

II Regional Unemployment in Europe

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This section provides an empirical characterization of regional unemployment patterns in European countries. The magnitude of regional unemployment differences is compared across countries and over time. The persistence of these differences is also examined.

Trends in Unemployment Rates

It is useful to begin by examining trends in aggregate unemployment rates. It is well known that the European economies have witnessed rising unemployment over the last two decades, and there is widespread consensus that the structural component of unemployment has also risen considerably. Figure 2.1 plots the average unemployment rate for all EU countries, for the first-stage participants in EMU, and for Italy and Spain.

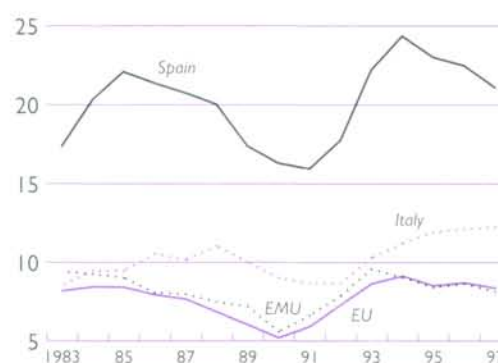
Nationwide unemployment rates, however, provide an incomplete picture. Trends in unemployment rates have been far from uniform across regions within these countries. For instance, the nationwide unemployment rate has remained relatively flat in Italy over the last three years. This masks considerable variation at the regional levels, with the unemployment rate declining in the northern regions (to its current level of less than 5 percent) and increasing in the southern regions (where it amounts to almost 23 percent).

Perhaps the best measure to summarize the geographic dispersion of unemployment is the standard deviation of regional unemployment rates.¹ Table 2.1 shows the standard deviation of regional unemployment for 14 European countries and the United States. The countries that display the largest variation in regional unemployment rates in 1997 are Italy, Spain, Finland, Germany, and Belgium, in that order.²

¹The data used in this section were generously provided by Eurostat.

²Caution must be exercised in using the standard deviation of regional unemployment rates for cross-country comparisons because different countries necessarily have different numbers and sizes of regions. This section defines regions as the largest admin-

Figure 2.1. Unemployment Rates in Italy, Spain, European Union, and European Monetary Union Members
(In percent)



Most European countries have a greater degree of regional dispersion of unemployment than the United States. Regional unemployment differences increased during the 1990s in several European countries, including Belgium, Finland, Germany, and Italy.³ On the other hand, these differences declined during the 1990s in Ireland and the United Kingdom.⁴

istrative subunits of a country. The regional disaggregation is based on NUTS-1 (*nomenclature des unités territoriales statistiques*) units except for certain countries for which a finer disaggregation based on NUTS-2 units was required. The definition of regional units is similar to that of Pench, Sestito, and Frontini (1998). For the United States, data on the 50 states were used. The full list of regions is provided in the Appendix.

³The unification of East and West Germany in 1990 was obviously an important factor contributing to the increase in both the aggregate level and the regional dispersion of German unemployment.

⁴The Thatcher-era reforms of the 1980s appear to have contributed to the decline in unemployment dispersion in the United Kingdom. For a more detailed analysis of these reforms and their effects on the U.K. labor market, see Prasad and Ramaswamy (1994).

