

# Labor Market Performance in Transition

## The Experience of Central and Eastern European Countries

Jerald Schiff, Philippe Egoumé-Bossogo, Miho Ihara,  
Tetsuya Konuki, and Kornélia Krajnyák



# **Labor Market Performance in Transition**

## **The Experience of Central and Eastern European Countries**

**Jerald Schiff, Philippe Egoumé-Bossogo, Miho Ihara,  
Tetsuya Konuki, and Kornélia Krajnyák**

**INTERNATIONAL MONETARY FUND**

**Washington DC**

**2006**

© 2006 International Monetary Fund

Production: IMF Multimedia Services Division

**Cataloging-in-Publication Data**

Labor market performance in transition : the experience of Central and Eastern European countries / Jerald Alan Schiff ... [et al.] — Washington, D.C. : International Monetary Fund, 2006.

p. cm. — (Occasional paper ; 248)

ISBN 1-58906-469-0

Includes bibliographical references.

1. Labor market — Europe, Central. 2. Labor market — Europe, Eastern.
  3. Unemployment — Europe, Central. 4. Unemployment — Europe, Eastern.
  5. Unemployment — Europe, Central — Statistics. I. Schiff, Jerald Alan. II. Occasional paper (International Monetary Fund) ; no. 248
- HD5764.7.A6L32 2006

Price: US\$28.00

(US\$25.00 to full-time faculty members and students at universities and colleges)

Please send orders to:

International Monetary Fund, Publication Services  
700 19th Street, N.W., Washington, D.C. 20431, U.S.A.

Tel.: (202) 623-7430      Telefax: (202) 623-7201

E-mail: [publications@imf.org](mailto:publications@imf.org)

Internet: <http://www.imf.org>



recycled paper

# Contents

<b>Preface</b>	<b>vii</b>
<b>Abbreviations</b>	<b>ix</b>
<b>I Overview</b>	<b>1</b>
<b>II Labor Market Developments in Transition: The Stylized Facts</b>	<b>3</b>
Labor Market Participation	3
Employment Developments	8
Unemployment	9
Regional Unemployment	11
Wage Developments	11
Policies and Labor Market Outcomes	12
Stylized Facts and Questions Raised	29
<b>III Labor Markets in Transition: An Econometric Analysis</b>	<b>30</b>
A Brief Literature Review	30
A Simple Analytical Framework	30
Econometric Analysis: Determinants of Unemployment in Transition	32
Data Issues and Econometric Results	34
Country Case Studies: What Works Best?	36
<b>IV Understanding Persistent Regional Disparities in Unemployment</b>	<b>44</b>
Differences in Labor Market Performance: An Overview	44
Labor Mobility: The Individual Worker's Decision	49
Job Mobility: The Firm's Decision	52
<b>V Policy Lessons: Reducing Unemployment in Transition</b>	<b>56</b>
<b>Appendixes</b>	
I. Data Sources and Issues	58
II. Country Case Studies	60
III. Models of Worker and Firm Decision Making in a Regional Context	72
<b>Bibliography</b>	<b>77</b>

**Figures**

2.1. Labor Participation Rates	9
2.2. Real GDP and Employment	10
2.3. Private Sector Share in Employment	12
2.4. Employment by Sector	13
2.5. Productivity by Sector	14
2.6. Unemployment Rates	15
2.7. Long-Term Unemployment	16
2.8. Regional Unemployment Rates	26
2.9. Real Wages	27
2.10. Statutory Overall Tax Rates on Labor Income	27
2.11. Minimum Wages	28
2.12. Statutory Replacement Ratios of Unemployment Benefits to Average Gross Wage	28
3.1. Employment Dynamics in Transition Countries: A Simple Framework	31
3.2. Sources of Growth	32
3.3. Employment and Real GDP Per Capita	33
3.4. Unemployment Residuals	39
3.5. Gross Monthly Wages and GDP per Employee, 2003	41
3.6. Strictness of Employment Protection and Size of Shadow Economy	42
4.1. Unemployment and Its Regional Dispersion	45
4.2. Unemployment and Structural Change	46
4.3. Commuting Frequency and Unemployment	48
4.4. Unemployment and Car Ownership, Hungarian Regions, 2002	49
4.5. Unemployment and Home Ownership: Selected European Nations in the 1990s	51
4.6. Unemployment and Main Phone Lines, Hungarian Regions, 2002	54
A2.1. Productivity, Wages, and Unit Labor Costs in the Private Sector	65
A2.2. Real Wages	66
A3.1. Benefits from Labor Market Choices Under Different Transaction Costs	73
A3.2. Benefits from Different Labor Market Choices Under Various Labor Market Conditions	74
A3.3. Benefits from Different Labor Market Choices for Insiders and Outsiders if Privilege Is Not Portable	75
A3.4. Benefits from Different Labor Market Choices for Insiders and Outsiders if Privilege Is Portable	76

**Tables**

2.1. Selected Macroeconomic Indicators	4
2.2. EBRD Transition Indicators	8
2.3. Bulgaria: Labor Force Survey Results	17
2.4. Croatia: Labor Force Survey Results	18
2.5. Czech Republic: Labor Force Survey Results	19
2.6. Estonia: Labor Force Survey Results	20
2.7. Hungary: Labor Force Survey Results	21
2.8. Latvia: Labor Force Survey Results	22
2.9. Lithuania: Labor Force Survey Results	23
2.10. Slovak Republic: Labor Force Survey Results	24
2.11. Slovenia: Labor Force Survey Results	25
2.12. Employment Protection Legislation Index (EPL)	29
3.1. Panel Estimation (Arellano-Bond): Employment and Unemployment	36
3.2. Impact of Terms of Trade (TOT) Shocks on the Employment Rate in the Presence of Labor Market Institutions (LMI)	38

3.3. Selected Business Environment Indicators	<a href="#">40</a>
3.4. OLS Estimation on the Impact of EPL on Shadow Economy	<a href="#">42</a>
4.1. Basic Indicators, Hungarian and Czech Regions	<a href="#">47</a>
4.2. Indicators of Commuting Costs in Selected Countries	<a href="#">49</a>
4.3. Indicators of Job Creation by Regional Unemployment Quintiles in Hungary	<a href="#">50</a>
4.4. House Ownership in Selected Countries	<a href="#">50</a>
4.5. Skill Endowments	<a href="#">52</a>
4.6. Motivation of Austrian Outward Direct Investors, End-1999	<a href="#">53</a>
4.7. Unemployment Rate and the FDI Sector's Share in the Corporate Sector's Employment in Hungarian Regions	<a href="#">53</a>
A2.1. Regional Inequalities in Hungary, 2003:Q3	<a href="#">65</a>

The following conventions are used in this paper:

- ... to indicate that data are not available or not applicable;
- to indicate that the figure is zero or less than half the final digit shown;
- between years or months (for example, 2004–05 or January–June) to indicate the years or months covered, including the beginning and ending years or months;
- / between years or months (for example, 2004/05) to indicate a fiscal or financial year.

“Billion” means a thousand million; “trillion” means a thousand billion.

“Basis points” refer to hundredths of 1 percentage point (for example, 25 basis points are equivalent to  $\frac{1}{4}$  of 1 percentage point).

Minor discrepancies between constituent figures and totals are due to rounding.

\* \* \*

As used in this report, the term “country” does not in all cases refer to a territorial entity that is a state as understood by international law and practice. As used here, the term also covers some territorial entities that are not states but for which statistical data are maintained on a separate and independent basis.

*This page intentionally left blank*

## Preface

This Occasional Paper analyzes the labor market experiences of the countries of Central and Eastern Europe during their transition from centrally planned to market-based economies. The paper highlights remaining weaknesses in labor markets in these countries—still-high rates of unemployment and long-term unemployment in many countries, and the concentration of unemployment in selected poor regions—and suggests a broad policy road map for addressing these problems.

The paper was prepared by a team comprising Jerald Schiff, Philippe Egoumé-Bossogo, Miho Ihara, Tetsuya Konuki, and Kornélia Krajnyák. In addition, Nadia Choueiri, Paulo Drummond, and David Moore contributed valuable country case studies, which appear in Appendix II of the paper. The authors would like to thank Carlo Cottarelli, Susan Schadler, and numerous economists in the IMF's European Department for their comments and for help with data at various stages of the process of producing this paper. Anna Unigovskaya provided excellent research assistance, and Sara Salimi and Ana Rosa Reyes ably assisted in preparing the manuscript. James McEuen of the IMF's External Relations Department edited the manuscript and coordinated production of the publication.

The opinions expressed in this paper are solely those of the authors and do not necessarily reflect the views of the International Monetary Fund or its Executive Directors.



*This page intentionally left blank*

## Abbreviations

A-B	Arellano-Bond
ALMP	Active labor market policy
CEE	Central and Eastern European
CIS	Commonwealth of Independent States
EBRD	European Bank for Reconstruction and Development
EPL	Employment protection legislation index
EU	European Union
EU-15	EU pre-2004: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom
GDP	Gross domestic product
i.i.d.	Independent and identically distributed
ILO	International Labor Organization
LFS	Labor force survey
OLS	Ordinary least squares
NUTS	Nomenclature of Territorial Units for Statistics (Nomenclature des Units Territoriales Statistiques)

*This page intentionally left blank*

# I Overview

More than a decade after the start of transition, the unemployment rate remains in double digits in a number of Central and Eastern European (CEE) countries. After a period of gradual decline, unemployment has actually increased recently in several transition economies. In addition, in a number of these countries, long-term unemployment rates are high, and regional variations in unemployment large.

The failure of unemployment rates to decline significantly in many countries—including some with good growth performance—is something of a puzzle. At the outset of the transition there were expectations that quick, market-driven reallocation of resources would lead to a rapid decline in unemployment after an initial surge. However, this did not happen, even though labor market institutions in these countries are considered generally flexible and minimum wage and unemployment insurance levels modest. Understanding better this phenomenon may have consequences beyond the transition context, since many countries undergoing market-oriented reforms may need to struggle with initial increases in unemployment.

This Occasional Paper seeks to explain the persistence of high unemployment in transition economies. We focus, in particular, on three interrelated issues:

- How has the process of transition from largely centrally planned to market economies affected labor market performance?
- What part do labor market institutions and policies play in explaining developments over time and across countries? A large literature for industrial countries establishes that rigid labor market institutions correlate positively with unemployment. This paper seeks to fill a gap in the literature by analyzing the impact of institutions on unemployment in CEE countries.
- Why have regional unemployment differences persisted? The paper presents a framework for understanding why regional differences in unemployment have remained, limiting also aggregate declines in unemployment. This requires an understanding of the factors limiting both the movement of labor from high unemployment regions and the movement of capital and jobs to those regions.

Given the complexity of the issues involved and the severe data limitations, the paper takes an eclectic methodological approach to these issues. First, a new database has been compiled from a number of national and international sources on labor market developments and policies. This allows us both to track labor market developments across a number of transition countries and to compare labor market policies in a more systematic way than has to our knowledge been done before. Second, the database is utilized for an econometric analysis focusing on the impact of transition and labor market policies on unemployment and employment. Most econometric studies for transition countries have relied on a snapshot comparison of institutions and labor market performance at a point in time. By using panel data for 11 countries over 10 years, this study seeks to explain the labor market dynamics during transition as well as differences among countries. However, given the limitations of this database (Appendix I), our analysis is supplemented by several case studies of countries with good and poor labor market outcomes. Finally, to look at the issue of labor and capital mobility within countries—for which data are particularly limited—we examine the implications of simple analytical models.

Results suggest that both the transition process and labor market institutions and policies have affected unemployment. Among our key findings are the following:

- Faster-reforming countries have had better unemployment records, notwithstanding initial job losses. Those countries that have been able to move most quickly to an advanced stage of transition have generally proved best placed to experience job-creating growth.<sup>1</sup> This points to the need to complete the structural reform process and remove the remaining bottlenecks that have hindered faster reallocation of resources and decline in unemployment.
- Labor market policies have some, but not a dominant, influence over labor market outcomes. It

<sup>1</sup>However, for some countries, such as Poland, second rounds of restructuring or cyclical downturns have led to increases in unemployment in recent years.

appears that those countries with more flexible policies are better able to take advantage of positive macroeconomic shocks with higher employment and lower unemployment rates. It is plausible, moreover, that data problems have obscured stronger links between labor policies and outcomes.

- Policies not typically viewed as labor market policies can nevertheless have a major impact on labor market outcomes. For example, difficult business climates in some countries appear to have limited the ability for small and medium-sized enterprises to play their role as a key employment generator.
- Market processes cannot be relied on to eliminate regional differences in unemployment. In fact, agglomeration effects may reinforce initial differences in labor market performance. In addition, there are important constraints both on labor mobility to low-unemployment regions and on the movement of jobs to less prosperous areas. For example, housing policies can play a key role in limiting workers' mobility, while the failure to provide decent transportation infrastructure may limit the ability of high-unemployment regions to attract capital.

## II Labor Market Developments in Transition: The Stylized Facts

**T**ransition economies all experienced an initial sharp contraction in output. According to official data, output declined sharply over the period 1988–93, and pretransition levels of GDP were typically not achieved again for many years. In some cases, they had still not been reached by 2002 (Table 2.1). The size of the initial shock varied significantly across countries depending, in part, on the extent of pretransition linkages with the Soviet Union. There were, in addition, dramatic structural changes in these economies, reflected in part by the rapid growth of the share in output accounted for by the private sector and, within that, the services sector.

These two factors, a deep recession and fundamental structural changes, had profound effects on the labor market. Many pretransition characteristics of these economies' labor markets—high participation rates, the lack of open unemployment, long tenures, and little wage differentiation—changed completely. Over the past decade, most of these countries experienced low participation rates, high unemployment, more mobility across jobs, and a substantial widening of wage differentials.

The speed of transition varied widely among these countries, with faster reformers generally experiencing more rapid recovery. As can be seen in the European Bank for Reconstruction and Development (EBRD) summary indicators of progress in transition (Table 2.2), Poland, Hungary, the Czech Republic, and Estonia were more successful early on in achieving a high private sector share in GDP, privatization, and enterprise reform. These countries recovered from the shock of transition more rapidly as well. In contrast, Bulgaria and Croatia lagged, while Slovenia—which started the process at a significantly higher level of income—followed a more gradualist transition path.

The path and speed of reforms appear to have played a key role in explaining differences in labor market developments. However, the relationship between the pace of transition and labor market developments is a complex one. In Hungary—a relatively successful model of transition—the unemployment rate peaked in 1992 because job creation in growing sectors was initially too slow to offset job losses in restructuring

sectors, but it has since declined gradually to single digits. However, the participation rate and employment are still lower than at the outset of transition. The Czech Republic has also seen lower levels of unemployment, although on a generally rising trend. In slower reformers among CEE countries, such as Bulgaria, Croatia, and the Slovak Republic, unemployment rates remained stubbornly high after initial sharp contractions in output and employment. However, at the extreme, in the countries of the Commonwealth of Independent States (CIS) (not part of our sample), which lagged badly in the reform process, employment remained stable during the early 1990s even while output collapsed.

### Labor Market Participation

Participation and participation rates have typically fallen from initially high levels and are now generally below EU-15 levels (Figure 2.1).<sup>2</sup> Countries with the largest increases in unemployment rates tended to experience the largest declines in participation rates. The decline in participation, which cushioned the impact of the crisis on unemployment, was achieved via a number of avenues, including exit from the market by discouraged job seekers; early retirement; entrance onto disability rolls; participation in subsistence farming and other informal activities; and increased participation in higher education. Emigration also played a role in labor supply developments. In Bulgaria, for example, the total population has declined by 7 percent since 1990, while the labor force has contracted by nearly 20 percent as the participation rate for the working-age population dropped sharply. The large decline in participation rates is due, to some extent, to the fact that these rates were unusually high in centrally planned economies. However, participation rates (as a share of working-age

<sup>2</sup>EU-15 refers to EU members pre-2004: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

## II LABOR MARKET DEVELOPMENTS IN TRANSITION: THE STYLIZED FACTS

**Table 2.1. Selected Macroeconomic Indicators**

(In percent of GDP, unless otherwise indicated)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002 <sup>1</sup>
<b>Bulgaria</b>															
Population (in thousands)	8,981	8,999	9,019	9,046	9,073	9,101	9,068	9,036	8,982	8,929	8,875	8,821	8,542	8,453	8,370
Real GDP growth (year-on-year percent change)	2.4	-0.5	-9.1	-10.8	-8.4	-11.6	-3.5	-1.8	-8.0	-5.6	4.0	2.3	5.4	4.0	4.0
CPI inflation (period average; year-on-year percent change)	2.5	6.4	23.9	333.5	82.0	72.8	96.0	62.1	123.0	1,061.2	18.8	2.6	10.4	7.5	6.4
Nominal GDP per capita (in U.S. dollars)	5,113	5,197	2,286	840	948	1,190	1,071	1,450	1,102	1,161	1,435	1,394	1,474	1,603	1,939
Fiscal balance	-5.6	-1.4	-12.8	-14.7	-5.2	-10.9	-5.8	-5.6	-10.3	-2.0	0.9	-0.9	-1.0	-0.9	-0.8
Current account balance	-1.8	-0.3	-4.7	-1.0	-4.2	-10.1	-0.3	-1.5	0.2	4.3	-0.5	-5.3	-5.6	-6.1	-5.6
Total external debt	17.8	19.7	50.6	161.1	160.5	127.7	116.8	77.4	97.0	94.2	80.7	88.7	89.0	78.4	66.1
Domestic saving	36.0	32.7	31.3	17.9	10.6	2.5	7.8	15.1	9.8	20.0	16.4	12.9	12.7	14.3	14.3
Private	41.6	34.2	44.1	32.6	25.6	18.2	12.1	19.6	19.4	21.0	12.8	9.3	9.9	11.3	11.7
Public	-5.6	-1.4	-12.8	-14.7	-15.0	-15.7	-4.2	-4.5	-9.7	-1.0	3.6	3.6	2.9	3.0	2.6
Investment	34.4	33.1	30.4	22.6	19.9	15.3	9.4	15.7	8.1	9.9	16.9	17.9	18.3	20.4	20.5
Private	28.6	27.6	27.3	20.6	17.1	13.4	7.9	14.5	7.4	8.9	14.2	13.4	14.4	16.5	17.1
Public	5.8	5.6	3.1	2.0	2.8	1.9	1.5	1.1	0.7	1.0	2.7	4.5	3.9	3.9	3.4
<b>Croatia</b>															
Population (in thousands)	4,681	4,685	4,770	4,789	4,600	4,600	4,700	4,500	4,600	4,500	4,600	4,400	4,400	4,400	4,400
Real GDP growth (year-on-year percent change)	-2.0	0.8	-7.5	-17.0	-11.7	-8.0	5.9	6.8	6.0	6.6	2.5	-0.4	3.7	4.1	3.5
CPI inflation (period average; year-on-year percent change)	194.1	1,239.9	583.1	117.4	665.5	1,516.6	97.5	2.0	3.5	3.6	5.7	4.1	6.2	4.9	3.5
Nominal GDP per capita (in U.S. dollars)	3,378	5,436	8,586	14,570	2,136	2,370	3,103	4,180	4,320	4,469	4,702	4,560	4,325	4,598	4,963
Fiscal balance	0.1	0.2	-0.4	-4.7	-3.9	-0.8	1.6	-1.7	-1.8	-2.3	-3.5	-8.2	-6.3	-6.6	-6.6
Current account balance	8.9	5.2	1.4	2.0	3.2	5.7	5.9	-7.7	-5.5	-11.6	-7.1	-6.9	-2.3	-3.1	-2.8
Total external debt	133.3	74.7	47.9	26.3	31.5	27.0	22.5	20.8	23.2	31.9	40.3	43.5	53.1	51.5	49.0
Domestic saving	41.1	38.8	32.5	28.3	12.0	15.3	23.0	9.9	16.2	16.0	17.3	19.3	21.8	22.5	24.4
Private	...	...	...	...	10.7	13.2	18.3	8.1	11.6	11.2	12.0	18.9	22.5	23.1	23.3
Public	...	...	...	...	1.3	2.1	4.7	1.8	4.6	4.8	5.3	0.4	-0.7	-0.5	1.1
Investment	34.1	33.5	31.3	26.8	8.7	9.7	17.4	18.5	22.7	27.6	24.4	26.2	24.0	25.6	27.2
Private	...	...	...	38.9	5.6	6.2	13.8	14.7	16.8	21.0	16.5	18.8	19.3	20.1	20.0
Public	...	...	...	-12.1	3.2	3.5	3.5	3.8	5.9	6.6	7.9	7.5	4.8	5.5	7.2
<b>Czech Republic</b>															
Population (in thousands)	10,300	10,302	10,305	10,310	10,320	10,320	10,330	10,320	10,310	10,304	10,295	10,283	10,250	10,220	10,200
Real GDP growth (year-on-year percent change)	2.1	4.5	-2.4	-11.6	-0.5	0.1	2.2	5.9	4.3	-0.8	-1.0	0.5	3.3	3.3	2.7
CPI inflation (period average; year-on-year percent change)	0.2	1.4	9.5	56.6	11.1	20.8	10.0	9.1	8.8	8.5	10.6	2.1	3.9	4.7	2.7
Nominal GDP per capita (in U.S. dollars)	5,258	5,126	5,129	3,820	2,885	3,391	3,978	5,042	5,599	5,140	5,536	5,347	5,018	5,551	6,954

Table 2.1 (continued)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002 <sup>1</sup>
Fiscal balance	1.4	1.3	-2.1	4.8	-2.1	2.6	-1.9	-1.4	-0.9	-1.6	-1.4	-3.1	-3.5	-3.0	-6.0
Current account															
balance	1.7	1.2	-1.6	1.5	2.1	1.3	-1.9	-2.6	-7.1	-6.7	-2.2	-2.7	-5.3	-4.6	-5.2
Total external debt	9.5	10.9	11.3	17.0	26.1	27.4	29.7	33.0	36.7	40.8	42.7	41.5	42.0	38.2	33.0
Domestic saving	30.5	30.9	27.8	30.1	27.2	28.2	27.1	29.9	27.4	25.9	27.8	25.4	24.4	25.3	25.5
Private	23.3	23.7	20.3	22.0	19.8	20.6	19.8	22.1	20.5	21.0	23.1	21.4	21.1	23.4	24.3
Public	7.2	7.2	7.5	8.1	7.3	7.6	7.3	7.8	6.9	4.8	4.7	4.1	3.3	1.9	1.2
Investment	26.5	26.0	25.2	23.0	26.3	27.4	29.8	34.0	34.2	32.6	30.0	28.1	29.7	30.0	30.2
Private	...	...	...	...	22.3	22.4	24.4	28.5	29.2	27.1	26.1	22.3	23.8	23.7	23.9
Public	...	...	...	...	4.0	5.0	5.4	5.6	5.1	5.4	3.9	5.7	5.8	6.2	6.3
<b>Estonia</b>															
Population															
(in thousands)	1,547	1,561	1,571	1,580	1,581	1,589	1,568	1,547	1,536	1,526	1,495	1,474	1,453	1,435	1,419
Real GDP growth															
(year-on-year percent change)	5.3	3.0	-2.3	-7.9	-21.6	-8.2	-1.6	4.5	4.5	10.5	5.2	-0.1	7.8	6.4	7.2
CPI inflation															
(period average; year-on-year percent change)	0.6	2.0	17.2	210.6	1,075.9	89.8	47.7	29.0	23.1	11.2	8.2	3.3	4.0	5.8	3.6
Nominal GDP															
per capita (in U.S. dollars)	983	1,013	1,186	572	603	1,093	1,540	2,429	3,026	3,225	3,724	3,774	3,761	4,159	4,959
Fiscal balance	-3.0	-3.0	-6.1	5.3	-0.3	-0.6	1.2	-1.2	-1.8	2.1	-0.3	-4.3	-0.6	0.4	1.1
Current account															
balance	11.5	6.8	-1.9	59.7	3.9	1.2	-6.8	-4.2	-8.6	-11.4	-8.6	-4.4	-5.5	-5.6	-10.2
Total external debt	—	—	—	—	2.8	4.7	4.6	4.3	33.6	53.8	50.1	54.9	54.7	55.7	60.2
Domestic saving	28.0	28.0	28.0	28.0	28.0	26.7	19.2	21.1	17.5	17.6	18.9	18.5	20.7	21.4	17.7
Private	...	...	...	...	...	23.4	14.0	17.8	14.4	11.4	15.1	18.7	18.3	18.0	13.0
Public	...	...	...	...	...	3.3	5.2	3.3	3.1	6.2	3.8	-0.2	2.3	3.4	4.7
Investment	19.7	19.7	19.7	12.1	25.6	22.7	23.3	22.1	24.4	27.5	27.1	21.8	25.2	26.1	29.9
Private	...	...	...	8.3	24.1	19.9	19.3	17.7	19.5	23.4	23.0	17.7	22.2	23.0	26.3
Public	...	...	...	3.8	1.4	2.7	4.0	4.4	4.9	4.1	4.1	4.1	3.0	3.0	3.6
<b>Hungary</b>															
Population															
(in thousands)	10,421	10,375	10,355	10,337	10,310	10,278	10,248	10,218	10,178	10,138	10,098	10,058	10,008	9,957	9,907
Real GDP growth															
(year-on-year percent change)	-0.1	0.7	-3.5	-11.9	-3.1	-0.6	2.9	1.5	1.3	4.6	4.9	4.2	5.2	3.8	3.5
CPI inflation															
(period average; year-on-year percent change)	15.7	16.9	28.6	34.8	22.8	22.4	18.8	28.3	23.5	18.3	14.3	10.0	9.8	9.2	5.5
Nominal GDP															
per capita (in U.S. dollars)	2,995	3,071	3,487	3,264	3,647	3,790	4,088	4,371	4,439	4,511	4,658	4,773	4,657	5,215	5,916
Fiscal balance	0.9	-0.8	1.0	-3.8	-7.8	-9.2	-8.6	-6.2	-3.1	-4.8	-4.8	-3.7	-3.7	-3.2	-4.3
Current account															
balance	-2.6	-4.5	0.4	0.8	0.9	-8.9	-9.3	-5.6	-3.7	-2.1	-4.9	-4.4	-2.8	-2.2	-3.8
Total external debt	62.8	64.0	58.9	67.1	57.0	63.0	68.1	70.9	61.0	51.9	56.9	58.6	56.8	52.8	46.8
Domestic saving	23.4	22.3	25.7	22.4	18.8	11.8	13.4	18.4	23.5	25.6	24.8	24.2	28.2	25.2	25.0
Private	...	...	...	20.6	18.3	11.6	15.3	21.2	23.4	25.5	24.1	24.3	26.0	25.7	25.4
Public	...	...	...	1.8	0.5	0.2	-1.9	-2.8	0.1	0.1	0.7	-0.1	2.2	-0.5	-0.4
Investment	26.0	26.8	25.4	21.7	18.0	20.7	22.8	23.9	27.2	27.7	29.7	28.5	31.1	27.3	27.5
Private	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Public	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...



## II LABOR MARKET DEVELOPMENTS IN TRANSITION: THE STYLIZED FACTS

**Table 2.1 (continued)**

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002 <sup>1</sup>
<b>Latvia</b>															
Population (in thousands)	2,690	2,698	2,692	2,685	2,677	2,669	2,627	2,501	2,470	2,445	2,421	2,399	2,377	2,364	2,346
Real GDP growth (year-on-year percent change)	5.3	3.0	-2.3	-12.6	-32.1	-11.4	2.2	-0.9	3.8	8.3	4.7	3.3	6.9	8.0	6.4
CPI inflation (period average; year-on-year percent change)	0.6	4.7	-1.7	124.4	951.2	109.1	35.8	25.2	17.6	8.4	4.6	2.4	2.6	2.5	1.9
Nominal GDP per capita (in U.S. dollars)	6,908	7,155	7,359	5,339	510	813	1,388	1,956	2,262	2,509	2,733	3,010	3,250	3,480	3,925
Fiscal balance	6.5	6.6	7.6	9.5	-0.8	0.6	-4.3	-3.4	-1.7	0.3	-0.7	-3.6	-3.0	-2.0	-2.4
Current account balance	-1.9	-2.5	-4.0	-2.6	-0.4	13.6	-4.1	-0.3	-3.8	-4.7	-9.0	-9.1	-6.4	-8.9	-6.5
Total external debt	—	—	—	—	3.2	10.4	9.8	31.4	37.4	44.9	46.8	52.9	61.0	67.7	75.7
Domestic saving	22.4	22.4	22.6	22.6	22.6	19.9	20.6	14.0	11.4	14.8	15.1	14.2	17.1	18.0	20.3
Private	...	...	...	...	21.2	17.7	21.1	16.1	11.0	12.1	12.0	13.4	16.4	16.5	19.2
Public	...	...	...	...	1.4	2.2	-0.5	-2.1	0.4	2.8	3.1	0.7	0.7	1.4	1.1
Investment	13.0	13.3	14.0	13.3	17.1	10.7	14.8	14.3	15.2	19.5	24.1	23.2	23.4	26.9	26.8
Private	...	...	...	...	14.5	8.7	13.0	12.7	13.1	17.0	20.3	18.9	19.8	23.4	23.3
Public	...	...	...	...	2.6	1.9	1.8	1.6	2.1	2.5	3.8	4.4	3.7	3.5	3.5
<b>Lithuania</b>															
Population (in thousands)	3,642	3,673	3,697	3,719	3,749	3,779	3,769	3,715	3,602	3,575	3,549	3,524	3,500	3,481	3,469
Real GDP growth (year-on-year percent change)	5.3	3.0	5.5	-5.7	-21.3	-16.2	-9.8	3.3	4.7	7.0	7.3	-1.7	3.9	6.4	6.8
CPI inflation (period average; year-on-year percent change)	0.3	2.3	7.8	224.7	413.6	410.4	72.1	39.5	24.7	8.8	5.1	0.8	1.0	1.3	0.3
Nominal GDP per capita (in U.S. dollars)	9,281	9,560	6,324	6,443	525	735	1,154	1,708	2,241	2,754	3,126	3,076	3,252	3,474	4,090
Fiscal balance	7.8	7.2	6.6	4.1	0.5	-5.2	-4.8	-4.3	-4.4	-1.8	-5.7	-8.4	-2.7	-1.9	-1.1
Current account balance	0.5	0.2	-0.4	0.3	5.4	-7.4	-3.9	-10.7	-5.0	-7.9	-11.7	-11.0	-5.9	-4.7	-5.2
Total external debt	—	—	—	0.1	5.1	10.1	10.3	11.9	43.9	36.0	33.7	41.8	42.7	43.6	43.7
Domestic saving	37.6	37.3	36.9	33.8	25.5	17.4	14.9	13.8	12.2	14.9	14.1	11.7	13.9	15.9	16.5
Private	...	...	...	...	...	13.8	13.9	12.0	12.0	13.3	15.2	15.6	14.1	15.8	14.7
Public	...	...	...	...	...	3.7	1.0	1.8	0.2	1.6	-1.1	-3.9	-0.2	0.1	1.8
Investment	28.0	28.0	28.1	21.0	13.6	16.5	15.9	20.7	21.1	24.9	25.8	22.7	19.8	20.6	21.7
Private	...	...	...	...	...	13.6	12.4	17.0	18.4	22.3	22.7	20.5	17.9	18.7	18.6
Public	...	...	...	...	...	2.9	3.5	3.7	2.7	2.6	3.2	2.2	1.9	1.9	3.1
<b>Poland</b>															
Population (in thousands)	37,800	37,838	38,200	38,300	38,400	38,515	38,595	38,645	38,675	38,705	38,726	38,705	38,665	38,637	38,602
Real GDP Growth (year-on-year percent change)	3.3	3.8	-7.2	-7.0	2.0	4.3	5.2	6.8	6.0	6.8	4.8	4.1	4.0	1.0	1.0
CPI inflation (period average; year-on-year percent change)	60.2	251.1	585.8	70.3	43.0	35.3	32.2	27.9	19.9	14.9	11.8	7.3	10.1	5.5	2.1
Nominal GDP per capita (in U.S. dollars)	1,724	1,679	1,544	1,995	2,196	2,229	2,553	3,288	3,719	3,720	4,091	4,008	4,079	4,561	4,670

Table 2.1 (concluded)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002 <sup>1</sup>
Fiscal balance	—	-7.8	3.2	-6.9	-7.0	-3.4	-3.0	-3.1	-3.3	-3.2	-3.3	-3.4	-3.1	-5.3	-5.7
Current account															
balance	-6.7	-2.9	1.2	-3.4	-1.8	-3.3	0.7	4.2	-1.0	-3.0	-4.3	-7.5	-6.3	-4.0	-3.6
Total external debt	63.4	63.4	83.0	63.1	56.5	56.3	42.8	34.6	33.1	34.5	37.3	42.2	44.1	39.6	40.4
Domestic saving	21.4	21.8	26.8	16.5	13.4	12.2	18.4	23.9	20.9	21.6	21.9	18.9	19.9	18.4	18.6
Private	20.2	26.1	20.5	19.7	17.0	12.6	18.7	24.5	21.6	21.6	22.0	19.2	19.2	19.5	19.7
Public	1.1	-4.3	6.3	-3.2	-3.7	-0.4	-0.3	-0.6	-0.6	—	-0.1	-0.3	0.8	-1.1	-1.1
Investment	28.1	24.7	25.6	19.9	15.2	15.6	17.7	19.7	21.9	24.6	26.2	26.4	26.3	22.5	22.6
Private	25.3	22.2	23.2	17.0	11.4	11.7	14.2	16.4	18.6	21.6	23.1	23.3	23.2	19.1	19.0
Public	2.8	2.5	2.4	2.9	3.7	3.8	3.5	3.3	3.3	3.0	3.1	3.0	3.1	3.3	3.6
<b>Slovak Republic</b>															
Population															
(in thousands)	5,193	5,215	5,237	5,260	5,290	5,308	5,338	5,348	5,358	5,368	5,378	5,388	5,388	5,392	5,397
Real GDP growth															
(year-on-year percent change)	2.5	4.5	-0.4	-15.9	-6.7	-3.7	5.2	6.5	5.8	5.6	4.0	1.3	2.2	3.3	4.0
CPI inflation															
(period average; year-on-year percent change)	0.2	1.3	10.0	61.2	10.0	23.0	13.4	9.9	5.8	6.1	6.7	10.7	12.0	7.3	4.2
Nominal GDP															
per capita (in U.S. dollars)	9,761	9,517	8,581	6,309	2,224	2,489	2,842	3,577	3,827	3,927	4,090	3,742	3,671	3,794	4,190
Fiscal balance	-11.7	-12.0	-15.0	-8.6	-11.9	-6.4	-1.2	0.3	-1.2	-4.8	-4.7	-3.3	-3.5	-4.0	-4.4
Current account															
balance	0.9	0.6	-1.1	1.6	-0.4	-4.9	4.4	2.0	-10.2	-9.3	-9.2	-4.9	-3.6	-8.6	-8.5
Total external debt	5.1	5.8	6.8	10.9	24.0	25.6	30.7	29.7	37.4	46.3	54.1	52.1	54.6	55.8	53.3
Domestic saving	35.0	35.9	39.3	37.8	29.4	-79.0	25.6	28.6	25.2	26.5	25.0	23.4	22.8	22.9	22.5
Private	5.9	5.5	9.3	12.7	10.4	-81.0	22.7	23.8	20.9	24.9	24.0	23.0	22.7	22.9	23.3
Public	29.1	30.4	30.1	25.2	19.0	2.0	2.9	4.8	4.3	1.7	1.0	0.3	0.1	—	-0.8
Investment	34.1	35.3	40.4	36.2	29.0	26.0	21.4	26.5	35.6	35.2	34.7	28.2	26.4	31.9	31.0
Private	29.2	28.7	34.9	32.0	22.4	22.5	17.3	22.1	30.0	28.8	29.1	24.5	22.8	27.9	27.4
Public	4.9	6.7	5.5	4.2	6.6	3.5	4.1	4.4	5.6	6.5	5.7	3.7	3.6	4.0	3.7
<b>Slovenia</b>															
Population															
(in thousands)	1,967	1,975	1,986	2,000	2,000	1,990	1,990	1,990	1,990	1,990	1,980	1,990	1,990	1,988	1,986
Real GDP growth															
(year-on-year percent change)	-2.0	0.8	-7.5	-8.9	-5.5	2.8	5.3	4.1	3.5	4.6	3.8	5.2	4.6	3.0	2.5
CPI inflation															
(period average; year-on-year percent change)	194.1	1,239.9	583.1	117.7	207.3	31.9	21.5	13.5	9.9	8.4	8.0	6.1	8.9	8.4	7.7
Nominal GDP															
per capita (in U.S. dollars)	5,515	8,845	14,145	23,927	6,261	6,368	7,229	9,419	9,487	9,149	9,891	10,086	9,107	10,605	11,083
Fiscal balance	1.3	0.7	0.9	0.4	0.3	0.6	-0.2	-0.2	-0.2	-1.7	-0.6	-0.6	-1.4	-1.4	-2.9
Current account															
balance	15.4	7.6	0.7	4.0	7.4	1.5	4.0	-0.5	0.2	0.1	-0.8	-3.9	-3.4	-0.4	-0.8
Total external debt	—	—	—	—	13.9	14.8	15.7	15.8	21.2	22.9	25.3	27.4	34.3	35.4	38.6
Domestic saving	0.1	—	—	0.1	10.6	18.3	18.8	22.8	23.6	24.1	24.8	24.3	25.2	25.9	26.4
Private	...	...	...	...	6.8	14.6	16.0	20.1	20.7	22.9	22.9	21.9	23.9	24.1	24.6
Public	...	...	...	...	3.8	3.7	2.7	2.7	2.8	1.2	1.9	2.4	1.4	1.8	1.9
Investment	17.6	17.3	16.2	15.9	16.5	19.9	21.8	25.3	24.3	24.8	26.6	28.4	27.8	25.4	28.7
Private	...	...	...	...	14.0	17.0	19.1	21.1	20.1	20.6	22.3	23.8	23.7	21.2	24.7
Public	...	...	...	...	2.6	2.8	2.7	4.2	4.2	4.2	4.3	4.6	4.1	4.2	4.0

Source: IMF, *World Economic Outlook (WEO)*.<sup>1</sup>IMF staff projections.

