-0.06 (-0.47)	-0.04 (-0.29)	0.02 (0.16)
COMPET1 ² (-1)	-0.81 (-0.71)	-0.85 (-0.71)	-0.50 (-0.40)	-0.75 (-0.66)	-0.77 (-0.64)	-0.44 (-0.36)
EMU*COMPET1(-1)	-2.63 (-2.19)**	-2.52 (-2.05)**	2.49 (1.93)*	-2.79 (-2.31)**	-2.72 (-2.20)**	-2.37 (-1.81)*
VA(-1)	2.13 (2.24)**	-0.64 (-0.44)	-0.42 (-0.29)	1.80 (1.86)*	-1.33 (-0.88)	-0.57 (-0.38)
LABOR EXPENSES(-1)		3.43 (2.03)**			3.87 (2.24)**	
TOT. EMPLOYMENT(-1)			4.90 (2.06)**			4.45 (1.85)*
EMU*VALUE ADDED(-1)				5.57 (1.64)	7.03 (1.75)*	3.32 (0.75)
EMU*LABOR EXPENSES(-1)					-1.80 (-0.27)	
EMU*TOT. EMPLOYMENT(-1)						6.90 (1.08)
Observations	1,383	1,282	1,158	1,383	1,282	1,158

Notes: Generalized least squares regressions allowing for heteroschedasticity of the error term and including country, sector, and time dummies. *T*-statistics in parentheses. REG: indicator of regulatory impediments to product market competition, excluding public ownership; ENERGY, COMMUNICATIONS, TRANSPORT, RETAIL, and PROFESSIONAL: sectorial dummy variable that equals 1 for the corresponding sector; ESM: dummy variable equal to 1 from 1993 onward for the countries that enter the European Union's single-market program; EMU: dummy variable equal to 1 from 1999 onward for the countries that enter the EMU; COMPET1: growth rate of the CPI relative to competitors; COMPET2: growth rate of the export goods deflators relative to competitors; N. OF DEVALUATIONS FROM 1979–1993: number of devaluations that a country that belonged to the European Monetary System did from 1979 to 1993; VA: value added at the sectorial level; LABOR EXPENSES: labor costs or compensation of employees at the sectorial level; TOT. EMPLOYMENT: total employment at the sectorial level. See also the notes to table 2.1 and the appendix for the exact definition of the variables.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 2.4 Other determinants of product market reforms (countries indicators)

	Three Sectors			Five Sectors		
	REG (1)	REG (2)	REG (3)	REG (4)	REG (5)	REG (6)
REG(-1)	0.92 (75.89)***	0.91 (68.51)***	0.92 (68.30)***	0.89 (55.21)***	0.86 (49.64)***	0.87 (48.67)***
ESM*ENERGY	-0.02 (-0.35)	-0.02 (-0.44)	-0.02 (-0.54)	0.02 (0.28)	0.05 (0.80)	0.03 (0.54)
ESM*COMMUNICATIONS	-0.05 (-1.22)	-0.06 (-1.46)	-0.11 (-2.44)**	0.00 (0.02)	0.02 (0.43)	-0.07 (1.06)
ESM*TRANSPORT	-0.18 (-3.97)***	-0.18 (-3.83)***	-0.19 (-3.94)***	-0.15 (-2.55)**	-0.11 (-1.88)*	-0.15 (-2.30)**
EMU*ENERGY	0.23 (2.10)**	0.15 (1.32)	0.15 (1.26)	0.11 (0.85)	0.01 (0.06)	-0.03 (-0.24)
EMU*COMMUNICATIONS	0.12 (1.47)	0.07 (0.87)	0.13 (1.45)	0.03 (0.27)	-0.04 (-0.36)	0.02 (0.18)
EMU*TRANSPORT	0.58 (6.55)***	0.52 (5.96)***	0.52 (5.57)***	0.49 (4.84)***	0.43 (4.31)***	0.39 (3.66)***
EMU*REG(-1)	-0.17 (-6.63)***	-0.16 (-5.94)***	-0.16 (-5.82)***	-0.14 (-4.64)***	-0.12 (-3.99)***	-0.11 (-3.57)***
COMPET1(-1)	-0.16 (-1.21)	-0.15 (-1.05)	-0.12 (-0.83)	-0.06 (-0.35)	0.01 (0.06)	0.03 (0.15)
COMPET1 ² (-1)	0.13 (0.11)	0.25 (0.21)	0.39 (0.32)	0.37 (0.27)	0.50 (0.33)	0.38 (0.26)
EMU*COMPET1(-1)	-2.66 (-2.15)**	-2.50 (-2.00)**	-2.44 (-1.87)*	-2.62 (-2.01)**	-2.66 (-2.02)**	-2.47 (-1.80)*
VA(-1)	2.52 (2.51)**	-0.58 (-0.39)	-0.75 (-0.48)	2.43 (1.98)**	-1.54 (-0.77)	-2.30 (-1.12)
LABOR EXPENSES(-1)		3.89 (2.20)**			5.70 (2.20)**	
TOT. EMPLOYMENT(-1)			6.40 (2.49)**			8.29 (2.41)**
CRISIS(-1)	-0.06 (-2.30)**	-0.06 (-2.36)**	-0.06 (-2.27)**	-0.09 (-2.65)***	-0.08 (-2.48)**	-0.10 (-2.78)***
PR. SURPLUS/GDP(-1)	0.65 (2.05)**	0.61 (1.82)*	0.63 (1.84)*	0.66 (1.70)*	0.59 (1.41)	0.48 (1.12)
RIGHT GOV.(-1)	-0.01 (-0.83)	-0.02 (-0.96)	-0.02 (-1.01)	-0.01 (-0.52)	-0.02 (-0.83)	-0.02 (-0.75)
CENTER GOV.(-1)	-0.07 (-1.84)*	-0.08 (-2.07)**	-0.07 (-1.71)*	-0.10 (-1.86)*	-0.11 (-2.08)**	-0.12 (-1.97)**
ELECTION YEAR(-1)	-0.02 (-1.52)	-0.03 (-1.75)*	-0.03 (-1.76)*	-0.02 (-0.98)	-0.02 (-1.10)	-0.02 (-1.02)
REG. TRADING PART.(-1)	0.06 (2.07)**	0.06 (1.88)*	0.05 (1.69)*	0.07 (1.94)*	0.08 (2.08)**	0.08 (2.08)**
UNEMPL. BENEF.(-1)				-0.33 (-2.19)**	-0.28 (-1.78)*	-0.38 (-2.35)**
EMPLOY. PROTECTION(-1)				0.04 (1.01)	0.07 (1.67)*	0.02 (0.41)
Observations	1,301	1,211	1,119	984	919	835