Table 2.1. Standard Deviations of Unemployment Rates

Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Austria	...	...	...	...	...	...	...	...	...	...	0.90	0.92	0.97	1.05	1.05
Belgium	2.34	2.29	2.52	2.91	3.00	3.14	2.64	2.55	2.42	2.68	3.00	3.27	3.54	3.59	3.59
Denmark	1.97	1.94	1.85	1.38	1.53	1.46	1.63	1.60	2.00	2.15	2.26	2.01	2.04	2.08	1.75
Finland	...	...	...	...	...	3.14	2.50	2.59	3.64	4.80	6.14	6.02	5.39	5.46	5.36
France	1.75	2.14	2.17	2.00	2.07	2.07	2.02	2.02	2.10	2.28	2.12	2.21	2.17	2.54	2.67
Germany	1.71	2.05	2.29	2.25	2.29	2.23	2.13	1.88	2.54	4.03	3.63	3.36	3.10	3.34	4.71
Germany, east	...	...	...	...	...	...	...	...	1.31	1.66	2.46	2.25	2.44	2.16	2.76
Germany, west	1.71	2.05	2.29	2.25	2.29	2.23	2.13	1.88	1.60	1.39	1.61	1.74	1.79	1.89	2.05
Greece	0.98	1.27	2.61	3.71	2.66	1.91	1.75	2.02	1.98	2.49	2.50	2.65	2.66	3.41	2.88
Ireland	0.12	0.40	0.68	0.54	0.58	2.54	1.82	1.63	1.90	1.86	1.81	1.66	1.56	1.40	1.10
Italy	3.10	3.35	3.85	4.87	4.95	6.49	6.60	6.33	5.88	4.79	5.59	6.22	7.00	7.56	7.58
Netherlands	...	...	...	...	...	1.69	1.50	1.73	0.90	1.03	0.97	0.93	0.98	1.33	1.10
Portugal	...	...	...	3.93	3.28	4.24	3.31	2.67	2.28	1.74	1.81	2.41	2.69	2.67	2.29
Spain	3.62	5.20	4.98	4.86	5.28	4.85	5.24	5.46	5.28	5.21	5.49	5.21	5.35	5.52	5.61
Sweden	...	...	...	...	...	...	...	0.68	0.78	1.06	1.34	1.44	1.48	1.43	1.99
United Kingdom	3.45	3.36	3.42	3.45	3.57	3.54	3.68	3.39	2.78	2.42	2.30	2.28	2.23	1.98	2.18
United States	2.53	2.18	1.94	2.23	2.14	1.89	1.33	1.14	1.54	1.61	1.51	1.32	1.28	1.24	1.22

Source: Authors' calculations.

An alternative measure of the degree of cross-regional variation in unemployment rates is the coefficient of variation, that is, the standard deviation of regional unemployment rates divided by the nationwide unemployment rate in each country.⁵ This measure, shown in Table 2.2, confirms the high dispersion of regional unemployment in a number of European countries, and notably Italy, Germany, and Belgium, in that order.⁶

Another perspective on regional unemployment comes from examining the dispersion of regional unemployment for different demographic groups. This is of particular relevance in the context of both marked changes in the degree of labor force attachment of some demographic groups, such as females, and considerable increases in youth unemployment.

Table 2.3 shows regional unemployment dispersion measures where the labor force is disaggregated on the basis of age and gender. There are no substantive changes in trends over time or in the ranking among countries in terms of dispersion of regional unemployment when considering different demographic groups. The geographical dispersion of unemployment rates tends to be higher for young workers than for the aggregate labor force. In some countries, such as Italy, youth unemployment rates have been very high in recent years, and the dispersion has been commensurately high.

To show that large regional unemployment differences reflect labor market rigidities instead of large region-specific shocks, the persistence of such differences is analyzed. Specifically, the correlations between the beginning- and end-of-sample unemployment rates for regions within a country are examined.

Figure 2.2 shows scatter plots of regional unemployment rates in 1983–85 and 1995–97 for the United States and for those European countries for which these data are available. Regional unemployment is significantly more persistent in the European countries (with the exception of Denmark) than in the United States. The estimated slope coefficient from a regression of 1995–97 regional unemployment rates on 1983–85 rates is positive for all countries, but the regression's *R*-squared is markedly higher for most European countries than for the

United States.⁷ The case of Italy is particularly striking since the correlation coefficient is 0.96.

Why Do Regional Unemployment Differences Matter?

Having examined the evidence on regional unemployment dispersion, it is germane to ask: why regional unemployment differentials matter for overall economic performance; how these differentials can be affected by institutional features and by policy measures; and what, if anything, can and should be done to address these differentials? Moreover, it is important to examine the implications of EMU with respect to these questions.

Regional unemployment differentials could, in principle, result merely from region-specific shocks. Country-specific or industry-specific shocks could also have differential effects across regions, perhaps because of differences in the sectoral composition of output and employment (or in the structure of labor and product markets) among regions.⁸ In either case, the dispersion of regional unemployment rates might not appear deleterious *per se*. However, persistent differentials in regional unemployment rates do suggest inefficiencies in labor market adjustment that could affect nationwide unemployment.