**Table 2.2. EBRD Transition Indicators**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bulgaria	1.0	1.1	1.6	1.7	1.9	2.2	2.3	2.3	2.7	2.7	2.9	3.0	3.0	3.1
Croatia	1.5	1.6	1.7	1.8	2.0	2.5	2.6	2.9	2.9	3.0	3.0	3.1	3.1	3.2
Czech Republic	1.0	1.0	2.0	2.5	3.0	3.2	3.2	3.3	3.3	3.4	3.4	3.5	3.5	3.5
Estonia	1.0	1.1	1.3	1.8	2.6	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.5	3.6
Hungary	1.3	1.6	2.2	2.5	2.8	3.1	3.3	3.4	3.6	3.7	3.7	3.7	3.7	3.7
Latvia	1.0	1.0	1.1	1.9	2.1	2.7	2.7	2.9	3.0	3.0	3.1	3.1	3.1	3.3
Lithuania	1.0	1.1	1.1	1.5	2.4	2.6	2.8	2.9	3.0	3.0	3.1	3.2	3.3	3.4
Poland	1.2	2.2	2.4	2.5	2.9	3.0	3.2	3.3	3.4	3.5	3.5	3.5	3.6	3.6
Slovak Republic	1.0	1.0	2.0	2.4	2.7	3.0	3.0	3.1	3.1	3.1	3.2	3.3	3.3	3.3
Slovenia	1.4	1.7	1.8	2.0	2.6	2.8	2.9	3.0	3.0	3.2	3.2	3.3	3.3	3.3

Source: European Bank for Reconstruction and Development (EBRD).

population) now fall between 50 and 60 percent for the countries in this study, on the low side relative to the EU-15 countries.

## Employment Developments

Employment declined sharply in the initial years of transition as job shedding in government and state-owned enterprises more than offset job creation in the nascent private sector. This decline largely reflects the initial economic contraction that took place (Figure 2.2). The relationship between employment and output levels, however, is quite different across countries, perhaps owing to differences in the degree of hidden unemployment before transition as well as the restrictiveness of labor markets at the onset of the economic contraction. For example, in Bulgaria, where macroeconomic developments were particularly adverse and the labor code relatively flexible, employment declined by nearly a third over the period 1988–93. Employment in Hungary—where the contraction was less severe—declined by 27 percent over the same period. Employment declines in Slovenia, the Czech Republic, and the Slovak Republic were significantly smaller, while Croatia’s employment appears to have increased slightly, despite a very sharp contraction in GDP.

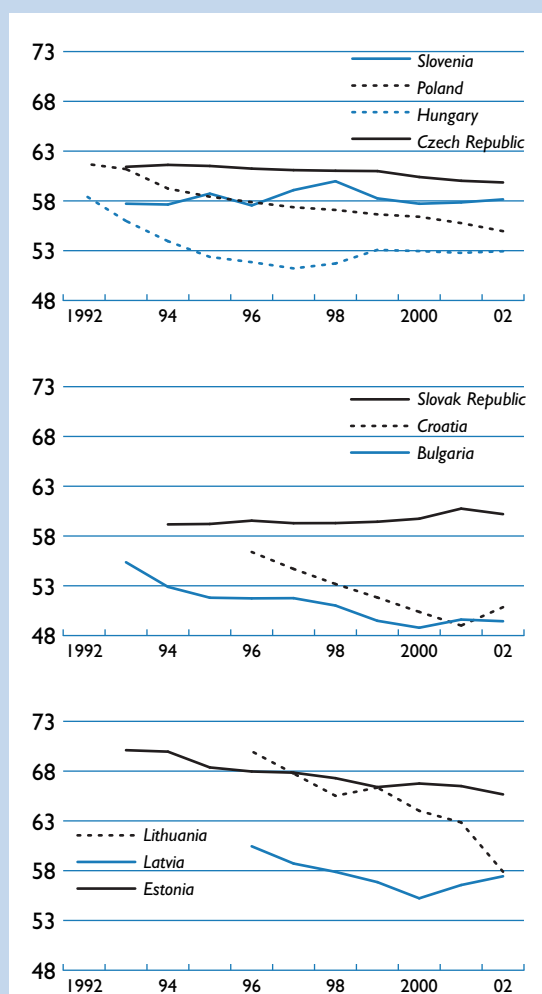
In most countries, growth resumed after several years but was initially powered by gains in productivity while employment continued to fall. As transition progressed, and productivity gains associated with job shedding were exhausted, employment in some countries rose slightly. However, employment in the Baltic countries continued to decline or stagnated during the late 1990s and early 2000s despite rapid economic growth. Furthermore,

in some cases—for example, in Bulgaria, the Czech Republic, and Poland—second rounds of restructuring led to new job cuts while in others recessions constrained labor demand. By 2002, overall employment levels remained well below pretransition levels.

The transition period has been characterized by large shifts in labor between the public and private sectors. Private sector employment has grown rapidly, both in absolute terms and as a share of total employment. This reflects both the privatization of state-owned enterprises as well as the growth in the new private sector. By 2002, the private sector generally accounted for between 50 and 80 percent of total employment (Figure 2.3). It is noteworthy that the share of employment in the public sector remains higher in a number of the slower-reforming economies with higher unemployment rates, in particular Bulgaria, Croatia, and the Slovak Republic. This may reflect in part the role of government or state-owned enterprises as the employer of last resort in the context of less rapid private sector job creation, although the direction of causality is not obvious. This suggests the possibility of additional pressures on unemployment rates in some of these countries as further restructuring or fiscal consolidation takes place.

Transition has also seen significant movement of labor across sectors of the economy. Without exception, the share of total employment in services grew, and in virtually all cases exceeded 50 percent by 2001, while employment in industry fell as a share of total employment, and in some cases fell sharply in absolute terms (Figure 2.4). In this respect, labor markets appear to have been characterized by a significant degree of flexibility. Countries varied substantially, however, in their experience, in particular in the ex-

**Figure 2.1. Labor Participation Rates**  
(In percent of working-age population)



Source: Labor Force Survey (LFS) data.

tent to which agricultural employment declined. Among the more rapid reformers—including the Czech Republic, Estonia, Hungary, and Poland—employment in agriculture, where productivity was relatively low, declined as a share of total employment. In other cases—Bulgaria and Croatia—agricultural employment grew in importance. This may reflect that agricultural workers were not mobile to other sectors or regions and/or that individuals have returned to rural areas where, if jobs are not available, at least subsistence farming is.

Sharp declines in employment and intersectoral shifts by labor enabled most countries to maintain levels of labor productivity early in transition, after an

initial sharp drop (Figure 2.5).<sup>3</sup> More successful transition economies were subsequently able to raise productivity well above pretransition levels. In some countries, however, labor productivity remains lower (Croatia) or only slightly higher than pretransition levels, suggesting that additional restructuring and further spurts of unemployment are possible.

## Unemployment

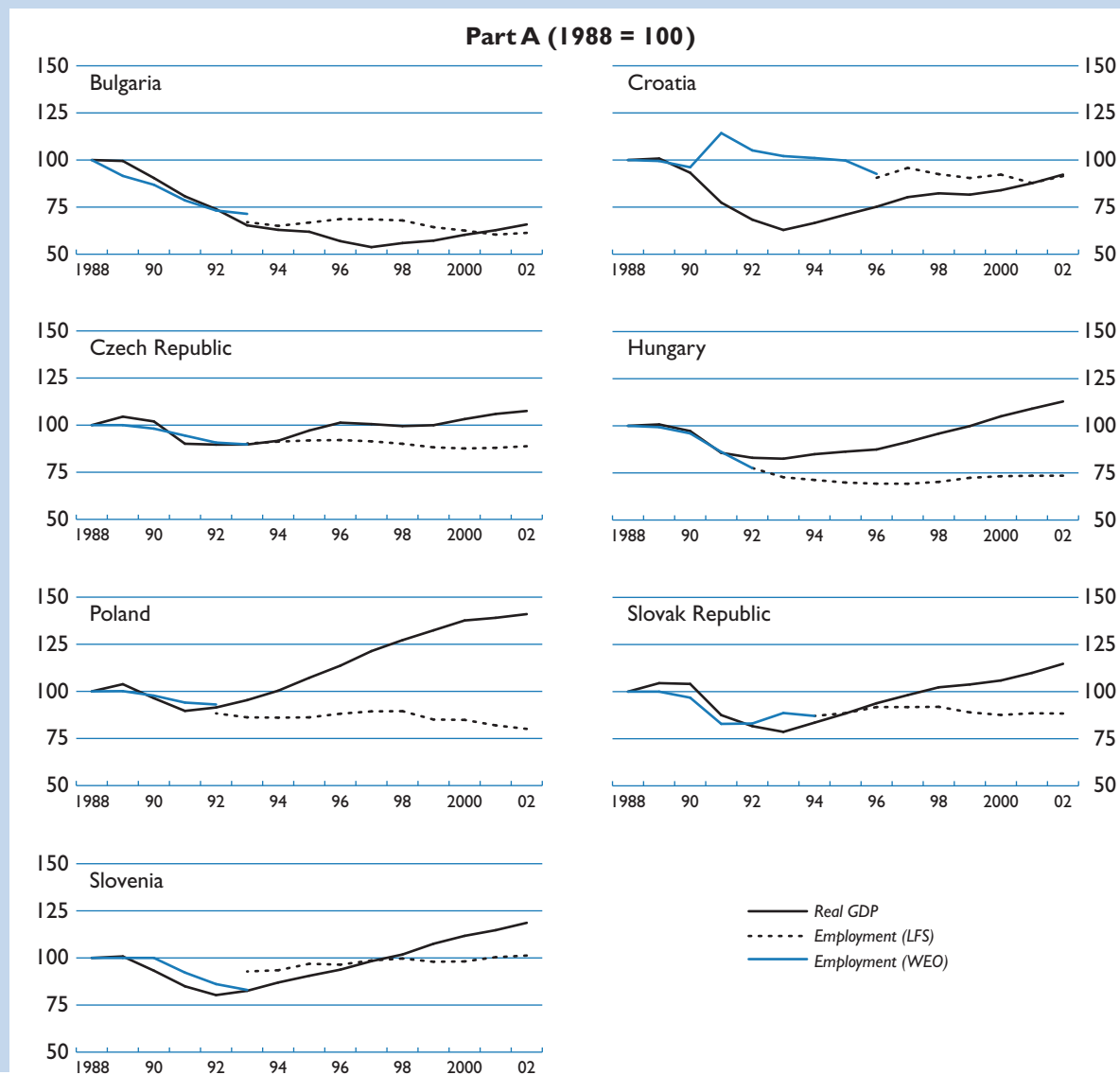
Despite the decline in participation rates, unemployment rates typically increased sharply in the initial years of transition and have tended to remain quite high. In Bulgaria, Croatia, Poland, the Slovak Republic, and the Baltic countries unemployment rates remain in double digits (Figure 2.6). Only the Czech Republic, Hungary, and Slovenia have managed to bring or keep their unemployment rates below 10 percent. After stabilizing in the mid-1990s, unemployment in several countries surged again after 1998, reflecting second rounds of restructuring and cyclical slumps. As a result, in 2000–01, several countries reached their highest unemployment rates since the start of transition.

Long-term unemployment has been a major problem in transition economies. Of the unemployed, the share who have been out of work for more than one year generally falls between 40 and 60 percent for the transition economies in 2001–02 (Figure 2.7). This is roughly in line with the EU-15 countries (Grogan and Moers, 2001) but far higher than the United States or a number of other OECD countries. This share has generally increased, in some cases—for example, Hungary and the Czech Republic—significantly. High long-term unemployment has potentially important policy implications, including because this group may find their job skills eroding—increasing the long-run equilibrium unemployment rate—and because they may become ineligible for unemployment insurance and fall into poverty.

The pool of unemployed has been stagnant. Contrary to expectations that unemployment would serve as the most important transitory state in the reallocation of workers across sectors or jobs, the reallocation has tended to happen via job-to-job moves. However, these characteristics of the labor reallocation process do not seem to be out of line with EU-15 countries. Grogan and Moers (2001) show similar frequencies

<sup>3</sup>Note that the employment data, from the World Bank, underlying sectoral productivity numbers are not consistent with those total employment data reported in Tables 2.3–2.11, which are from either national sources or labor force survey (LFS) results.

Figure 2.2. Real GDP and Employment



of job-to-job and unemployment-to-unemployment movement in CEE and EU-15 countries.

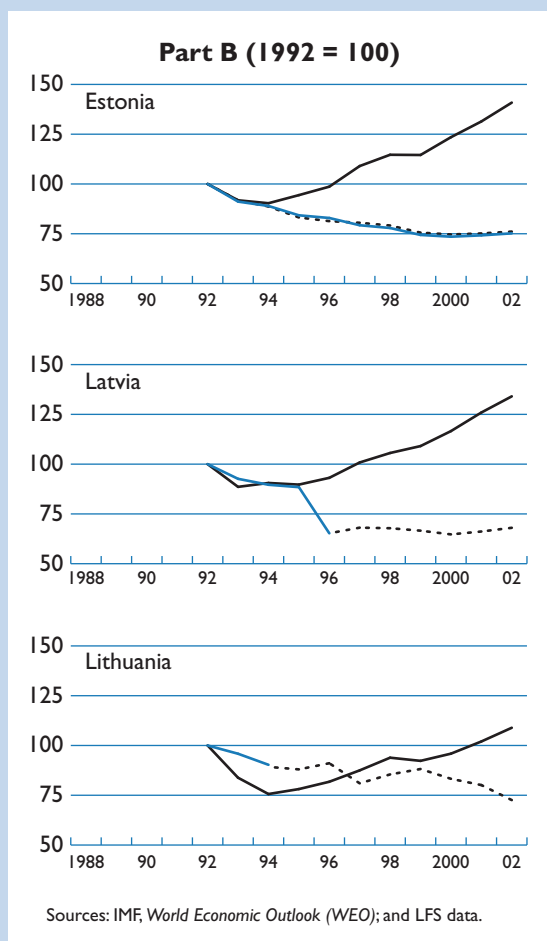
Among the key facts gleaned from country LFS data are (Tables 2.3–2.11):

- Unemployment among *young and low-skilled* workers is significantly higher than overall unemployment. The unemployment rate for *young* labor force participants (aged 15–24) exceeds 15 percent in all cases and 40 percent in several countries. Anecdotal evidence suggests that in a labor market with large numbers of unemployed, employers can afford to focus their hiring on individuals with prior work experience. In addition,

the very young (aged 15–19) are generally low-skilled, which limits their job possibilities. The experience of these transition economies is not out of line with that of Western Europe, where unemployment rates in excess of 20 percent are not uncommon.<sup>4</sup> However, these unemployment rates are considerably higher than for youths in the United States or United Kingdom,

<sup>4</sup>In 2003, for example, France, Belgium, and Italy had unemployment rates for workers under age 25 that ranged between 21.8 percent and 26.7 percent.

Figure 2.2 (concluded)



where rates are generally in the range of 10–12 percent.

- *Older workers* tend to experience rates of unemployment below the national rate, perhaps reflecting the alternative of early retirement, including via disability.
- There is a heavy concentration of unemployment among *lower-skilled workers*. While definitions vary across countries, unemployment rates among those in the lowest category of educational attainment (generally primary school or less) are as high as 44 percent in Bulgaria and the Slovak Republic. The outlier is Slovenia, where the unemployment rate for those with basic education or lower is just over 9 percent. Slovenia's more gradual approach to transition may have left intact a larger number of industrial sector jobs for which lower-skilled workers are qualified. In

fact, Slovenia has maintained a larger share of employment in industry than all but one country in the sample. For those individuals with higher education, unemployment rates vary between 2 and 8 percent, rates not significantly different from the EU-15 countries.

- There is evidence that *minority groups* have been especially hard-hit. In the Baltics, for example, the unemployment rate among non-nationals—primarily Russian speakers—has run more than double that of nationals, and unemployment rates among the Roma in Hungary, Bulgaria, and the Slovak Republic are also extremely high.

## Regional Unemployment

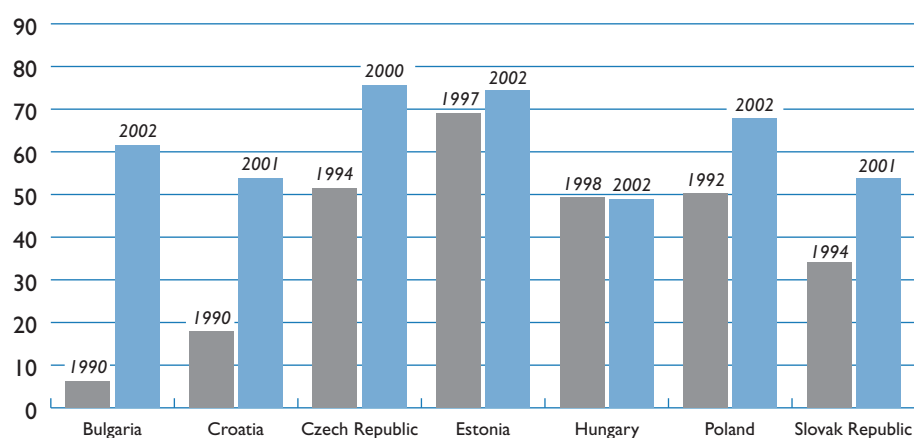
Unemployment is quite regionally concentrated and there is little evidence that migration is significantly reducing this concentration. As discussed in Section IV, the initial regional variation may have reflected the impact of the initial shock of transition in the context of the centrally planned distribution of resources. However, there has been little movement in the relative position of high-unemployment regions over the course of transition, with regional unemployment moving largely in unison with aggregate unemployment in a given country. In fact, in some countries—for example, Bulgaria, the Czech Republic, and Hungary—the concentration of unemployment has increased (Figure 2.8).

Despite the large initial variation in unemployment, geographical labor mobility within countries has been limited. Housing market imperfections may contribute to this limited labor mobility. Transition economies are characterized by extremely high rates of home ownership, owing to the housing privatization process following the fall of centrally planned economies. Home ownership is above 70 percent in these countries, and at or above 90 percent for several, including Bulgaria and Hungary. This compares with an average home ownership rate of 55 percent in the EU-15 countries. Combined with the fact that housing and mortgage markets are underdeveloped and housing costs are significantly higher in urban centers, the high rate of home ownership may make a move for employment purposes unattractive.

## Wage Developments

Real wages initially declined sharply, but they have subsequently grown steadily, in particular for faster reformers (Figure 2.9). The decline reflected both the collapse in output as well as rapid price inflation. In general, in the first years of transition, real

**Figure 2.3. Private Sector Share in Employment**  
(In percent of total employment)



Source: LFS data.

wages declined by between a quarter and a half—with the exception of Hungary, where real wages were almost unchanged in the first five years of transition, and Bulgaria, Croatia, and Latvia, where the decline was about 60 percent. By 2001, real wages exceeded 1988 levels in about half of the countries in the sample, by between 15 percent and 40 percent. In Bulgaria, Latvia, Lithuania, and the Slovak Republic, wages had yet to recover fully, while in Slovenia, real wages are virtually unchanged from pretransition levels.

The relationship between real wages and productivity shows considerable variation across countries. In Poland, for example, real wages and productivity have moved quite closely. In the Czech Republic and Slovak Republic, real wages initially dropped much more sharply than productivity, but since 1991 real wage growth has outstripped productivity gains. (The experiences of Croatia and Slovenia are broadly similar, but data are more sketchy.) In Bulgaria and Hungary, by contrast, wage growth has lagged productivity growth during the course of transition.

### Policies and Labor Market Outcomes

To what extent have policies and institutions helped to determine the labor market performance of CEE countries? As described below, labor markets in these countries appear relatively flexible compared with those of the EU-15 countries, suggesting that labor policies may not be the sole explanation for lingering high unemployment.

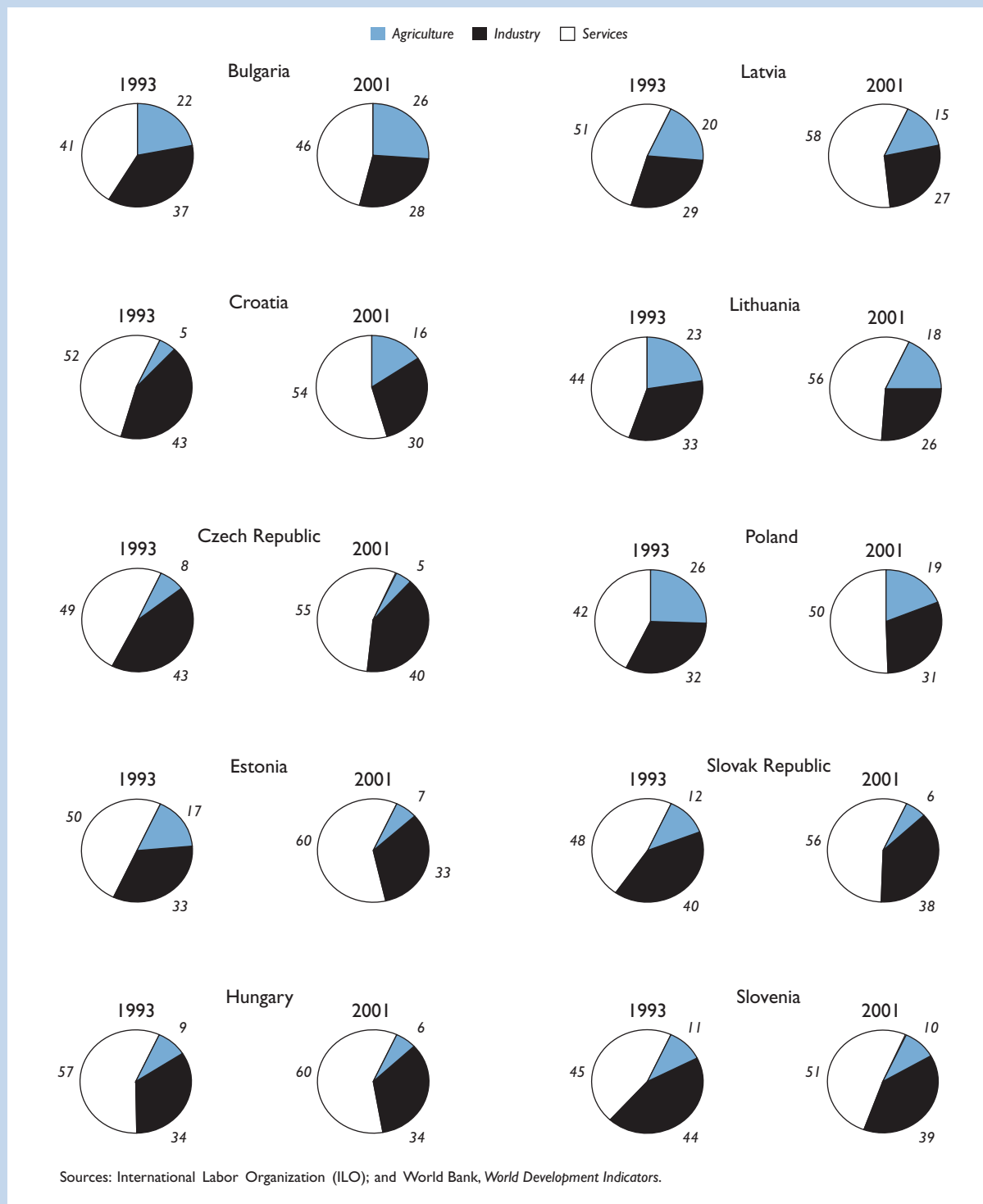
However, labor markets are less flexible than in the United States and in some cases high labor taxes, extended social benefits, and relatively high minimum wages may have contributed to low participation and employment and high unemployment.

Labor market outcomes can be influenced by a range of policies.

- A comparatively high *minimum wage*, in particular relative to the wages of low-skilled workers, can dampen the demand for labor. There are, however, questions about the extent to which statutory minimum wages have been enforced.
- A high overall *tax rate on labor income* can reduce both demand for and supply of labor, depending on the ultimate incidence of the tax.
- Income-tested *social assistance* effectively increases the marginal tax rate on labor earnings, since a dollar earned will both increase taxes paid and lower benefits received.
- Excessively generous *unemployment benefits*, in terms of the replacement rate, eligibility requirement, or duration, can retard incentives for job search. But the failure to provide adequate benefits can slow the entire transition process, as workers resist restructuring.
- The structure of the *pension system* can influence labor market performance. For example, easy early retirement rules will tend to reduce employment and participation rates, with an ambiguous impact on measured unemployment.
- *Labor market institutions*, such as the extent of centralized collective bargaining or the ease with



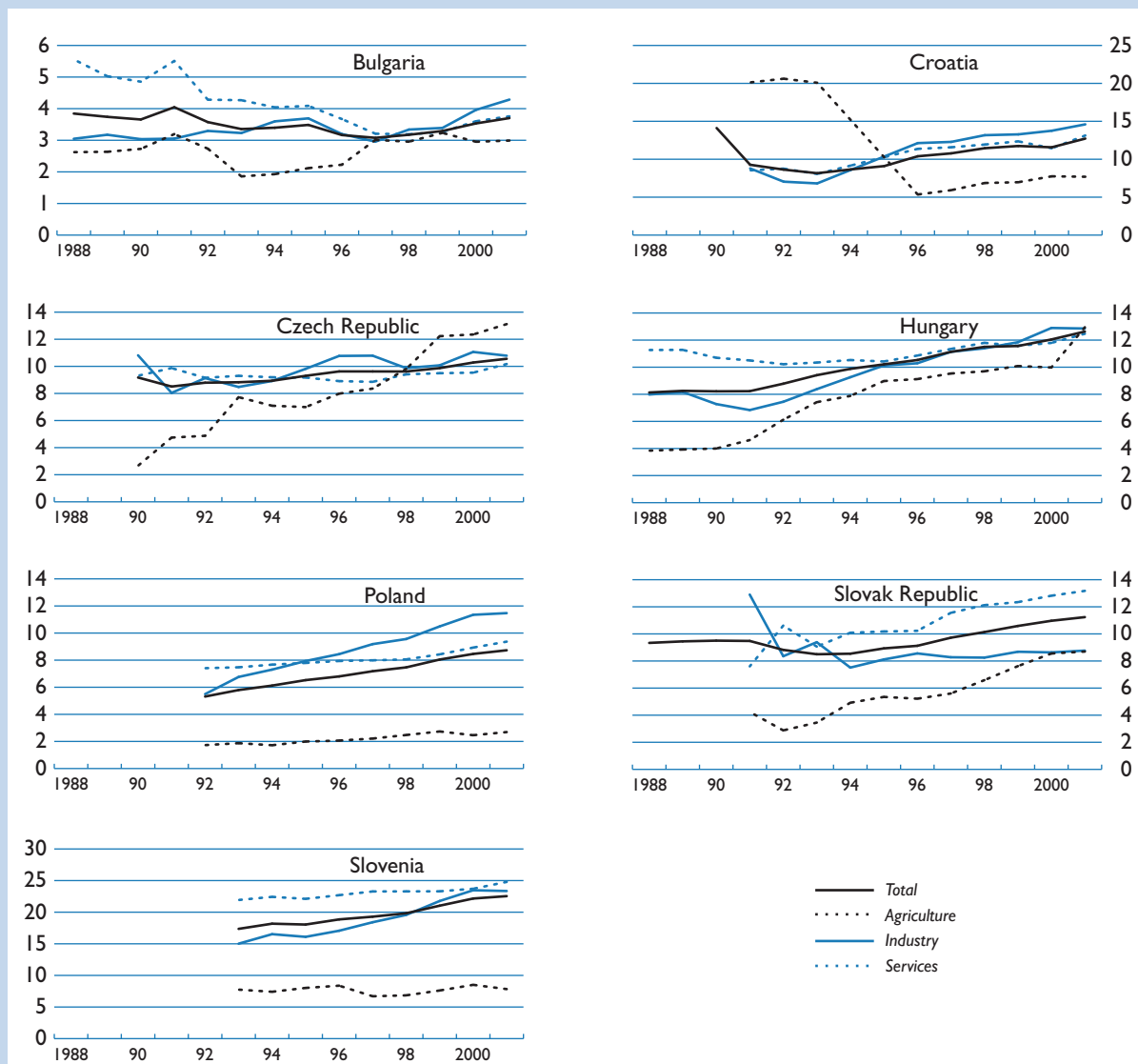
**Figure 2.4. Employment by Sector**  
(In percent of total employment)





**Figure 2.5. Productivity by Sector**

(In thousands of constant 1995 U.S. dollars)



which workers can be hired and fired, can influence the willingness of businesses to take on new workers and the overall flexibility of the labor market.

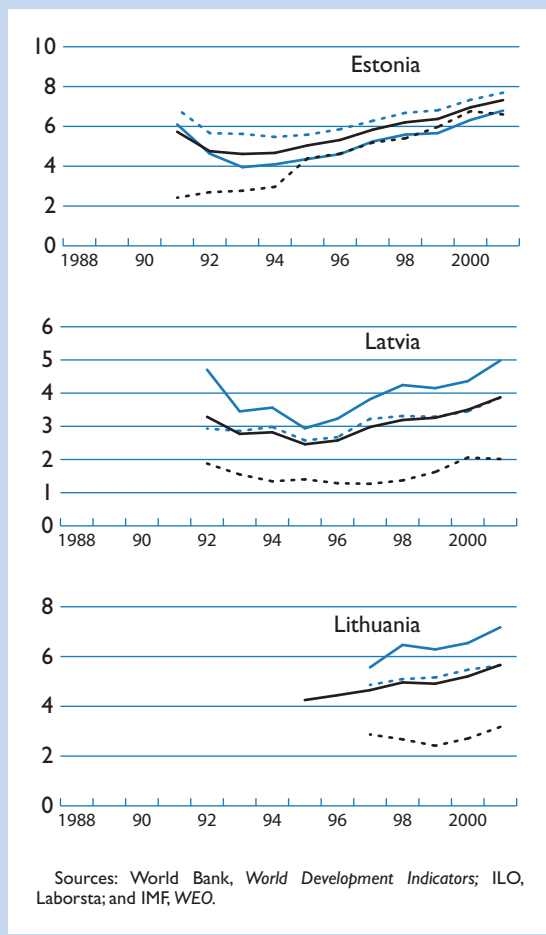
- *Active labor market policies can improve job prospects for the unemployed.* However, evidence on the cost effectiveness of such programs is mixed (Martin and Grubb, 2001; OECD, 2003a and 2004a,b).

There are substantial differences among CEE countries with respect to labor policies, but all appear

to have achieved a reasonable degree of flexibility. It seems clear that labor markets are not stickier compared with those in the EU-15 countries, except for high tax wedges on labor income, although they are significantly more sticky than in the United States.

The statutory tax wedge on labor income is high in CEE countries, reflecting adverse demographics and labor market developments as well as difficulties in collecting social contributions. The overall tax rates on labor—including personal income taxes and social insurance contributions—exceed 50 percent in all

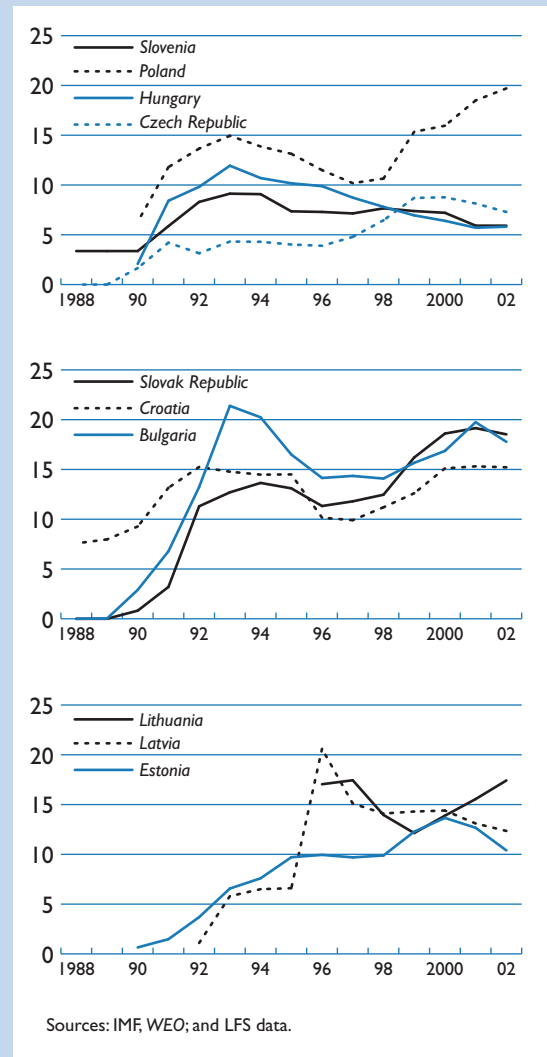
Figure 2.5 (concluded)



cases and are as high as 75 percent in Hungary (Figure 2.10). This is higher than in most EU-15 countries—whose high labor income tax burdens (about 50 percent) are often criticized as a source of high unemployment (see OECD, 2004a,b)—and well above those of the United States and other industrial countries. Tax wedges in Hungary and Romania are even higher than in developed countries with the highest tax burden, such as Sweden (about 64 percent). Such high rates can dampen labor supply, in particular when alternative sources of income, such as social assistance or subsistence activity, provide an acceptable standard of living. During the transition period, the fiscal pressure to maintain high payroll taxes has been strong (see Riboud, Sánchez-Páramo, and Silva-Jáuregui, 2002). Aging populations and declining employment rates strain public pension systems, while high unemployment rates have tended to raise

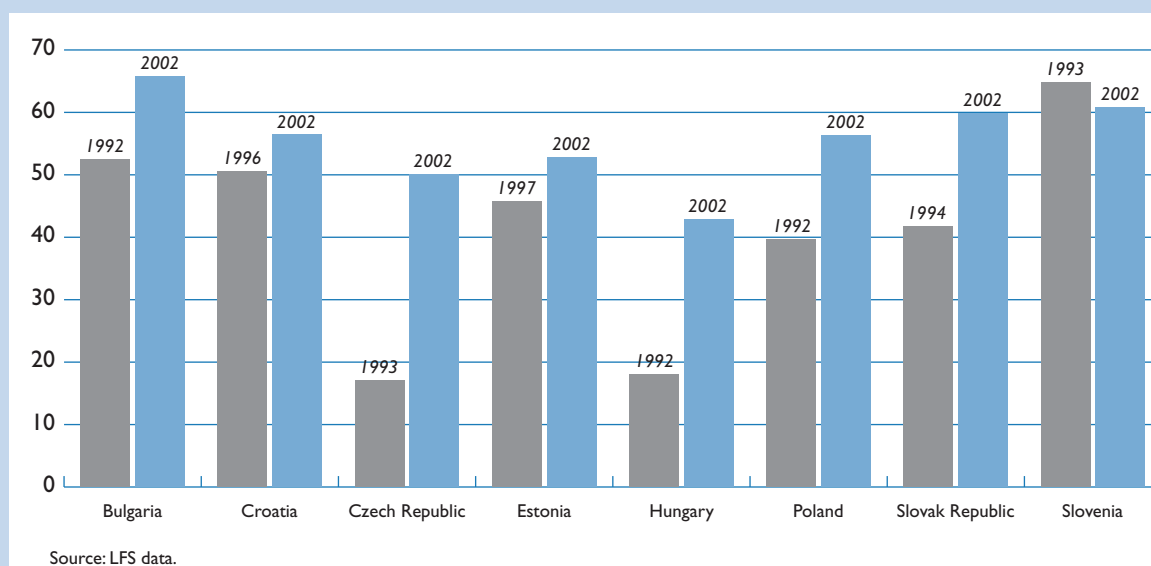
Figure 2.6. Unemployment Rates

(In percent)



spending on the unemployment insurance and social benefit system.