Notes: Generalized least squares regressions allowing for heteroschedasticity of the error term and including country, sector, and time dummies. *T*-statistics in parentheses. CRISIS: dummy variable equal to 1 when the output gap (defined as the difference of actual output to potential) is below the ninetieth percentile of the output gap empirical density; PR. SURPLUS/GDP: primary deficit as a share of GDP; RIGHT GOV.: dummy variable that equals 1 if the government is led by a right-oriented party; CENTER GOV.: dummy variable that equals 1 if the government is led by a center-oriented party; ELECTION YEAR: dummy variable that equals 1 if (parliamentary or presidential) elections were held during that year; REG. TRADING PART.: average of the value of the indicators REG for the trading partners; UNEMPL. BENEF.: unemployment benefit replacement rate for low-income workers in their first year of unemployment; EMPLOY. PROTECTION: summary indicator of the stringency for employment protection legislation. See notes to table 2.3 and the appendix for the exact definition of all the variables included in the regressions.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

1 fact that it may take some time until governments react to macroeconomic
2 events and to reduce the possibility of reverse causality in our estimates.
3 Several results are worth noting. First, the results on EMU shown thus far
4 are robust to the inclusion of the additional control variables. Second, we
5 find evidence that deregulation reforms occur in country-years in which the
6 output gap (defined as the difference of actual output to potential) is below
7 the ninetieth percentile of the output gap empirical density (equal to -3.4
8 percent). This gives some support to the crisis hypothesis—namely, that
9 reforms are more likely to occur in bad times. Third, the higher the primary
10 deficit as a share of gross domestic product (GDP), the lower the level of
11 regulation, indicating that reforms' blockers may be less powerful when they
12 feel that public finances are also in trouble and that liberalizing the economy
13 can help both in boosting growth and possibly in reducing the likelihood of
14 further increases in taxes or cutting in spending. Fourth, we find some evi-
15 dence that product market reforms happen at the beginning of the political
16 term (right after an election), but this result is not particularly robust to
17 specification changes. Fifth, deregulation in trading partners fosters dereg-
18 ulation at home. This result is consistent with the evidence in Hoj et al.
19 (2006).

20 Finally, we looked into the interaction between labor market reforms and
21 product market reforms. Specifically, our estimates show that an increase in
22 unemployment benefits leads to lower regulation in product markets, while
23 a decrease in the employment protection index is associated with less regula-
24 tion of product markets (but the coefficient is significant at the 10 percent
25 level only in column [5]). Product market liberalization reforms seem easier
26 to implement if workers receive some kind of protection in the form of social
27 insurance. As mentioned earlier, workers of the incumbent firms are more
28 likely to become unemployed and lose in the short run from deregulation.
29 Hence, they can be more willing to bear the short-run costs once the gener-
30 osity of unemployment benefits increases than they otherwise would. Fiori
31 et al. (2007) find that labor market reforms do not Granger-cause product
32 market reforms. However, their labor market indicator is the principal com-
33 ponent of unemployment benefits and employment protection. Results in
34 table 2.4 show that the two variables have opposite effects on regulation in
35 product markets. Hence, considering a combination of the two variables
36 may prevent one from detecting any effect of labor market regulation on
37 product market regulation.

38 2.3.7 Endogeneity of Euro Membership

40 The decision to join the EMS and especially to adopt the euro is of course
41 not an exogenous variable. In order to investigate this issue, we have rees-
42 timated table 2.1 using an instrumental variable procedure. First, we have
43 estimated with a probit model the probability that a certain country adopts
44 the euro. The choice of the right-hand side variable is based upon the gravity

1 literature on trade and the literature on currency unions.¹⁶ The specification,
2 described in detail in Alesina, Ardagna, and Galasso (2008), is meant to
3 capture that: (a) countries that trade more with each other should be more
4 likely to choose to be part of the same common currency area; (b) the higher
5 the correlation of the business cycle frequency (output and prices), the more
6 likely it is that two countries will choose to join the union; and (c) the higher
7 past inflation, the more likely it is that a country will join the union. In fact,
8 the more two countries trade with each other, the more they benefit from a
9 common currency. The more correlated are their business cycles, the lower
10 the costs of a simple monetary policy. Finally, a history of high inflation
11 makes a monetary anchor especially effective. We find support with regard
12 to EMU for the first two effects but not for the third.¹⁷ This is not surprising,
13 as the monetary anchor argument certainly did not apply to low-inflation
14 members (e.g., Germany and France).