There are also potential feedbacks between regional and nationwide unemployment rates. Layard, Nickell, and Jackman (1991) provide evidence that the relationship between wage growth and unemployment at the regional level is convex in many European countries. Hence, an increase in the regional dispersion of unemployment for a given level of nationwide unemployment would translate into an increase in the nationwide NAIRU. This effect would be strengthened in an economy where a region with relatively low unemployment was the leading region in wage negotiations. This is the case, for instance, in Italy, where wage-bargaining outcomes at the national level have tended to reflect labor market

⁵A simple monotonic transformation (the square) of the coefficient of variation is also used by Layard, Nickell, and Jackman (1991).

⁶The standard deviation and the coefficient of variation sometimes reveal different pictures. For instance, in the case of Spain, the standard deviation indicates high unemployment dispersion in absolute terms, while the coefficient of variation indicates moderate dispersion relative to the high level of the nationwide unemployment rate.

⁷Section IV shows that persistence is higher in Spain than in the United States also when using data on the 50 Spanish provinces—the same number of units as that of the United States—rather than the 17 Spanish regions, as in this section.

⁸Bayoumi and Prasad (1997) find that nationwide and industry-specific shocks are more important than region-specific shocks for output fluctuations in the United States compared to Europe. See Clark and Shin (1998) for a comprehensive review of the literature that tries to disentangle these different types of shocks and a summary of the results from different approaches. Since the distinction between region-specific shocks and country-specific shocks that have asymmetric regional effects is not crucial for the purposes of this discussion, they are henceforth lumped together under the rubric of region-specific shocks.

Table 2.2. Coefficients of Variation of Unemployment Rates

Country	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Austria	...	...	...	...	...	...	...	...	...	...	0.23	0.23	0.26	0.23	0.24
Belgium	0.20	0.20	0.22	0.26	0.27	0.31	0.36	0.40	0.39	0.40	0.37	0.34	0.37	0.37	0.40
Denmark	0.21	0.22	0.24	0.25	0.27	0.24	0.22	0.21	0.24	0.24	0.21	0.24	0.28	0.29	0.31
Finland	...	...	...	...	...	0.65	0.64	0.67	0.55	0.43	0.37	0.33	0.34	0.38	0.39
France	0.23	0.23	0.22	0.20	0.20	0.22	0.22	0.24	0.24	0.23	0.19	0.18	0.19	0.21	0.22
Germany	0.25	0.29	0.31	0.34	0.36	0.36	0.37	0.38	0.51	0.71	0.52	0.42	0.41	0.41	0.47
Germany, east	...	...	...	...	...	...	...	...	0.13	0.11	0.17	0.15	0.18	0.14	0.15
Germany, west	0.25	0.29	0.31	0.34	0.36	0.36	0.37	0.38	0.39	0.33	0.28	0.25	0.27	0.27	0.26
Greece	0.18	0.22	0.47	0.83	0.58	0.31	0.32	0.38	0.33	0.38	0.36	0.36	0.35	0.40	0.34
Ireland	0.01	0.02	0.04	0.03	0.03	0.16	0.12	0.13	0.13	0.12	0.11	0.11	0.13	0.12	0.11
Italy	0.35	0.35	0.40	0.45	0.49	0.57	0.64	0.68	0.65	0.54	0.54	0.55	0.58	0.61	0.62
Netherlands	...	...	...	...	...	0.17	0.17	0.23	0.15	0.17	0.15	0.13	0.13	0.20	0.21
Portugal	...	...	...	0.47	0.49	0.69	0.66	0.58	0.55	0.45	0.34	0.35	0.37	0.35	0.34
Spain	0.23	0.28	0.24	0.24	0.28	0.26	0.32	0.35	0.35	0.31	0.26	0.23	0.25	0.26	0.26
Sweden	...	...	...	...	...	...	...	0.41	0.27	0.20	0.15	0.15	0.16	0.14	0.18
United Kingdom	0.32	0.31	0.30	0.30	0.33	0.40	0.50	0.49	0.34	0.26	0.23	0.25	0.27	0.28	0.32
United States	0.27	0.30	0.27	0.32	0.34	0.35	0.26	0.21	0.24	0.23	0.24	0.23	0.24	0.24	0.26

Source: Authors' calculations.