Minimum wages, while not high by international standards, may adversely affect employment, in particular of low-skilled workers. In several countries, such as Croatia and the Slovak Republic, the minimum wage approached or exceeded half of the average gross wage early in transition, suggesting that hiring of low-skilled employees could have been depressed (Figure 2.11). Overall, we observe a converging trend among CEE countries in the ratio of the minimum wage to the average gross wage: by 2002, virtually all countries were in the range of

**Figure 2.7. Long-Term Unemployment**
*(In percent of total unemployment)*


30–40 percent, in line with the United States and Japan (about 40 percent) and significantly lower than most EU-15 countries (between 50 percent and 60 percent).

Unemployment insurance replacement ratios and durations are mainly within a range between those in EU-15 countries and the United States. In recent years, some of the sample countries—notably, Estonia and Lithuania—have had replacement ratios lower even than in New Zealand, whose replacement ratio (30 percent) is the lowest among the OECD countries (Figure 2.12). As regards unemployment benefit duration (here, for a worker with 20 years of social security contributions), some CEE countries have durations identical to those in the United States (6 months), while others are in the range of 9 to 18 months, similar to those in the EU-15 countries.

CEE countries are also in the middle of the pack, compared with the industrial countries, with regard to employment protection. Table 2.12 reports the employment protection legislation index (EPL) for seven CEE countries.<sup>5</sup> The EPL for Slovenia is comparable with those in Southern European countries, Portugal, and Spain, which are characterized by relatively re-

strictive labor markets.<sup>6</sup> On the other end of the scale, Hungary's EPL is significantly lower than the EU-15 average, but much higher than the EPL in very flexible labor markets such as the United States and the United Kingdom. The EPLs in other CEE countries are fairly close to the EU-15 average. A key question, however, is whether such a middle-of-the-road position is detrimental in a context where resource reallocation has to take place on a large scale for economic performance to improve.

In some cases, an extensive social assistance system may be contributing to lower employment levels. In Poland, total social assistance levels have been quite close to the minimum wage, providing adverse incentives for labor market participation (Estevão, 2003). However, most CEE countries have cut back on social assistance payments during the past 10 years.

For most CEE countries, early retirement ages are in line with the EU-15 countries and the United States. Most of the countries have raised the retirement age gradually, in the context of pension reform. In 2002, the retirement age of most CEE countries was above 60 years—in line with the EU-15 average (about 60), Japan (60), and the United States (62).

<sup>5</sup>The EPL is a weighted average of 22 indicators representing the degree of restrictions on worker dismissals. Data to compile the EPL for Bulgaria, Romania, Latvia, and Lithuania are not available.

<sup>6</sup>See Riboud, Sánchez-Páramo, and Silva-Jáuregui (2002), for detailed discussion on EPLs in OECD countries.

**Table 2.3. Bulgaria: Labor Force Survey Results***(Period average, unless otherwise indicated)<sup>1</sup>*

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Working-age population (in thousands) <sup>2</sup>	6,881	6,887	6,899	6,903	6,903	6,924	6,890	6,890	6,779	6,740
Economically active population (in thousands)	3,809	3,643	3,574	3,572	3,573	3,532	3,409	3,361	3,363	3,332
In percent of working-age population	55.4	52.9	51.8	51.7	51.8	51.0	49.5	48.8	49.6	49.4
Employed (in thousands)	2,995	2,905	2,984	3,066	3,060	3,035	2,875	2,795	2,699	2,740
In percent of working-age population	43.5	42.2	43.3	44.4	44.3	43.8	41.7	40.6	39.8	40.6
Of which: <sup>3</sup>										
Private sector <sup>4</sup>	22.4	25.8	28.2	31.3	37.0	43.3	39.6	53.0	59.5	62.5
Youth <sup>5</sup>	9.4	9.2	8.8	8.4	8.1	8.7	8.6	8.0	8.0	7.7
Female	46.6	46.7	46.9	47.0	46.8	46.9	46.8	46.8	47.8	47.5
Employees	88.7	89.4	88.8	88.6	86.2	86.1	86.7	84.9	84.7	85.2
Private enterprises	12.7	17.2	19.4	22.7	27.3	34.5	30.7	45.2	52.7	56.5
Employers	1.7	1.6	1.8	1.8	1.9	2.1	2.3	2.4	3.5	3.3
Self-employed	8.1	7.6	8.1	8.1	9.7	9.9	9.3	10.8	9.8	9.5
Unpaid family workers	1.4	1.2	1.1	1.3	1.9	1.6	1.3	1.4	1.6	1.6
Unemployed (in thousands)	815	737	590	505	513	497	534	567	664	592
In percent of economically active population	21.4	20.2	16.5	14.1	14.4	14.1	15.7	16.9	19.7	17.8
Of which: <sup>6</sup>										
Youth <sup>5</sup>	30.5	28.0	28.9	26.9	25.8	25.1	23.7	21.6	21.2	20.4
Female	48.3	46.8	48.1	46.8	47.0	45.9	64.8	45.9	45.1	44.7
Long-term <sup>7</sup>	52.5	59.0	64.1	61.7	58.4	57.0	54.3	56.8	61.8	65.7
Basic education <sup>8</sup>	47.3	46.8	48.1	45.4	40.5	40.5	40.6	38.0	35.7	35.6
Secondary education <sup>9</sup>	45.1	46.0	45.4	47.6	51.7	50.9	51.9	53.2	53.7	53.6
Tertiary education	7.6	7.2	6.5	6.9	7.9	8.6	7.5	8.8	10.6	10.8
Urban areas	66.0	64.7	59.4	67.2	69.3	69.1	67.6	67.9	68.8	70.5
Unemployment by reasons <sup>6</sup>										
Lost job <sup>10</sup>	55.8	58.5	58.7	57.0	56.9	54.6	55.8	59.6	45.1	43.4
Seasonal or temporary job terminated	5.0	6.4	7.9	10.1	9.7	12.4	13.8	12.1	7.6	8.9
Seeking first job	21.4	21.0	21.8	21.4	21.6	20.8	19.5	18.8	23.4	23.8
Unemployment rates by age (in percent)										
Aged 15–19	66.9	64.7	57.4	51.5	49.9	45.9	50.4	52.9	58.7	54.1
Aged 20–24	40.5	38.2	34.4	30.5	31.0	28.9	30.6	31.9	35.3	33.1
Aged 25–49	17.7	17.3	13.9	12.2	12.5	12.3	14.0	15.0	17.7	16.2
Aged 50 and over	15.6	14.7	11.0	9.2	9.6	10.2	11.5	13.8	16.5	14.5
Unemployment rates by education attainment (in percent)										
Primary or lower <sup>8</sup>	...	...	40.1	35.6	30.1	32.4	36.7	37.8	47.6	46.0
Lower secondary <sup>11</sup>	30.1	30.4	23.9	20.6	19.9	20.4	24.7	25.9	30.9	27.9
Upper secondary	19.7	18.4	14.6	12.7	13.9	13.1	14.6	16.0	19.2	17.1
Tertiary education	9.3	8.0	5.7	5.1	5.8	6.1	5.8	7.2	8.9	8.3
Unemployment rates by regions (in percent)										
Urban areas	19.5	18.0	14.7	12.9	13.6	13.1	14.2	15.4	18.1	16.7
Rural areas	26.3	26.2	21.5	17.8	16.5	16.8	20.1	21.1	24.1	21.3
Economically inactive population (in thousands)	3,071	3,244	3,325	3,332	3,330	3,392	3,480	3,529	3,416	3,408
Of which: <sup>12</sup>										
Those who want to work	12.0	10.4	9.3	9.1	9.1	10.8	13.0	15.2	16.0	16.1
Discouraged persons	6.6	6.3	5.7	5.8	6.8	7.8	9.3	11.9	10.7	11.8

Source: National Statistical Institute of Bulgaria.

<sup>1</sup>Survey was conducted two-three times per year up to 1999 and four times from 2000 onward.<sup>2</sup>Aged 15 and above.<sup>3</sup>Percentage share in total employed.<sup>4</sup>All nonpublic sector.<sup>5</sup>Aged 15–24.<sup>6</sup>Percentage share in total unemployed.<sup>7</sup>One year and over.<sup>8</sup>International Standard Classification of Education (ISCED) I.<sup>9</sup>ISCED 3.<sup>10</sup>From 2001 data refer to unemployed who lost job within past eight years.<sup>11</sup>ISCED 2; and lower secondary or lower for 1993–94.<sup>12</sup>Percentage share in total inactive population.

**Table 2.4. Croatia: Labor Force Survey Results**
*(First half of the year, unless otherwise indicated)<sup>1</sup>*

	1996	1997	1998	1999	2000	2001	2002
Working-age population (in thousands) <sup>2</sup>	2,972	3,233	3,257	3,321	3,587	3,518	3,528
Economically active population (in thousands)	1,676	1,768	1,732	1,721	1,807	1,724	1,794
In percent of working-age population	56.4	54.7	53.2	51.8	50.4	49.0	50.9
Employed (in thousands)	1,506	1,593	1,538	1,504	1,534	1,460	1,521
In percent of working-age population	50.7	49.3	47.2	45.3	42.8	41.5	43.1
Of which: <sup>3</sup>							
Youth <sup>4</sup>	10.4	10.4	10.0	9.9	10.4	9.0	8.9
Female	46.5	45.8	46.0	0.5	45.4	44.2	44.4
Employees	70.8	74.1	75.1	75.3	74.0	75.3	75.9
Employers and self-employed	21.1	18.5	18.7	19.2	20.3	19.8	19.3
Family workers	8.1	7.5	6.3	5.5	5.7	5.0	4.7
Part-time	13.1	10.5	10.7	9.4	9.7	8.7	9.3
Unemployed (in thousands)	170	175	194	217	273	264	273
In percent of economically active population	10.2	9.9	11.2	12.6	15.1	15.3	15.2
Of which: <sup>5</sup>							
Youth <sup>4</sup>	35.2	37.7	36.6	35.0	29.3	34.8	28.9
Female	48.2	48.0	46.4	49.3	49.8	50.0	52.0
Long-term <sup>6</sup>	50.5	52.0	49.2	53.0	52.7	62.4	56.4
Less than upper secondary education <sup>7</sup>	15.3	16.6	...	...	...	...	...
Upper secondary education <sup>7</sup>	43.5	40.0	...	...	...	...	...
Tertiary education <sup>7</sup>	4.7	4.0	...	...	...	...	...
Unemployment by reasons <sup>5</sup>							
Lost/left job	47.0	45.1	48.5	52.1	51.6	54.2	66.3
Seeking first job	31.7	35.4	34.5	33.6	35.9	34.8	33.3
Unemployment rates by age (in percent)							
Aged 15–24	27.6	28.4	31.5	33.8	33.6	41.2	39.8
Aged 15–19	36.6	42.2	...	...	...	...	...
Aged 20–24	24.0	23.4	...	...	...	...	...
Aged 25–49	8.4	8.0	9.0	10.6	13.9	12.8	16.2
Aged 50–64	...	4.9	6.0	5.6	8.3	7.9	9.6
Aged 65 and over	...	...	...	...	...	...	...
Unemployment rates by educational attainment (in percent) <sup>8</sup>							
Less than upper secondary education	7.8	10.0	12.3	12.2	15.2	16.2	17.2
Upper secondary education	11.9	10.7	13.5	15.0	17.2	18.4	15.2
Tertiary education	6.1	4.4	5.2	8.4	12.2	7.6	9.4
Unemployment rates by region (in percent)							
Densely populated area	11.0	11.2	12.4	13.9	16.8	16.0	...
Intermediate populated area	9.2	7.6	8.8	10.6	12.5	14.3	...
Thinly populated area	7.0	12.6	...	...	...	...	...
Economically inactive population (in thousands) <sup>2</sup>	1,295	1,464	1,525	1,600	1,781	1,794	1,734
Discouraged persons <sup>9</sup>	3.7	3.1	3.1	3.0	3.6	2.3	...

Sources: Republic of Croatia Central Bureau of Statistics, Labor Force Survey Results 1996–2001; Republic of Croatia Bureau of Statistics website, <http://www.dzs.hr/Eng/FirstRelease/firstrelease.htm>; and IMF staff calculations.

<sup>1</sup>1996: November data.

<sup>2</sup>Aged 15 and above; 1996: aged 15–85.

<sup>3</sup>Percentage share in total employed.

<sup>4</sup>Aged 15–24.

<sup>5</sup>Percentage share in total unemployed.

<sup>6</sup>12 months and over.

<sup>7</sup>Aged 25–59 only.

<sup>8</sup>1996–1997: aged 25–59 only; 1998 onward: aged 15–59.

<sup>9</sup>Inactive persons who are not looking for a job because they believe that there is no job available; in percent of total inactive population.

**Table 2.5. Czech Republic: Labor Force Survey Results***(Average for four quarters)*

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Working-age population (in thousands) <sup>1</sup>	8,293	8,355	8,406	8,448	8,487	8,523	8,555	8,586	8,616	8,643
Economically active population (in thousands)	5,094	5,148	5,171	5,173	5,185	5,201	5,218	5,186	5,171	5,173
In percent of working-age population	61.4	61.6	61.5	61.2	61.1	61.0	61.0	60.4	60.0	59.9
Employed (in thousands)	4,874	4,927	4,963	4,972	4,937	4,866	4,764	4,732	4,750	4,796
In percent of working-age population	58.8	59.0	59.0	58.9	58.2	57.1	55.7	55.1	55.1	55.5
Of which: <sup>2</sup>										
Youth <sup>3</sup>	16.0	16.3	16.1	15.8	15.2	14.8	13.6	12.6	11.5	10.2
Female	43.9	44.0	43.9	43.6	43.5	43.3	43.4	43.4	43.4	43.3
Employees	87.0	86.8	86.1	86.0	86.1	85.1	84.5	83.9	84.0	...
Employers	2.7	3.2	3.8	4.1	4.0	4.2	4.1	4.1	3.9	...
Self-employed	6.3	6.9	7.5	7.6	7.9	9.0	9.7	10.3	10.6	...
Members of producers' cooperatives	3.7	2.7	2.0	1.8	1.6	1.3	1.2	1.1	0.9	...
Unemployed (in thousands)	220	221	208	201	248	336	454	455	421	377
In percent of economically active population	4.3	4.3	4.0	3.9	4.8	6.5	8.7	8.8	8.1	7.3
Of which: <sup>4</sup>										
Youth <sup>3</sup>	32.5	34.6	32.4	30.1	28.6	30.4	29.4	26.9	25.7	24.9
Female	55.9	53.7	52.9	52.7	54.6	56.5	53.5	53.4	53.8	54.7
Long-term <sup>5</sup>	17.0	20.2	28.0	28.2	28.1	29.5	36.0	47.3	45.3	...
Basic education	29.1	29.0	34.2	33.5	30.3	24.7	22.6	25.5	27.1	24.3
Secondary education	66.1	66.8	62.4	63.2	66.0	70.1	72.2	70.1	68.9	71.8
Tertiary education	4.8	4.0	3.2	2.9	3.4	3.6	3.8	3.6	3.8	3.7
Unemployment rates by age										
Aged 15–24	8.4	8.7	7.8	7.2	8.6	12.4	17.0	17.0	16.6	...
Aged 15–19	11.8	13.2	13.1	13.3	16.5	25.1	31.8	33.6	37.3	...
Aged 20–24	6.3	6.2	5.6	5.1	6.4	9.1	13.6	14.2	13.8	...
Aged 25–49	3.6	3.6	3.5	3.4	4.3	5.7	7.8	8.0	7.4	...
Aged 50 and over	3.0	2.6	2.6	2.9	3.3	4.1	5.6	6.0	5.7	...
Unemployment rates by educational attainment										
Basic education	9.0	9.4	10.8	11.1	13.4	15.8	20.6	22.0	21.6	...
Secondary education without GCE <sup>6</sup>	4.1	4.1	3.8	3.6	4.4	6.2	8.9	9.0	8.5	...
Secondary education with GCE <sup>6,7</sup>	3.0	3.0	2.3	2.4	3.3	4.9	6.4	6.1	5.5	...
Secondary general education <sup>8</sup>	5.1	5.1	3.9	3.2	5.0	6.9	9.2	9.0	7.9	...
Tertiary education	2.0	1.7	1.2	1.1	1.5	2.2	3.0	2.8	2.5	...
Economically inactive population (in thousands) <sup>2</sup>	3,199	3,207	3,236	3,274	3,302	3,322	3,337	3,400	3,445	...

Source: Czech Statistical Office.

<sup>1</sup>Aged 15 and above.<sup>2</sup>Percentage share in total employed.<sup>3</sup>Aged 15–24.<sup>4</sup>Percentage share in total unemployed.<sup>5</sup>Duration of job search over one year.<sup>6</sup>GCE = General Certificate of Education.<sup>7</sup>Vocational and technical.<sup>8</sup>Classification of secondary education was changed in 2001; data on secondary general education are not available for 2002 onward.

**Table 2.6. Estonia: Labor Force Survey Results**

(Period average, unless otherwise indicated)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Working-age population (in thousands) <sup>1</sup>	1,067	1,045	1,026	1,012	1,001	994	988	986	985	985
Economically active population (in thousands)	748.0	730.9	701.4	687.7	678.8	668.6	655.8	658.2	655.2	646.5
In percent of working-age population	70.1	70.0	68.4	68.0	67.8	67.3	66.4	66.8	66.5	65.7
Employed (in thousands)	698.9	675.4	633.4	619.3	613.0	602.5	575.3	568.3	572.2	579.3
In percent of working-age population	65.5	64.6	61.7	61.2	61.3	60.6	58.2	57.6	58.1	58.8
Of which: <sup>2</sup>										
Private sector <sup>3</sup>	...	...	...	...	68.6	69.4	69.4	71.7	72.0	74.1
Youth <sup>4</sup>	...	...	...	...	12.3	12.0	10.9	11.0	10.9	9.7
Female	57.2	59.2	63.1	64.5	65.2	66.3	69.4	70.3	69.8	69.0
Part-time	...	...	...	...	7.6	8.6	7.9	9.4	8.2	7.8
Employees	...	...	...	...	92.7	92.0	92.0	91.6	92.6	92.9
Employers	...	...	...	...	2.5	3.1	3.3	3.1	2.7	2.8
Self-employed	...	...	...	...	4.7	4.7	4.5	5.3	4.8	4.8
Unpaid family workers	...	...	...	...	0.8	0.8	0.8	0.7	0.9	0.6
Unemployed (in thousands)	49.1	55.5	68.1	68.4	65.8	66.1	80.5	89.9	83.0	67.2
In percent of economically active population	6.6	7.6	9.7	9.9	9.7	9.9	12.3	13.7	12.7	10.4
Of which: <sup>5</sup>										
Youth <sup>4</sup>	...	...	...	...	19.3	20.4	19.1	21.7	21.4	17.9
Female	48.1	49.7	43.6	44.7	45.9	43.4	43.2	45.1	47.3	46.1
Long-term <sup>6</sup>	...	...	...	...	45.7	47.0	45.8	45.4	48.3	52.8
Basic education <sup>7</sup>	...	...	...	...	19.5	19.4	19.9	20.1	16.9	18.9
Secondary education <sup>8</sup>	...	...	...	...	62.0	62.8	63.1	62.4	62.7	61.5
Tertiary education	...	...	...	...	16.1	15.4	14.9	16.0	18.1	17.6
Urban areas	...	...	...	...	67.8	69.9	69.3	71.1	69.5	74.7
Unemployment by reasons <sup>5</sup>										
Lost job	...	...	...	...	59.0	58.3	63.0	60.4	54.6	53.1
Quit job	...	...	...	...	20.2	20.0	17.9	17.5	21.0	23.0
Seeking first job	...	...	...	...	8.7	7.6	6.5	10.3	11.1	10.1
Other	...	...	...	...	12.1	14.1	12.5	11.9	13.3	13.7
Unemployment rates by age (in percent)										
Aged 15–24	11.2	11.7	14.4	16.1	14.5	15.8	19.7	23.8	22.2	17.6
Aged 25–49	6.5	7.6	9.7	9.6	10.0	10.0	12.3	12.9	11.9	9.7
Aged 50–69	4.2	5.1	6.9	7.3	6.1	6.2	8.5	10.6	9.9	9.2
Unemployment rates by education attainment (in percent)										
Primary or lower <sup>7</sup>	...	...	...	...	14.9	17.9	26.5	18.9	27.4	26.6
Lower secondary <sup>9</sup>	...	...	...	...	15.9	16.4	21.0	24.3	20.4	20.2
Upper secondary	...	...	...	...	10.6	10.8	13.3	14.6	13.6	10.9
Tertiary education	...	...	...	...	5.1	5.1	6.1	7.3	7.4	5.7
Economically inactive population (in thousands)	318.9	313.9	324.5	324.2	321.7	325.0	331.9	327.8	330.1	338.1

Source: Statistical Office of Estonia.

<sup>1</sup>Aged 15–69.

<sup>2</sup>Percentage share in total employed.

<sup>3</sup>All nonpublic sector.

<sup>4</sup>Aged 15–24.

<sup>5</sup>Percentage share in total unemployed.

<sup>6</sup>One year and over.

<sup>7</sup>ISCED 1.

<sup>8</sup>ISCED 3.

<sup>9</sup>ISCED 2.

**Table 2.7. Hungary: Labor Force Survey Results***(Average for four quarters)*

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Working-age population (in thousands) <sup>1</sup>	7,729	7,763	7,786	7,820	7,808	7,800	7,756	7,717	7,780	7,772	7,762
Economically active population (in thousands)	4,530	4,346	4,201	4,095	4,048	3,995	4,011	4,096	4,120	4,102	4,109
In percent of working-age population	58.6	56.0	54.0	52.4	51.8	51.2	51.7	53.1	53.0	52.8	52.9
Employed (in thousands)	4,085	3,827	3,752	3,679	3,648	3,646	3,698	3,811	3,856	3,868	3,871
In percent of working-age population	52.9	49.3	48.2	47.0	46.7	46.7	47.7	49.4	49.6	49.8	49.9
Of which: <sup>2</sup>											
Youth <sup>3</sup>	13.8	13.6	13.8	13.6	13.3	13.9	15.2	14.5	13.3	11.9	...
Female	45.6	45.7	45.2	44.3	44.2	44.0	44.8	44.8	44.8	44.7	...
Employees	78.4	80.7	81.2	81.0	81.2	82.0	83.5	84.0	84.4	85.2	...
Members of cooperatives	5.5	3.5	2.8	2.3	2.2	1.9	1.5	1.1	1.0	0.8	...
Members of partnerships	6.3	5.1	4.7	4.6	4.2	3.8	3.6	2.9	3.4	3.1	...
Self-employed	7.1	8.1	8.8	9.6	10.2	10.2	10.0	10.7	9.9	9.6	...
Unemployed (in thousands)	445	519	449	417	400	349	313	285	264	234	239
In percent of economically active population	9.8	11.9	10.7	10.2	9.9	8.7	7.8	7.0	6.4	5.7	5.8
Of which: <sup>4</sup>											
Youth <sup>3</sup>	26.9	25.3	27.8	27.4	26.6	27.5	28.0	27.6	26.8	23.7	...
Female	40.1	39.1	39.3	37.2	39.1	38.6	39.5	40.0	39.1	38.5	...
Long-term <sup>5,6</sup>	18.0	30.6	39.4	44.3	48.3	43.8	41.6	44.6	43.8	41.2	...
Basic education <sup>7</sup>	44.2	41.7	40.2	38.9	37.8	40.9	39.0	34.3	32.3	...	...
Secondary education	52.2	54.9	56.4	57.0	58.1	56.2	57.2	62.5	63.2	...	...
Tertiary education	3.6	3.4	3.8	4.1	4.1	2.8	3.7	3.2	4.1	...	...
Unemployment by reasons <sup>4,6</sup>											
Lost job	71.5	68.0	65.5	65.5	63.1	56.9	55.7	56.6	55.5	54.8	...
Quit job	7.9	6.6	7.7	8.0	8.0	8.9	9.3	11.1	10.3	12.0	...
Gave up own business	2.0	2.0	2.1	1.7	2.6	2.5	2.3	2.0	2.9	2.8	...
Seasonal job terminated	0.6	1.8	1.8	2.0	2.7	4.3	4.7	6.8	7.4	7.9	...
Left school	8.3	8.9	10.3	11.3	10.6	8.8	8.4	10.4	10.8	8.7	...
Unemployment rates by age											
Aged 15–19	27.0	33.3	29.8	31.1	30.4	28.8	24.8	23.4	23.7	21.0	...
Aged 20–24	14.0	17.0	16.0	14.7	14.5	13.0	11.1	10.6	10.4	9.5	...
Aged 60–74	4.3	10.1	10.5	5.1	5.4	6.2	9.0	1.0	1.8	2.1	...
Economically inactive population (in thousands)	3,199	3,417	3,585	3,724	3,760	3,805	3,745	3,621	3,660	3,670	3,653
Of which: <sup>8</sup>											
Passive unemployed	4.8	3.4	3.0	2.9	2.7	2.5	2.9	3.0	3.0	3.0	3.2

Source: Central Statistical Office of Hungary.

<sup>1</sup>Aged 15–74.<sup>2</sup>Percentage share in total employed.<sup>3</sup>Aged 15–24.<sup>4</sup>Percentage share in total unemployed.<sup>5</sup>Duration of job search over one year; data for 1992 and 1993 do not include persons looking for a job for more than 25 months.<sup>6</sup>Excludes persons who will begin working in a new job within 30 days.<sup>7</sup>Includes less than eight grades of primary school.<sup>8</sup>Percentage share in total inactive population.



**Table 2.8. Latvia: Labor Force Survey Results**

(Period average, unless otherwise indicated)

	1996	1997	1998	1999	2000	2001	2002
Working-age population (in thousands) <sup>1</sup>	1,979	1,988	1,985	1,988	1,992	1,957	1,955
Economically active population (in thousands)	1,196	1,167	1,149	1,130	1,100	1,107	1,123
In percent of working-age population	60.4	58.7	57.9	56.8	55.2	56.6	57.4
Employed (in thousands)	949.0	990.0	986.0	968.0	941.0	962.0	989.0
In percent of working-age population	48.0	49.8	49.7	48.7	47.2	49.1	50.6
Of which: <sup>2</sup>							
Youth <sup>3</sup>	12.4	11.9	11.2	11.1	10.5	10.2	10.8
Female	47.9	48.7	48.1	48.1	49.0	49.4	49.0
Employees	85.3	80.5	82.6	83.7	85.0	84.9	86.2
Employers	3.1	3.2	3.2	3.7	4.2	4.2	3.2
Self-employed	7.1	9.9	8.7	7.3	6.8	6.1	6.2
Unpaid family workers	4.4	6.3	5.4	5.1	3.9	4.6	4.3
Unemployed (in thousands)	247	177	162	161	159	145	135
In percent of economically active population	20.7	15.2	14.1	14.2	14.5	13.1	12.0
Of which: <sup>4</sup>							
Youth <sup>3</sup>	7.4	8.7	11.2	10.1	8.6	9.2	9.3
Female	20.1	28.5	40.2	39.0	33.8	36.3	39.0
Long-term <sup>5</sup>	20.0	29.8	18.1	21.1	17.0	16.8	17.5
Basic education <sup>6</sup>	8.1	11.0	15.0	14.3	12.2	12.8	13.3
Secondary education <sup>7</sup>	20.1	24.9	36.2	35.6	29.6	44.0	45.4
Tertiary education	2.2	2.9	4.7	4.8	4.0	4.5	4.8
Unemployment rates by age (in percent)							
Aged 15–24	31.5	23.4	24.4	23.6	21.8	21.7	18.6
Aged 25–49	17.8	14.0	13.0	13.4	14.1	12.4	10.8
Aged 50–59	17.9	13.8	12.2	11.9	12.8	12.6	11.2
Economically inactive population (in thousands)	783	821	836	858	892	850	832

Source: Central Statistical Bureau of Latvia.

<sup>1</sup>Aged over 15.

<sup>2</sup>Percentage share in total employed.

<sup>3</sup>Aged 15–24.

<sup>4</sup>Percentage share in total unemployed.

<sup>5</sup>One year and over.

<sup>6</sup>ISCED 2.

<sup>7</sup>ISCED 3.

**Table 2.9. Lithuania: Labor Force Survey Results***(Period average, unless otherwise indicated)*

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Working-age population (in thousands) <sup>1</sup>	...	...	2,910	...	2,812	2,806	2,802	2,800	2,816
Economically active population (in thousands)	...	...	2,037	1,820	1,843	1,862	1,794	1,760	1,630
In percent of working-age population	...	...	70.0	...	65.5	66.3	64.0	62.8	57.9
Employed (in thousands)	1,656	1,632	1,690	1,502	1,585	1,636	1,545	1,486	1,346
In percent of working-age population	...	...	58.1	...	56.4	58.3	55.1	53.1	47.8
Of which: <sup>2</sup>									
Female	...	...	...	49.4	45.9	44.5	46.1	46.2	51.9
Employees	...	...	...	81.6	74.7	71.2	72.3	73.4	83.5
Employers and self-employed	...	...	...	19.1	15.6	14.0	14.8	14.7	17.3
Unpaid family workers	...	...	...	3.8	3.4	3.5	3.1	2.9	3.6
Unemployed (in thousands)	347	347	347	317	257	226	249	274	284
In percent of economically active population	...	...	17.0	17.4	14.0	12.1	13.9	15.6	17.4
Of which: <sup>3</sup>									
Youth <sup>4</sup>	...	...	...	20.6	18.9	25.0	21.7	18.5	12.6
Female	...	...	46.7	37.8	37.2	48.0	46.3	43.3	36.4
Basic education <sup>5</sup>	...	...	...	16.4	15.1	16.5	18.6	16.7	13.5
Secondary education <sup>6</sup>	...	...	...	41.3	66.3	85.2	83.6	74.3	56.1
Tertiary education	...	...	...	23.3	6.8	8.5	7.8	12.4	9.5
Economically inactive population (in thousands)	...	...	873	...	970	944	1,009	1,041	1,186

Source: Lithuania Statistics.

<sup>1</sup>Aged over 15.<sup>2</sup>Percentage share in total employed.<sup>3</sup>Percentage share in total unemployed.<sup>4</sup>Aged 15–24.<sup>5</sup>ISCED 2.<sup>6</sup>ISCED 3.

**Table 2.10. Slovak Republic: Labor Force Survey Results**

 (Average for four quarters)<sup>1</sup>

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Working-age population (in thousands) <sup>2</sup>	4,081	4,130	4,173	4,214	4,254	4,292	4,329	4,366	4,366
Economically active population (in thousands)	2,444	2,471	2,509	2,522	2,545	2,573	2,608	2,653	2,628
In percent of working-age population	59.9	59.8	60.1	59.8	59.8	60.0	60.2	60.8	60.2
Employed (in thousands) <sup>3</sup>	2,110	2,147	2,225	2,224	2,228	2,156	2,123	2,145	2,141
In percent of working-age population	51.7	52.0	53.3	52.8	52.4	50.2	49.0	49.1	49.0
Of which: <sup>4</sup>									
Youth <sup>5</sup>	14.2	14.5	15.1	14.8	14.2	13.0	12.3	11.6	11.5
Female	44.4	44.4	44.5	44.5	44.4	44.9	45.4	45.6	44.7
Private sector <sup>6</sup>	34.0	39.1	42.9	46.7	49.5	50.1	50.6	53.3	...
Employees	93.7	93.5	93.6	92.9	91.9	91.1	91.0	90.6	90.6
Private sector (percentage share in total employees)	29.6	34.9	38.9	43.5	46.4	46.4	46.8	49.6	...
Employers	1.9	2.0	2.0	2.3	2.5	2.3	2.4	2.6	2.4
Self-employed	4.3	4.4	4.3	3.9	4.2	5.2	5.3	5.5	6.0
Contributing family workers	0.1	0.1	0.1	0.1	—	0.1	0.1	0.1	0.1
Part-time	2.7	2.6	2.5	2.2	2.1	1.9	1.9	2.1	1.8
Unemployed (in thousands)	334	324	284	298	317	417	485	508	487
In percent of economically active population	13.6	13.1	11.3	11.8	12.5	16.2	18.6	19.2	18.5
Of which: <sup>7</sup>									
Youth <sup>5</sup>	33.9	31.7	31.4	32.3	33.4	34.4	31.6	31.5	30.1
Female	46.0	47.1	50.5	48.9	47.2	45.7	45.3	44.4	45.8
Long-term <sup>8</sup>	41.7	53.2	51.6	50.3	50.7	46.9	53.9	55.7	59.8
Basic education and less <sup>9</sup>	28.1	29.9	28.3	29.2	27.0	21.4	19.7	19.9	20.6
Secondary education <sup>10</sup>	68.5	67.6	68.9	67.6	69.8	75.6	77.1	77.1	76.5
Tertiary education <sup>11</sup>	3.5	2.5	2.9	3.2	3.2	3.0	3.2	3.0	2.9
Unemployment rates by age									
Aged 15–24	27.3	24.7	21.0	21.7	23.6	32.1	35.2	37.2	36.1
Aged 15–19	45.1	42.9	41.9	37.8	40.0	55.5	59.4	59.5	55.8
Aged 20–24	19.6	17.7	14.1	16.0	18.0	24.4	28.5	31.6	31.9
Aged 25–49	11.4	11.3	9.9	10.2	10.5	13.5	15.9	16.3	15.5
Aged 50 and over	8.1	8.0	6.2	6.9	7.7	9.6	12.1	12.6	14.4
Unemployment rates by educational attainment									
Lower secondary or less	27.3	28.6	25.2	26.6	28.7	34.4	39.4	42.9	45.5
Secondary education	12.6	11.8	10.3	10.5	11.2	15.4	17.9	18.5	17.7
Postsecondary	4.1	2.9	2.8	3.5	3.8	4.7	5.7	5.1	4.7
Economically inactive population (in thousands)	1,637	1,660	1,663	1,692	1,709	1,719	1,721	1,714	1,738
Discouraged persons <sup>12</sup>	0.8	0.4	0.6	0.7	0.6	0.6	0.6	0.7	0.8

Sources: Statistical Office of the Slovak Republic, "Labor Force Sample Survey Results in the Slovak Republic"; and IMF staff calculations.