15 We then use the estimated probability of joining the union as an instru-
16 mental variable (IV) for table 2.1. The results, shown in Alesina, Ardagna,
17 and Galasso (2008), indicate that the coefficients of interests on EMU in
18 column (1) of table 2.1 are generally robust to this IV procedure. We have
19 investigated all the specifications of table 2.1 with various degrees of suc-
20 cess. In some cases, the IV results remain significant, while in some cases,
21 the standard errors are too big for statistical significance. As we discussed
22 in the introduction, we are not convinced that the decision of whether to
23 enter the euro area was exogenous only (or mainly) to economic variables.
24 Political consideration seemed crucial, and therefore it is hard to measure
25 with an instrument the decision of whether to join.

26 2.4 Labor market: The Evidence

27 2.4.1 The Data

28 In order to investigate the determinants of labor market regulation, we
29 consider two time-varying measures for twenty-one OECD countries for
30 the period from 1985 to 2003. These two measures capture the degree of
31 employment protection related to the firing decisions and the level of insur-
32 ance provided to the unemployed, respectively. Data on the former measures
33 are coded and collected by the OECD and described in the OECD *Employ-*
34 *ment Outlook* (2004). The latter data are also collected at the OECD and are
35 described in the OECD *Benefits and Wages* (several issues); because original
36 data are available only for odd years, data for even years have been obtained
37 by linear interpolation.

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16. See Alesina, Barro, and Tenreyro (2002), in particular.

17. Also, Rose (2000) finds a significant and negative impact of the inflation rate on the probability of joining a currency union.

1 The indicator on employment protection ranges from 0 to 6 (from least to
2 most restrictive) and measures the restrictions placed on the firing processes
3 by both labor legislation and collective-bargaining agreements. This index
4 includes an assessment of the legislative provisions, as well as the enforce-
5 ment dimension, as they provide a measure of the judicial practices and
6 court interpretations of legislative and contractual rules. This indicator is
7 also provided separately for regular and temporary workers.

8 For the regular workers, the indicator on the employment protectory
9 regulation has three main components: (a) difficulty of dismissal—that is,
10 legislative provisions setting conditions under which a dismissal is justified
11 or fair; (b) procedural inconveniences that the employer may face when
12 starting the dismissal process; and (c) notice and severance pay provisions.
13 The index also provides a measure of the regulation of fixed-term contracts
14 and temporary work agencies. This is intended to measure the restrictions
15 on the use of temporary employment by firms with respect to the type of
16 work for which these contracts are allowed and their duration. The employ-
17 ment legislation for regular contracts constitutes the core component of the
18 overall summary index of employment protective legislation (EPI) strictness
19 that we use.

20 The indicator on the level of insurance provided to the unemployed rep-
21 represents the unemployment benefit replacement rate for low-income workers
22 in their first year of unemployment. This is measured by the average replace-
23 ment rate—that is, the ratio of the unemployment benefit to the last wage—
24 for a worker that earns 66 percent of average worker earnings.

25 2.4.2 The Euro and Labor Market Reforms

26 As for the product market, all our regressions are estimated with general-
27 ized least squares, allowing for heteroschedasticity of the error term, and
28 include the lagged value of the left-hand side variable and country and time
29 dummies.

30 In table 2.5, we consider the generosity of the unemployment benefits,
31 as defined earlier, to be a measure of labor market regulation. In column
32 (1), we start from the basic specification, with tests only for the effects of
33 the European single market and of the euro. We then add the interaction
34 of EMU with the lagged value of the dependent variable (column [2], our
35 measures of competition (column [3]), and additional possible explanatory
36 variables encountered in the literature, such as economic crisis and fiscal and
37 political variables (column [4]). Finally, columns (5) and (6) report the results
38 of the regressions that include the effects of the lagged variable of regula-
39 tion in the product market, the alternative variable of regulation in the labor
40 market (EPL), and the level of unemployment benefits in the trading part-
41 ners. The results show that while the ESM had no impact on this measure
42 of labor market regulation, the introduction of the euro led to an increase
43 in the generosity of the unemployment benefit. No other variable shows
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Table 2.5 The euro and unemployment benefits

	UNEMPLOYMENT BENEFIT (1)	UNEMPLOYMENT BENEFIT (2)	UNEMPLOYMENT BENEFIT (3)	UNEMPLOYMENT BENEFIT (4)	UNEMPLOYMENT BENEFIT (5)	UNEMPLOYMENT BENEFIT (6)
UNEMPL. BENEF.(-1)	0.93 (38.57)***	0.93 (38.58)***	0.94 (38.49)***	0.93 (36.90)***	0.93 (36.02)***	0.93 (35.80)***
ESM	0.00 (1.43)	0.00 (1.42)	-0.01 (-1.44)	0.00 (0.77)	0.00 (0.62)	0.00 (0.78)
EMU	0.01 (2.03)**	0.01 (1.35)	0.01 (1.62)	0.01 (2.00)**	0.01 (2.35)**	0.01 (2.29)**
EMU* UNEMPL. BENEF.(-1)		-0.01 (-0.45)				
COMPET(-1)			-0.01 (-0.63)			
COMPET ² (-1)			-0.04 (-0.26)			
EMU*COMPET1(-1)			-0.11 (-1.27)			
CRISIS(-1)				0.00 (0.23)	0.00 (0.23)	0.00 (0.34)
PR. SURPLUS/GDP(-1)				0.04 (1.18)	0.03 (0.76)	0.03 (0.76)
RIGHT GOV.(-1)				0.00 (0.12)	0.00 (0.48)	0.00 (0.32)