Table 2.3. Unemployment Rates on the Basis of Age and Gender*(Average standard deviations)***1983–85**

	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Netherlands	Portugal	Spain	Sweden	United Kingdom
Total workers	...	2.39	1.92	...	2.02	2.02	1.62	0.40	3.43	...	...	4.60	...	3.41
Female	...	4.61	2.56	...	3.15	2.37	3.40	1.50	6.08	...	...	5.28	...	2.63
Male	...	1.75	1.76	...	1.59	1.97	1.26	0.35	2.60	...	...	4.77	...	4.04
Workers 24 years old and below	...	4.30	3.19	...	5.95	3.86	3.15	1.57	10.39	...	...	7.18	...	5.95
Workers 25 years old and above	...	2.07	1.59	...	1.32	1.69	1.56	0.43	1.89	...	...	3.59	...	2.58

1995–97

	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Netherlands	Portugal	Spain	Sweden	United Kingdom
Total workers	1.02	3.57	1.95	5.40	2.46	3.72	2.98	1.35	7.38	1.14	2.55	5.49	1.63	2.13
Female	1.41	3.97	1.81	4.90	3.08	4.96	4.88	1.56	9.69	1.39	4.10	6.91	1.04	1.45
Male	0.96	3.53	2.23	5.74	2.26	2.81	2.10	1.80	6.55	0.91	2.04	4.99	2.56	2.71
Workers 24 years old and below	1.81	9.50	2.83	8.51	6.56	2.60	9.10	2.48	18.49	2.38	4.73	7.98	5.07	3.90
Workers 25 years old and above	0.94	3.01	1.81	4.51	2.12	3.99	2.39	1.31	5.56	0.90	2.38	5.06	1.25	1.79

Source: Authors' calculations.

Figure 2.2. Unemployment Rates by Region: 1995–97 vs. 1983–85¹

(In percent)

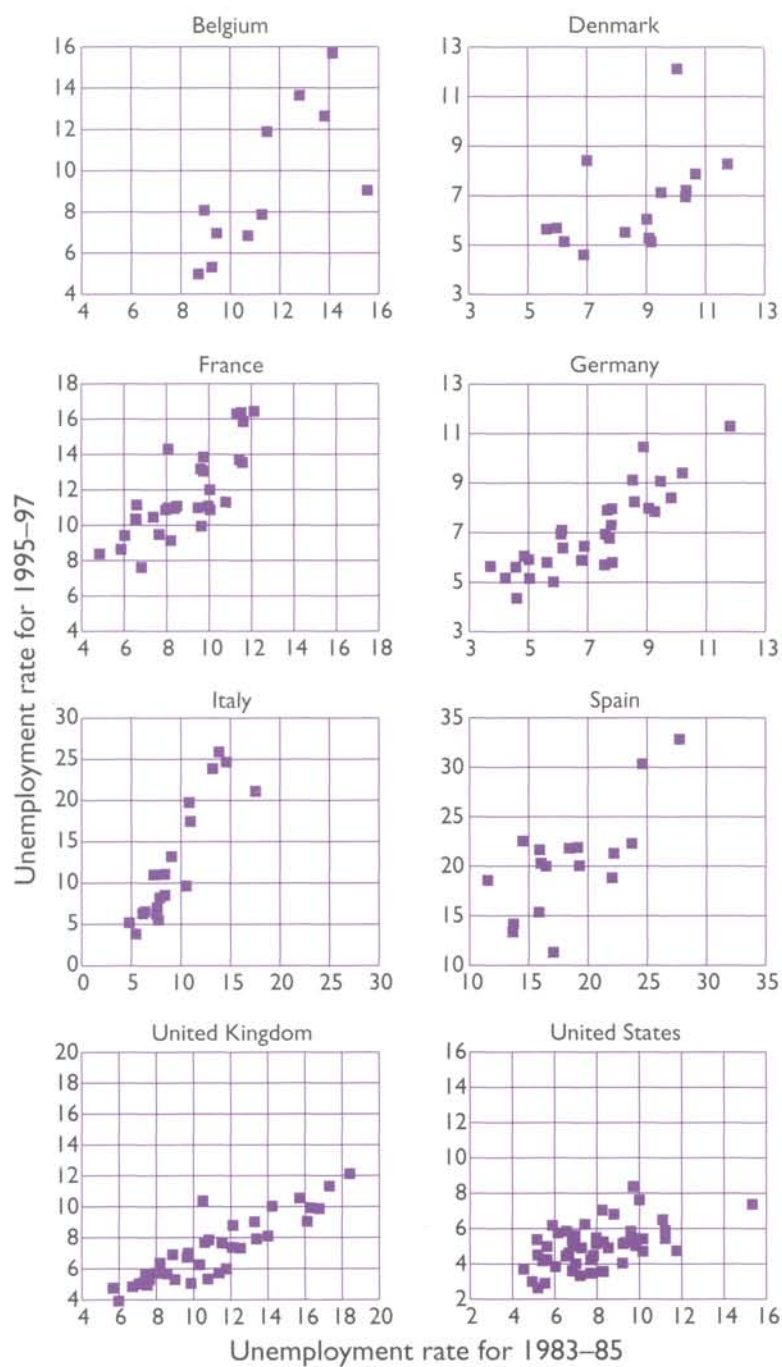
Source: Eurostat, *Regional Statistical Yearbook* (various issues).¹The vertical axis measures the unemployment rate for 1995–97. The horizontal axis measures the unemployment rate for 1983–85.