<sup>1</sup>1994–96: excludes military conscripts.

<sup>2</sup>Aged 15 and above.

<sup>3</sup>1997 onward: includes military conscripts, thus data differ from authorities' presentation that excludes military conscripts from "employed."

<sup>4</sup>Percentage share in total employed.

<sup>5</sup>Aged 15–24.

<sup>6</sup>All employed except public sector employees.

<sup>7</sup>Percentage share in total unemployed.

<sup>8</sup>13 months and over.

<sup>9</sup>Primary education and less.

<sup>10</sup>Apprenticeship (with and without examination), secondary, and full secondary (general and vocational).

<sup>11</sup>Higher, bachelor, university, and research qualification.

<sup>12</sup>Percentage share in total inactive population.

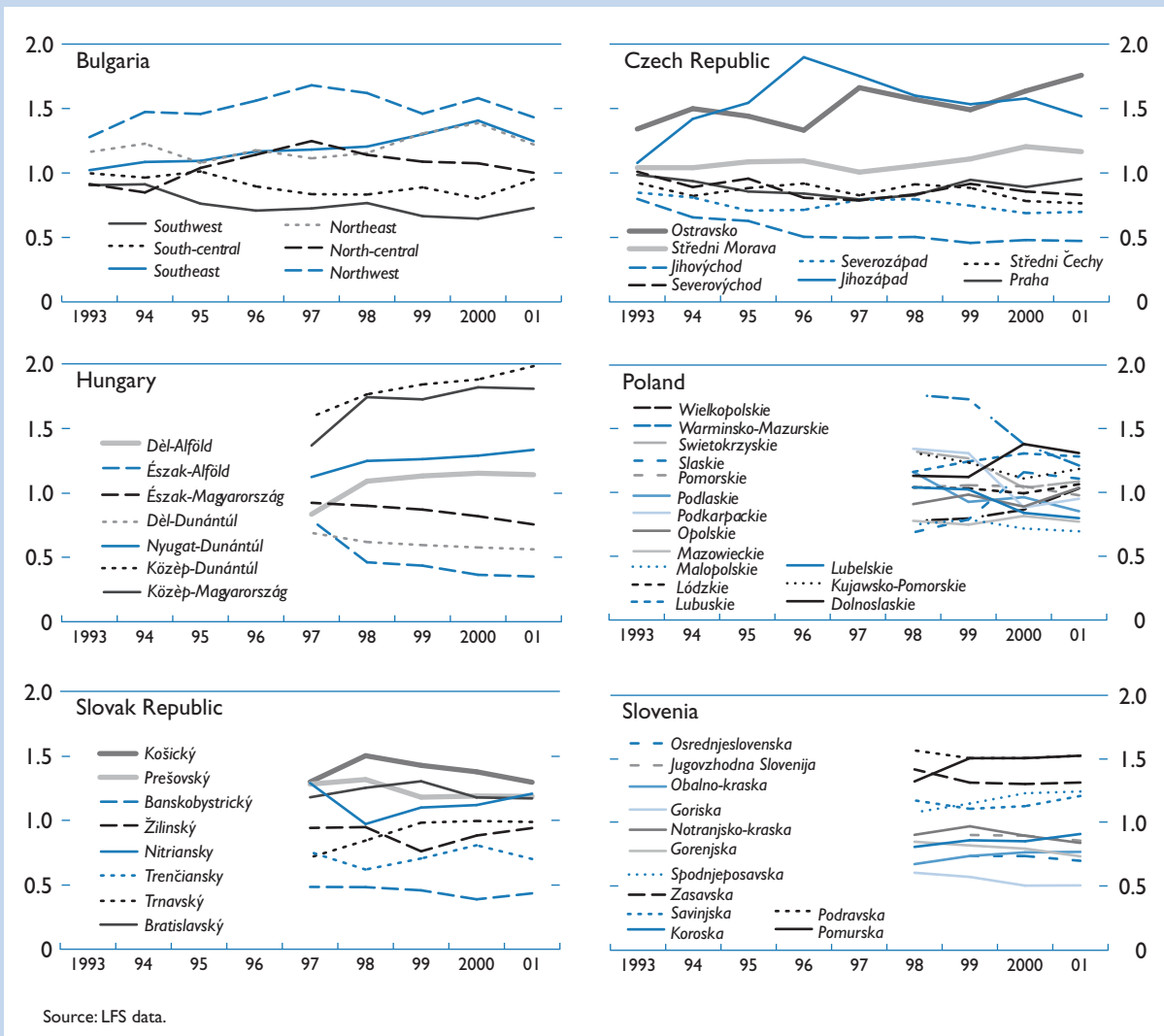
**Table 2.11. Slovenia: Labor Force Survey Results***(In percent, unless otherwise indicated; second quarter)*

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Working-age population (in thousands) <sup>1</sup>	1,613	1,624	1,621	1,644	1,635	1,638	1,653	1,669	1,679	1,687
Economically active population (in thousands)	931	936	952	946	966	983	963	963	972	981
In percent of working-age population	57.7	57.6	58.7	57.5	59.1	60.0	58.3	57.7	57.8	58.2
Employed (in thousands)	845	851	882	878	898	907	892	894	914	922
In percent of working-age population	52.4	52.4	54.4	53.4	54.9	55.4	54.0	53.6	54.4	54.7
Of which: <sup>2</sup>										
Youth	...	10.8	11.7	11.0	13.3	12.3	11.3	10.3	9.6	9.7
Female	46.7	46.7	46.4	46.7	46.3	46.3	46.0	46.2	45.6	45.9
Part-time	5.2	5.4	5.7	6.7	8.2	7.7	6.6	6.1	6.1	6.6
Paid employment	84.6	82.4	83.1	83.1	81.3	80.9	81.6	83.9	82.9	83.8
Self-employed	12.2	12.2	12.2	12.5	11.9	12.5	12.6	11.2	11.8	11.7
Unpaid family workers	3.2	5.4	4.6	4.2	6.8	6.6	5.8	4.8	5.3	4.6
Unemployed (in thousands)	85	85	70	69	69	75	71	69	57	58
In percent of economically active population	9.1	9.1	7.4	7.3	7.1	7.7	7.4	7.2	5.9	5.9
Of which: <sup>3</sup>										
Youth	35.3	30.6	34.3	31.9	36.2	33.2	30.9	25.9	29.6	27.6
Female	42.4	43.5	44.3	44.9	46.4	46.5	47.8	47.6	48.7	48.3
Long-term	64.8	63.4	60.8	56.5	60.6	60.0	59.3	66.9	66.1	60.7
Registered at employment exchange	82.4	78.8	82.9	85.5	79.7	82.5	80.4	82.1	83.9	82.8
Basic education or lower	31.7	34.2	33.5	34.0	39.1	30.6	28.5	31.6	33.2	28.0
Secondary education	61.7	59.5	61.6	60.4	76.1	64.2	64.9	63.4	60.2	64.9
Postsecondary education	2.6	2.3	3.2	3.7	3.2	2.0	4.7	2.8	3.5	4.0
Tertiary education	4.0	3.3	2.2	1.8	5.0	3.3	1.9	2.2	3.1	3.6
Seeking first job	21.2	21.2	24.3	26.1	27.5	28.6	26.4	31.9	27.8	27.6
Unemployment rates by age										
Aged 15–24	...	...	...	...	...	...	...	...	16.1	15.0
Aged 15–19	40.2	35.7	27.4	32.7	20.8	27.4	28.9	24.7	22.5	18.3
Aged 20–24	21.0	19.7	17.4	16.8	16.5	15.7	15.9	14.8	15.0	14.4
Aged 25–49	7.3	7.6	6.0	5.9	5.9	6.5	8.5	5.8	4.7	4.8
Aged 50 and over	4.5	5.1	3.9	4.3	2.4	3.6	4.3	6.9	3.9	3.7
Unemployment rates by education attainment										
Basic education or lower	12.1	13.4	10.7	11.5	12.3	11.0	10.8	12.3	10.3	9.3
Secondary education	10.7	10.2	8.2	7.6	9.5	8.6	8.3	7.8	6.1	6.4
Postsecondary education	3.3	2.8	3.1	4.0	3.5	2.1	5.0	2.2	2.3	2.9
Tertiary education	5.1	4.1	2.4	1.9	5.5	3.7	1.6	2.3	2.5	2.6
Economically inactive population (in thousands)	680	689	667	698	669	656	690	706	708	707
Economically active population by education attainment										
Basic education or lower	223	216	218	203	219	208	188	178	185	174
Secondary education	488	495	526	546	553	563	557	561	572	585
Postsecondary education	68	69	72	65	64	70	67	88	86	81
Tertiary education	67	69	65	63	62	67	80	66	71	82

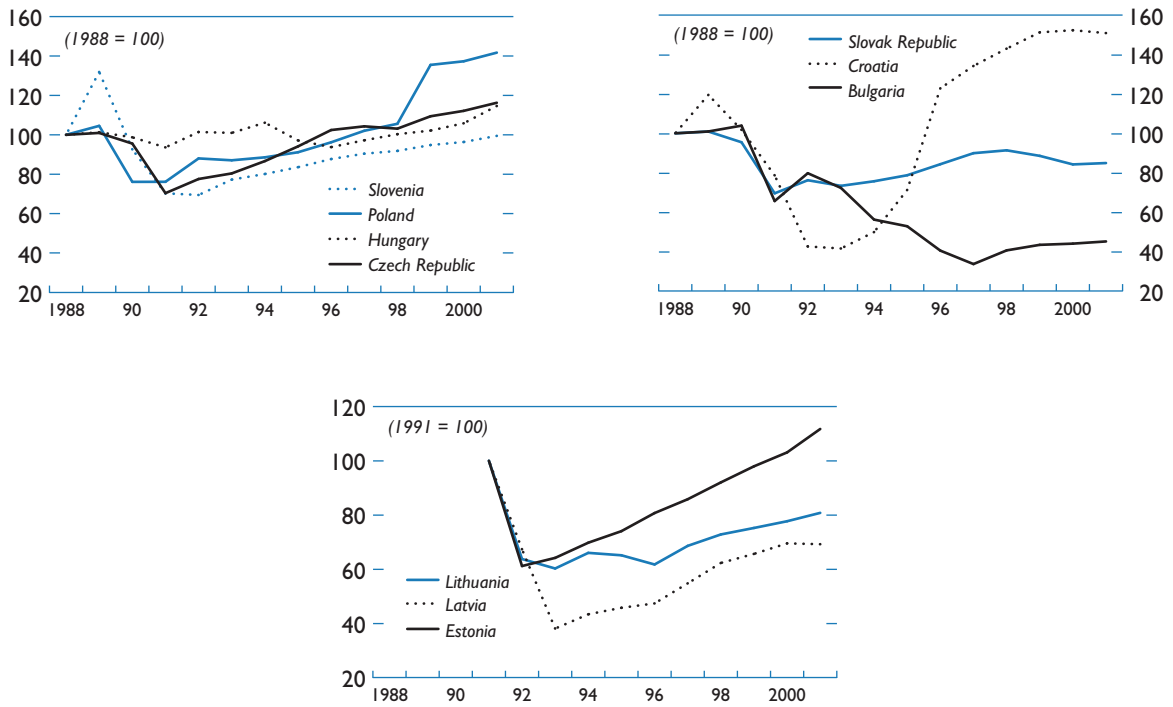
Source: Statistical Office of the Republic of Slovenia.

<sup>1</sup>Aged 15 and over.<sup>2</sup>Percentage share in total employed.<sup>3</sup>Percentage share in total unemployed.

**Figure 2.8. Regional Unemployment Rates**  
 (Ratio of regional unemployment rates to economy-wide unemployment rate)

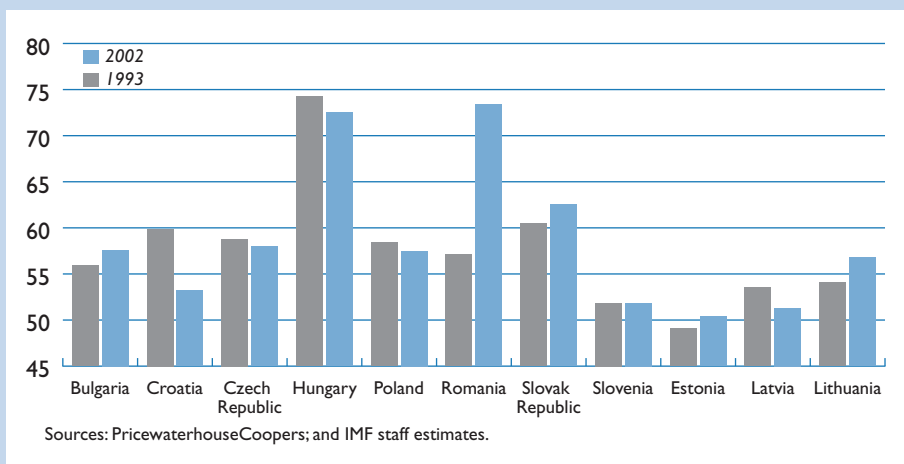


**Figure 2.9. Real Wages**



Sources: National authorities; and IMF staff estimates.

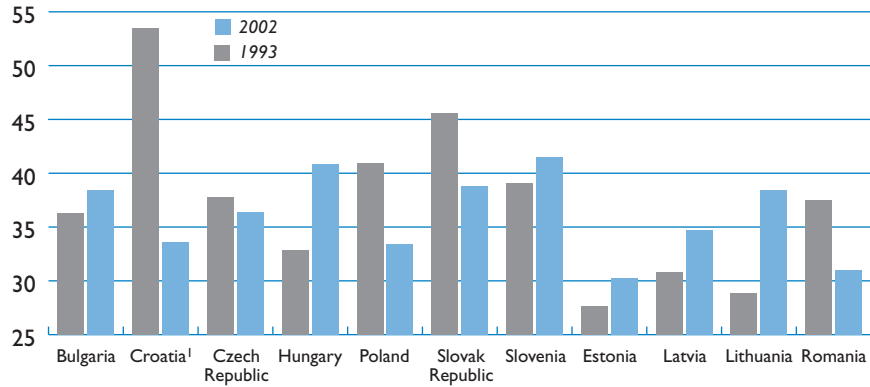
**Figure 2.10. Statutory Overall Tax Rates on Labor Income**  
(In percent)



Sources: PricewaterhouseCoopers; and IMF staff estimates.

**Figure 2.11. Minimum Wages**

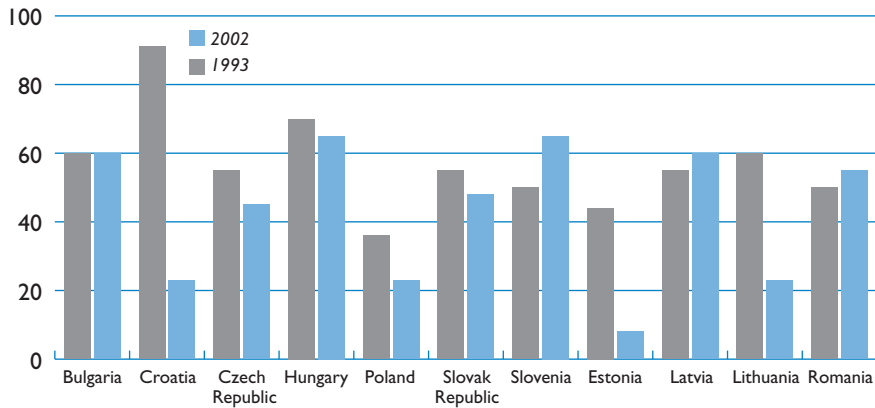
(In percent of average gross wages)



Sources: National authorities; ILO; and IMF staff estimates.  
<sup>1</sup>For Croatia, data are for 1994.

**Figure 2.12. Statutory Replacement Ratios of Unemployment Benefits to Average Gross Wage**

(In percent)



Source: U.S. Social Security Administration, *Social Security Throughout the World*.

**Table 2.12. Employment Protection Legislation Index (EPL)**

Czech Republic	1.9
Hungary	1.7
Poland	2.1
Slovak Republic	2.0
Croatia <sup>1</sup>	2.8
Slovenia <sup>1</sup>	3.0
Estonia <sup>1</sup>	2.6
EU-15 average <sup>2</sup>	2.3
United States	0.7
Japan	1.8

Source: OECD (2004a).

<sup>1</sup>World Bank estimate.

<sup>2</sup>Excludes Greece and Luxembourg.

However, retirement through the disability rolls appears to have served as a conduit for early retirement. In Bulgaria, for example, the number of pensioners exceeds by 20 percent the over-59 population, and early retirement is frequent in several other countries. Many of the early retirees are disability pensioners—in Hungary, the Slovak Republic, and Poland, 30 to 50 percent of the older cohorts are categorized as disabled.

The new EU member countries in the region appear to spend little on active labor market policies. Although data are sketchy, it appears that these countries spend between 0.1 percent and 0.8 percent of

GDP annually on such policies, compared with spending in the EU-15 of 1.2 percent of GDP or more in a number of countries (OECD, 2003a).

### Stylized Facts and Questions Raised

These stylized facts seem to suggest that, despite considerable variance, country experiences share some common features. This provokes several questions that the rest of the paper attempts to examine:

- Did the labor market experience of transition countries follow a common path? If so, what are its characteristics, and how can “latecomers” learn from the experience of those countries that began the transition earliest?
- Did labor market institutions influence the experience? If so, can different institutional arrangements explain most of the cross-country differences?
- What factors may account for the seemingly different job-creating abilities, and labor market experiences, of the various transition countries?
- What may account for the large and persistent interregional differences in labor market performance?
- What policies may help improve labor market performance during transition?

The remainder of the paper is organized as follows: Section III takes up the first three questions and attempts to answer them by analyzing a panel of transition country data, as well as by trying to synthesize “what works” based on country experiences. Section IV addresses issues of interregional differences by drawing conclusions from stylized models and the available empirical literature. Section V concludes and discusses possible policies to improve labor market performance in transition.



### III Labor Markets in Transition: An Econometric Analysis

After a review of the main stylized facts, this section undertakes a systematic quantitative analysis of transition countries' labor market experience to help draw policy conclusions.

#### A Brief Literature Review

Theoretical analyses of unemployment in transition initially predicted a hump-shaped path for unemployment during the transition process. Initial job destruction in the public sector would gradually be overtaken by private sector job creation. However, in the interim, unemployment would result either because of the costs of matching workers from the declining (public) sector with private sector jobs with different skill requirements, or because the private sector initially expands output by increasing labor productivity rather than via hiring (Chadha, Coricelli, and Krajnyák, 1993). In this context, the pace and breadth of structural reforms in general and labor policies specifically play a key role in determining unemployment.

Aghion and Blanchard (1994) use this framework to describe an optimal speed of transition. Too rapid transition (restructuring) would be detrimental to employment. It would create an initial overly large increase in unemployment that would generate a heavy tax burden on firms to support the social safety net and thereby limit private sector job creation. In addition, too fast transition would be resisted by workers in the state sector, who would have to be bought off with generous unemployment benefits. If, however, transition proceeds too slowly, private sector job creation is insufficient as well, and the benefits of transition are not fully realized. More recently, this framework has been criticized for failing to fully capture the reality of labor market dynamics in transition countries. For example, Boeri (2001) argues that such models consider only labor demand and ignore developments in labor supply, notably the sharp decline in participation rates, which drive a wedge between the recovery in employment and the decline in unemployment.

A large empirical literature for industrial countries finds that rigid labor market institutions are detrimental to employment. A number of papers argue that lower struc-

tural unemployment in the United States and United Kingdom compared with continental Europe is due largely to more flexible labor market policies and institutions in these two countries (Blanchard and Wolfers, 2000; Nickell, 1998; IMF, 2003). Other papers argue that, while stringent institutions do not necessarily lead to higher unemployment, they may lead to other problems such as low job turnover. Comparing Portugal and the United States—two countries at the extremes of the spectrum of employment protection, but with similar unemployment rates—Blanchard and Portugal (2004) show that in Portugal flows into unemployment are three times lower than in the United States, but unemployment duration is three times higher.

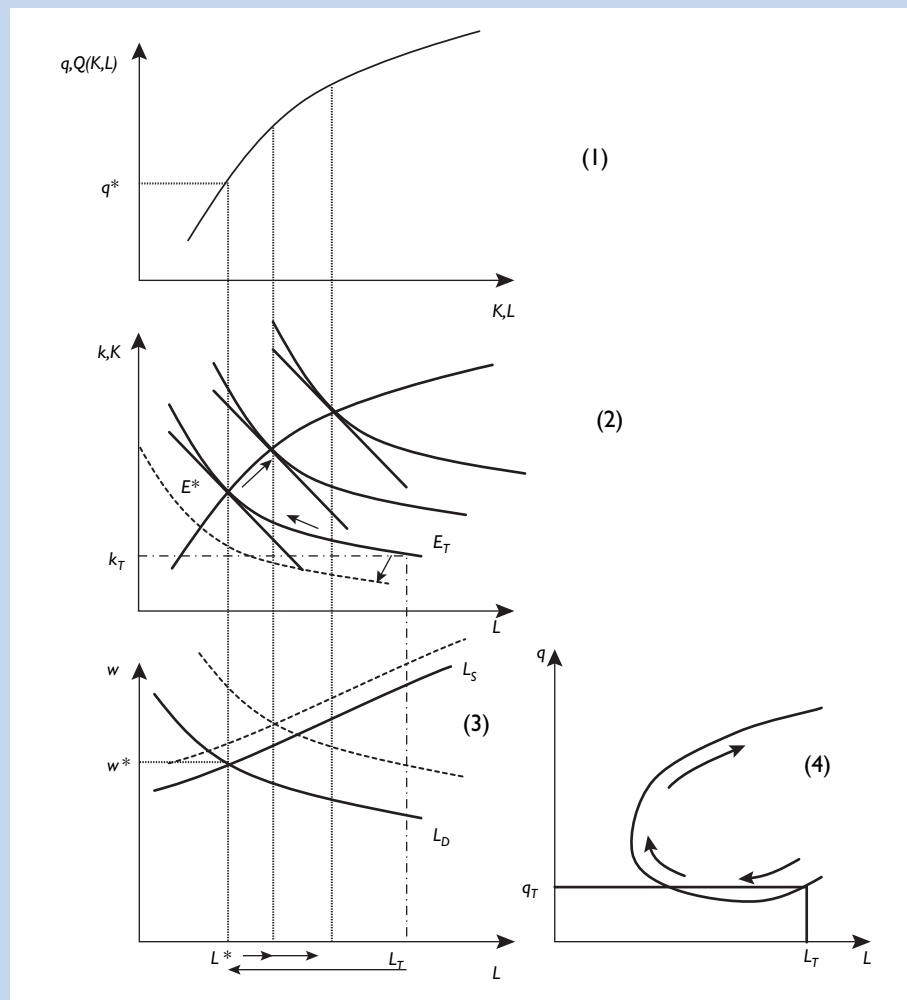
But this view that rigid institutions are to blame for relatively poor employment performance in Europe is not unanimous. For example, Blanchard (2004) presents evidence that the increase in unemployment in continental Europe has not coincided with an increasing rigidity of institutions. Baker and others (2002) argue that the econometric results of a number of leading contributions purporting to show a positive relationship between rigidity of institutions and unemployment do not pass close scrutiny.

#### A Simple Analytical Framework

A simple neoclassical analysis shows that, for some period of time, a decline in employment is consistent with a rebound in output. Figure 3.1 depicts in panel (2) the starting point in transition economies ( $E_t$ ) and the profit-maximizing equilibrium  $E^*$ , where marginal prices equalize and the labor market clears with wage  $w^*$  in panel (3).<sup>7</sup> Upon the elimination of central planning, firms sought to move to  $E^*$ , eliminating excess labor and capital, while improving technology.

<sup>7</sup>Panel (1) of Figure 3.1 shows the production function; panel (2) depicts the labor-capital isoquant; panel (3) represents the labor market; and panel (4) summarizes the relation between employment and output per capita in transition countries. The subscript  $T$  relates to the end of central planning and the beginning of the transition period.

**Figure 3.1. Employment Dynamics in Transition Countries:  
A Simple Framework**



After the initial severe shock to output and labor (shift of the isoquant downward), transition economies would have moved gradually closer to market equilibrium. During the move to the equilibrium  $E^*$ , output increases and employment declines. At the same time, technological and structural progress would gradually shift the isoquant out. This process would eventually reverse the initial drop in labor as gains from increased productivity run their course.

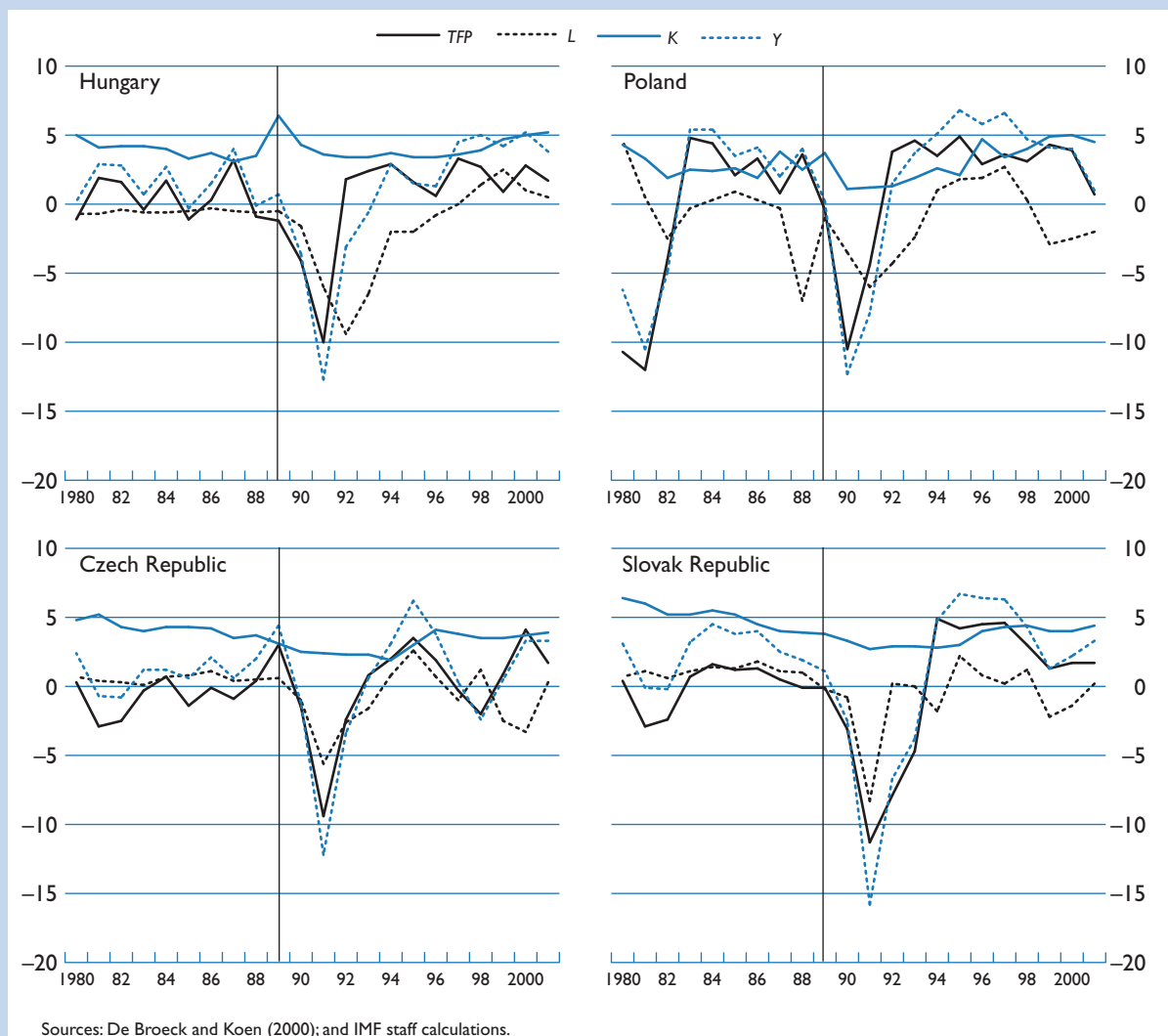
This suggests a C-shaped relationship between output and employment during transition. Countries can be expected to go through three stages during the transition: (1) an initial period of declining output and falling employment; (2) a period of rising productivity and growth, but falling employment; and (3) the “normal” period of rising output and employment. Only in this third stage, when the

recovery of output is already well under way, does employment pick up. The length of the “anomalous” second phase can be considered a measure of success for transition, which would depend on how fast the economy implements efficiency-increasing structural reforms and absorbs technological changes. Labor market institutions and policies and macroeconomic shocks may also affect the speed of the process.

A growth accounting exercise for a number of CEE countries shows that labor’s contribution to growth remained negative even while these economies were rebounding. Figure 3.2 illustrates that the contribution of labor to growth turns positive only two to five years after the uptick in output following the shock of transition, well after capital and total factor productivity gains begin to be felt.

**Figure 3.2. Sources of Growth**

(In annual percentage change)



There is, in addition, some evidence of the predicted C-shaped dynamics of employment and output in transition countries (Figure 3.3). Coincident employment and output gains are a fairly recent phenomenon, although more successful reformers—in particular Hungary, Poland, and the Czech Republic—were able to increase employment earlier as well. However, in each of these successful cases, employment gains subsequently leveled off or reversed. This may reflect in part that, even in these countries, second rounds of restructuring or cyclical developments have led to employment losses, a phenomenon that may well be repeated in other less advanced transition economies.

### Econometric Analysis: Determinants of Unemployment in Transition

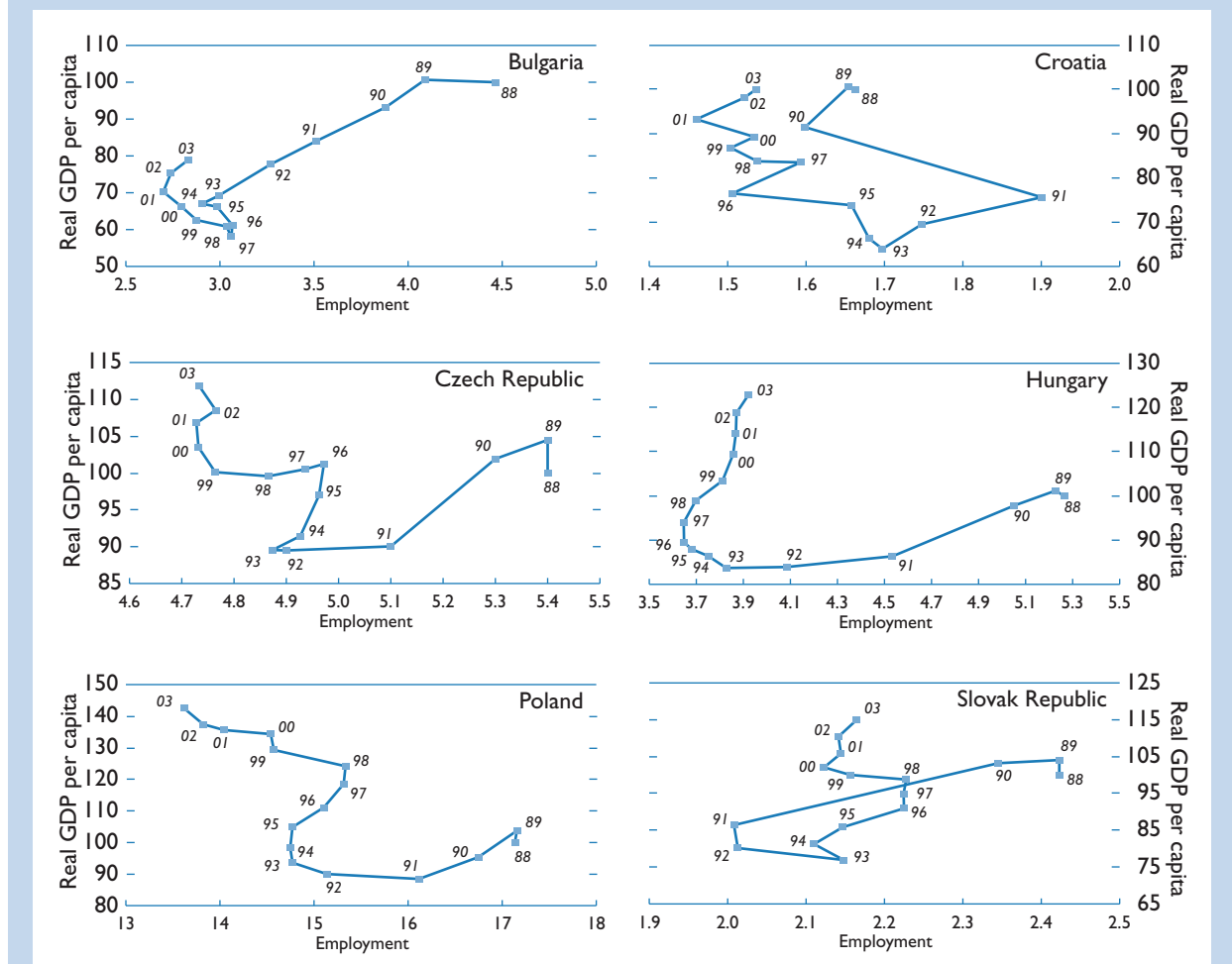
The relationship, described above, between employment ( $e$ ) and economic growth ( $\dot{q}$ ) can be estimated as:

$$e_{it} = c_i + \beta \dot{q}_{it} + \varepsilon_{it}$$

or

$$e_{it} = c_i + \sum_{\tau} \alpha_{\tau} T'_{\tau} \dot{q}_{it} + \varepsilon_{it},$$

Figure 3.3. Employment and Real GDP Per Capita<sup>1</sup>



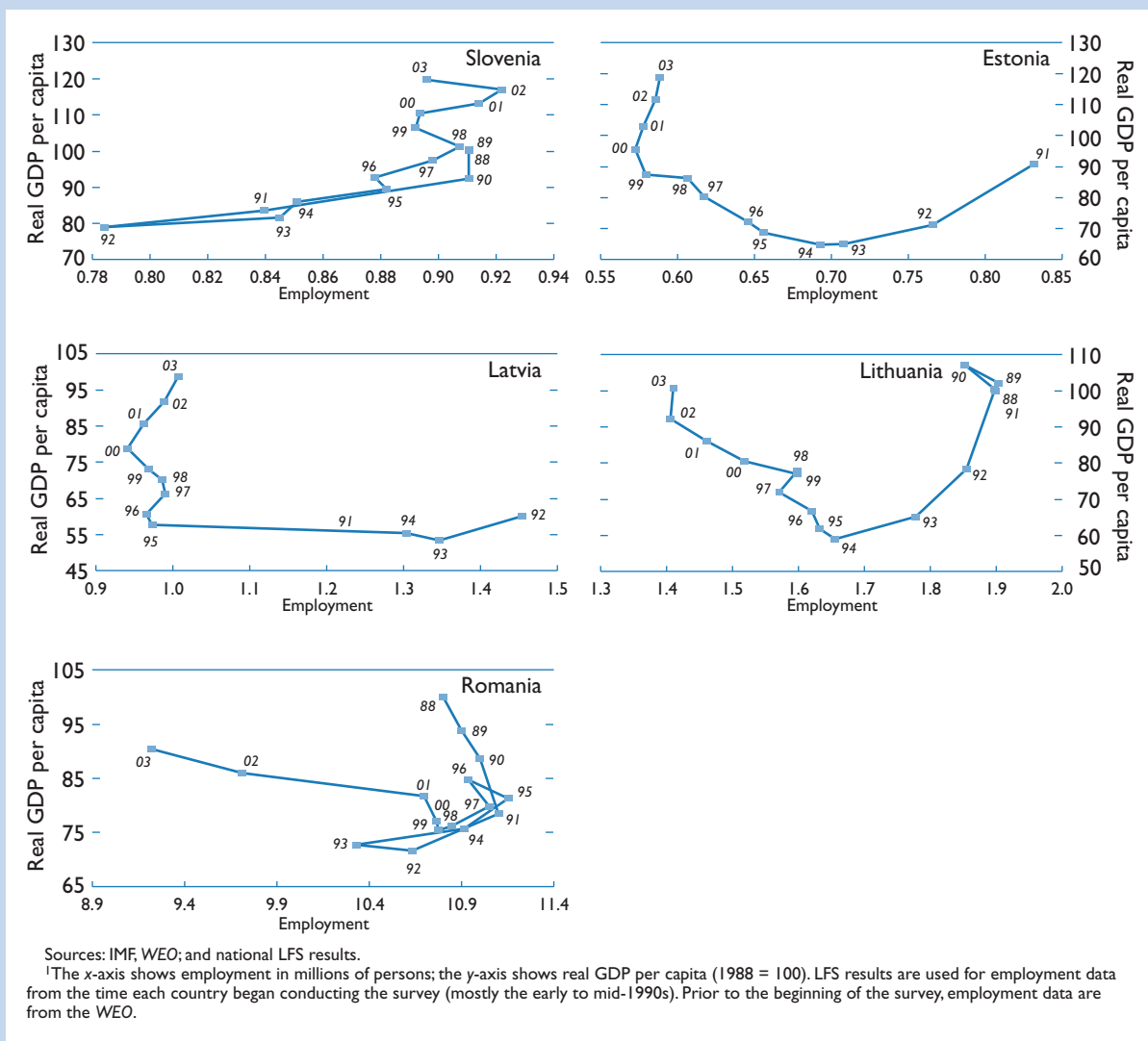
where  $\alpha_\tau$  is a vector of slopes associated with each transition phase and  $T_\tau$  is a vector of transition phases. The transition phases need to be defined such that they are not endogenous to growth or employment developments.