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CENTER GOV(-1)	-0.01	-0.01	-0.01	-0.01	
	(-0.99)	(-0.91)	(-1.11)	(-1.11)	
ELECTION YEAR(-1)	0.00	0.00	0.00	0.00	
	(0.16)	(0.05)	(0.15)	(0.15)	
EMPLOY. PROTECTION(-1)		0.00	0.00	0.00	
		(0.46)	(0.52)	(0.52)	
UNEMPLOYMENT BENEFIT		-0.10	-0.10	-0.10	
TRADING PARTNERS(-1)		(-2.29)**	(-2.39)**	(-2.39)**	
PMKT REGULAT(-1)		0.00	0.00	0.00	
		(1.38)	(0.45)	(0.45)	
PMKT REGULAT(-2)			0.01	0.01	
			(1.59)	(1.59)	
Observations	378	378	366	362	362

Notes: Generalized least squares regressions allowing for heteroskedasticity of the error term and including country, sector, and time dummies. *T*-statistics in parentheses. UNEMPLOYMENT BENEFIT TRADING PARTNERS: average of the value of the indicator UNEMPL_BENEF for the trading partners; PMKT REGULAT: country average value of the sectoral indicator REG. See notes to tables 2.3 and 2.4 and the appendix for the exact definition of all the variables included in the regressions.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

1 any explanatory power, with the exception of the level of unemployment
2 benefits in the trading partners, which presents a puzzling result, however,
3 as more unemployment benefits in trading partners is associated with less
4 unemployment benefits in the home country.

5 When using the degree of EPL as a measure of labor market regulation,
6 as in table 2.6, we do not find any effect of EMU—or any other plausible
7 explanatory variable—on labor market reforms. More generally, we found
8 that this index of labor market reform moved much less than that of product
9 market, as shown in figure 2.4.

10 2.4.3 Additional Evidence

11 The indicator of labor market reform used in the previous section may
12 give an overly narrow view of the evolution of labor markets in Europe.
13 These indicators of flexibility refer only to the primary labor market. But
14 two other factors, related to each other, have changed. One has been the
15 development of a vast labor market in several countries based on temporary
16 contracts with very few, if any, of the rigidities of the primary labor mar-
17 ket. For instance, much of the increase in employment reported in France,
18 Italy, and Spain has occurred in this secondary market. The second change
19 is that in the last ten or fifteen years, several European countries seem to
20 have experienced a substantial amount of wage moderation. In table 2.7, we
21 investigated whether the adoption of the euro has contributed to achieving
22 wage moderation in these seemingly unreformed labor markets. This is of
23 course important as an indicator of second-round effects: that is, whether
24 inflationary shocks get a second-round boost from wage increases. This table
25 shows that the countries that joined the EMU in 1999 have experienced a
26 significant increase in wage moderation in the period leading up to the com-
27 mon currency: that is, between 1993 and 1999. After this period, there is no
28 evidence of an additional effect of euro adoption on the degree of wage
29 moderation. These results are consistent with the fact that in preparation
30 for EMU membership, many countries had to put their houses in order.
31 This meant inflation reduction and fiscal rigor (in areas including public
32 salaries).

33 More specifically, in column (1) of table 2.7, the dependent variable is the
34 growth of nominal wages. On the right-hand side, in addition to the lagged
35 dependent variable, we have lagged inflation and our variables capturing
36 simple market membership and EMU membership. The former (but not
37 the latter) has a negative and statistically significant coefficient, indicating,
38 at least at first sight, an effect of simple market membership on wage mod-
39 eration. However, in column (2), we show that this result is driven by the
40 countries' membership of the simple market and their preparation to join
41 the EMU and attempts to achieve convergence criteria. In fact, we added
42 a dummy for EMU countries in the run-up to the euro (1993 to 1998) and
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Table 2.6 The euro and employment protection

	EMPLOYMENT PROTECTION (1)	EMPLOYMENT PROTECTION (2)	EMPLOYMENT PROTECTION (3)	EMPLOYMENT PROTECTION (4)	EMPLOYMENT PROTECTION (5)	EMPLOYMENT PROTECTION (6)
EMPLOY. PROTECTION(-1)	0.93 (31.35)***	0.92 (31.08)***	0.93 (31.51)***	0.92 (30.70)***	0.92 (30.77)***	0.92 (30.68)***
ESM	-0.01 (-0.97)	-0.01 (-0.95)	-0.02 (-1.07)	0.00 (0.28)	0.00 (0.24)	0.00 (0.24)
EMU	-0.01 (-0.66)	0.04 (0.79)	0.00 (0.04)	-0.02 (-0.89)	0.00 (0.23)	-0.01 (-0.26)
EMU* EMPL. PROTECT.(-1)		-0.02 (-1.13)				
COMPET1(-1)			0.00 (0.06)			
COMPET1 ² (-1)			0.17 (0.34)			
EMU*COMPET1(-1)			0.51 (0.94)			
CRISIS(-1)				-0.01 (-0.91)	-0.01 (-0.46)	-0.01 (-0.46)
PR. SURPLUS/GDP(-1)				0.00 (0.01)	-0.01 (-0.07)	-0.01 (-0.08)
RIGHT GOV.(-1)				-0.01 (-1.45)	-0.01 (-0.99)	-0.01 (-1.00)
CENTER GOV.(-1)				0.00 (0.16)	0.00 (0.11)	0.00 (0.12)
ELECTION YEAR(-1)				0.00 (0.51)	0.00 (0.37)	0.00 (0.38)
UNEMPL. BENEF.(-1)					-0.13 (-1.58)	-0.13 (-1.53)
EMPL. PROTECT. TRADING PARTNERS(-1)					0.03 (1.46)	0.03 (1.46)
PMKT REGULAT(-1)					-0.01 (-0.47)	0.00 (0.20)
PMKT REGULAT(-2)						0.00 (0.07)
Observations	373	373	355	362	362	362

Notes: Generalized least squares regressions allowing for heteroschedasticity of the error term and including country, sector, and time dummies. *T*-statistics in parentheses. EMPL. PROTECT. TRADING PARTNERS; average of the value of the indicator EMPL. PROTECT. for the trading partners. See notes to tables 2.3, 2.4, and 2.5 and the appendix for the exact definition of all the variables included in the regressions.