Table 2.4. Average Net Interregional Migration(In percent of regional population)¹

Period	Canada	United States	Germany	Italy	United Kingdom
1970–79	0.62	1.20	0.27	0.37	0.47
1980–89	0.63	0.84	0.34	0.33	0.26
1990–95	0.52	0.87	0.31	0.40	0.20

Source: Obstfeld and Peri (1998).

¹National figures are population-weighted averages over regions. For the period indicated, each regional figure is calculated as the average absolute value of the change in regional working-age population (measured net of national working-age population growth). The data for Germany refer to the western *Länder* only and exclude Berlin.

conditions in the north, which has had much lower unemployment than the south for many years.

Both capital and labor can play an important role in correcting regional unemployment differences. Capital mobility to relatively high-unemployment areas could take the form of migration of firms, the setting up of new firms, or the expansion of existing firms: new jobs would be created in each of these cases. As for labor, both the migration of labor force participants and changes in the labor force participation rate can help, although these adjustment mechanisms could involve considerable welfare costs. Adjustment through capital rather than labor, therefore, seems to be more desirable and, in particular, the migration of firms appears to be a promising adjustment mechanism. However, given the constraints on data availability, much of the analysis that follows will focus on the role played by prices and quantities related to labor in the adjustment process.

The adjustment to regional employment shocks is an important issue because even temporary region-specific employment shocks can result in long-lasting unemployment if they are not promptly offset by relative wage changes, labor migration, or changes in labor force participation. Given the institutional features and policies in the labor markets of many European countries, temporary shocks could generate hysteresis in regional unemployment rates, which would be reflected in national unemployment rates.

Blanchard and Katz (1992) conclude that in the United States interregional migration of labor is the main shock absorber for regional employment shocks. Using a similar framework, Obstfeld and Peri (1998) compare regional labor market adjustment in Europe to that in the United States and find that regional shocks have more persistent effects on employment in European countries compared to the United States. They also conclude that adjustment through interregional migration is smaller and slower in Europe than in the United States.

Table 2.4 (Obstfeld and Peri, 1998) shows that average net interregional migration is substantially lower in Germany, Italy, and the United Kingdom, compared to Canada and the United States.⁹ In fact, as documented by authors such as Faini, Galli, Gennari, and Rossi (1997), labor mobility has been on a marked downward trend over the last two decades in many European countries such as Italy. Since the migration rate may itself reflect high unemployment, it would not be fair to implicate low levels of migration as the reason for inefficient regional labor market adjustment. Nevertheless, an analysis of institutional barriers to migration could have important policy implications.

Some institutional features and policies in European labor markets may well play a role in hindering labor migration. These include transaction costs involved in changing houses and information costs associated with job searches across regions. More important, relative wage rigidities may imply that the “price” incentives to migrate tend to be low. In addition, it has been argued that “cultural attributes” and other intangible barriers limit labor mobility in Europe, both within and across national borders. These influences cannot be denied, although it is not clear why they should play a greater role now than at the time of the massive migration flows of the 1950s and 1960s.