This simple model, however, needs to be expanded to account for the impact of labor market institutions and macroeconomic shocks. The consensus empirical specification has sought to explain unemployment with labor market institutions, controlling for macroeconomic determinants of unemployment, with a view to testing directly whether institutions have an impact on unemployment. However, the impact of some institutions or policies on unemployment may be either reduced or magnified by other institutions. This suggests that the simple specification should be augmented by interactions between certain institutions (see IMF, 2003). In addition, rigid institutions could prevent the economy from taking advantage of posi-

tive macroeconomic shocks to reduce unemployment. For example, Blanchard and Wolfers (2000) point to this by showing that the institution-corrected unemployment rate trends upward in EU-15 countries. They suggest that this hypothesis can be tested by including the interactions of macroeconomic and institutional variables as explanatory variables. Finally, the transition process may also influence the effects of labor market policies and institutions. Indeed, institutions themselves were in transition: for example, high firing costs on the books would not have had a strong impact on unemployment if they were not binding due to lack of enforcement mechanisms. Therefore, the reduced-form model to estimate employment growth should ideally be:

$$e_{it} = c_i + \sum_{\tau} \alpha_{\tau} T_{\tau} \dot{q}_{it} + \sum_{j+k+\mu} \delta_{j+k+\mu} \Gamma_{j+k+\mu} + \xi_{it},$$

Figure 3.3 (concluded)



where  $j$  is the number of macroeconomic control variables included,  $k$  is the number of labor market policies and institutions,  $\mu$  is the number of interacted variables in the equation, and  $\xi_{it}$  is assumed to be a normally distributed, independent and identically distributed (i.i.d.) residual.

### Data Issues and Econometric Results

Data were compiled from various national and international sources. Despite best efforts to ensure consistency across countries and over time in definitions

of variables, it is likely that some consistency problems remain. Thus, results should be viewed with more than the usual caution.

Data limitations imply that the actual specifications employed here fall well short of the ideal. The shortness of the period observed (1993–2002) and the small number of countries (11) present limitations. The lack of a full set of observations for the years 1989–92 is a particular gap, because this covers the early years of transition in several countries. Analogous studies undertaken for OECD countries have typically utilized about 40 years of data and a larger set of variables, making the results significantly more robust. Owing

to these data limitations, the paper focuses on a subset of potentially relevant labor market institutions and policies: the tax rate on labor (the tax wedge), minimum wage (as a share of per capita GDP), and the replacement rate of unemployment benefits (the statutory replacement ratio). Other policy variables for which data were available—duration of unemployment benefits, early retirement age, and family benefits—were consistently nonsignificant and were subsequently dropped. The lack of significance may well reflect the lack of intracountry variation. Potentially relevant but unobserved variables include the role of unions, the extent of centralization of the wage bargaining system, the cost of active labor market policies, and limitations on flexible work contracts.<sup>8</sup> To minimize endogeneity problems, the transition phases were derived on the basis of the average value of EBRD indices of transition. These indices are based on institutional indicators and are not directly related to output or employment. (See Appendix I for a description of data sources and availability.)

Panel estimations were carried out, correcting for bias arising from the presence of the lagged dependent variable on the right-hand side. Because the lagged dependent variable is a significant regressor and the period of observation is short, the Arellano-Bond (A-B) estimator, which corrects for the attendant bias, was used. We regressed the employment rate on macroeconomic controls, labor market institutions, labor market institutions interacted with changes in the terms of trade, and transition stages interacted with output:

$$e_{it} = c_i + \lambda e_{i,t-1} + \sum_j \varphi_j X_{j,i,t} + \sum_k \theta_k Y_{k,i,t} + \sum_j \sum_k \gamma_{j,k} X_{j,i,t} Y_{k,i,t} + \sum_\tau \alpha_\tau \dot{q}_{i,t} EBRD_\tau + \xi_{i,t},$$

where  $e_{it}$  is the employment rate at time  $t$  in country  $i$ ;  $c_i$  is a country-specific effect;  $X_{j,i,t}$  is a vector of macroeconomic variables other than output growth;  $Y_{k,i,t}$  is a vector of labor market institutions;  $\dot{q}_{it}$  is output growth;  $EBRD_\tau$  represents the transition stages; and  $\xi_{i,t}$  is an i.i.d. residual. Identical equations were estimated for unemployment rates, which abstracts from potential responses of participation.

The results suggest that employment and unemployment rates are persistent.<sup>9</sup> Lagged unemployment has a large positive effect on unemployment (Table 3.1)—an increase of 1 percentage point in the lagged unemployment rate raises unemployment by almost 0.6 percentage point. Results for employment are similar, with a 1 percentage point rise in lagged employ-

ment generating a rise in employment of about 0.6 percentage point. As a robustness test, the model was estimated sequentially by dropping, in turn, each one of the countries from the sample. The results did not change markedly.

The impact of growth on labor market performance depends, as expected, on a country's stage of transition. The impact of growth on employment in early transition is not significant and point estimates are negative. But, as predicted, as the transition advances employment growth becomes more tightly linked to output growth.<sup>10</sup> For example, for a country in the most advanced transition stage, a rise in growth by 1 percentage point increases the employment rate by about 0.3 percentage point. This highlights the potential gains to countries completing the transition process quickly. Results for unemployment are similar: growth does not reduce unemployment in the initial phase of transition, but does so increasingly in later stages.

Labor market policies and institutions, while not a dominant influence on employment and unemployment, do appear to play a role in allowing economies to benefit from a positive terms of trade shock. The key labor policy variables are not significant on their own, except for the replacement ratio, which has the expected positive sign in the unemployment equation. However, when we interact the terms of trade—a proxy for an exogenous shock—and labor market policies, a significant impact is observed.<sup>11</sup> A higher labor tax wedge and higher replacement ratio reduce gains from positive shocks to the terms of trade, with the coefficients in both the employment and unemployment equations significant. The impact of institutions is quantitatively significant. For example, while an improvement in terms of trade of 1 percentage point would have a direct positive impact on employment of 1.07 percentage points, three-quarters of this gain is lost when the minimum wage ratio, replacement ratio, and tax wedge are at their mean levels, and a correspondingly higher fraction of the gains is lost when these variables are less favorable (Table 3.2).<sup>12</sup>

<sup>10</sup>While the positive coefficient in the second stage was not predicted by the theoretical framework, this may simply suggest that the stages as defined based on the EBRD average do not correspond precisely to the stages in the theoretical framework. Indeed, the data series for the estimation starts only in 1993, while in many of the countries transition began in earnest in 1989. In fact, out of 110 observations only 9 (8 percent) are classified as phase 1 of the transition.

<sup>11</sup>Following other studies (IMF, 2003), we interacted labor policies and institutions with each other to no significant results and decided to drop them.

<sup>12</sup>The results are symmetric, so that a negative terms of trade shock would have a smaller impact on employment and unemployment when labor market policies are less favorable. This is consistent with the experience in much of the former Soviet Union, where a massive output decline had only a modest impact on measured employment and unemployment.

<sup>8</sup>The OECD index on labor protection is available for only 7 of 11 countries in the sample.

<sup>9</sup>Table 3.1 reports results from the A-B estimations, correcting for heteroscedasticity.



**Table 3.1. Panel Estimation (Arellano-Bond): Employment and Unemployment<sup>1</sup>**

	1	2	3	4	5	6	7	8	9	10	11
	None	Bulgaria	Croatia	Czech Rep.	Estonia	Hungary	Latvia	Lithuania	Poland	Slovak Rep.	Slovenia
Employment											
Lagged employment rate	0.615	0.708	0.625	0.617	0.596	0.574	0.66	0.617	0.559	0.595	0.618
	[8.68]***	[18.12]***	[9.41]***	[8.54]***	[9.58]***	[7.65]***	[9.01]***	[9.48]***	[6.78]***	[7.72]***	[8.61]***
Transition phase 1*lagged change in real GDP	-0.144	-0.254	-0.063	-0.145	-0.17	-0.138	-0.098	-0.213	-0.129	-0.015	-0.145
	[0.81]	[1.45]	[0.26]	[0.83]	[0.88]	[0.61]	[0.53]	[1.16]	[0.67]	[0.12]	[0.77]
Transition phase 2*lagged change in real GDP	0.195	0.329	0.212	0.193	0.222	0.178	0.146	0.148	0.179	0.133	0.195
	[1.79]*	[3.41]***	[1.74]*	[1.77]*	[2.05]**	[1.51]	[1.52]	[1.02]	[1.57]	[1.44]	[1.73]*
Transition phase 3*lagged change in real GDP	0.31	0.322	0.299	0.315	0.381	0.304	0.304	0.32	0.201	0.273	0.326
	[3.55]***	[3.84]***	[3.58]***	[3.27]***	[4.01]***	[3.38]***	[2.99]**	[5.37]***	[2.58]**	[3.15]***	[3.72]***
Lagged change in TOT	1.065	1.108	0.917	1.109	0.958	1.158	0.921	0.873	0.957	1.143	1.077
	[6.04]***	[5.37]***	[5.01]***	[6.29]***	[5.58]***	[5.85]***	[5.29]***	[3.10]**	[4.82]***	[6.76]***	[6.00]***
Cumulative foreign direct investment (in percent of GDP)	-0.01	0.035	-0.001	-0.022	-0.035	-0.01	-0.035	0.013	-0.042	-0.001	-0.007
	[0.20]	[1.03]	[0.02]	[0.35]	[0.66]	[0.19]	[0.67]	[0.31]	[0.78]	[0.03]	[0.13]
Tax wedge (total taxes on labor)	-0.104	-0.154	-0.102	-0.102	-0.112	-0.084	-0.058	-0.119	-0.124	-0.048	-0.101
	[1.44]	[2.02]**	[1.31]	[1.44]	[1.59]	[0.87]	[0.81]	[1.50]	[1.77]*	[0.83]	[1.38]
Replacement ratio	-0.005	-0.005	0.005	-0.008	-0.003	-0.007	-0.008	-0.003	-0.001	-0.009	-0.005
	[0.68]	[0.25]	[0.32]	[1.08]	[0.40]	[0.81]	[1.09]	[0.27]	[1.10]	[1.18]	[0.72]
Minimum-to-average wage	0.063	0.073	0.084	0.063	0.053	0.063	0.019	0.105	0.054	0.067	0.061
	[1.55]	[1.95]*	[1.37]	[1.51]	[1.25]	[1.44]	[0.80]	[2.38]**	[1.22]	[1.74]*	[1.43]
TOT*tax wedge	-0.014	-0.014	-0.014	-0.014	-0.013	-0.015	-0.014	-0.007	-0.013	-0.014	-0.014
	[7.01]***	[8.25]***	[8.33]***	[7.97]***	[7.73]***	[5.36]***	[7.16]***	[2.89]**	[7.28]***	[8.38]***	[7.60]***
TOT*replacement ratio	-0.006	-0.006	-0.004	-0.006	-0.005	-0.006	-0.005	-0.004	-0.005	-0.006	-0.006
	[4.78]***	[3.64]**	[1.58]	[5.70]***	[4.77]***	[4.47]**	[4.25]**	[2.29]**	[4.67]**	[4.92]***	[4.80]***
TOT*minimum-to-average wage	0.001	0.001	0.003	0.001	0.002	0	0.004	-0.004	0.001	0.001	0.001
	[0.38]	[0.38]	[1.01]	[0.40]	[0.60]	[0.14]	[2.56]**	[0.98]	[0.35]	[0.47]	[0.41]
Constant	-0.08	-0.147	-0.06	-0.062	-0.012	-0.127	-0.053	-0.221	0.13	-0.09	-0.102
	[0.47]	[0.99]	[0.38]	[0.33]	[0.08]	[0.63]	[0.30]	[1.69]*	[0.77]	[0.44]	[0.52]
Observations	87	79	79	79	79	79	80	79	79	79	79
Number of country identification	11	10	10	10	10	10	10	10	10	10	10

These results are broadly similar to those from studies of industrial countries. As in this paper, IMF (2003) finds that unemployment is persistent, with a similar coefficient. However, while that paper also concludes that a positive terms of trade shock would reduce unemployment, the estimated effect is much smaller than in this paper. As for interacting macroeconomic shocks with labor market institutions, Blanchard and Wolfers (2000) find that labor market institutions or policies can have a significant mitigating effect on the impact of positive macroeconomic shocks on unemployment. The replacement ratio tends to increase unemployment despite positive macroeconomic shocks, as does the tax wedge. The literature, in general, does not focus on estimating determinants of the employment rate, or on the impact of the transition on employment and unemployment.

In contrast to the EU-15 countries, there is no evidence that residual unemployment rates are trending upward over time. Unlike in Western Europe—where

residual unemployment appears to trend upward, perhaps reflecting relatively rigid labor market policies and institutions (IMF, 2003)—both the employment and unemployment residuals appear stationary in the transition economies (Figure 3.4). As noted above, compared with the EU-15 countries, labor market policies and institutions are reasonably flexible and perhaps also moving more toward market orientation over time (Riboud, Sánchez-Páramo, and Silva-Jáuregui, 2002).

### Country Case Studies: What Works Best?

The analysis to date provides some general guidance for policymakers in transition countries looking to improve labor market performance over the medium term. In particular, results suggest that completing transition as quickly as possible allows

Table 3.1 (concluded)

	1	2	3	4	5	6	7	8	9	10	11
	None	Bulgaria	Croatia	Czech Rep.	Estonia	Hungary	Latvia	Lithuania	Poland	Slovak Rep.	Slovenia
Unemployment											
Lagged unemployment rate	0.553	0.605	0.558	0.558	0.534	0.508	0.648	0.532	0.483	0.52	0.556
	[5.25]***	[5.91]***	[5.03]***	[5.23]***	[5.24]***	[4.99]***	[8.34]***	[4.02]***	[4.63]***	[4.54]***	[5.02]***
Transition phase 1*lagged change in real GDP	0.228	0.378	0.327	0.228	0.257	0.211	0.14	0.344	0.215	0.081	0.229
	[1.16]	[1.92]*	[1.43]	[1.18]	[1.23]	[0.90]	[0.72]	[1.78]*	[1.00]	[0.59]	[1.11]
Transition phase 2*lagged change in real GDP	-0.179	-0.348	-0.17	-0.176	-0.212	-0.16	-0.14	-0.091	-0.166	-0.11	-0.179
	[1.64]	[3.59]***	[1.48]	[1.62]	[1.89]*	[1.38]	[1.40]	[0.75]	[1.45]	[1.24]	[1.56]
Transition phase 3*lagged change in real GDP	-0.284	-0.294	-0.29	-0.287	-0.366	-0.28	-0.286	-0.265	-0.161	-0.244	-0.302
	[2.89]***	[2.84]***	[2.90]***	[2.63]***	[3.56]***	[2.83]***	[2.92]***	[3.47]***	[2.16]**	[2.43]**	[3.02]***
Lagged change in TOT	-0.838	-0.752	-0.917	-0.881	-0.726	-0.919	-0.923	-0.399	-0.723	-0.91	-0.844
	[4.99]***	[3.22]***	[4.65]***	[5.26]***	[5.40]***	[6.04]***	[5.36]***	[3.31]***	[5.74]***	[5.25]***	[5.06]***
Cumulative foreign direct investment (in percent of GDP)	0.037	-0.006	0.024	0.052	0.065	0.035	0.04	0.02	0.071	0.031	0.037
	[0.92]	[0.18]	[0.58]	[1.02]	[1.68]*	[0.78]	[0.78]	[0.56]	[1.87]*	[0.72]	[0.75]
Tax wedge (total taxes on labor)	0.107	0.177	0.139	0.105	0.117	0.086	0.055	0.128	0.136	0.049	0.104
	[1.40]	[2.23]**	[1.54]	[1.39]	[1.56]	[0.90]	[0.77]	[1.47]	[1.76]*	[0.79]	[1.35]
Replacement ratio	0.012	0.05	0.017	0.015	0.01	0.015	0.01	0.014	0.007	0.015	0.012
	[1.79]*	[2.08]**	[1.64]	[2.39]**	[1.40]	[1.83]*	[1.35]	[2.42]**	[1.33]	[2.28]**	[1.81]*
Minimum-to-average wage	-0.044	-0.045	-0.037	-0.044	-0.034	-0.047	-0.02	-0.088	-0.036	-0.05	-0.042
	[1.51]	[1.83]*	[1.14]	[1.46]	[1.14]	[1.39]	[0.84]	[2.70]***	[1.18]	[1.88]*	[1.33]
TOT*tax wedge	0.011	0.012	0.01	0.012	0.01	0.012	0.014	0.003	0.01	0.012	0.011
	[3.63]***	[3.74]***	[3.37]***	[3.80]***	[3.64]***	[3.70]***	[7.16]***	[1.10]	[3.99]***	[3.92]***	[3.70]***
TOT*replacement ratio	0.006	0.005	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.007	0.006
	[5.51]***	[2.98]***	[3.75]***	[6.14]***	[5.27]***	[4.57]***	[4.36]***	[4.74]***	[5.32]***	[5.43]***	[5.45]***
TOT*minimum-to-average wage	-0.002	-0.004	-0.001	-0.003	-0.003	-0.002	-0.002	0.001	-0.003	-0.003	-0.002
	[1.32]	[1.98]**	[0.24]	[1.31]	[1.76]*	[0.83]	[2.54]**	[0.31]	[1.58]	[1.49]	[1.32]
Constant	-0.018	0.075	0.045	-0.044	-0.092	0.042	0.024	0.115	-0.25	-0.032	-0.003
	[0.10]	[0.40]	[0.24]	[0.24]	[0.60]	[0.20]	[0.13]	[0.72]	[1.59]	[0.15]	[0.01]
Observations	88	80	80	80	80	80	80	80	80	80	80
Number of country identification	11	10	10	10	10	10	10	10	10	10	10

Note: Robust z-statistics are shown in brackets;

\*significant at 10 percent; \*\*significant at 5 percent; \*\*\*significant at 1 percent; TOT, terms of trade.

<sup>1</sup>The Arellano-Bond estimator corrects for the lagged dependent variable bias that occurs when the period of observation is short (usually up to 10 years) by using first differences as instruments.

employment to begin rising more rapidly, and that avoiding high minimum wages and taxes on labor can allow labor performance to benefit from positive economic shocks.

In the absence of a far richer data base, more detailed policy recommendations would require a closer qualitative analysis of the experience of transition economies. Here we seek to take a detailed look at two transition countries that have had relatively strong labor market performances—Hungary and the Czech Republic—and several with weaker outcomes—Bulgaria, Croatia, and the Slovak Republic—with an eye toward explaining these differences. We look, then, at selected policies of these countries in some detail to see whether light can be shed on their disparate labor market performances.

### Structural Reforms for Employment Generation

The three underperforming countries can be characterized as relatively slow reformers. This can be seen, for example, in various transition indicators and the private sector's share of value added in total GDP and its employment share in total employment. All of these slow reformers have suffered from a stubbornly high unemployment rate. In addition, the share of long-term unemployment in total unemployment has been significantly higher (hovering around 60 percent in recent years) than in the rapid reformers (where it is around 45 percent).

Poor performers have no systematic disadvantage as regards wage levels or the process of wage deter-



**Table 3.2. Impact of Terms of Trade (TOT) Shocks on the Employment Rate in the Presence of Labor Market Institutions (LMI)**

	Mean Value of Variable	Coefficient of Variable	Effect of Variable	Combined Effect of TOT and Individual Interaction	Combined Effect of TOT and All Interactions	"Cost" of LMI	"Cost" of LMI in Percent of TOT Effect
When the labor market variables are at their mean					<b>0.197</b>	0.868	81.5
percentage change in TOT	0.734	1.065	1.065				
TOT*tax wedge	40.7	-0.014	-0.570	0.495			
TOT*replacement ratio <sup>1</sup>	18.6	0.001	0.019	1.084			
TOT*minimum wage ratio	49.6	-0.006	-0.297	0.768			
Assuming 10 percent increase to average of each labor market variable					<b>0.111</b>	0.954	89.6
TOT*tax wedge	44.8		-0.627	0.438			
TOT*replacement ratio <sup>1</sup>	20.5		0.020	1.085			
TOT*minimum wage ratio	54.5		-0.327	0.738			

Source: Author's calculations.

<sup>1</sup>Abstracting from the effect of this (interacted) variable because its coefficient is not significantly different from zero.

mination. Although labor unions take a part in the collective bargaining in these countries, and the wage setting system is fairly centralized, there is no evidence that they are outliers in this regard. Moreover, there is not consistent evidence that real wage dynamics are out of line with productivity growth in Bulgaria and Slovak Republic. Average wages in Croatia are higher than most CEE countries and this does not appear to be justified by proportionately higher value added per employees (Figure 3.5). However, unit labor cost dynamics indicate that Croatia has more recently contained the labor cost increases compared with other CEE countries, partly reflecting its efforts to restrain public sector wages.<sup>13</sup>

Transfers and benefits also do not appear to play a major role in explaining labor market performance overall, but they can be important in particular cases. Unemployment insurance payments are generally low and do not seem to discourage job search. However, social assistance in some high-unemployment countries may blunt job search incentives, especially for workers with large families. In the Slovak Republic, income assistance to reach a "minimum subsistence income" for all households other than single individuals exceeds the net average wage for families with two or more children.

Strict employment protection legislation may also be a factor. Croatia scores poorly in this regard, with

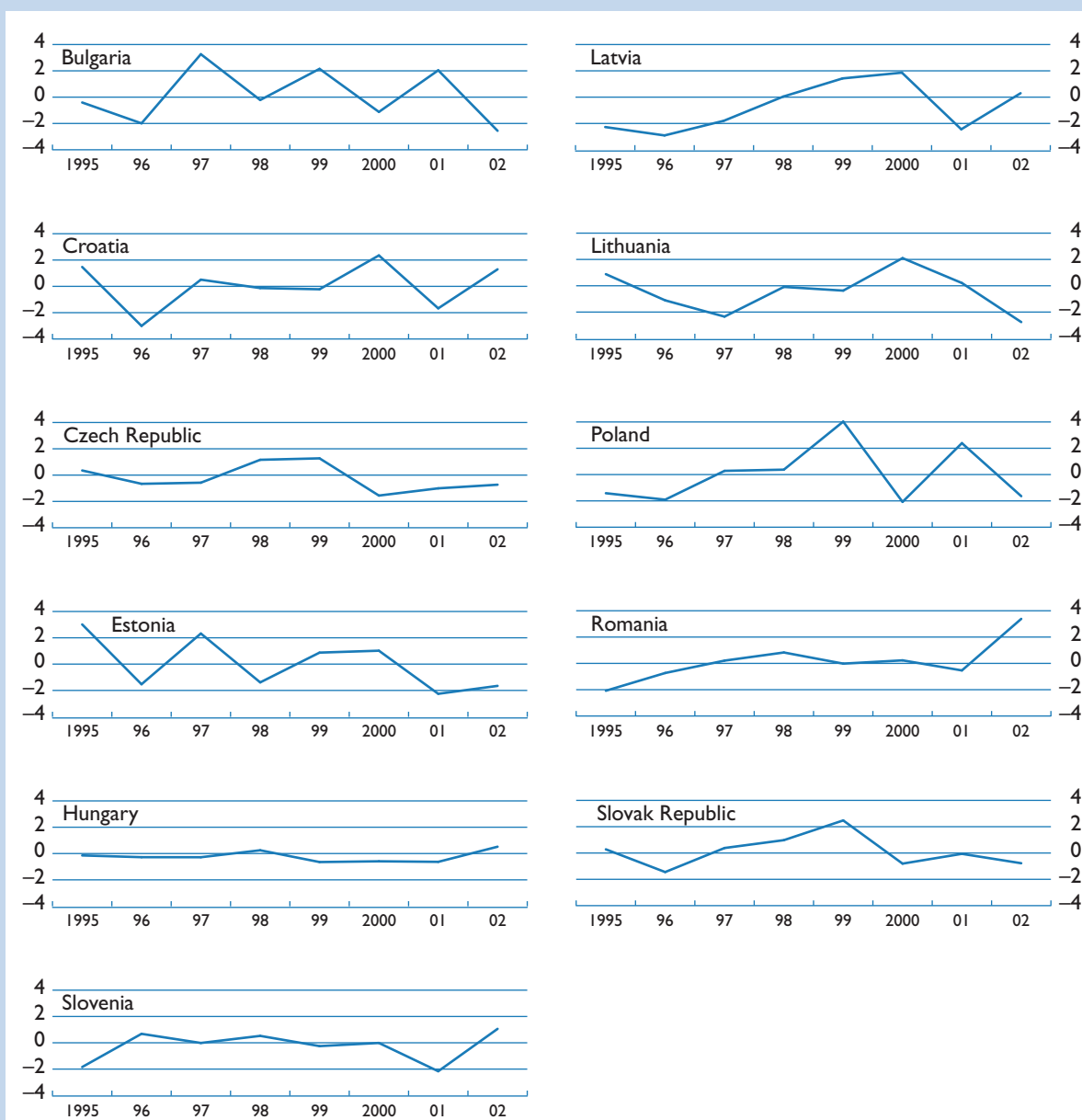
an EPL that is high among CEE countries. Individual dismissals are costly because of a long advance notice period and high severance pay, while collective dismissals are even more difficult. However, the EPL in the Slovak Republic is significantly lower (indicating labor market flexibility) and is not seen as a major contributor to unemployment.

One potentially important explanation for differences in labor market performance lies in the varying abilities of the nascent private sectors to create jobs. It is widely recognized that new small and medium-sized enterprises or foreign-owned firms, which entered after the collapse of planned economy regime, have been the engine of job creation in the CEE countries (see, for example, Jurajda and Terrell, 2002; and Rutkowski, 2003). But in high-unemployment countries, foreign direct investment inflows appear weaker, and small and medium-sized enterprises are less dynamic. In Bulgaria and Croatia, small and medium-sized enterprises account for only 41 percent and 46 percent of employment, respectively, in contrast to leading reformers where the share of employment in small and medium-sized enterprises is well over 50 percent.

Legal barriers to firm entry and job creation do not appear to be the main issue here, but implementation of laws and regulations may be. According to the "Doing business indicators," compiled by the World Bank on the basis of relevant laws and regulations, institutional barriers to business entry or impediments in business operations in the three high-unemployment countries do not compare poorly with barriers in other transition countries. However, there is some evidence

<sup>13</sup>Upward wage pressure exerted by unions apparently led to some excessive increases in labor costs in Croatia in the earlier stage of transition.

Figure 3.4. Unemployment Residuals



Source: Authors' calculations.

that implementation of these regulations may be a problem. For instance, the time required for firm entry is high in the Slovak Republic, while time required to enforce a contract is high in the Slovak Republic and Bulgaria (Table 3.3).

Business surveys also help shed light on stagnant private sector job creation in the high-unemployment

outliers. According to the World Economic Forum's *Quality of the National Business Environment*, which ranks countries on the basis of survey scores on various factors affecting the business environment, Bulgaria, Croatia, and the Slovak Republic rank significantly behind Hungary and the Czech Republic (see Table 3.3). Croatia's lowest ratings are for

**Table 3.3. Selected Business Environment Indicators**

	Slow Reformers			Fast Reformers	
	Bulgaria	Croatia	Slovak Rep.	Czech Rep.	Hungary
World Bank (2004), <i>Doing Business in 2004</i>					
Starting a business					
Number of procedures	10	13	10	10	5
Time (days) to start a business	30	50	98	88	65
Monetary cost (percent of income per capita)	8.3	18.2	10.2	11.7	64.3
Minimum capital (percent of income per capita)	134.4	50.7	111.8	110.0	220.3
Enforcing a contract					
Number of procedures	26	20	26	16	17
Time (days) to enforce a contract	410	330	420	270	365
Monetary cost (percent of income per capita)	6.4	6.6	13.3	18.5	5.4
Procedural complexity index <sup>1</sup>	69	50	40	65	57
Rigidities in employment regulations <sup>2</sup>					
Flexibility of hiring	43	76	34	17	46
Flexibility of employment <sup>3</sup>	90	89	89	63	92
Flexibility of firing	26	31	60	27	23
Overall flexibility in employment regulations	53	65	61	36	54
World Economic Forum (2004), <i>The Global Competitiveness Report, 2002–2003</i>					
Quality of the national business environment ranking <sup>4</sup>	63	54	40	29	34

Sources: World Bank (2004); and World Economic Forum (2004).

<sup>1</sup>On a scale of 1 to 100.

<sup>2</sup>Higher indicators imply less flexibility.

<sup>3</sup>Hours of work, leaves, and minimum wage.

<sup>4</sup>Ranking among 80 countries.

cooperation in labor-employer relations, while the Slovak Republic fails in transport infrastructure quality, and Bulgaria scores poorly in administrative burdens for startups. Corruption and inefficient bureaucracy are also among the top three problems both in Croatia and the Slovak Republic. Thus, weak law enforcement owing to corruption and red tape, combined with strict employment protection (Croatia) or low quality of infrastructure (Slovak Republic), could have played an important role in explaining the slow pace of job creation by private sector new businesses in the slow reformers.

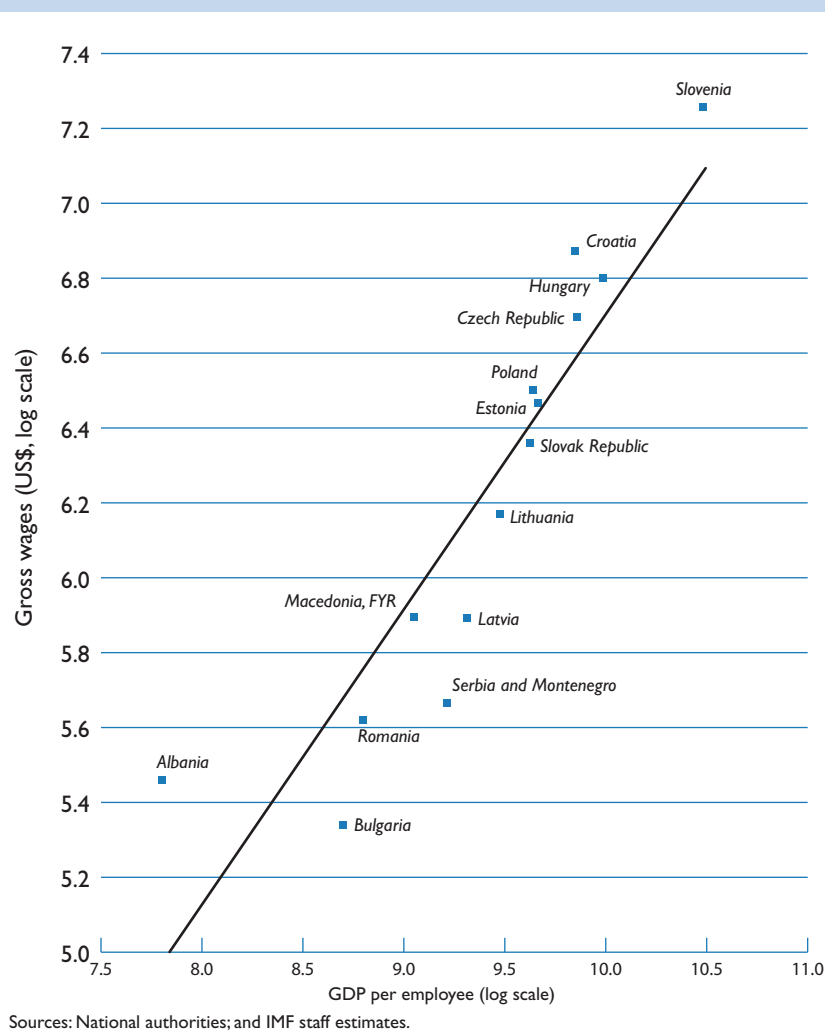
In recent years, the poor performers started addressing these issues, which could help turn around their unfavorable labor market performance. At the beginning of 2004, Croatia amended the labor law to substantially relax employment protection (see Appendix II), while the Slovak Republic reformed the social assistance system to encourage efforts to seek work (Appendix II). These measures could enhance employment growth in these countries over the medium term. Furthermore, all three underperforming countries recently began focusing more on active labor market policies (ALMPs). Although impact studies of ALMPs in Hungary seem to

indicate little positive effect (Appendix II), empirical studies in OECD countries suggest that there is a correspondence between training and employment and labor force participation both at the aggregate and individual levels (OECD, 2003a and 2004a). Such studies also provide evidence that crowding-out effects, in which individuals who receive training might partially displace those who do not, are not large within each specific labor market group. These results could indicate that properly designed ALMPs can improve the labor market position of specific targeted groups in CEE countries who are hit particularly hard by the transition shock, and can enhance economy-wide employment.

### Limiting the Size of the Informal Economy

Less flexible labor market policies may also influence formal sector employment by providing incentives for firms to operate in the gray economy. A large shadow economy could have a number of unwanted economic implications. First, it leads to lower tax compliance, which will hinder fiscal consolidation. Second, an expansion of the shadow economy could

Figure 3.5. Gross Monthly Wages and GDP per Employee, 2003



lower the productivity of the entire economy.<sup>14</sup> Firms in the unofficial sector tend to be small because they try to stay away from the authorities' attention. Their small scale limits their ability to make the most of new technology and business practices, which can drag down the overall productivity of the economy.