***Significant at the 1 percent level.

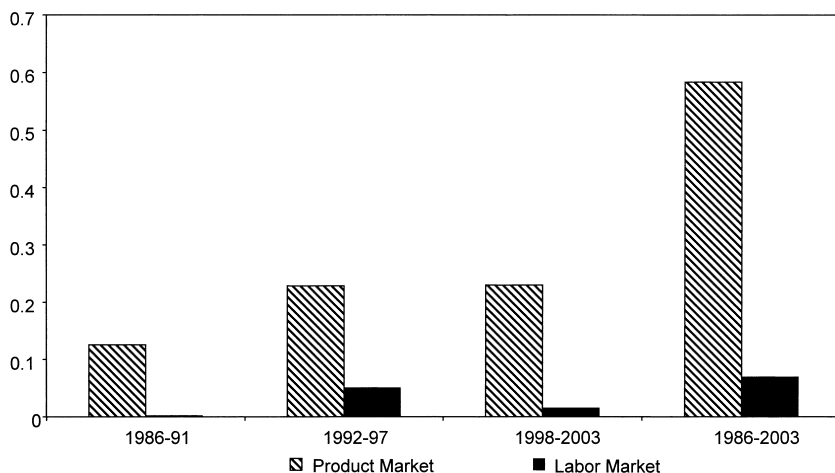


Fig. 2.4 Deregulation in product and labor markets

Table 2.7 The euro and wage moderation

	NOMINAL WAGE GROWTH (1)	NOMINAL WAGE GROWTH (2)
NOMINAL WAGE GROWTH LAGGED	0.48 (10.43)***	0.47 (10.12)***
LAGGED INFLATION	0.22 (3.69)***	0.24 (3.91)***
ESM	-0.01 (-2.50)**	
EMU 1993-1998		-0.01 (-2.90)***
EMU 1999-2003	0.00 (0.89)	-0.01 (-1.50)
EU-NO EMU 1993-2003		-0.01 (-1.33)
Observations	508	508

Notes: Generalized least squares regressions allowing for heteroschedasticity of the error term and including country, sector, and time dummies. *T*-statistics in parentheses. See notes to table 2.1 and the appendix for the exact definition of all the variables included in the regressions.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

another one after they adopted the single currency. As this column shows, the pre-euro dummy variable has a significant negative coefficient. Meanwhile, the coefficient on the posteuro period is insignificant. We also investigated possible differential effects between EMU and non-EMU countries relative to the effects of (lagged) inflation, but we found no differences.

2.5 Conclusions

Our statistical analysis suggests that the adoption of the euro has had a significant effect in promoting the adoption of product market reforms, at least in some sectors.

There are three possible interpretations of the results. One is that it is simply a coincidence: some countries decided to reform right at the end of the 1990s, and this time period happened to coincide with the adoption of the euro. The second interpretation is that the euro did indeed have an effect in promoting liberalization by eliminating the palliative of competitive devaluations. Firms found themselves losing competitiveness and became more vocal in demanding liberalization in sectors that were providing intermediate goods and services (including nontradable ones) in order to keep their costs low. A third story, related to the second, is that the euro did not matter that much economically per se but that it was used as a political tool by reformers to argue that countries belonging to the euro area needed structural reform; in other words, the euro was used as a justification to promote a product market reform agenda.

One should be worried about the possibility of spurious correlations because of the relatively small number of countries involved in the tests; however, the results do appear quite robust to a battery of econometric tests. It is hard to entirely disentangle the role of actual economic pressures introduced by the euro and the political rhetoric associated with it, but certainly, the results of our econometric exercise have moved us from our prior assumptions toward believing that the euro might indeed have had an effect, if not in promoting, at least in weakening the opposition to product market reforms. Future work should take some further steps toward trying to disentangle these three alternatives. One step in this direction would be to focus on where the political and economic pressure to liberalize certain sectors came from.¹⁸

The adoption of the euro does not seem to have had much of an effect in promoting labor market reforms, at least in the primary labor market sector: in general, labor markets have proceeded more slowly and tentatively than product markets. However, a secondary labor market with temporary labor contracts has grown in a few countries that did not reform the primary labor market. In addition, the run-up to euro adoption has led to some wage moderation. This timing has led us to consider the question of whether product market reform should indeed precede labor market liberalization. We find that regulation decreases when value added and labor costs of the sector fall (i.e., when a sector's rents decrease) and that product markets are

18. Interestingly, energy, the sector that was mostly affected by the introduction of the euro, was found by Barone and Cingano (2008) to be the service sector whose liberalization has the most beneficial effects on the growth rate of the downstream manufacturing sectors.

deregulated in country-sectors-years with lower employment. Hence, in less labor-intensive sectors, governments can meet less resistance and can more easily implement deregulation measures. However, we also find that product market deregulation is easier to implement when unemployment subsidies are more generous and is more difficult to implement when there are higher firing costs, which interfere with market reallocations. Therefore, the type of labor market policies more prone to facilitating product market reforms are those in which the workers are protected with unemployment subsidies but specific jobs are not, making the (re)matching between firms and workers easier. Labor market reforms are multidimensional in nature and are often quite complex and difficult to capture with one macroindicator. Also, several countries in the euro area have two separate markets: the traditional and highly regulated market, and a second, much more flexible one based on temporary contracts. Further investigation into the role of the euro in promoting labor market reform is an excellent topic for future research.