A crucial determinant of the impact of region-specific labor demand shocks is wage flexibility. In fact, relative wage adjustment, rather than employment, could absorb much of the effects of such shocks. However, real wage rigidity is much greater in European countries than in more flexible labor markets such as the United States. Obstfeld and Peri (1998) confirm that relative wage adjustment is

⁹In interpreting the data in Table 2.4, it should be kept in mind that migration rates are influenced by the business cycle and that countries could have different cyclical positions during the periods under consideration.

smaller and more sluggish in Europe than in the United States and also in the specific case of the response to regional labor demand shocks. Such relative wage rigidities have adverse consequences at both the national and regional levels.

Wages could also play a useful role in correcting persistent regional unemployment imbalances. If wages were to fall in regions characterized by persistently high unemployment, then lower unit labor costs would attract firms into these regions, and lower real wages would act as an additional incentive for workers to migrate to the relatively low-unemployment regions. In countries that have a centralized bargaining system in which wages are largely determined at the national level, interregional wage differentials tend to be smaller, reducing the incentives for migration of capital or labor.

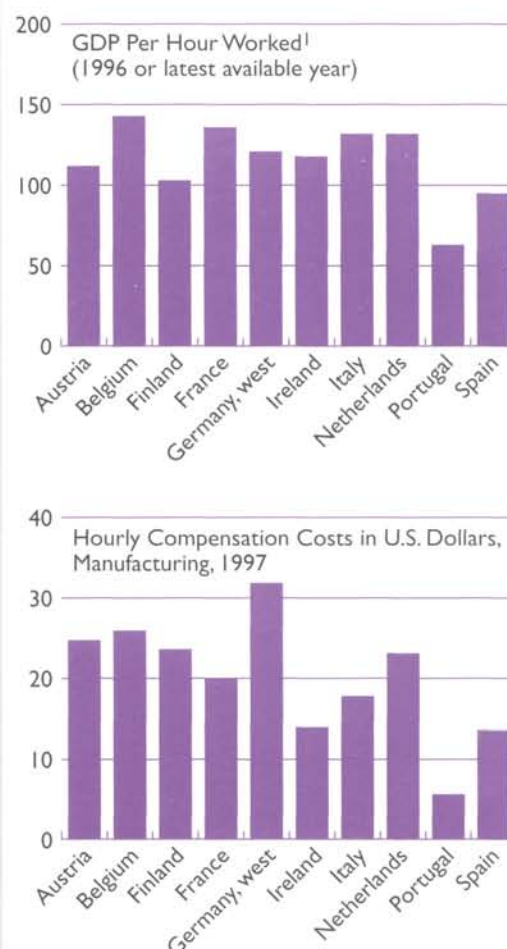
Regional unemployment imbalances and the effects of region-specific shocks could become more pronounced under EMU for three main reasons: pressures to equalize wages across countries; the implications of lower inflation for relative wage adjustment; and the loss of the exchange rate as a cushion from country-specific shocks for regions that are more vulnerable to them.

First, under EMU, regional unemployment disparities could be exacerbated by pressures to equalize wages across the participating countries. Wage equalization that resulted endogenously from labor migration could, of course, be an efficient outcome. However, it is unlikely that more open borders within the EMU area alone will encourage higher levels of labor mobility across European countries. Thus, the danger is that, since nominal wages contracted in a common currency will be easily comparable across national borders, competition within the EU could result in pressures for wage equalization across EMU. There is also danger in the fact that, with wages but not productivity equalized, unemployment could increase in countries where labor is less productive.

The implications of pressures for wage equalization are highlighted by evidence of significant differentials across European countries in the levels of both labor productivity and labor compensation. Figure 2.3 shows labor productivity levels based on GDP per hour worked and hourly compensation costs in manufacturing in 1997 for a set of European countries.¹⁰ Although international comparisons of wage and productivity levels need to be interpreted with caution, it is clear that there is a substantial dispersion of hourly compensation costs across euro countries, as one would expect in the case of large productivity differentials. If wages in a relatively high-wage country like

¹⁰The data on hourly compensation costs in manufacturing are drawn from the U.S. Bureau of Labor Statistics (1997). The data on GDP per hour worked are drawn from the OECD (1998).