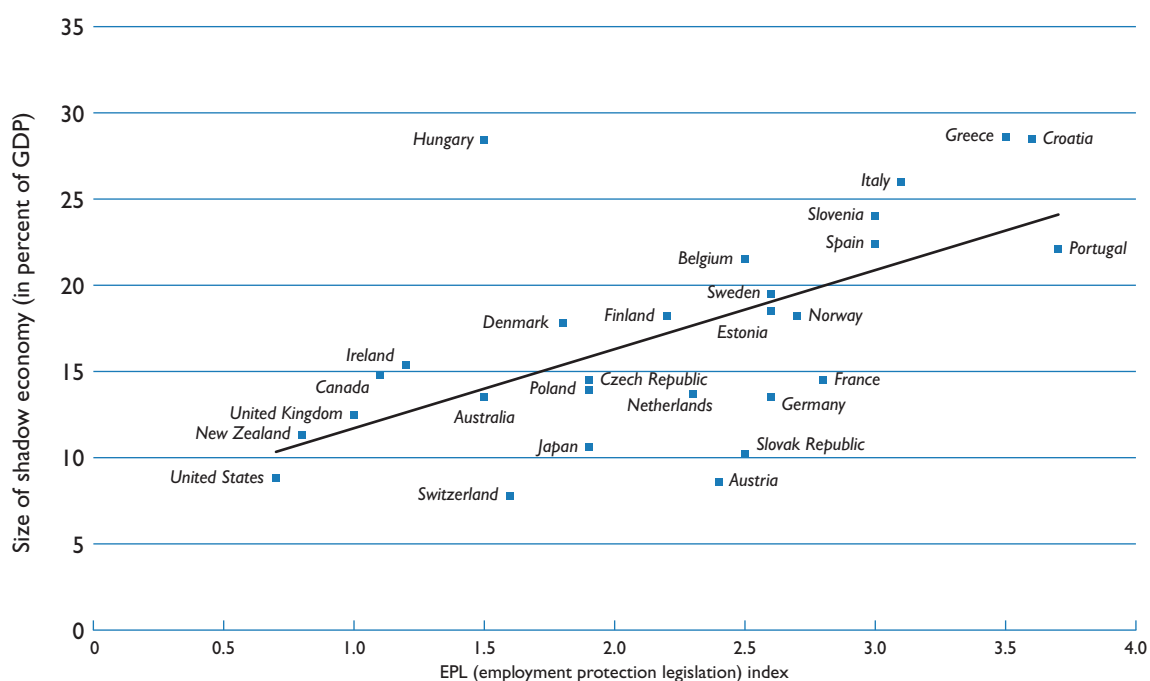
A number of studies find that the gray economy is substantially larger in transition countries than in industrial countries. Schneider (2002a) finds that in CEE countries the shadow economy accounted for between 18 and 36 percent of GDP and that this share

<sup>14</sup>Farrell (2004) provides empirical analysis on the relation between the shadow economy and the productivity of the entire economy.

has increased over time. Among these countries, Bulgaria and Croatia were the highest, above 30 percent, and the Czech Republic and Slovak Republic were the lowest, at roughly 18 percent.<sup>15</sup>

Stringent employment protection leads to increased labor costs in the official economy and provides an incentive for firms to operate in the informal sector. Since labor costs can be shifted largely onto employees, it could also provide workers with an incentive to work in the shadow economy. Figure 3.6 plots the size of the shadow economy in percent of GDP and the

<sup>15</sup>The employment and unemployment data used in this paper are LFS based and reflect employment in the unofficial sector.

**Figure 3.6. Strictness of Employment Protection and Size of Shadow Economy**

**Table 3.4. OLS Estimation on the Impact of EPL on Shadow Economy**
*(Dependent variable: shadow economy as a percent of GDP)*

Regressor	Coefficient	Standard Error	T-Ratio	[Prob]
Constant	7.994	14.750	0.542	[0.593]
Log GDP per capita, one-year lagged	-1.260	1.150	-1.096	[0.284]
EPL***	4.529	1.442	3.140	[0.005]
Tax wedge on labor income	0.106	0.099	1.074	[0.294]
Business regulations	0.962	1.344	0.716	[0.481]

R-bar-squared = 0.356  
Number of observations = 28

\*\*\*Significant at 1 percent level.

EPL in 21 industrial countries and 7 CEE countries.<sup>16</sup> It suggests that the stricter the employment protection is, the bigger the shadow economy tends to be.

Other factors also affect the size of the shadow economy. Almost all studies point out that the tax and social security burden is a key factor.<sup>17</sup> Business regulations also affect the size of the shadow economy. Finally, it is widely recognized that the higher are the quality of infrastructure and the effectiveness of public services, the greater are the incentives to work in the official sector (see Johnson, Kaufmann, and Zoido-Lobaton, 1998).

A simple econometric analysis suggests that employment protection may help explain the size of the shadow economy. Table 3.4 reports the results of ordinary least squares (OLS) regression of the estimated size of the shadow economy on the log of one-year lagged per capita GDP, the EPL index, the tax wedge on labor income, and the business regulation

index.<sup>18</sup> This result should be treated with caution due to the small sample size and inherent uncertainties regarding estimates of the size of the shadow economy. However, it is of interest that the EPL coefficient is positive and highly significant, suggesting that less employment protection is correlated with a smaller shadow economy. Neither the tax wedge on labor income nor the business regulation index is significant.

The above results suggest that CEE countries could enhance employment in the official sector and expand the tax base by relaxing employment protection. Because EPLs in all CEE countries are significantly higher than those in very flexible labor markets such as the United States and the United Kingdom, there is ample room for these countries to make their market more flexible over the medium term. Such reforms could even improve the productivity of the entire economy as mentioned above, as well as enhance tax compliance.

<sup>16</sup>As regards the size of the shadow economy, this empirical study uses estimations by Johnson, Kaufmann, and Zoido-Lobaton (1998) that are based on electricity consumption. This measure avoids the endogeneity issues, unlike the estimates in Schneider (2002a), which are inferred from institution variables.

<sup>17</sup>Schneider and Enste (2000) provide an illustrative survey on this issue.

<sup>18</sup>The business regulation index compiled by the Economic Freedom Network is used as a measure of strictness of business regulations. It takes into account price controls, time required for business entry, and the extent of irregular payments to business regulators. It ranges from 1 (most strict) to 10 (most liberalized).

## IV Understanding Persistent Regional Disparities in Unemployment

Labor market performance not only varies across transition countries, but also across regions within a country, and such regional differences are substantial.

### Differences in Labor Market Performance: An Overview

For most transition countries, the unemployment rate in the highest-unemployment NUTS2 region exceeds that in the lowest by 10 to 20 percentage points.<sup>19</sup> The picture is similar for participation rates as well as the incidence of long-term unemployment. Although such differences are not out of line with the experience of EU-15 countries, they appear to be at the high end, comparable to Belgium or Spain (Figure 4.1). In addition, the differences are persistent—for example, the ranking of regions with respect to unemployment rates tended to remain unchanged in 1995–2001 within each country, with increasing or stable dispersion.

These persistent disparities are a cause for concern. First, the ossification of pockets of high unemployment may contribute to higher aggregate unemployment. Unemployed workers in areas with depressed labor markets are at high risk of losing their labor market attachment. Persistently poor job prospects may weaken motivation to update skills. As a result, a portion of the labor force may become unemployable. Second, job search intensity and labor market participation rates may decline. And third, regional fragmentation of the labor market may weaken social cohesion, making needed structural reforms more difficult to implement.

What causes these regional disparities? A full explanation is unlikely to be provided by institutional factors discussed in previous chapters. Arguably, regions of the same country are at roughly the same stage of economic transition, share the same institu-

<sup>19</sup>NUTS2 (Nomenclature of Territorial Units for Statistics/Nomenclature des Units Territoriales Statistiques) regions are territorial units of broadly comparable size. Throughout this section, unemployment and participation rates are based on Eurostat LFS data.

tional and legal infrastructure,<sup>20</sup> and are exposed to largely the same policy shocks. At least part of the answer should, therefore, lie elsewhere. This Section explores—by building on the existing empirical literature that mostly covers Hungary and the Czech Republic, as well as on the insights from two simple, stylized models—what other factors may contribute to the emergence and persistence of the regional variation in labor market performance.

The origins of regional differences in unemployment are likely to be found in transition-related shocks. Many of these shocks were related to sudden relative price changes and therefore had significant industry-specific components. This in turn translated into initial regional differences in unemployment. In addition, ongoing structural change—for example, due to second and third rounds of restructuring in heavy industry and mining—may have contributed to widening regional unemployment differentials even at later stages of transition. To illustrate this, Figure 4.2 plots the level and change in unemployment against a measure of structural change in 1998–99 for transition countries and transition country regions.<sup>21</sup> Changes in industry structure and unemployment indeed appear to be positively correlated. However, transition-related shocks would need to be very particular—recurring in certain regions but not in others—in order to explain fully the observed pattern of persistent regional differences in unemployment.

A fuller explanation of persistent regional disparities could rely on a long list of factors. Among the possibilities that have been put forth are the following:

- *Inadequate wage flexibility.* If wages are not sufficiently flexible downward—because the mini-

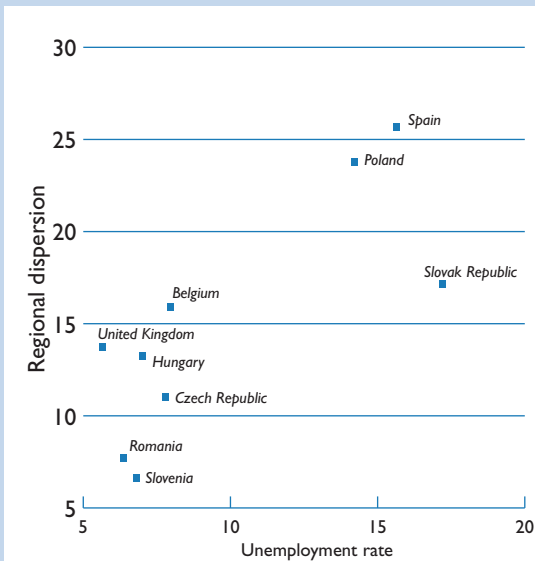
<sup>20</sup>Of course, the key concern is de facto, rather than de jure, equivalence of the business environment, and regional differences may arise. For example, if learning-by-doing by local administrators plays a role in how easily and speedily the steps necessary for setting up a business can be completed, regions with more numerous start-ups may develop an advantage.

<sup>21</sup>The measure of structural change is based on changes in industry shares in regional output. Following Newell and Pastore (2000), the index is defined as  $S = 100 \cdot 0.5 \sum_i (|s(i,t) - s(i,0)|)$ , where  $s(i,t)$  is the share of industry  $i$  in total output at time  $t$ . It would be interesting to look at this index early on in the transition, but data availability constrains us to the 1998–99 period.



**Figure 4.1. Unemployment and Its Regional Dispersion<sup>1</sup>**

(In percent)



Sources: Eurostat; and IMF staff calculations.

<sup>1</sup>Regional dispersion is the difference between maximum and minimum unemployment rates in regions.

num wage is binding, or because centrally negotiated wage demands are excessive for high-unemployment regions—the brunt of labor market adjustment in response to a negative regional shock will occur through reduced employment. Inadequate wage flexibility also prolongs the period necessary for increased unemployment to dissipate.

- **High benefits.** If the difference between labor and benefit income is small or negative, workers will voluntarily become unemployed, will have minimal incentive for job search and improving skills, and may drop out of the labor market altogether. For practical reasons, benefit payments usually do not take into account regional variation in wage and price levels;<sup>22</sup> hence, these effects may be especially strong in distressed regions, and differences in unemployment and participation rates may persist.
- **Limited factor mobility.** Movement of workers and jobs can help even out differences in regional labor markets. However, the equalizing process may slow or halt if factor mobility is impeded. Ex-

<sup>22</sup>There is generally no information on price levels across regions, and data are especially scarce in the area of housing costs. In addition, regional differentiation in benefits would be politically difficult to implement, and very cumbersome and costly to enforce.

amples of impediments include the limited transferability of certain assets—such as housing—labor market segmentation, high transportation costs, regional differences in physical or business infrastructure endowments, and the emergence of agglomeration externalities.

There is little evidence to support the notion that wages across regions are particularly inflexible in transition economies (Table 4.1). In contrast to a number of EU-15 countries—for example, Belgium or Italy—with national wage bargaining systems, wage setting is typically local,<sup>23</sup> and regional wage differentials can be substantial. For example, Kertesi and Köllő (1999) report a 30 percent gap between the wages of comparable workers in Hungary’s highest and lowest unemployment regions; similar differences are observed in other countries. However, with large regional productivity differentials, a nationally set minimum wage may contribute to inadequate wage flexibility at the low end of the wage distribution, particularly in low-productivity, high-unemployment regions.

Of course, some of this difference reflects the regional labor market situation. A frequently used measure of wage flexibility is the responsiveness of individual wages to regional unemployment, or the slope of the wage curve (Blanchflower and Oswald, 1994). In mature economies, typical estimates of the elasticity of wages with respect to regional unemployment are around  $-0.1$ , implying that a doubling of the regional unemployment rate is associated with a 10 percent fall in wages. Estimates for transition countries by Blanchflower (2001) and others<sup>24</sup> indicate that the responsiveness of wages to regional unemployment is at this level or even higher. In addition, nonparticipation tends to be very high in high-unemployment, low-wage regions—including because subsistence activity may generate income levels comparable to employment, or because outdated or insufficient skills and the scarcity of jobs owing to large regional capital destruction discourage workers.<sup>25</sup> If these factors are relevant, further falls in wages alone are unlikely to markedly improve the labor market situation in high-unemployment regions.

Can high benefits be blamed? The empirical evidence here is mixed. As noted above, unemployment benefits are generally not high in transition economies. Further, for Hungary, Köllő (2001) finds no difference in the job-finding probability of unemployed

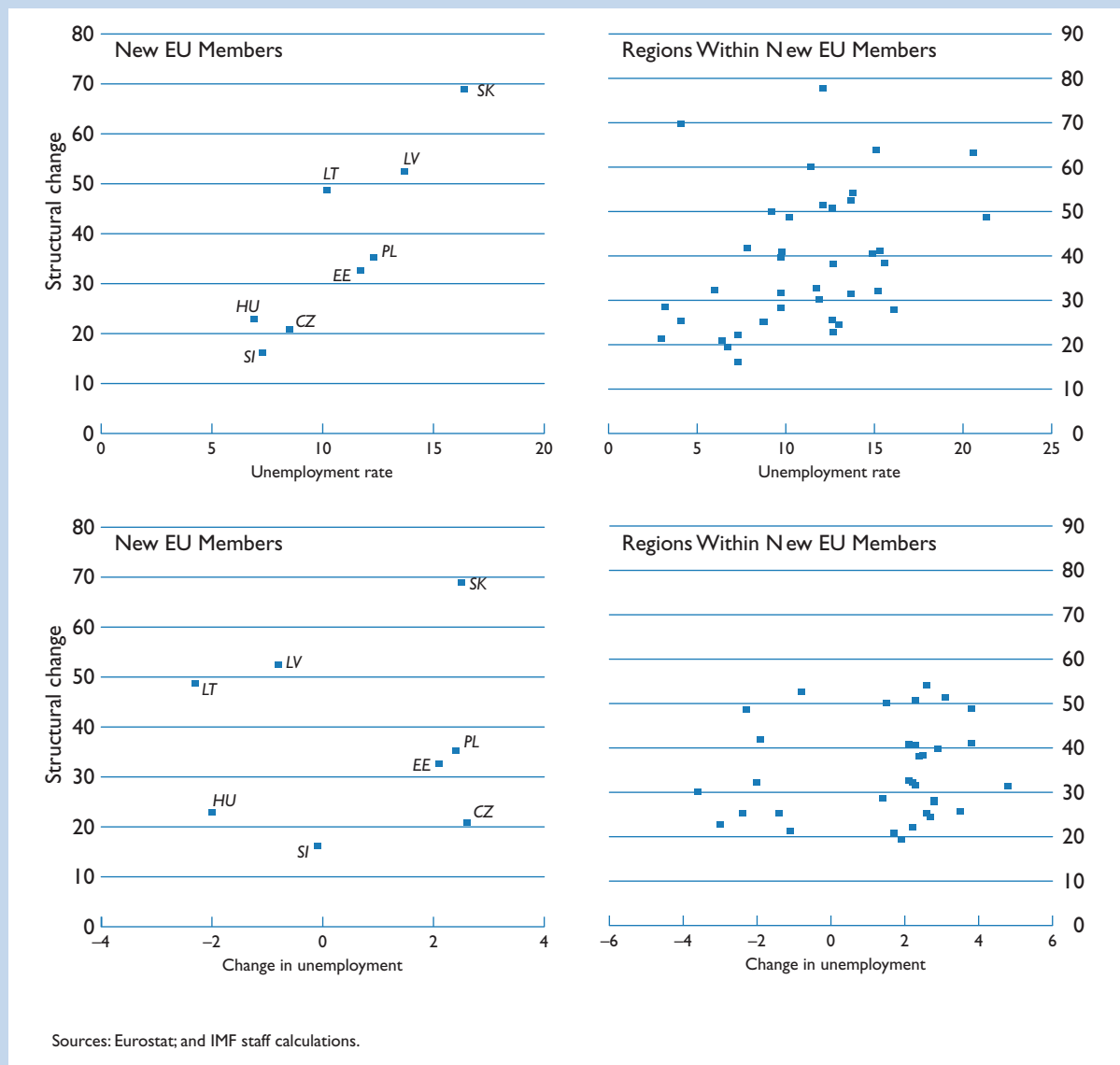
<sup>23</sup>See country notes in Appendix II.

<sup>24</sup>For example, Galuščák and Münich (2004) for the Czech Republic; IMF (2003) for Poland; and Kertesi and Köllő (1999) for Hungary.

<sup>25</sup>Note, however, that full-time farmers are usually considered employed in the LFS data even if they only produce for their own consumption. In countries where the importance of small farms in agriculture is large—for example, Poland—this tends to weaken the correlation between regional unemployment and nonparticipation.



**Figure 4.2. Unemployment and Structural Change**  
(In percent)



with and without benefits. In the same vein, workers leaving unemployment appear to take larger wage cuts compared with their previous wages in depressed regions—that is, the reservation wage appears to decline with regional unemployment.<sup>26</sup> If relatively high

<sup>26</sup>Kertesi and Köllő (1999) estimate that a worker who, based on his characteristics such as age, education, etc., can be expected to have a long unemployment spell but leaves the benefit rolls earlier accepts a wage cut of 13 percent in a region with 10 percent unemployment. He receives an 18 percent cut in a region where unemployment is 20 percent. Workers who can be expected to have a short unemployment spell accept wage cuts of 5 and 8 percent, respectively.

benefits kept the reservation wage high, we would observe the opposite: job-finding unemployed would accept smaller wage cuts in high-benefit regions. On the other hand, social or family benefits may give rise to welfare traps for specific demographic groups—for example, low-wage families with several children.<sup>27</sup> For these workers, benefits may exceed their likely wages, and unemployment or nonparticipation may be an appealing option.

<sup>27</sup>See Erbenova, Sorm, and Terrell (1998), and Jurajda and Munich (2002) for the Czech Republic.

Table 4.1. Basic Indicators, Hungarian and Czech Regions

Hungary, 1997 and 2000	Central	Western Transdanubia	Central Transdanubia	Southern Plain	Southern Transdanubia	Northern Plain	North							
<b>1997</b>														
Employment rate	61.6	65.6	58.5	58.9	56	48.9	50.5							
Unemployment rate (LFS)	7.7	6.8	8.9	9.9	9.9	12.8	15.8							
Educational level <sup>1</sup>	107	101	99	96	98	94	97							
Personal income per capita <sup>1</sup>	124	94	94	84	87	84	89							
Wages per worker	100	73	78	69	71	69	72							
Adjusted for personal characteristics	100	74	81	68	71	69	73							
Adjusted for personal characteristics and productivity	100	96	99	92	92	90	90							
<b>2000</b>														
Unemployment rate (LFS)	4.0	4.1	5.0	6.3	7.9	7.9	8.9							
Educational level <sup>1</sup>	108	100	99	97	97	94	96							
Personal income per capita <sup>1</sup>	134	108	105	78	83	75	82							
Czech Republic, 2002	Prague	Jiho-český	Plzeňský	Středo-český	Králové-hradecký	Vysočina	Pardubický	Liberecký	Karlovarský	Zlínský	Jihomoravský	Olomoucký	Moravskoslezský	Ústecký
Unemployment rate (registered)	3.7	6.7	7.1	7.2	7.3	8.3	8.7	8.7	10.1	10.2	11.2	12.2	15.9	17.1
Investment per capita	147	115	84	110	74	91	85	73	214	75	80	117	86	78
Wages per worker	100	71	75	78	69	68	68	71	68	70	71	67	75	72

Sources: Czech and Hungarian statistical offices; and Köllő (2001).

<sup>1</sup>In percent of country average.

While migration of workers could reduce regional unemployment differentials, it appears that this mechanism is not particularly strong or speedy. Workers in transition countries appear even less willing to migrate than their Western European counterparts. Cseres-Gergely (2002) reports that annual gross migration between Hungarian regions is, at about 2 percent of the population, comparable to Swedish or Dutch internal migration, but migration flows are only half this large or smaller for the Czech Republic, the Slovak Republic, and Poland. Fidrmuc (2002) estimates that, despite large regional differentials in unemployment rates and wages, migration flows induced by such variations in regional labor market conditions are less important in the Czech Republic, Slovak Republic, Hungary, and Poland than they are in Italy or Portugal. Migration appears to respond to economic incentives—people tend to move from high-unemployment, low-wage regions to more prosperous ones (Fidrmuc, 2002; Cseres-Gergely, 2002; Fidrmuc and Huber, 2003). But so few people move that migration is unlikely to eliminate regional differences in unemployment rates.

Commuting to work is a possible substitute to migration. With commuting, a change of residence is not necessary to participate in another labor market. In fact, Eurostat data indicate that the frequency of commuting

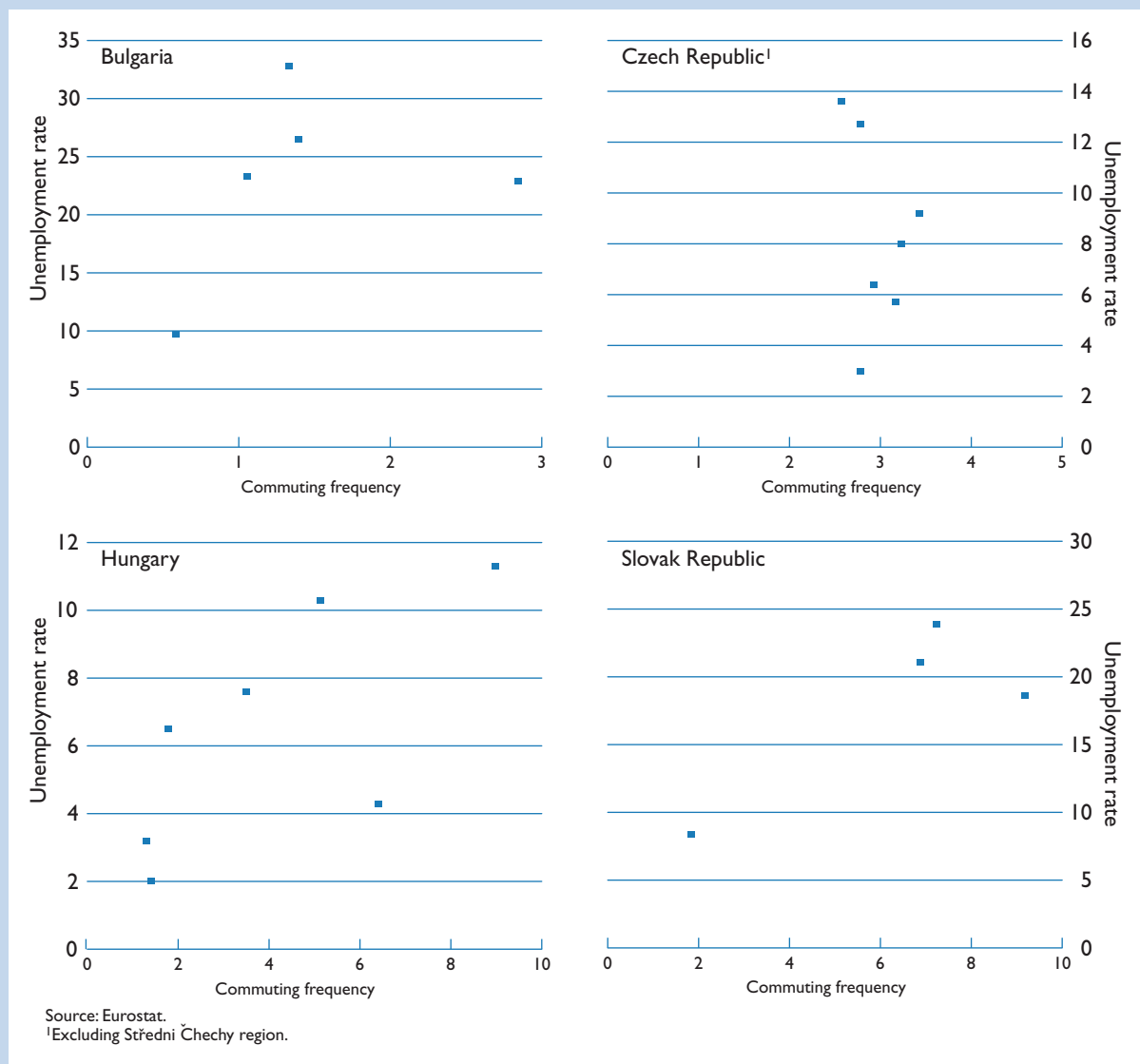
is correlated with regional unemployment (Figure 4.3), with people who reside in depressed regions commuting more. This is consistent with Köllő (2002a), who reports, for Hungary, that about half of those exiting unemployment to employment find work in a settlement other than their primary residence. It appears that commuting may alleviate regional differences in unemployment but is not a strong enough mechanism to narrow them substantially. There appear to be two main obstacles to commuting on a larger scale. First, as Table 4.2 shows, commuting is expensive—both in money and time—reflecting in part poor public transportation<sup>28</sup> and transport infrastructure. Second, if the size of the depressed region is large, there may be nowhere to commute to, especially if car ownership is limited (Figure 4.4). For example, the highest-unemployment regions in Hungary appear to be rural regions that are either isolated or are in the neighborhood of a high-unemployment urban center.

Capital mobility could also potentially help eliminate regional disparities, but capital appears to favor advan-

<sup>28</sup>For example, to commute to a job the employee needs to have the means to get to his job before business starting hours, and then back home after closing hours. Places where such connections do not exist cannot be considered as feasible commuting targets.

**Figure 4.3. Commuting Frequency and Unemployment**

(In percent)



taged regions despite their tighter labor markets. For instance, Fazekas (2003) reports that during 1993–2000, foreign firms increased their employment in the quartile of lowest-unemployment regions in Hungary by 8 percent. In the highest-unemployment quartile, they expanded employment by less than 1 percent. Other indicators also show that high-unemployment regions are not attractive for capital (Table 4.3), and instead of disappearing, the differences between advantaged and disadvantaged regions appear to widen over time.<sup>29</sup>

<sup>29</sup>For Hungary, see Kertesi and Köllő (1999), and Fazekas (2003).

The chapter focuses on limited factor mobility, with a view to identifying impediments to such mobility and policies that could help mitigate them. Because of data limitations—regional information on a comparable basis across countries is available only for a few variables—we center the analysis around two illustrative models. First, we examine a stylized model of individual labor market behavior, holding capital constant. This provides an opportunity to take a closer look at the individual’s incentives to participate in the local labor market or to move to another region. Next, we look at another simple model to describe how jobs

**Table 4.2. Indicators of Commuting Costs in Selected Countries<sup>1</sup>**

	Czech Republic	Hungary	Poland	Slovak Republic	Slovenia
Cost of gasoline per liter (in U.S. dollars)	0.81	0.94	0.83	0.74	0.80
In percent of monthly average wage	0.15	0.17	0.14	0.17	0.07
In percent of monthly minimum wage	0.40	0.42	0.42	0.43	0.17
Cost of rail ticket, 30 km return (in U.S. dollars)	1.77	2.12	...	2.03	...
In percent of monthly average wage	0.32	0.39	...	0.45	...
In percent of monthly minimum wage	0.88	0.95	...	1.17	...
Cost of monthly rail ticket (in U.S. dollars) <sup>2,3</sup>	26.8	46.8	29.3	...	...
In percent of monthly average wage	4.8	8.6	5.0	...	...
In percent of monthly minimum wage	13.3	21.0	15.0	...	...

Source: IMF staff calculations.

<sup>1</sup>Data for 2003 (rail prices) and 2002 (gasoline prices, minimum and average wage).

<sup>2</sup>For distance of about 30 km.

<sup>3</sup>For Hungary, includes employee and employer share.

might be allocated across regions and draw attention to factors that might make regions attractive or unattractive for capital. The number and skills of available workers may influence the attractiveness of regions, so

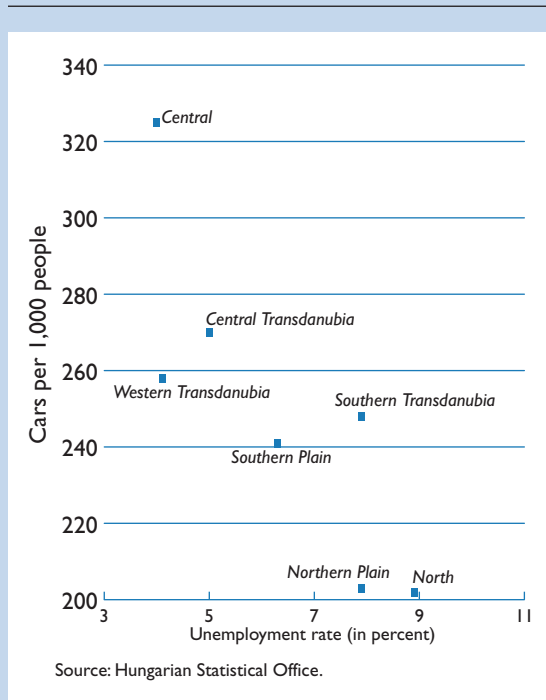
that migration and participation decisions may have an effect on job creation.

### Labor Mobility: The Individual Worker's Decision

This section considers the determinants of regional labor supply—workers' incentives to participate in the local labor market and to move to another region. To simplify the exposition, we focus on the individual's decisions when facing a fixed labor demand—that is, we abstract from job creation or destruction stemming from capital accumulation or capital decumulation. While labor supply decisions depend broadly on the same factors in transition and mature market economies, some structural features of the economy are likely to have particular importance in transition countries.

- *Regional differences in unemployment rates have been accompanied by a large differentiation in participation rates, but migration flows remained even weaker than in other European countries.* To the extent that migration and changes in labor market participation are substitute mechanisms in adjusting to labor market shocks, they should be jointly examined. If “too low” migration rates shift the burden of adjustment to participation rates in transition countries, employment and output will be lower during an adjustment to a negative shock. In transition, tilting the balance toward migration may result in a brighter employment outcome.
- *An inefficient housing market is a possible impediment to mobility.* Housing markets are prob-

**Figure 4.4. Unemployment and Car Ownership, Hungarian Regions, 2002**



**Table 4.3. Indicators of Job Creation by Regional Unemployment Quintiles in Hungary<sup>1</sup>**

		Q1	Q2	Q3	Q4	Q5
Firm creation <sup>2</sup>	1993	6.3	3.3	2.8	2.1	1.5
	1996	2.3	2.4	1.7	1.5	1.0
Start-ups <sup>3</sup>	1993	9.1	8.5	8.2	6.5	5.4
	1995	2.7	1.3	0.5	0.8	0.6
Employment by foreign firms <sup>4</sup>	1993	13.1	8.5	6.5	5.7	4.8
	1996	22.3	16.8	14.3	14.9	11.7

Source: Kertesi and Köllő (1999).

<sup>1</sup>From lowest to highest unemployment.

<sup>2</sup>Annual change in the number of firms per thousand population (excluding sole-proprietorships).

<sup>3</sup>Annual change in the number of sole-proprietorships per thousand population.

<sup>4</sup>Percent of workers employed in majority foreign-owned firms.

**Table 4.4. House Ownership in Selected Countries<sup>1</sup>**

	Czech Republic	Estonia	Hungary <sup>2</sup>	Latvia	Poland	Slovenia	Slovak Republic <sup>3</sup>	Germany	United Kingdom
Share of owner-occupied housing	51	92	90	55	72	84	75	38	65
Size of housing loans relative to GDP	3.8	5.2	1.5	2.5	1.8	3	3.3	56	54

Sources: OECD data; and IMF staff calculations.

<sup>1</sup>For transition countries, data refer to 1999 (share of owner-occupied housing) and 2000 (mortgages); for EU countries, data refer to 1995 and 1998, respectively.

<sup>2</sup>Share of owner-occupied housing in 1997.

<sup>3</sup>"Owner-occupied" includes private rented.

ably more distorted in transition economies than in more developed economies. In many countries, the state-owned housing stock was privatized by selling the apartments to the sitting tenant at low prices, generating very high home ownership rates but keeping the housing market thin (Table 4.4). There is some evidence suggesting that countries with high rates of home ownership tend to have higher unemployment rates (Figure 4.5). The problem is compounded by credit market imperfections—mortgage financing is unlikely to be available without significant collateral, something that migrants from depressed regions are unlikely to offer. Further, the rental market is small, and rent controls and a bias toward tenant rights may be an obstacle for its future development. As a result, moving to a new address is relatively infrequent. For example, while in Sweden, the Netherlands, and the United Kingdom 10–12 percent of the popula-

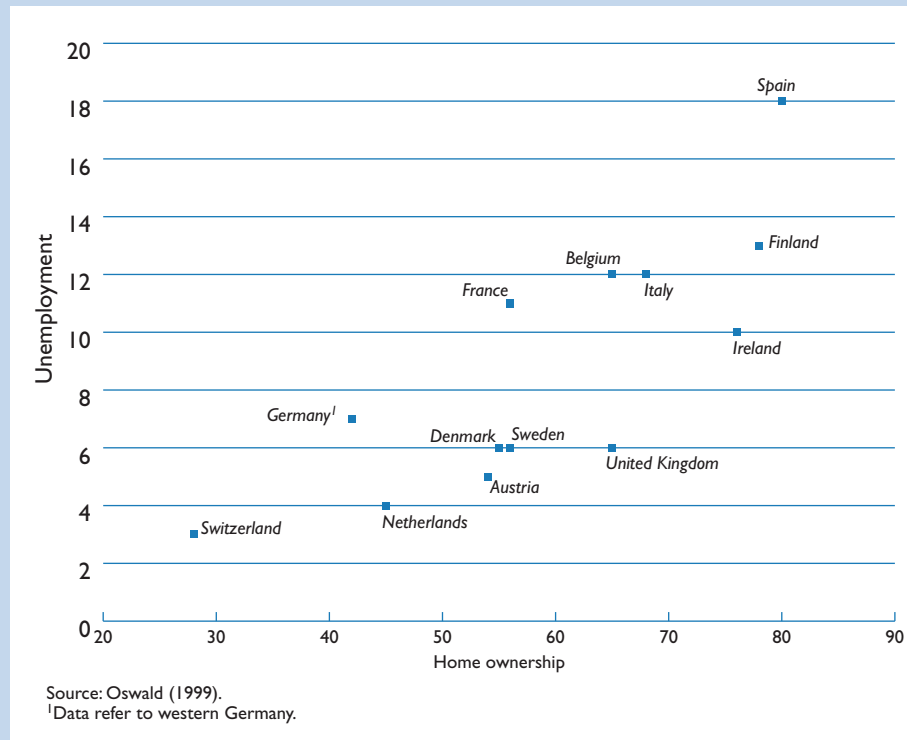
tion moves house each year, in Hungary only about 4 percent does so.<sup>30</sup>

- *Labor market segmentation along dimensions other than regional may be stronger in transition economies than elsewhere in Europe because of more skill heterogeneity.* At one extreme is the part of the labor force with skills rendered obsolete by transition. These workers have joined the ranks of the unskilled, who in many cases comprise a larger share of the labor force than in industrial countries (Table 4.5). At the other extreme are young and newly trained individuals with highly marketable skills. Because the skills and work experience of older workers with sim-

<sup>30</sup>See data reported by Cseres-Gergely (2002). The difference is not due to different propensities to migrate (move to another region): as mentioned before, about 2 percent of the population in Hungary as well as in the Netherlands and Sweden migrates each year.