Appendix

Data Sources and Definitions

Our data set includes yearly data on twenty-one OECD countries (Australia, Austria, Belgium, Canada, Switzerland, Germany, Denmark, Spain, Finland, France, the United Kingdom, Greece, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Sweden, and the United States) from 1975 to 2003. Following is a list of variables used in our regressions, with their definitions and sources.

REG: Aggregation of the OECD summary indicator of regulatory impediments to product market competition, excluding public ownership, in three or five broad sectors: energy (electricity and gas), communication (telecommunications and post), and transportation (airlines, road freight, and railways); and retail and professionals. Data on regulation for professionals are only available in 1996 and 2003 and for retail in 1998 and 2003. (Source: Conway and Nicoletti [2007] and Nicoletti and Scarpetta [2003].)

ENERGY, COMMUNICATIONS, TRANSPORT, RETAIL, and PROFESSIONAL: Sectorial dummy variable that equals 1 for the corresponding sector.

European single market (*ESM*): Dummy variable that equals 1 for the countries that enter the European Union's single market program after its implementation in 1993.

EMU: Dummy variable that equals 1 for the countries that enter the EMU after its implementation in 1999.

- 1 *EMU**“variable” (e.g., “energy”): Interaction between EMU and the cor-
 2 responding variable.
- 3 *ESM**“variable” (e.g., “energy”): Interaction between single market and the
 4 corresponding variable.
- 5 *COMPET1*: Indicator of lack of competitiveness at the country-sector-year
 6 level for the period from 1975 to 2003 for the energy, communications,
 7 and transport sectors, measured as the growth rate of the CPI relative to
 8 competitors at $t - 1$. (Source: OECD *Economic Outlook* number 80.)
- 9 *COMPET2*: Indicator of lack of competitiveness at the country-sector-year
 10 level for the period from 1975 to 2003 for the energy, communications,
 11 and transport sectors, measured as the growth rate of the export goods
 12 deflators relative to competitors at $t - 1$. (Source: OECD *Economic Out-*
 13 *look* number 80.)
- 14 *N. OF DEVALUATIONS FROM 1979–1993*: Number of devaluations that
 15 a country that belonged to the European Monetary System did from 1979
 16 to 1993.
- 17 *VA*: Value added for the three sectors: energy (electricity, gas, and water),
 18 communications (communications and posts), and transport (transport
 19 and storage). It measures the sector contribution to national GDP, cal-
 20 culated as the difference between production and intermediate inputs.
 21 (Source: OECD STAN database for industrial analysis, revision 3 [ISIC
 22 rev. 3].)
- 23 *LABOR EXPENSES*: Labor costs or compensation of employees in the
 24 three preceding sectors. It includes wages and salaries of employees paid
 25 by producers, as well as supplements such as contributions to social
 26 security, private pensions, health insurance, life insurance, and similar
 27 schemes. (Source: OECD STAN database for industrial analysis, revision
 28 3 [ISIC rev. 3].)
- 29 *TOT. EMPLOYMENT*: Total employment in the preceding three sectors.
 30 (Source: OECD STAN database for industrial analysis, revision 3 [ISIC
 31 rev. 3].)
- 32 *CRISIS*: Dummy variable equal to 1 when the output gap (defined as the
 33 difference of actual output to potential) is below the ninetieth percen-
 34 tile of the output gap empirical density (equal to -3.4 percent). (Source:
 35 OECD *Economic Outlook* database.)
- 36 *PR. SURPLUS/GDP*: Primary deficit as a share of GDP. (Source: OECD
 37 *Economic Outlook* database.)
- 38 *RIGHT GOV.*: Dummy variable that equals 1 if the government is led by a
 39 right party or coalition; that is, parties that are defined as conservative,
 40 Christian democratic, or right wing. (Source: Database of Political Insti-
 41 tutions [DPI] of the World Bank, compiled by Beck et al. [2001].)
- 42 *CENTER GOV.*: Dummy variable that equals 1 if the government is led
 43 by a center party or coalition; that is, parties that are defined as centrist
 44 or whose position can best be described as centrist—for example, party

1 advocates strengthening private enterprise in a social-liberal context.
2 (Source: Database of Political Institutions [DPI] of the World Bank,
3 compiled by Beck et al. [2001].)

4 *ELECTION YEAR*: Dummy variable that equals 1 if (parliamentary or
5 presidential) elections were held during that year. (Source: Database of
6 Political Institutions [DPI] of the World Bank, compiled by Beck et al.
7 [2001].)

8 *REG. TRADING PART.*: Average of the value of the indicators REG for
9 the trading partners. (Source: Conway and Nicoletti [2007]; Nicoletti and
10 Scarpetta [2003]; and OECD STAN database for industrial analysis, revision 3 [ISIC rev. 3].)

11 *UNEMPL. BENEF.*: Unemployment benefit replacement rate for low-
12 income workers in their first year of unemployment. This is measured
13 by the average replacement rate—that is, the ratio of the unemployment
14 benefit to the last wage for a worker that earns 66 percent of average
15 worker earnings. (Source: OECD *Benefits and Wages*.)

16 *EMPLOY. PROTECTION*: OECD summary indicator of the stringency
17 for employment protection legislation for all contracts, defined as the
18 average of values for the indefinite contract (regular) workers and the
19 fixed-term contract (temporary) workers. (Source: OECD, *Employment
20 Outlook 2004*.)

21 *UNEMPLOYMENT BENEFIT TRADING PARTNERS*: Average of the
22 value of the indicator UNEMPLOYMENT BENEFIT for the trading
23 partners. (Source: OECD *Benefits and Wages* and OECD STAN database
24 for industrial analysis, revision 3 [ISIC rev. 3].)