Figure 2.3. Labor Productivity and Compensation



Sources: Organization for Economic Cooperation and Development, *Science, Technology and Industrial Outlook (1998)*; and U.S. Bureau of Labor Statistics.

¹OECD average = 100.

Germany were to be used by labor unions in other European countries as the basis for wage negotiations, the resulting differentials between wages and productivity in these countries could have deleterious effects on employment in countries with relatively low levels of productivity, such as Portugal and Spain.

Second, monetary union is widely expected to encourage low inflation, as evidenced by the decline in the inflation risk premium on the government bond yields of EMU countries, including among others, Italy and Spain. Given that the available em-

irical evidence supports the hypothesis of downward nominal wage rigidity, the relative wage declines that would be needed in high-unemployment regions could take longer to materialize under EMU than in a context of higher inflation.¹¹ In the past, the exchange rate may also have cushioned somewhat the asymmetric effects of nationwide shocks in regions with differing sectoral output composition, thereby mitigating in some countries the impact of these effects on regional unemployment dispersion (Eichengreen, 1993), but this will no longer be an option.¹²

¹¹Akerlof, Dickens, and Perry (1996) provide evidence of downward nominal wage rigidity even in the United States and argue that this phenomenon could have pernicious effects on unemployment in an environment of low inflation.

¹²These considerations are made more relevant by the sluggishness of regional relative price adjustment and the prospect of increased regional specialization under a common currency area. Krugman (1991) notes that regions in the United States are more

Should EMU result in wider unemployment disparities and a more sluggish adjustment to shocks, pressures might intensify for fiscal transfers, which appear to be the preferred tool of policymakers in addressing regional disparities.¹³ Such transfers, however, have important adverse consequences. Financing these transfers typically involves distortionary taxation that has a negative effect on overall economic activity. Further, large and continuing interregional transfers tend to breed political and social tensions and often perpetuate the regional disparities that they are intended to cure. Thus, fiscal transfers seem to be a temporary salve, but not a solution to the problem of regional disparities.

specialized than European countries, though his analysis is based solely on data for the manufacturing sector. Bayoumi and Prasad (1997) find that, based on a broader one-digit classification of sectoral output, there is less conclusive evidence that U.S. regions are more specialized than European countries.

¹³See Obstfeld and Peri (1998) and the references therein.

Appendix: European Regions and U.S. States

Data from the following European regions and U.S. states were used in compiling the information on regional unemployment rates provided in Section II.

Austria (9)

Burgenland
Kaernten
Niederoesterreich
Oberoesterreich
Salzburg
Steiermark
Tirol
Vorarlberg
Wien

Belgium (11)

Antwerpen
Brabant Wallon
Hainaut
Liège
Limburg (b)
Luxembourg (b)
Namur
Oost-Vlaanderen
Rég.Bruxelles-Cap./Brussels
Hfdst.gew.
Vlaams Brabant
West-Vlaanderen

Denmark (15)

Aarhus amt
Bornholms amt
Frederiksborg amt

Fyns amt
København og Frederiks Kom.
Københavns amt
Nordjyllands amt
Ribe amt
Ringkøbing amt
Roskilde amt
Sønderjyllands amt
Storstrøms amt
Vejle amt
Vestsjællands amt
Viborg amt

Finland (6)

Ahvenanmaa/Aaland
Etelä-Suomi
Itä-Suomi
Pohjois-Suomi
Uusimaa
Väli-Suomi

France (30)

Alsace
Aquitaine
Auvergne
Basse-Normandie
Bourgogne
Bretagne
Centre

Champagne-Ardenne
Corse
Essonnes
Franche-Comté
Haute-Normandie
Hauts-de-Seine
Languedoc-Roussillon
Limousin
Lorraine
Midi-Pyrénées
Nord
Paris
Pas-de-Calais
Pays de la Loire
Picardie
Poitou-Charentes
Provence-Alpes-Côte d'Azur
Rhône-Alpes
Seine-et-Marne
Seine-Saint-Denis
Val-de-Marne
Val-d'Oise
Yvelines