**Figure 4.5. Unemployment and Home Ownership: Selected European Nations in the 1990s**

(In percent)



ilar training—obtained before transition—may have been devalued, they may represent another, medium-skill category and compete with the young workers only to a limited degree. Kertesi and Köllő (2003) find evidence that, with the appearance of new technologies, this skill obsolescence for the educated workers took place in Hungary, as “skill appreciation” (an increase in the returns to education) became restricted to younger workers. Jurajda (2004) finds similar evidence of skill obsolescence for the Czech Republic.

- *Subsistence activity is more important in transition economies, and may be a viable substitute to labor mobility or labor market participation.* The reasons for this are many. First, a larger gray economy provides more opportunities for the unemployed or those outside the labor force to earn income (monetary or in kind). Second, land or plot ownership is more widespread as a result of land privatization and agricultural reform and the popularity of “dachas.” More people are able to supplement their income with their own agricul-

tural produce. Third, average income levels are much closer to subsistence in transition countries than in industrial countries. For example, calculations by the Romanian Statistical Office indicate that per capita income was significantly lower in households involved in private farming than in employed or unemployed households (about 40 percent and 90 percent, respectively). However, the differences disappear if “in kind” income is also considered.<sup>31</sup>

A stylized model that incorporates these features (Appendix III) is applied to examine the costs and benefits of moving. Workers decide simultaneously whether to move and whether to participate based not only on their expected wages in the two regions, but also on available benefits and subsistence income. An additional consideration for the moving decision is transaction costs (including capital gains and losses)

<sup>31</sup>Calculations cited in Köllő and Vincze (1999). Note, however, that these subsistence farmers are considered self-employed by Romanian statistics.

**Table 4.5. Skill Endowments**

	High Skill <sup>1</sup>	Low Skill <sup>2</sup>
OECD high-income countries, average	0.16	0.78
Austria	0.07	0.91
Finland	0.12	0.78
France	0.24	0.76
Germany	0.15	0.76
Italy	0.10	0.86
Netherlands	0.26	0.74
Sweden	0.13	0.72
United Kingdom	0.15	0.75
CEE, average <sup>3</sup>	0.12	0.83
Czech Republic	0.11	0.90
Hungary	0.16	0.84
Poland	0.11	0.85
Slovak Republic	0.11	0.57
Slovenia	0.07	0.86
Baltic states	0.20	0.59

Sources: Marin (2004, Table 12); and IMF staff calculations.

<sup>1</sup>Tertiary education. Ratio of people with tertiary education.

<sup>2</sup>Up to second level. Ratio of people up to secondary education.

<sup>3</sup>Weighted by 2003 population.

related to selling a house in the home region and buying another one in the target region. The model yields the following conclusions:

- *Migration follows economic incentives:* relatively higher wages and lower probability of unemployment in the target region tend to induce individuals to move.
- *However, deteriorating labor market conditions—declining wages or increasing unemployment—may trigger nonparticipation rather than out-migration.* This can be particularly the case for older workers and suggests that high unemployment regions may end up with a large number of nonparticipating workers who do not have the necessary incentives to migrate.
- *The level of benefits and subsistence income tends to influence participation but has less impact on mobility.* Participation may be more strongly influenced by changes in subsistence income than changes in benefits.
- *Imperfections in the housing market—large differences in house prices across regions and/or large transaction costs—bias workers toward staying in their region of origin.* This effect is likely to be stronger for older workers, who are more likely to own a house or rent at favorable rates.
- *Migration and participation decisions differ across worker groups with different labor mar-*

*ket status.* If workers are split between outsiders (those with a weaker labor market position, such as long-term unemployed with few marketable skills) and insiders (those with a strong labor market position—for instance, employed high-skill workers), the labor-supply behavior of the two groups will differ. Because of their worse labor market prospects, outsiders are more prone to dropping out of the labor force—they decide not to participate at lower levels of benefits and subsistence income than insiders do. In addition, assuming that insider status is transferred with the worker when he moves to another region, insiders will have a higher propensity to move. Outsiders will tend to drop out of the labor force rather than move to another region.

These conclusions suggest that labor mobility should not necessarily be relied on to address persistent high regional unemployment. Rather, they point to the possibility that high-unemployment regions could move toward low participation, with older and lower-skilled potential workers remaining at home, and others moving to more favored regions.

### Job Mobility: The Firm's Decision

Having considered short-term determinants of regional labor supply, this section examines factors that are likely to influence regional labor demand. When thinking over the factors influencing the firm's location decision—incentives for or deterrents to regional investment and job creation—four stylized facts that can be gleaned from the literature need to be considered.

- *Although cheap labor can help attract capital, direct cost factors appear to be a relatively unimportant motive, at least for foreign direct investment.* A survey of Austrian investors (Table 4.6), for example, shows labor costs as distant third to market access and other considerations. Because foreign direct investment inflows are strongly correlated with other indicators of investment and job creation activity, the framework should allow market size to play a role as an incentive for capital flows.
- *Empirical evidence suggests that agglomeration economies influence regional productivity and therefore attractiveness for capital.* Wage differentials have tended to widen between the central agglomerations and less densely populated regions in transition economies, owing in part to the tightness of the regional labor markets. However, Kertesi and Köllő (1999) find for Hungary that the main agglomeration's labor costs declined relative to other regions as its relative productivity increased. Fazekas (2003) also finds quicker productivity growth for foreign direct



**Table 4.6. Motivation of Austrian Outward Direct Investors, End-1999**

	Share in the number of investments (in percent)					Share in the value of investments (in percent)					Total Investments Number	In millions of euros
	Labor Costs	Taxation	Market Access	Supply Security	Other	Labor Costs	Taxation	Market Access	Supply Security	Other		
Total	3	2	72	3	20	1	3	50	5	41	2,172	9,261
EU-11 <sup>1</sup>	1	2	70	2	25	0	2	46	0	51	565	2,846
EU-15	1	2	70	2	25	0	3	40	5	51	664	3,841
Eastern Europe	6	0	73	3	17	4	1	71	2	23	1,098	3,314
Hungary	8	0	68	4	19	7	0	69	2	22	404	841
Czech Republic	6	0	74	1	19	3	0	61	1	35	257	993
Poland	2	0	74	12	11	1	0	79	4	16	105	236

Source: Oesterreichische Nationalbank, "Austrian Outward and Inward Direct Investment at the End of 1999" (*Focus on Austria 2/2001*), Table 10.1.  
<sup>1</sup>EU-11 refers to: Austria, Belgium, Denmark, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain.

investment firms that settled in the advantaged low-unemployment regions.

- *Third, a region's location appears to matter both for its ability to attract capital and its labor market performance.* Table 4.7 illustrates this for the case of Hungary. The capital and the regions close to the EU-15 border (those listed in italics in Table 4.7) tend to do much better along both dimensions. Similar location effects are observable in the Czech Republic and Slovak Republic, suggesting that proximity to large markets and low transportation costs are a factor in capital's location decision.
- *Last, regional unemployment rates and investment (particularly foreign direct investment) activity are negatively correlated (Tables 4.3 and 4.7).* This confirms the idea that the performance of regional labor markets is strongly related to the region's ability to attract businesses and foster job creation.

A "new economic geography" model provides an analytical framework for examining firm location decisions. Puga (1999) explains the location of manufacturing as a function of the strength of agglomeration and dispersion forces. Similarly to Krugman and Venables (1995), manufacturing firms generate demand for other firms' output, which makes "bunching" of firms advantageous. At the same time, however, transportation costs and the limited availability of labor in regions tend to induce firms to spread across regions. More precisely, agglomeration of manufacturing is promoted by two effects. The first is demand linkages. In a region where many firms are located, demand for manufactured goods is higher, since the manufacturing sector itself generates demand for its own product as an intermediate input. The second is cost linkages. If many firms are located in the same region, intermediate inputs

for a new firm are cheaper, since the prices of locally supplied varieties are not augmented by transport costs. If nothing else were at work, these forces—demand and

**Table 4.7. Unemployment Rate and the FDI Sector's Share in the Corporate Sector's Employment in Hungarian Regions<sup>1</sup>**  
*(In percent)*

	FDI Share in Employment, 1998	Unemployment, 1998
<i>Budapest<sup>2</sup></i>	40.5	3.4
Baranya	2.9	10.9
Bács-Kiskun	2.5	8.7
Békés	1.7	13.5
Borsod-Abaúj-Zemplén	4.4	18.6
Csongrád	3.2	7.9
Fejér	4.5	7.7
<i>Győr-Sopron-Moson<sup>3</sup></i>	7.3	4.5
Hajdú-Bihar	3.2	14.4
Heves	2.3	10.9
Komárom-Esztergom	2.8	9.3
Nógrád	0.9	14
<i>Pest<sup>2</sup></i>	7.1	5.5
Somogy	1.8	10.7
Szabolcs-Szatmár-Bereg	1.6	18.3
Jász-Nagykun-Szolnok	2.1	13.4
Tolna	1.3	11.7
<i>Vas<sup>3</sup></i>	4.7	5.2
Veszprém	3.0	7.4
Zala	2.3	7.1

Sources: Eurostat; and Fazekas (2000, Table 2).

<sup>1</sup>FDI: foreign direct investment.

<sup>2</sup>Central agglomeration.

<sup>3</sup>Western border.



cost linkages—would cause manufacturing to concentrate in one region. However, a larger number of firms means stronger competition. If a larger share of the demand for manufactures is satisfied by local production, the average price of manufactures is lower, forcing individual firms to lower their prices or reduce the scale of production. Second, the presence of many firms generates larger labor demand and pushes up wage costs.

This framework suggests that two types of equilibria can be distinguished: those in which manufacturing spreads across regions, and those with agglomerates in one region. In the first type of equilibrium, agglomeration and dispersion forces balance each other, and firms earn zero profits in both regions. In the second type, all firms concentrate in one region without any incentive to relocate. As transport costs influence the strength of some of the agglomeration and dispersion forces, they also have an effect on the long-run equilibrium, with the relationship between transport costs and agglomeration being  $\Omega$ -shaped. With very high transport costs, the advantages of producing close to market dominate, most sales occur locally, and manufacturing is dispersed across regions. As transport costs fall, export markets gain in importance, local product market competition weakens as a dispersion force, and manufacturing tends to agglomerate. If transport costs become lower yet, manufacturing starts to spread again, attracted by lower wages and low competition in the deindustrialized regions. In the limit, manufacturing is again fully dispersed, and wages equalize across regions. Under some conditions, multiple equilibria may also arise—regions with a small initial manufacturing base may lose their manufacturing sector altogether, while regions with a critical mass of manufacturing will attract additional firms.

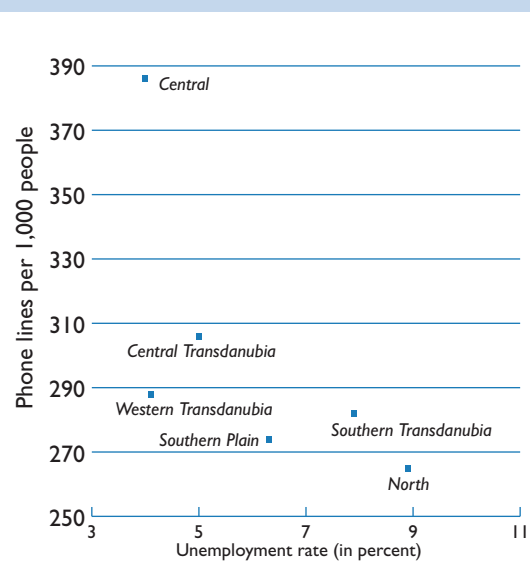
This model suggests that different initial positions may cause regions to diverge over both the short and the long run. We assume that the model economies are characterized by low-to-medium transport costs, and that multiple equilibria are possible.<sup>32</sup> In this case, in a region hard-hit by the transition shock, the manufacturing sector and thus the home market may be too small to make production profitable, and firms

<sup>32</sup>The fact that the role of external trade is large in these economies and that foreign direct investment appears to be geared toward production for exports suggests low transport costs. However, the fact that market access rather than cheap labor tends to motivate location decisions suggests that transport costs between transition countries and the rest of Europe are significant. These observations can be reconciled if we consider that transition countries are not yet in equilibrium. Export capacity may still be below its long-run value, while the home market may be underprovided. In addition, there are likely significant differences in transport costs across industries; hence, the relative importance of various motives for production location should also vary. Some industries may seek low labor costs, others market access, yet others high-skill labor. In addition, the observation that regional convergence does not appear to be taking place suggests a situation where multiple equilibria may arise.

exit. Manufacturing shrinks, and the region gets caught in a vicious cycle. By contrast, in the lucky region a virtuous cycle operates: profits are positive, new firms enter, and the home market expands. Even if the manufacturing base is large enough in both regions to eventually attract new firms, the lucky region may initially be more successful. Because the manufacturing sector is larger there, agglomeration effects may lead to higher profits. The faster entry of firms to the lucky region may reinforce the differences temporarily, since it strengthens the benefits from agglomeration. But with the entry of more and more firms, keener competition on the product market and factor cost increases start eroding profits. Eventually, the cost advantage of the unlucky region will induce firms to locate there, and the regions start to converge.

The analysis also points to transport costs as a significant factor in a region's attractiveness. There is a large variation in the density and quality of road and rail networks across transition country regions, and anecdotal evidence suggests that the poor state of transport infrastructure acts as a deterrent to investment. In addition, it may also hinder commuting and further contribute to persistent high unemployment. Having a disadvantage in the area of transport infrastructure may increase the likelihood that a region will see more firm exit or less enthusiastic firm entry compared with a better-provided region, especially if other elements of business infrastructure also com-

**Figure 4.6. Unemployment and Main Phone Lines, Hungarian Regions, 2002**



Source: Hungarian Statistical Office.

pare unfavorably (Figure 4.6). Therefore, offsetting such disadvantages—that is, reducing transport costs where they are particularly high—may increase the chances of eventual regional convergence.

The size of the effective labor force may be another important factor in attracting firms. The effective supply of labor not only depends on the number of workers available, but also on their skill. The labor force may shrink more in unlucky regions than in lucky ones, for several reasons. Skill mismatch—that is, a large number of workers with skills appropriate for the outdated industry but not fit for modern manufacturing—is likely to reduce the size of the effective labor force more in the unlucky region. In

addition, if the economy shrinks, nonparticipation may become more attractive, again reducing the size of the labor force and the potential to exploit agglomeration economies. Further, local knowledge spillovers may increase the productivity edge of the region with a large manufacturing base, increasing the likelihood of regional divergence in the size of manufacturing. This points to the potential importance of reducing regional differences in productivity—possibly by ensuring an even level of general education and the preconditions for an adequate skill mix across regions—to help even out differences in regions' attractiveness to capital and possibly labor market outcomes.

## V Policy Lessons: Reducing Unemployment in Transition

This paper has sought to describe and explain labor market performance during transition in CEE countries. Among our key findings are:

- *Initial declines in employment and the emergence of high unemployment have persisted in most transition economies, even following the resumption of reasonably strong economic growth.* This partly reflects the fact that growth was initially driven by gains in productivity, including via significant job shedding. Because the scope for such gains is becoming smaller in more advanced transition economies, further economic growth may now become more job-rich. However, countries with significant restructuring remaining may experience further bouts of joblessness.
- *Labor market policies and institutions, while not necessarily a dominant factor, appear to have influenced unemployment developments across countries.* Data problems have limited our ability to identify precisely the role of labor policies and institutions. Nevertheless, the paper does find evidence that a higher unemployment insurance replacement rate and a larger tax wedge on labor income limit the ability of economies to generate jobs in response to positive shocks. Moreover, strict employment protection legislation is associated with an expanded shadow economy, with potential impact on productivity and labor demand.
- *Regional variations in unemployment have persisted and, in some cases, widened.* The inability to deal with the problems of high-unemployment regions has contributed both to the persistence of high aggregate unemployment as well as the high levels of long-term unemployment in many transition economies. Market forces—the flow of workers to low-unemployment regions or the movement of jobs to regions with surplus labor—have not been effective in addressing these concerns. Rather, the tendency of more highly skilled workers to migrate from poor regions and for advantaged regions to attract greater investment points to the potential for further regional divergence. Labor market policies may contribute to this process if a relatively generous minimum

wage is implemented uniformly across regions or if unemployment insurance (or other social assistance) does not take account of differing regional price levels.

- *Continued high unemployment also reflects policies outside the labor market.* High home ownership rates, constraints on the development of a housing rental market, and credit market imperfections may hinder labor mobility. Business climate problems can limit the dynamism of the small and medium-sized enterprise sector, which is typically an important generator of jobs. And poor infrastructure can doom regions to a high-unemployment equilibrium.

Perhaps the strongest message for transition economies that arises from our analysis is: to bring unemployment down, complete the reform process as quickly as possible. While market-oriented reform is likely to stimulate economic growth before—and in some cases well before—employment growth, advanced reformers do experience employment growth. Many of the countries in our sample now appear to be at the start of the stage in which economic growth is job rich, although several others have seen labor market performance deteriorate with second-round restructuring or macroeconomic downturns. Perhaps the greatest danger is that the political costs of being in the high-growth/low-employment stage of transition will constrain countries' ability to complete the reform process and move to the stage of more job-rich growth. This consideration is potentially relevant for a broader range of countries than those considered here. Any country implementing reforms that increase productivity sharply may confront the trade-off between short-run employment costs and longer-term gains.

The paper also suggests that transition economies could improve their unemployment picture by cutting taxes on labor income, but this is not an easy task. Labor taxation is one area in which the transition economies score rather badly—worse, in particular, than the EU-15 countries—and our results suggest that a cut in marginal rates could have a modest impact on labor market performance. However, reducing social security contribution rates is complicated

by aging populations and already strained pension systems. Moreover, replacing lost direct tax revenue with indirect taxation, while an option, can have negative consequences for income distribution and may be politically difficult.

Our cases studies seem to suggest at least one potential difference between good and bad performers: those with relatively low unemployment tend to have good business climates. Thus, successfully tackling the broad array of issues influencing a country's overall business climate may be critical in stimulating employment growth in transition, including in small and medium-sized enterprises. In part this may require an overhaul of laws and regulations limiting entry of new firms. But it appears that implementation of these laws and regulations—heavily influenced by the effectiveness of the legal system and governance more generally—may be at least as important. In some countries, rigid employment regulations are likely to have discouraged new business entry or expansion of employment and led to an expanded shadow economy.

The paper suggests also that governments may need to consider policy measures to help specific regions pull out of high unemployment traps. One approach is to remove constraints on labor mobility, by providing better information on job opportunities nationwide and/or addressing housing market distortions—for example, through easing rent controls, appropriately balancing tenant and landlord rights, or eliminating distortions in the tax system tilted toward home ownership and against the rental market. However, simply easing labor mobility is likely to affect primarily the better-skilled, potentially leaving high-unemployment regions further disadvantaged with respect to investment and job creation. Thus, such an approach would need to go hand in hand with efforts to bring jobs to the high-unemployment regions. Our analysis points toward several types of measures that could be effective in this regard, although policy design would need to be carefully considered to ensure that the policies were effective and their fiscal costs acceptable:

- *On the labor supply side, careful design of the tax-benefit system may help eliminate welfare traps.* However, “subsistence traps” are unlikely to disappear until wages significantly exceed subsistence income—that is, until later stages of transition. Participation rates for the low-skilled may remain low despite welfare reform.
- *Provision of basic infrastructure could be critical in attracting investment and lifting a region out of high-unemployment equilibrium.* Putting emphasis on developing transport infrastructure to link problem regions more tightly with foreign and domestic markets should be a priority.
- *Properly designed job training could potentially make a high-unemployment region more attractive to investors, helping to pull the region out of its high-unemployment equilibrium.* Most transition countries spend relatively little on training. Bringing the local skill mix closer to the one demanded by dynamic industries could be helped by an emphasis on updating skills and on lifelong learning. Given the extent of the skill mismatch—as a share of the labor force and as the distance between the actual and desired skill mix—active labor market policies could potentially have significant payoffs. However, the evidence on the effectiveness of such policies in mature economies is not clear-cut, and international experience and domestic pilot programs should be used to identify the most promising schemes.
- *Tax incentives for investors in high-unemployment regions could serve as the initial push needed by these regions, but also run significant risks.* It is extremely difficult to design and implement such tax regimes in a manner that ensures that only marginal investments receive such benefits and that tax evasion is not facilitated. Further, if the incentives are not effective in attracting a critical mass of investors, agglomeration benefits will not accrue, and the investors may relocate as soon as the incentives expire.

# Appendix I Data Sources and Issues

This appendix briefly describes the data sources of selected variables used in this study.

## Labor Force Data

Main sources: European Union, *New Cronos* database <http://europa.eu.int/newcronos>; International Labor Organization (ILO), *Laborsta* [www.laborsta.org](http://www.laborsta.org); National authorities' statistical offices, statistical yearbooks, and websites; and World Bank, *World Development Indicators*.

Basic employment data mainly come from national authorities' labor force survey (LFS) data, unless otherwise indicated. As noted at the bottom of each LFS results tables, some countries' data are end-of-period data, while others are annual average. Although this may make the data set less consistent when making cross-country comparison, such difference is assumed to be small enough to permit reasonable analysis. More important, one should note that the countries of study in this paper did not start conducting the LFS until the early to late 1990s, and the data for the period prior to that come from various sources. We are aware that splicing data from different sources are not deemed to be completely consistent, and our use of such data is limited to grasping the overall trends.

Years in which countries of the study began conducting LFS: Bulgaria, 1993; Croatia, 1996; Czech Republic, 1993; Estonia, 1993; Hungary, 1992; Latvia, 1996; Lithuania, 1994; Poland, 1992; Slovak Republic, 1994; and Slovenia, 1993.

The variables that require particular attention because of their different data source (other than the LFS) and/or their definitions are presented below.

## Working-Age Population

From LFS. Defined as 15 years old and above. However, some countries did not adopt this widely accepted definition when they began conducting LFS, making the time series inconsistent over the period (refer to the footnotes under each table for details).

## Employment

From LFS. For the period prior to the beginning of LFS, data from the IMF's *World Economic Outlook* are used.

## Unemployment

From LFS. For the period prior to the beginning of LFS, data from the IMF's *World Economic Outlook* are used. The series labeled "Registered" come from each authority's labor office.

## Youth Employment/Unemployment

From LFS. Defined as 15–24 years old. The series labeled "Registered" come from each authority's labor office.

## Long-Term Unemployment

From LFS. "Long-term" is defined as 12–13 months and over. The definition slightly differs depending on the country (refer to the footnotes under each table).

## Unemployment by Education Attainment

From LFS. The classification of education levels are based on each authority's definition, and these definitions may not be completely comparable across countries.

## Unemployment Rates (including youth and long-term, both LFS and registered)

All are calculated using the working-age population presented in the country-by-country tables and the LFS tables as the denominator, and they may not be exactly the same as the "official" rates that may be found in each country's official sources.

## Private Sector Employment

Although LFS data are used whenever possible, almost half of what is presented in the summary tables

is taken from other sources, including Statistical Appendixes of IMF Country Reports, and authority's employment registration (refer to the footnote under each table).

### Employment by Industry

LFS data (taken from ILO's database, *Laborsta*) are used whenever available, and they are spliced with the data from the World Bank's *World Development Indicators*.

### Regional Employment/Unemployment

Provided by national authorities or taken from the EU's New Cronos database.

### Wage Data

Main sources: National authorities' statistical offices, statistical yearbooks, and websites; and ILO, *Laborsta* [www.laborsta.org](http://www.laborsta.org).

### Economy-Wide Monthly Wages

From the ILO *Laborsta* database. Original data in local currency units have been adjusted as necessary for cross-country comparison.

### Private and Public Sector Monthly Wages

Provided by national authorities or taken from national statistical yearbooks or from national authorities' websites whenever available. Thus, the data may not be completely consistent with economy-wide wages that come from the ILO database, *Laborsta*.

### Minimum Wage

Taken from various sources including: authorities, statistical yearbook, statistical offices' websites, ILO, and IMF staff estimates.

### Labor Market Policies and Institutions

Main sources: Social Security Worldwide [www.issa.int](http://www.issa.int); U.S. Social Security Administration, *Social Security throughout the World*, [www.ssa.gov/international/](http://www.ssa.gov/international/) and various printed editions; and Vienna Institute for International Economic Studies, [www.wiiw.ac.at](http://www.wiiw.ac.at).

### Duration of Unemployment Benefits; Family Benefits; Early Retirement Age

Constructed based on the information provided on Social Security Worldwide website and in *Social Security throughout the World* by the U.S. Social Security Administration. Because the social security information is not published every year, we assumed the policy of the previous year was carried on for the years for which we did not have information, and this assumption may not always be correct for those countries that have gone through rapid change in transition. In addition, such information is descriptive with a wide range of variation in detail across countries, and although we tried to construct the time series in as consistent a manner as possible using the same definition, they may not always be consistent for cross-country comparison.

### Tax Rates

Estimated by using average marginal income tax rate and payroll tax rate listed in PricewaterhouseCoopers, *Individual Taxes* in each year of the sample period.

### Unemployment Benefits

Based on the information listed in *Social Security throughout the World*, the data taken from the Vienna Institute for International Economic Studies database, and data provided by the authorities. The replacement ratio is the ratio of stipulated unemployment benefits to previous earnings during the first six months of the unemployment period. Duration is the one applied to a worker with 20 years of social security contributions.

### Government Spending on Social Security and Welfare

From IMF, *Government Finance Statistics*.

### Employment Protection Legislation (EPL) Index

From OECD, *Employment Outlook 1999*; and World Bank estimates (2002).

### Transition Indicators

European Bank for Reconstruction and Development, *EBRD Transition Report*, various editions.



## Appendix II Country Case Studies

The sections of this appendix present information on labor markets and conditions in Bulgaria, Croatia, Hungary, Poland, and the Slovak Republic.

### Bulgaria<sup>1</sup>

Closer economic links with the former Soviet Union and delays (until 1997) in implementing serious reforms led to a sharper output contraction in Bulgaria than in many other Central and East European (CEE) countries, resulting in one of the largest employment losses and steepest real wage declines of all CEE countries. Participation and employment rates also declined considerably. Despite the strong rebound in economic growth in the aftermath of the 1996–97 banking crisis, high unemployment remains a scourge. Bulgaria significantly reformed its labor laws and regulations to make them consistent with a market economy, while complying with EU directives. At the same time, the country has been expanding active labor market policies to help, in particular, long-term unemployed in the transition back to jobs. The persistence of high unemployment, however, leads one to wonder whether labor market institutions and policies have been an obstacle to unemployment decline, although there has been a marked shift in that direction recently.

### Labor Market Performance

The end of central planning resulted in the collapse of participation and employment and in a sharp increase in the unemployment rate and its persistence. Economic restructuring and privatization significantly increased redundancy, leading many workers to retire from active participation. The latter declined significantly, mostly among older, less educated, females, and workers in remote regions. During 1993–98, an estimated 40 percent of the unemployed withdrew from the labor force citing “discouragement” from low job prospects, feeding the decline in participation rates. After the initial drop (a third by 1993), employment continued to decline well into the early 2000s,

while unemployment went the opposite way, peaking at 22 percent in 2001 after a slight decline prior to the 1995/96 banking crisis, despite continued declines in participation. The acceleration of structural reforms—including enterprise restructuring and privatization—beginning in 1997 brought a new round of labor shedding. As entire industries became obsolete, regions that relied often on one or a few large enterprises registered higher unemployment rates. In contrast, the capital city area was able to soften the impact because it was more diversified and benefited first from the switch toward services. The period since 1989 has also seen a significant emigration, totaling around 9 percent of the 1989 population. Most migrants were aged between 30 and 40, with a secondary education level.

Productivity gains, skill mismatch, and a shallow housing market are leading causes of long-term unemployment and regional disparities in unemployment. Economic restructuring and the privatization of public enterprises have led not only to higher unemployment, but also to significant gains in productivity—which shot up by 19 percent during 1998–2000. The associated labor supply shock has not yet been fully met by demand, leading to long-term unemployment. In addition, because of the shift away from heavy industries to lighter manufacturing and services, a significant skill mismatch affecting a large segment of the active labor force has developed. The World Bank found that some jobs go unfilled because of the lack of adequately skilled job seekers, while at the same time there are not enough low-skilled jobs created at the prevailing minimum wage to absorb the available low-skilled individuals among the unemployed. This phenomenon seems more pronounced in Bulgaria than in other CEE countries. A disproportionately high number of blue-collar workers in regions compared with the capital city area have contributed to persistent large regional disparities in unemployment, since the unemployed find it unappealing to move to a different region where their skills are not in demand. In addition, the high rate of house ownership and the associated shallow housing market may have contributed to the disparities, because individuals are reluctant to migrate, thereby trading a significant part of their net worth for an uncertain future.

<sup>1</sup>The author of this case study is Philippe Egoumé-Bossogo.

Small and medium-sized enterprises have failed to create as many jobs in Bulgaria as in other transition economies, pointing to potential institutional problems. The shift of activity from heavy industry to light manufacturing and services has meant more small and medium-sized enterprises. But, contrary to a number of other transition economies (for example, Hungary), small and medium-sized enterprises in Bulgaria create far fewer jobs and employ a lower proportion of total workers (only 41 percent). More generally, jobs created in small enterprises (most of which are new) continue to fall short of jobs eliminated in large enterprises. Legal barriers to firm entry do not seem to be the main problem, since Bulgaria does not compare poorly with other CEE countries according to the “Doing business indicators” compiled by the World Bank and based on relevant regulations. However, there is some evidence that implementation of regulations may be a problem. For example, the time required to enforce a contract is high in Bulgaria among CEE countries (see Table 3.3). Business surveys also indicate that Bulgaria scores poorly in administrative burdens for business startups.

The informal sector is believed to employ many registered unemployed, and recent government measures may have flushed out some of these jobs. The unusually large number of discouraged job seekers suggests that workers take jobs in the informal sector while still receiving social benefits. New regulations introduced in 2003 cut social benefits for those recipients who are not willing to take low-paid jobs offered under government programs. The authorities reckoned that this measure, combined with the newly introduced minimum insurable income, has flushed into the formal sector as many as about 300,000 jobs, contributing to the rapid decline in the unemployment rate.

### Labor Costs

After declining during the better part of the 1990s, real wages have been increasing moderately, but more slowly than productivity. Real wages dropped at the start of the transition and remained depressed for many years subsequently. Despite some recovery owing to the strong economic growth since 2000, they are still trailing the level in 1989. Productivity, on the other hand, has been recovering faster, contributing to the competitiveness of the economy. Estimating the equilibrium dollar wage (as a function of productivity indicators) in Bulgaria and comparing it with the actual dollar wage, Krajnyák and Zettelmeyer (1998) found that the former was well above the latter, suggesting that the Bulgarian economy remained competitive. The minimum wage was raised steadily to recoup the real erosion that took place over the years. It now represents 38 percent of the average wage, a level that is not terribly high (in France the level is 50 percent) but

may limit job opportunities for the less skilled and experienced workers, notably in the country’s depressed regions.

Other labor costs remain relatively high, in part because of widespread tax evasion. Garibaldi, Dimitrov, and Stoyanova (2000) report a 1996 study that found that a large number of employers and workers evaded payment of social security contributions. To avoid an erosion of collected revenue, the authorities steadily raised contribution rates, possibly leading to a further rise in the informal sector. At up to 50 percent of gross labor income, labor taxes are much higher than in many Western European countries and represent a serious hiring deterrent. The high dependency ratio (ratio of pensioners to contributors, which reached 80 percent in 1998) is a reflection of the large evasion. The new minimum insurable income thresholds were also designed to boost collection of social security contributions by increasing the base (that is, registered work contracts), and while there was some success in the first half of 2003, it is still too early to assess the full impact of this measure.

### Wage Setting Process

Collective bargaining, although mostly centralized, has not led to high wage pressures. Industrial relations in Bulgaria are based on the tripartite system of negotiation involving the government, labor unions, and employers’ representatives. This system is rooted in the country’s constitution. Negotiations take place at four levels (national, branch, regional, and enterprise) depending on the encompassing nature of the issue. The national minimum wage and wage setting mechanisms, for instance, would be decided at the national level, whereas branches can decide to set their own minimum wage higher than the national level. While wages in the central government are completely centralized, decentralized collective bargaining is more prevalent in the nonbudget state-owned entities and in the private sector. But compared with other countries, centralized collective bargaining is more resorted to and less confrontational in Bulgaria. The ILO in 1998 found that only 70 percent of surveyed units had collective agreements at the local level compared with all units in other CEE countries in the survey, and a higher proportion of labor unionists found the atmosphere of the negotiations “good” compared with their counterparts in other countries. This relative collegiality, coupled with the high level of unemployment, has led to lower union pressure to award high wage increases.

Labor unions in Bulgaria appear relatively strong, but not confrontational. The two main labor unions in Bulgaria are the Confederation of Independent Trade Unions (KNSB) and the Confederation of Labor (“Podkrepa”), both founded at the start of the transition and with total membership in excess of 1.5 million



workers. Through numerous branches they cover virtually all the economic sectors. In a 1998 survey, the ILO found that the percentage of union members in 60 percent of the units surveyed was between 70 and 100 percent, compared with only 20 percent in Hungary and 5 percent in Poland. They found relations between labor unions and employers' organizations to be characterized by "cooperation and partnership" as opposed to "partnership and opposition" in other countries (as reported in Garibaldi, Dimitrov, and Stoyanova, 1998).

### Labor Market Institutions and Policies

A succession of amendments have modernized the Labor Code (initially promulgated in 1986) and increased labor market flexibility, but restrictions remain that may constrain employment performance. Employment protection legislation in particular may be a deterrent to job creation. For instance, separations are often referred to courts, where the burden of proof for a range of causes for dismissal (for example, inadequate skills, poor performance, and violation of discipline) falls squarely on the employer. Dismissal related to technological advances or reorganization is prohibited, which may discourage firing during a downturn and hiring during an upturn. The use of overtime work is strictly limited to 150 hours a year (the limit is twice as large as that in Hungary) and must be paid with a premium of at least 50 percent of the base wage. Fixed-term employment contracts are allowed only for work that is temporary or seasonal in nature and can be renewed only once. Also, wage adjustments are restricted: employers must pay 100 percent of wages during work stoppage regardless of whether the stoppage is due to low demand.

Passive labor market policies compare well with other countries and do not appear high enough to deter job search. To be eligible for unemployment benefits in Bulgaria, one has to be registered in a labor office, have a minimum employment spell of 9 months during the past 15 months, and be willing to accept a job or training if offered. Recipients are paid 60 percent of their last gross salary, capped at 140 percent of the minimum wage, and the entitlement period varies between 4 and 12 months. Because of the growth of long-term unemployment, unemployment benefits have fallen over the past decade. Social assistance, on the other hand, is available to all families on the basis of aggregate family income and the number of children in the household, thus providing a safety net to the unemployed whose eligibility for unemployment benefits has lapsed. Both the replacement rate and the coverage rate in Bulgaria are lower than in many other CEE countries.

To reduce unemployment the Bulgarian authorities are focusing on active labor market policies (ALMPs).