25 *PMKT REGULAT.* (−1 and −2): Country average value (lagged one and two
26 periods) of the sectorial indicator REG.

27 *EMPL. PROTECT. TRADING PARTNERS*: Average of the value of the
28 indicators EMPLOYMENT PROTECTION for the trading partners.
29 (Source: OECD *Employment Outlook 2004* and OECD STAN database
30 for industrial analysis, revision 3 [ISIC rev. 3].)

31 *POPULATION1SH*: The share of the population of a country over the total
32 population in the eleven EMU countries. (Source: Tenreyro [2007].)

33 *AREA1SH*: The share of land mass of a country over the total land mass
34 in the eleven EMU countries. (Source: Tenreyro [2007].)

35 *PRMSE*: The correlation shocks in prices of a country relative to the other
36 eleven EMU countries. (Source: Tenreyro [2007].)

37 *YRMSE*: The correlation shocks in output of a country relative to the other
38 eleven EMU countries. (Source: Tenreyro [2007].)

39 *BORDER*: The number of the eleven EMU countries with which a country
40 shares borders. (Source: Tenreyro [2007].)

41 *COMLANG*: The number of the eleven EMU countries with which a coun-
42 try shares a common language. (Source: Tenreyro [2007].)

- 1 *COLONY*: The number of the eleven EMU countries with which a country
 2 was ever in a colonial relationship. (Source: Tenreyro [2007].)
 3 *LPASTINLFWDI1*: Lagged value of the average over a five-year period of
 4 the inflation rate in a country, measured using the GDP deflator. (Source:
 5 World Development Indicator database.)
 6 *LAGINFLDEVEU11*: Lagged value of the difference between the inflation
 7 rate in a country—measured using the GDP deflator—and the average
 8 inflation in the other eleven EMU countries. (Source: World Development
 9 Indicator database.)
 10 *LPASTINFLDEVEU11*: Lagged value of the average over a five-year period
 11 of the difference between the inflation rate in a country—measured using
 12 the GDP deflator—and the average inflation in the other eleven EMU
 13 countries. (Source: World Development Indicator database.)
 14 *LAGINFLWDI1*: Lagged value of the inflation rate in a country, measured
 15 using the GDP deflator. (Source: World Development Indicator data-
 16 base.)
 17 *LPASTLNTRADE*: Lagged value of the average over a five-year period
 18 of the nominal sum of import and export that a country had with the
 19 other eleven EMU countries. (Source: OECD STAN Bilateral Trade
 20 Database.)
 21 *LAGLNTRADE*: Lagged value of the real sum of import and export that a
 22 country had with the other eleven EMU countries. (Source: OECD STAN
 23 Bilateral Trade Database.)
 24 *LPASTLNTRADE*: Lagged value of the average over a five-year period of
 25 the real sum of import and export that a country had with the other eleven
 26 EMU countries. (Source: OECD STAN Bilateral Trade Database.)
 27 *LAGLNTRADE*: Lagged value of the nominal sum of import and export
 28 that a country had with the other eleven EMU countries. (Source: OECD
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28 **Comment** Otmar Issing

29 This chapter by A. Alesina, S. Ardegnà, and V. Galano—in short, AAG—is
 30 indeed a triple-A contribution. It addresses an important aspect of the
 31 European Monetary Union (EMU) and brings together economics and po-
 32 litical considerations to explain policy choices. The authors go the hard way
 33 of detailed empirical work, scrutinize a myriad of data, and remain careful
 34 in their interpretation.

35 To start with, EMU in the end was a political decision. Economists
 36 around the world were more or less skeptical. Their fundamental concern
 37 was an obvious lack of flexibility in the economies of potential member
 38 states, and as a consequence, in the future monetary union. For example,
 39 on February 9, 1998, 155 German academic economists published an open
 40 letter entitled “The Euro Is Coming Too Early”—the main reason being the
 41 lack of flexibility in labor markets (and insufficient progress in consolidating
 42

43 Otmar Issing is the president of the Center for Financial Studies at the University of Frank-
 44 furt and a former member of the executive board of the European Central Bank.

1 public finances).¹ And it was in the first weeks after the establishment of the
2 European Central Bank (ECB) when I received a letter by Milton Friedman
3 saying, “Dear Otmar, congratulations on an impossible job. You know I am
4 convinced, monetary union in Europe is doomed to fail.”

5 In short, a clear majority of economists pointed to the fact that a mon-
6 etary union with the envisaged large membership—eleven countries finally
7 to start on January 1, 1999—would be far from fulfilling the criteria of
8 an optimal currency area (OCA). But, the project of monetary union, the
9 ambition to be allowed to participate, and after entry, the need to adapt to
10 the new framework of a single monetary policy—“one size fits all”—and
11 the removal of the tool of national monetary policy and changes in the
12 exchange rate of the national currency strengthened structural reforms and
13 fiscal consolidation.

14 The conditions for entry enshrined in the Maastricht treaty—at least for-
15 mally—referred only to nominal variables. The discipline exerted by these
16 criteria in some cases came late, but all in all, it was timely enough. The threat
17 of not being in at the start of EMU unleashed unexpected forces, including
18 the sphere of fiscal policy—admittedly with grave exemptions as regards
19 public debt levels.²

20 But what about structural reforms, progress toward greater flexibility in
21 product and labor markets? The authors identify two layers of a potential
22 impact of EMU.