E. Germany (8)

Berlin-Ost, Stadt
Brandenburg
Dessau

Halle
Magdeburg
Mecklenburg-Vorpommern
Sachsen
Thuringen

W. Germany (31)

Arnsberg
Berlin-West, Stadt
Braunschweig
Bremen
Darmstadt
Detmold
Duesseldorf
Freiburg
Giessen
Hamburg
Hannover
Karlsruhe
Kassel
Koblenz
Koeln
Lueneburg
Mittelfranken
Muenster
Niederbayern
Oberbayern
Oberfranken
Oberpfalz
Rheinessen-Pfalz
Saarland
Schleswig-Holstein
Schwaben
Stuttgart
Trier
Tuebingen
Unterfranken
Weser-Ems

Greece (13)

Anatoliki Makedonia, Thraki
Attiki
Dytiki Ellada
Dytiki Makedonia
Ionia Nisia
Ipeiros
Kentriki Makedonia
Kriti
Notio Aigaio
Peloponnisos
Stereia Ellada
Thessalia
Voreio Aigaio

Ireland (9)

Border
Dublin
Ireland

Mideast
Midland
Midwest
Southeast (Irl)
Southwest (Irl)
West

Italy (19)

Abruzzo-Molise
Basilicata
Calabria
Campania
Emilia-Romagna
Friuli-Venezia Giulia
Lazio
Liguria
Lombardia
Marche
Piemonte
Puglia
Sardegna
Sicilia
Toscana
Trentino-Alto Adige
Umbria
Valle d'Aosta
Veneto

Netherlands (13)

Drenthe
Flevoland
Friesland
Gelderland
Groningen
Limburg (NL)
Nederland
Noord-Brabant
Noord-Holland
Overijssel
Utrecht
Zeeland
Zuid-Holland

Portugal (7)

Açores
Alentejo
Algarve
Centro (P)
Lisboa e Vale do Tejo
Madeira
Norte

Spain (17)

Andalucia
Aragón
Asturias
Balears
Canarias
Cantabria

Castilla-la Mancha
Castilla y León
Cataluña
Comunidad Valenciana
Extremadura
Galicia
Madrid
Murcia
Navarra
Pais Vasco
Rioja

Sweden (8)

Mellersta Norrland
Norra Mellansverige
Ostra Mellansverige
Ovre Norrland
Smaaland med oearna
Stockholm
Sydsverige
Vaestsverige

United Kingdom (37)

Avon, Gloucs., Wiltshire
Bedfordshire, Hertfordshire
Berks., Bucks., Oxfordshire
Bord.-Centr.-Fife.-Loth.-Tayside
Cambridgeshire
Cheshire
Cleveland, Durham
Clwyd, Dyfed, Gwynedd, Powys
Cornwall, Devon
Cumbria
Derbyshire, Nottinghamshire
Dorset, Somerset
Dumfr., Galloway, Strathclyde
Essex
Grampian
Greater London
Greater Manchester
Gwent, Mid-sw. Glamorgan
Hampshire, Isle of Wight
Hereford and Worcs., Warwicks.
Highlands, Islands
Humberside
Kent
Lancashire
Leics., Northamptonshire
Lincolnshire
Merseyside
Norfolk
Northern Ireland
North Yorkshire
Northumberland, Tyne and Wear
Shropshire, Staffordshire
South Yorkshire
Suffolk
Surrey, East-West Sussex

West Midlands (County)	Iowa	North Carolina
West Yorkshire	Kansas	North Dakota
United States (51)	Kentucky	Ohio
Alabama	Louisiana	Oklahoma
Alaska	Maine	Oregon
Arizona	Maryland	Pennsylvania
Arkansas	Massachusetts	Rhode Island
California	Michigan	South Carolina
Colorado	Minnesota	South Dakota
Connecticut	Mississippi	Tennessee
District of Columbia	Missouri	Texas
Delaware	Montana	Utah
Florida	Nebraska	Vermont
Georgia	Nevada	Virginia
Hawaii	New Hampshire	Washington
Idaho	New Jersey	West Virginia
Illinois	New Mexico	Wisconsin
Indiana	New York	Wyoming

Source: Eurostat, *Regions Nomenclature of Territorial Units for Statistics* (1995).

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