23 One is (dis)qualified by AAG as “wishful thinking”—the rhetoric that
24 “any step toward integration is ‘by definition’ good and brings about all
25 sorts of wonderful achievements for the continent.” Strange as it might
26 sound for an economist, this “philosophy” of integration—or what it may
27 be called—played for some time an important political role under the label
28 of the “monetarist” position. This was based on the expectation that once
29 the exchange rate was fixed irreversibly, the rest would adjust in a mysteri-
30 ous way.

31 The other line of argument refers to the fact that monetary union elimi-
32 nates the option of strategic devaluations, or more generally of adjusting
33 policy rates to national cyclical conditions, and therefore enforces pressure
34 for enhancing the flexibility of labor markets and wage bargaining.³

35 In this context, AAG mention that not surprisingly, the pre-euro debate
36 initially focused on labor market reforms. The effect on product markets
37 comes mainly from increasing costs of regulation due to stronger compe-
38 tition.

40 1. See Issing (1996).

41 2. Issing (2008).

42 3. A few authors argued that the disappearance of the exchange rate risk would lead to a
43 higher demand for protectionism and thereby weaken the incentives for structural reforms.
44 See Calmfors (2001).

1 To what extent are the criteria of OCA endogenous? What is the impact of
2 EMU on concrete steps for more flexibility in product and labor markets?

3 Here, AAG are confronted with a tremendous identification problem. The
4 authors concentrate their empirical study at a one-shot event—the intro-
5 duction of the euro. The difficulties to isolate this effect from the rest of the
6 environment are obvious—and fully recognized by the authors:

7 1. The process of globalization has created incentives for reforms world-
8 wide.

9 2. The introduction of the euro is not just exogenous. Countries discussed
10 pros and cons and adapted to the common currency for different reasons,
11 which could have also affected incentives for structural reforms.

12 3. The effect of the introduction of the euro preceded the start of EMU.
13 As soon as it became a common conviction that EMU would begin as agreed
14 in Maastricht on January 1, 1999, risk premia in foreign exchange mar-
15 kets started to decline, and preparation for participation reached a decisive
16 phase.

17 4. The observation period still is rather short—further impact might be
18 in the pipeline.

19 5. Finally, and most importantly: is it possible to disentangle the effect of
20 participation in the single market from the introduction of the euro?

21 The main result of their empirical study can be summarized in two sen-
22 tences:

23 1. The adoption of the euro had a significant effect in promoting the
24 adoption of product market reform, especially in some sectors. Here, one
25 is tempted to argue that the impact should rather be in general terms (i.e.,
26 comprise structural reforms on a broad macrolevel). So, are sectoral reforms
27 more due to sectoral specifics than to the introduction of the euro?

28 2. For labor market reform, the euro did not have much of an effect.
29 Here, one may caution a bit. For example, the euro may have contributed
30 to the major labor market reforms that were implemented in Germany in
31 2004 and early 2005.

32 The authors are also convinced that the sequencing of reforms should
33 follow this pattern.

34 I will not try to evaluate the statistical method applied, nor to go through
35 the myriad of details. While the data are impressive, it would help if the
36 authors could try to consolidate their results.

37 The AAG chapter sets a landmark in extracting information from their
38 model on an issue of highest importance for the functioning of EMU. Over-
39 all, their results are consistent with those of other studies. In the meantime,
40 the European Commission has published its “EMU@10” special report
41 (2008). Its summary concludes:
42
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44

1 The evidence is not very conclusive, but it is clear that on balance the single
2 currency has had little positive effect on the pace of structural reform⁴. . . .
3 Consistent with these findings, the analysis . . . indicates that euro-area
4 countries have on average been less forthcoming in implementing the
5 structural policy recommendations made to them by the EU under the
6 Broad Economic Policy Guidelines (BEPGs)—a Treaty-based tool for
7 economic policy coordination—in the period 2000–2005. In particular,
8 progress in the cross-border integration of services has been more muted
9 than expected, which is particularly problematic. It is in this area espe-
10 cially that price rigidities persist. This has been recognised by . . . the
11 European Commission, which in turn has led to intensified surveillance
12 of national structural policies in the euro area in the framework of the
13 Lisbon Strategy for Growth and Jobs, which was revamped in 2005. (19)

14 A paper by Pelkmans, Montoya, and Maravalle (2008) shows that prod-
15 uct market reforms do help to “lubricate” adjustment processes in the euro
16 area.⁵

17 **Where Is EMU Going?**

18 Notwithstanding the remaining lack of flexibility, especially in labor mar-
19 kets, the single monetary policy has worked with great success—certainly
20 better than even the optimists had expected. This result might trigger a new
21 discussion on the relevance of the OCA criteria. Financial integration might
22 have played a role. Consumption smoothing and risk sharing should have
23 contributed to the functioning of EMU.

24 On the other hand, significant challenges are ahead. Countries that con-
25 tinuously have lost competitiveness inside the euro area are confronted with
26 heavy adjustment problems, and the slowdown of growth will reveal the
27 lack in ambition on structural reforms throughout the euro area. The costs
28 of the current financial crisis for the real economy will to a large extent
29 depend on the flexibility of labor and product markets—in particular, on
30 (downward) flexibility of labor costs and prices. In my book *The Birth of*
31 *the Euro* (2008), the title of the last chapter, “Europe at the Crossroads,” is a
32 kind of short-cut message. The there-is-no-alternative (TINA) to structural
33 reforms hypothesis remains true if the coherence of the area is to be pre-
34 served and the functioning of the single monetary policy guaranteed. The
35 alternative is anything but promising: increasing tensions—economically
36 and politically—with far-reaching consequences.

4. Duval and Elmeskov (2006) see no acceleration of reforms in EMU. A slowdown in
42 reforms in 1999 to 2004 relative to 1994 to 1998 is reported by Duval (2006).

5. Pelkmans, Montoya, and Maravalle (2008).

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