These include temporary employment programs, training with nonguaranteed jobs, training with guaranteed jobs, subsidized employment, employment associations, and self-employment support programs. Although the government continues to spend more on passive labor market policies to support the unemployed, the share of ALMPs in total labor market policy expenditure of the government has increased steadily since 1996, with a significant jump in 2003. During that year, the government set up a program of 100,000 public, low-skilled jobs in municipalities for long-term unemployed, who were given the alternative choice to forgo this opportunity and lose social assistance. Although some training goes along with these jobs, the government envisaged to renew them in 2004 and subsequent years, which could create another large public program. Indeed, ALMPs are no panacea and sometime provide only temporary and limited relief to the unemployed. In addition, ALMPs can generate deadweight losses and substitution effects, which negate the policies' intended goals. Consequently, these policies should be part of a package of labor policies including measures to further increase labor market flexibility, notably the firms' ability to determine the size of their labor force and wages. But, the government prefers to let social partners negotiate among themselves further measures to increase labor market flexibility instead of imposing them.

### Croatia<sup>2</sup>

Like many other CEE countries, Croatia experienced a sharp output contraction and dramatic structural changes in the initial stage of transition. These factors had profound effects on the labor market in the early 1990s. Although real output growth rebounded strongly after the negative impact of initial transition and the war for independence started phasing out in the mid-1990s, the unemployment rate has remained stubbornly high, and the participation rate has been low.

### Labor Market Performance

The labor market in Croatia has not performed well. In the early 1990s, economic restructuring and privatization significantly increased redundancies. The war during 1991–95 worsened the situation. While labor shedding by many firms led to improved productivity, it also contributed to massive inflows to unemployment. Although economic growth has remained brisk since the mid-1990s, outflows from unemployment, including outflows to jobs, have not accelerated, and fell short of inflows until 2000. The LFS-based unemployment rate has been hovering around 15 percent

<sup>2</sup>The author of this case study is Tetsuya Konuki.

for the past five years. A majority of the unemployed (55 percent) are jobless for over one year.<sup>3</sup> The labor force participation rate has remained about 50 percent. In particular, unemployment is high, and participation low, among youth. The overall low participation may reflect poor availability of job opportunities and skill mismatch problems.

Firm-level data reveal that the job reallocation in Croatia is sluggish. Croatian firms yearly close about 5 percent of all jobs, compared with a job destruction rate of 10–11 percent in other CEE countries.<sup>4</sup> At the same time, the job creation rate in Croatia is only 3.5 percent, compared with 7–11 percent in other CEE countries. These figures point to the stagnant nature of the Croatian labor market and indicate that, unlike some leading reformers in CEE countries, the Croatian economy has not undergone an intensive enterprise restructuring. In addition, regional analysis has proved that the job creation and destruction rates are modest at most across Croatia, although the unemployment rate varies significantly among regions.<sup>5</sup> Regional differences in the unemployment rate are more likely to be of a historic nature rather than the result of recent developments in enterprise restructuring.

Start-ups of small and medium-sized businesses have not created as many jobs in Croatia as in other CEE countries. As in many other CEE countries, small private firms have played a role as an engine of job creation in Croatia. The share of employment by the old sector, consisting of large state-owned enterprises, in total employment has been declining while the share of employment by the new sector, consisting of small private firms, has been expanding. However, these changes have been modest compared with other leading reformers such as the Czech Republic and Hungary, since the rate of new business start-ups has been insufficient to offset the employment reductions by existing firms.<sup>6</sup> Between 1997 and 2002, the total number of small and medium-sized enterprises, a proxy for the new sector, has declined by about 20 percent, while their employment has remained stagnant. The share of employment by small and medium-sized enterprises is 46 percent. This lags behind main CEE countries, where the share of employment by small and medium-sized enterprises is well over 50 percent.

Strict employment protection, which is discussed below, is likely to have discouraged entry or expansion of new businesses in Croatia. According to the World

Economic Forum's "Quality of the National Business Environment," which ranks almost 100 countries mostly on the basis of survey scores of various factors that affect the business environment, Croatia ranks significantly behind main CEE countries such as the Czech Republic, Hungary, and Poland. Among various factors, Croatia ranks worst in "cooperation in labor-employer relations," which could be explained by the strict employment protection.

### Labor Costs

Labor costs could partly explain stagnant job creation in Croatia. Gross wage comparison in manufacturing sector among CEE countries by the World Bank (2003) shows that gross wages in Croatia are higher than those in most of other CEE countries. It also indicates that relatively high wages in Croatia could not be justified by proportionately higher labor productivity. Economy-wide gross wage comparisons also support the findings of the World Bank. However, economy-wide unit labor cost dynamics for the past five years indicate that Croatia has contained the labor cost increases more successfully compared with other CEE countries, partly reflecting the government's efforts to restrain public sector wage level in recent years. The tax wedge on labor income slightly exceeds 50 percent. Although it is higher than most of the EU-15 and non-EU OECD countries, it is moderate among CEE countries (see Figure 2.10). Labor income tax and social security contributions do not seem to have had unfavorable effects on the country's competitiveness among CEE countries.

### Wage Setting Process

The wage determination process is centralized in Croatia. About 40 percent of the private sector employees are union members, while most of the public sector workers are union members. Trade unions in the private sector play a dominant role in wage setting because the industry-level bargaining prevails, especially in large firms. Public sector workers' unions also negotiate collective agreements with the government. Although there is no statutory minimum wage in Croatia, the minimum base for social security contribution, which at present accounts for about 35 percent of the average gross wage, plays the role of the wage floor. This notional minimum wage is as a rule used in collective agreements as the floor for the wage structure, although in some industries, where trade unions' bargaining position is stronger, this floor is set at a somewhat higher level. Although unions in Croatia generally favor cooperation over confrontation and conflict, they occasionally resort to strikes to force employers or the government to give in. Wage pressure exerted by unions apparently led to some exces-

<sup>3</sup>See Rutkowski (2003) for detailed discussions on labor market performance in Croatia.

<sup>4</sup>Rutkowski (2003) presents cross-country comparison of job creation and destruction among the CEE countries.

<sup>5</sup>See Bisogo (2002) and Rutkowski (2003) for regional analysis.

<sup>6</sup>See World Bank (2002b) for cross-country comparison in employment structure in transition economies.

sive increases in labor costs in Croatia in earlier stage of transition.

### Labor Market Institutions and Policies

The unemployment benefit system in Croatia is not particularly generous. The unemployment benefit in Croatia is a flat rate benefit in practice, since the fixed maximum amount of the benefit is only about one-fourth of the average wage. Relatively few unemployed receive the unemployment benefit. The duration of the unemployment benefit payment is capped at 312 days, which is not out of line with other CEE countries. The benefit coverage rate has been below 20 percent since the mid-1990s, reflecting two factors: (i) the unemployment rate is highest among new entrants to the labor market, who do not qualify for the unemployment benefit; and (ii) a large proportion of unemployed are long-term unemployed who are no longer eligible for the benefit. All these characteristics—low replacement rate, moderate duration of the benefit payment, and limited coverage—indicate that labor supply disincentives related to the unemployment benefit system are likely to be modest in Croatia. In particular, low benefit coverage means that labor supply disincentives are not significant because few people are affected by them.

However, employment protection in Croatia is among the strictest in CEE countries. According to the estimated value of the EPL (employment protection legislation index), employment protection in Croatia is stricter than that in most of the EU-15 and other CEE countries (see Table 2.12).<sup>7</sup> Until the amended labor law took effect in January 2004, individual dismissals were costly because of the long advanced notice period and high severance pay. Collective dismissals were even more difficult, mostly because of the overly inclusive definition of collective redundancy. Although fixed-term employment is a way of circumventing high costs of terminating regular employment contracts, the labor law until recently restricted its use by requiring that fixed-term contracts be signed only on exceptional basis. World Bank (2003) concludes that stringent employment protection has contributed to the stagnant labor market performance in Croatia, such as low job creation and hiring, long duration of unemployment spells, and the concentration of unemployment among disadvantaged worker groups. It also points out that the country's strict employment protection also provides an incentive for firms to move to or remain in the informal sector in order to lower labor costs.<sup>8</sup>

<sup>7</sup>World Bank (2003) presents cross-country comparisons of the EPL indices among the CEE countries and EU-15 countries.

<sup>8</sup>See Ott (2002) and Schneider (2002b) for the estimation of the size of the shadow economy in Croatia.

With a view to making the labor market more flexible, the labor law was amended in July 2003. The amended labor law, which fully entered into effect at the beginning of 2004, has lowered Croatia's EPL index by 23 percent. The main changes include: (i) relaxing restrictions on the use of fixed-term contracts; (ii) easing the preconditions for valid dismissals; (iii) shortening the advanced notice period from six to three months; (iv) reducing the amount of severance pay from half to one-third of the monthly pay; and (v) relaxing the definition of mass layoffs.

The chronic unemployment problem prompted the government to initiate a number of active labor market measures in early 2002, including self-employment promotion, subsidies and loans to small and medium-sized enterprises, and public works.<sup>9</sup> Some of the measures are focused on promoting hiring of young and highly educated people by subsidizing at least 60 percent of their gross wages for the first year. Also, an employer of workers with university education receives a one-off subsidy of €1,000 if the employment extends beyond one year and becomes permanent. Although it is too early to evaluate the effects of these active labor market measures, local economists cast some doubts whether they are well targeted (Institute of Economics, 2002). In particular, young people coming out of universities tended to manage to find jobs before the introduction of the new measures. Consequently, they can have only a minor impact on boosting employment.

### Hungary<sup>10</sup>

Hungary's successful transition, backed by significant structural reforms and supported by a competitive export sector, especially in the 1990s, has contributed to relatively low unemployment. But the labor market in Hungary is not without its weaknesses, especially a low participation rate and high regional inequality. This note briefly reviews labor market performance and policies in recent years.

### Labor Market Performance

Strong economic activity in recent years has contributed to low and declining unemployment, which reached its lowest level, 5.5 percent, in December 2003. The decline in unemployment has been generally accompanied by rising economy-wide employment, and, although quite low, rising participation rates.

<sup>9</sup>Mainly due to lack of resources, active labor market policies in Croatia were carried out in very low volume before 2002.

<sup>10</sup>The author of this case study is Paulo Drummond.

**Table A2.1. Regional Inequalities in Hungary, 2003:Q3***(In percent)*

Regions	Participation Rate <sup>1</sup>	Unemployment Rate
Central Hungary	57.8	4.1
Northern Hungary	58.4	4.7
Northern Great Plain	58.2	4.4
Southern Great Plain	51.9	7.9
Central Transdanubia	50.0	9.4
Western Transdanubia	49.7	6.2
Southern Transdanubia	50.4	6.3
<b>Country total</b>	<b>54.1</b>	<b>5.7</b>

<sup>1</sup>Population aged 15–74.

However, the labor market has been characterized by important weaknesses.

- *The participation rate is the lowest in the EU-15 area.* This reflects a number of factors. First, weaknesses in labor demand, particularly for low-paid jobs. Second, although the transfer system is not generous with respect to benefit levels, it is generous in its coverage. For more than 25 percent of the working-age population (15 to 64 years), transfers (social or labor market related) are the main source of registered income. Total social security outlays paid by the government are higher than in other CEE countries, reflecting these high take-up rates. Third, for older age groups, the low participation rate reflects the combination of a low statutory retirement age—the statutory retirement age has been steadily increased and is now at 62 for men and 59 for women, which is low relative to other OECD countries—and sizable early retirement schemes. Fourth, the take-up of disability benefits in Hungary is very large in international comparison (about 9 percent of the 20–64 age group are on disability benefit).<sup>11</sup>
- *Regional inequalities are high.* Low-employment areas register more than half the employment rates of high-employment areas (Table A2.1). This is partly due to the regional variations in the purchasing power of benefits. While benefit levels are low on average (see discussion below), their purchasing power varies widely across re-

<sup>11</sup>The average disability benefit received by people of working age was equivalent to around 50 percent of the average wage in early 2003, somewhat above the OECD average.

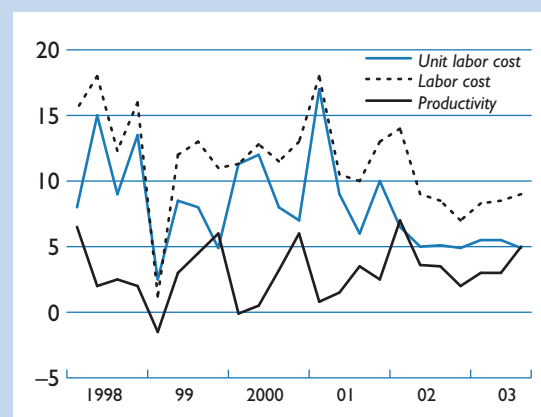
gions: the costs of living are much lower in the less-developed northern and eastern parts of the country than in the prosperous central and western regions. This, in particular, reduces incentives to move from the poorer regions to those where job search has more chances of success.

At times, foreign-owned firms have had a significant role in the creation of new jobs. According to Kaminski and Riboud (2000), foreign-owned firms were responsible for the creation of 75 percent of all new jobs during 1992–97 in Hungary. At that time, new entry by foreign companies helped to absorb workers from public enterprises, and foreign companies helped to contain unemployment in the relatively early stage of transition.

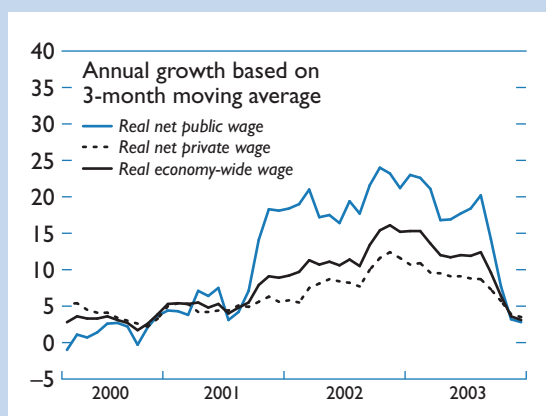
### Labor Costs

Wages have increased rapidly since 2000, reflecting large increases in minimum wages, strong aggregate demand, possible lagged inflation expectations, and demonstration effects from increases in public sector pay. Most public sector employees received a 50 percent increase in wages in the fall of 2002. Together with increases in the minimum wage of over 90 percent during 2001–02, these increases spilled over into the private sector. This contributed to private sector wage inflation significantly above productivity (Figure A2.1), and a surge in real wages on an economy-wide basis by some 14 percent in 2002 and 10 percent in 2003 (Figure A2.2).

Also significant has been the increase in the number of workers subject to a minimum wage. Until 2000, the minimum wage had been decreasing in real

**Figure A2.1. Productivity, Wages, and Unit Labor Costs in the Private Sector***(Annualized quarter-on-quarter growth rates, in percent)*



**Figure A2.2. Real Wages***(Year-on-year growth, in percent)*

terms, and so had its incidence. The hikes in statutory minimum wages reversed this trend. While about 7 percent of business employment was on the minimum wage in 2000, this share had risen to 18 percent in 2002, with a similar proportion earning wages no more than 10 percent above the minimum statutory level. The direct increase in labor costs from the minimum wage hike hit small domestically owned firms particularly hard because these employ the large majority of low-paid workers.

Empirical evidence on the effect of the minimum wage increases on labor demand and supply is scarce. Kertesi and Köllő (2003) estimate wage elasticity of demand for various categories of labor and find that unskilled workers have the highest elasticity, in the 1 to 1½ range. Applying this to data on the wage distribution suggests that the demand for unskilled labor might have declined by some 6 percent as a result of the increase in minimum wages. The impact is likely to be quite uneven across industries, and probably higher in the textile industry, assembly line productions, and low-paid services activities such as tourism. Also, obtaining a clear picture of the impact of the minimum wage is not without difficulties: some analysts argue that the minimum wage increases may have prompted some employers (particularly small and medium-sized enterprises) to underreport hours worked or to shift jobs to the gray economy, thus distorting estimates of that impact on the formal economy.

Despite a decrease in social security contribution rates since the early years of transition, total taxes and contributions on labor remain among the highest in the OECD, and particularly high given the level of economic development. While this does not necessarily discourage labor demand per se, the difficulty in

controlling the informal economy and preventing tax evasion results in excess burden on those who do not evade. In turn, this contributes to weaker official labor demand and supply, providing a strong incentive not to declare employment both to the tax authorities and in surveys recording labor market activity.

A key element of the tax wedge, weakening incentives to employ low-skilled and part-time workers, is the employers' lump-sum contribution to health care funds. In 2003, this fixed contribution represented 7 percent of the employer's contribution at the average wage but 17 percent at the minimum wage. This not only makes for relatively high nonwage costs on low-paid workers but also dissuades the development of part-time employment. Part-time work is indeed very little developed in Hungary, representing slightly less than 7 percent of total registered employment in 2003, against 15 percent in the OECD. The government had plans for a gradual phasing out of the fixed health contribution by 2006, partly in order to harmonize with EU rules on part-time work but also reflecting concerns about its impact on the labor market. However, after a reduction by almost 25 percent in 2003, the phase-out was to be slowed down in 2004 for fiscal reasons, and the 2004 act on taxation abolishes the contribution only for part-time workers on parental leave and for long-term unemployed over 50 coming back to work. Under the agreement reached in October 2003 in the National Reconciliation Council, the fixed health contribution was to be reduced across the board to HUF 2,250 in 2005 and to be eliminated completely in 2006.

### Wage Setting Process

Hungary has a national collective bargaining system whereby, each year, discussions aimed at agreement on wage guidelines are held by the Interest Reconciliation Council (IRC). The IRC includes representatives of trade unions, employers, and the government. Agreement is not binding, but it is viewed as the floor for sectoral or firm-level negotiations. Although the IRC agreement is generally applied in the public sector, actual wage increases in the private sector have generally exceeded IRC recommendations. The recommendations have usually been made in terms of nominal gross wage increases. For 2003, the recommendation was couched in terms of a real net increase. This weakened the transparency of the recommendation, and the IRC switched back to making the recommendation in gross nominal terms in 2004.

In practice, wage formation has tended to reflect an increasing decentralization of the wage bargaining system. The number of national branch agreements affecting the private sector declined rapidly in the 1990s, and, in many branches, wages are now decided directly at the firm level. Also, some rapidly expand-

ing sectors of the economy (the financial sector, some sectors where multinational corporations are dominant) are not represented in the IRC. Moreover, unionization is only around 20 percent. While scarce, there is some evidence that wage negotiations in the private sector indeed take place now mainly at the enterprise or individual level: wage differences across companies tend to reflect productivity, location, size, and ownership, and to highlight the dominance of company-level bargaining (Köllő, 2002b).

### Labor Market Institutions and Policies

A number of changes have been made to the unemployment insurance scheme in recent years, which makes it much less accessible and generous than in the past. The conditions for eligibility have been tightened, and the maximum duration of benefit has been reduced from 12 to 9 months. In addition, the replacement rate has been significantly reduced. The statutory replacement rate is 65 percent, but with a ceiling of HUF 39,240 per month (2003 figures) or 180 percent of the minimum old-age pension, which is equivalent to three-quarters of the minimum wage and about 30 percent of the average wage.

Unemployment assistance is available for those who are not eligible for unemployment insurance (or who have reached the end of unemployment insurance benefits). The assistance benefits have been significantly altered in recent years. An “unemployment assistance” benefit for long-term unemployed has been gradually eliminated and replaced by an access to regular social assistance, conditional on acceptance of public sector work when offered. A new assistance benefit was introduced in July 2003: the “job-search allowance.” For eligibility, individuals must have been on unemployment insurance benefits for at least 180 days and must be willing to engage in intensive cooperation with labor centers. The allowance is 85 percent of the minimum old-age pension in 2003, a sum of HUF 18,530. The maximum duration is six months (nine months for those aged over 45). A key goal of the scheme is to encourage individuals to take up work: if the recipient is employed, even in a part-time job, before the exhaustion of the disbursement period, half of the remaining subsidy to the end of the disbursement period can be paid in a lump sum on request.

ALMPs (active labor market policies) now absorb around 60 percent of the Labor Market Fund, which finances passive and active labor market policies. Several years ago, reforms to ALMPs raised spending on such measures considerably and devolved more responsibility to local governments. These policies consisted mainly of public works, training, and wage subsidies. Public works allowed long-term unemployed to break their unemployment period and provided localities with community services that they

would not have afforded otherwise. In principle, since public work schemes also make it difficult to continue informal work while on unemployment benefits, they encourage people to take official market jobs that offer better wages and working conditions.

However, impact studies of ALMPs seem to indicate little positive effect from such programs in terms of success in rehabilitating the long-term unemployed into regular private sector jobs. For instance, Fazekas (2004) concludes that in the majority of cases, public works have proved unable to transfer unemployed persons into formal market jobs. Wage subsidies—provided generally for one year to employers (mostly small and medium-sized enterprises) who hire the long-term unemployed with the obligation to employ them for another year after the supported period—seem to have been more successful because employment has been continued beyond the period when employers have signed up to employ them in 70–90 percent of the cases. Köllő (2002b) provides an overall assessment of recent reforms to passive and active labor market policies in recent years, and concludes that, while the reforms have reduced the number of benefit claimants significantly, they have not increased private sector employment and the labor force.<sup>12</sup>

In recognition of the influence of transfers on labor market participation, eligibility criteria for state-financed early retirement schemes have been significantly tightened since the second half of the 1990s. Currently, only older workers with long contribution histories are allowed to benefit from early retirement, and less than 170,000 people—or 2.6 percent of the working-age population—are now receiving these benefits, compared with more than 500,000 in 1999. To promote labor force participation among people on old-age pensions, the government has fully excluded old-age pensions from the taxable income. Previously a pension formed part of the tax base if the person was getting additional revenues through work. Because a number of retirees seem to be already working in the informal sector to supplement their revenues, this should provide an incentive for them to switch to the formal economy.

### Poland<sup>13</sup>

The transition shock left Poland with double-digit unemployment rates that a spur of strong growth in the mid-1990s helped to ease. However, the 1998 Russia crisis and a subsequent wave of restructuring and privatization reversed this improvement. Under

<sup>12</sup>Note that it is difficult to establish a clear picture of the effectiveness and cost efficiency of ALMPs, as in many other countries.

<sup>13</sup>The author of this case study is Nada Choueiri. It draws heavily on Choueiri (2005).

the influence of these shocks and of cyclical macroeconomic factors, unemployment soared in the late 1990s and early 2000s. The adverse labor market impact of these shocks persisted, partly because of policy and institutional problems. Despite the economic rebound in 2003–04, the labor market performance continues to disappoint, with high unemployment and low employment and labor force participation rates.

### Labor Market Performance

Poland has had one of the worst labor market performances among new EU member states. Having declined from 14 percent in the early 1990s to almost 10 percent in early 1998, the unemployment rate rose rapidly, exceeding 20 percent in 2002, as employment and labor force participation rates fell to 51 and 64 percent, respectively. Some improvement in the labor market took place during 2003–04, largely because of higher economic growth, which helped reduce unemployment to under 19 percent and raise employment to 52 percent in 2004. The labor force participation rate remained at around 64 percent.<sup>14</sup>

These negative trends are a legacy of economic transition and restructuring. Initially, restructuring and closing down old industries led to massive job destruction during 1990–93 and resulted in double-digit unemployment rates. While there was simultaneous private sector job creation, skill mismatches occurred that, along with a sharp productivity increase in the mid 1990s, help explain the lack of aggregate net employment growth. Job losses recurred in large numbers in the second wave of restructuring after the Russia crisis, which seems to have mostly affected exporters and heavy industries. Privatization also led to job shedding, as did the slowdown that gripped the country in 2001–02. Therefore, by 2004, redundancy or closing down of businesses explained nearly half of unemployment among previously employed persons.

The uneven impact of these factors across the country has led to regional labor market disparities. The process of industrial destruction at the onset of the transition has led to regional disparities in labor market performance. Mobility seems partly hampered by housing market problems, including little availability of rental units associated with rent controls and overly protective tenant rights. Also, the uniform application of benefits and minimum wages across regions has tended to raise workers' effective reservation wage in poorer regions, discouraging labor supply. Lack of labor cost differentiation to reflect differences in average labor productivity across regions—with the uniform minimum wage also contributing to the lack of

such differentiation—is suspected to be another factor that impeded growth of labor demand.

A number of policy and institutional problems likely contributed to persistently high unemployment since the late 1990s. The factors that seem to have particularly exacerbated the impact of transition, restructuring, and cyclical shocks include, in no particular order and certainly not exclusively, the following: (i) regional and skills mismatches resulting from shortcomings in infrastructure, in incentives for labor mobility, and in the education and training systems; (ii) easy access to benefits; (iii) high labor costs; and (iv) an insufficient degree of flexibility in regular employment contracts.

### Labor Costs

Despite some pick-up in early 2004, real wage growth remains contained. Real wages had grown strongly in the late 1990s, exceeding productivity growth, which contributed to a decline in competitiveness. The second wave of restructuring in the late 1990s, however, resulted in accelerated productivity growth; at the same time, real wage growth slowed, which restored part of the lost competitiveness. Recently, real wage growth has remained moderate overall, and smaller than productivity growth.

It is widely believed that high payroll taxes have tended to discourage employment in Poland. OECD estimates for 2004 indicate that the tax wedge in Poland, at about 42 percent, is between 10 and 15 percentage points above the OECD average. Social security contributions are an important component of that tax wedge. They are relatively high, at about 45 percent of gross wages, and their burden is shared almost equally between employers and employees.

### Wage Setting Process

Wage negotiations are largely decentralized in Poland. A tripartite commission, representing the government, the private sector, and trade unions, sets the wage for the public sector—for employees in both the administration and public enterprises—on the basis of a bargaining process. The role of private sector representatives is restricted to giving an opinion on how much public sector wages should increase without active participation in the negotiations. In the past, the bargaining process often failed, and the government had to decide on public wage increases by decree. Private sector wages are negotiated at the firm level and bear no formal relationship to increases decided for the public sector. Labor unions are generally weak and unable to exert pressure during wage negotiations.

Minimum wages are also set by the tripartite commission in case of agreement. The minimum wage

<sup>14</sup>All numbers are based on seasonally adjusted quarterly LFS data for the working-age population (ages 15–64). Data for 2004 are for the first three quarters of the year.

was around 42 percent of the national average wage in the early to mid-1990s, but this share has declined since and reached 36 percent in 2004. The uniformity of the minimum wage across regions is suspected to be an obstacle to job creation: the minimum wage is likely to be more binding in poorer regions because of the large economic differences they exhibit vis-à-vis richer ones (Estevão, 2003; Selassie, 2001).

### Labor Market Institutions and Policies

The Polish labor code dates from 1974 but has been amended to adapt to Poland's post-transition status. The first reform of the labor code took place in 1996 and usefully clarified many employment rules, although it did not seem to remove rigidities from the system overall. This reform was relatively favorable to employees in several respects—such as the prohibition of firing employees in case of mergers; the shortening of the weekly working time; and the increase in the length of the annual leave entitlement for some employees. Another labor code reform followed in 2002 that helped improve labor market flexibility, particularly in favor of small businesses. For example, a new type of contract was introduced to ease the hiring of temporary workers replacing employees on extended leave; the amount of additional remuneration for overtime work was reduced; the minimum number of employees for which a code for work had to be written was raised to 20 employees; and most employee entitlements became a function of the duration of employment with the *current* employer, rather than total lifetime employment.

Additional amendments to the labor code in 2003, largely needed for compliance with EU regulations, represented some backtracking from the 2002 reforms. These amendments, effective from 2004, introduced daily and weekly statutory rests and limits on overtime work, limiting the flexibility of work arrangements. Leave arrangements were changed to the workers' advantage. Also, mass layoff procedures were lengthened, and entitlements for severance payments were extended in cases of employment restructuring.

The government has taken steps to address Poland's labor market problems. To improve *youth employment*, a law was passed in October 2002 setting the minimum wage for new entrants at 80 percent (90 percent) of the nationwide minimum wage in the first (second) year of work (so-called "first job" program). A reform to the *disability system* effective in 1998 tightened eligibility requirements and introduced frequent reviews of disability certificates and measures to prevent work accidents. The *retirement age* became compulsory with the 1999 pension reform for persons who were integrated in the new pension system, although it remained at 65 for men and 60 for women.

Some forms of *preretirement allowances*<sup>15</sup> were eliminated (albeit with grandfathering) from January 2002. A law on Employment Promotion and Labor Market Institutions, passed by parliament in April 2004, tightened eligibility for registering as unemployed and receiving social benefits, and reduced the length of access to unemployment benefits in some regions.

The government also uses active labor market programs to promote employment. Spending on these programs rose to about 1.3 billion zlotys (under 0.2 percent of GDP) annually during 2003–04, more than double the level in the previous two years. The activation of new graduates (in the context of the "first job" program) captured more than one-third of that amount; about a fifth of it was spent on public works programs; and about 16 percent of the total spending went to subsidized employment programs.

Poland's social security and social assistance systems include a range of benefits. Employees and the self-employed have access to old-age insurance; disability, sickness, and maternity insurance; and to work injury and occupational disease insurance. Farmers have access to a separate social security system that includes similar benefits. Unemployment benefits are granted for a period of 6, 12, or 18 months, depending on the region where the unemployed person is registered. In addition, based on the revenue situation of the family, benefits can be provided that include family benefits, nursing benefits, child-care benefits, and alimony benefits. The minimum revenue criterion for access to family and alimony benefits was lowered in 2003, and other criteria for eligibility for family and nursing benefits were also tightened, resulting in fewer beneficiaries. Low-income households can also be entitled to housing benefits paid by local authorities outside the social assistance system.

Poland's benefit replacement rates tend to increase once individuals are no longer eligible for unemployment insurance but are eligible for social assistance. This holds for most individuals but not for single persons without dependents. Nevertheless, compared with other Visegrad countries, benefit replacement rates do not seem to be excessive in Poland. OECD estimates for 2002 indicate that long-term net replacement rates for a number of family types in Poland were below counterpart rates for the Slovak Republic and were broadly similar to rates in the Czech Republic, although they exceeded relatively significantly replacement rates calculated for Hungary.

<sup>15</sup>Preretirement allowances are granted to older workers who fulfill specific eligibility conditions—women with 30 years of work experience or men with 35 years of work experience—upon becoming unemployed, in lieu of unemployment benefits to bridge the gap to retirement.



## Slovak Republic<sup>16</sup>

This section briefly reviews the reasons for high unemployment in the Slovak Republic, and key institutional aspects including the new labor code, the wage setting process, the social safety net, unemployment insurance, and pensions.

### Labor Market Performance

Unemployment remains high by regional standards. According to the LFS,<sup>17</sup> the unemployment rate was 17.4 percent in 2003. Although down more than 2 percentage points from its peak in 2001, the unemployment rate has not fallen below 12 percent since the start of the transition, and it remains the second-highest in the OECD (unemployment is higher only in Poland, at just below 20 percent in 2003). Several recent studies<sup>18</sup> emphasize the following structural causes of unemployment in the Slovak Republic: (i) the skills mismatch for workers whose jobs disappeared at the start of the transition, and whose skills are very different from those required by new jobs in the market economy; (ii) for low-skilled workers, and especially outside the capital Bratislava, the gap between wages and unemployment benefits, which can be very low (in poorer regions, wages are lower, but benefits are the same as in richer regions, limiting incentives to seek work); and (iii) the spatial mismatch and low labor mobility (in the first half of 2003, unemployment ranged from around 6½ percent in the Bratislava region in the west, to well over 20 percent in eastern regions).

Despite the recent pick-up, employment remains low. Employment increased by 1.8 percent in 2003 and is growing strongly in the construction and service sectors, offsetting a slight fall in industrial employment and a sharper fall in agricultural employment. But overall employment remains below 60 percent of the working-age (15–64) population, one of the lowest rates in the OECD. This entirely reflects high unemployment; the corresponding participation rate of about 70 percent of the working-age population is in line with the OECD average.

As in many other CEE countries, small private firms have played a key role in employment creation. Small and medium-sized firms were employing almost 60 percent of total employment by 1998. Despite these developments, however, a 2001 World Bank

study noted that small firms face serious obstacles in their expansion.

### Labor Costs

Real wages are quite low. In 2003, the economy-wide average wage was Sk 14,365 (about \$390 a month). Real wages have remained broadly flat over the past five years. However, productivity growth has been strong through this period, and with wages low compared with other EU accession countries in the region, the Slovak Republic has consolidated a strong labor cost advantage (OECD, 2003c). This competitive advantage has contributed to the Slovak Republic's recent appeal as a destination for foreign direct investment.

Despite recent reductions, overall payroll taxes remain high relative to contribution rates in OECD countries, although comparable to those in other advanced transition economies. Including health care and sickness contributions, total payroll taxes are 48.6 percent of gross income, of which employees pay 13.4 percent and employers 35.2 percent. Payroll taxes were reduced by 3 percentage points for employers, and raised by 0.6 percentage points for employees, effective January 2004.

### Wage Setting Process

The government approves annual increases in the statutory minimum wage, based on a tripartite agreement among the ministry of labor, the confederation of trade unions, and employer representatives. In the absence of a tripartite agreement, the government makes the final decision. Effective October 2003, the minimum monthly wage rose to Sk 6,080 (\$172), roughly 45 percent of the economy-wide average wage. Although less than 1 percent of all workers receive this minimum, it is a reference point for a system of “wage tariffs,” or minimum salaries based on the difficulty of a job—there are six salary tiers strictly defining the wage entitlements of all employees unless their wages are directly set by collective bargaining, and increases in the level of the minimum wage result in increases in these entitlements.

Until recently, the wage setting process had been highly centralized, with collective bargaining conducted at the national, sectoral, and firm level (see OECD, 2002b): At the sectoral level, unions and employers' associations negotiate directly, with sectoral agreements acting as floors for firm-level wage setting. Until 2002, the Ministry of Labor could make the outcome of these negotiations binding for other employers not represented in sectoral agreements. With the new government that took office in 2002, the extension was approved by the minister only if firms had no objections to the collective agreement. This practice is

<sup>16</sup>The author of this case study is David Moore.

<sup>17</sup>Monthly data on registered unemployment are more timely, but less reliable because of labor force measurement problems. The registered unemployment rate was 15.3 percent in April 2004.

<sup>18</sup>See for example Pani (2000), World Bank (2001), and OECD (2002b).

currently being anchored in legislation stipulating that firms should concur with the terms of the collective agreement in order for the latter to be extended to them. In the public sector, wages are now subject to collective agreements between the trade unions and the corresponding government units.

Trade unions seem to have weakened recently, and the share of workers whose wages are determined outside collective agreements is increasing. Trade unions failed to obtain the minimum wage increase they had sought in 2003, and the general strike called to protest this (and other labor market policies), attracted little support. According to press reports, collective negotiations seemed to affect only about 20 percent of employees in the private sector, while the remaining 80 percent negotiated their wages and other working conditions individually. Only about half of the public sector employees are unionized.

### Labor Market Institutions and Policies

Unemployment benefits are not particularly generous. An unemployed person is eligible for benefits for up to six months (until end-2003, nine months) depending on contribution history. The beneficiary must have contributed for 24 of the previous 36 months to be eligible. The replacement rate is 50 percent of past gross income (until end-2003, 55 percent for the first six months, then falling to 45 percent for the last three months). However, benefits are subject to a ceiling—previously around half the economy-wide average wage, in 2004 raised to 60 percent of the average wage (with government plans to increase the ceiling further in 2005 and 2006). Contribution rates are 3 percent of gross income for employers (2.75 percent until end-2003), and 1 percent for employees.

Labor legislation has recently been in flux, but the most recent amendments significantly contributed to increased labor market flexibility. A new labor code took effect in April 2002, consistent with EU standards and replacing with one law several diverse labor laws implemented over the past decade. However, the new code introduced rigid and specific regulations on work arrangements and schedules that hindered labor market flexibility, and the code was heavily amended in June 2003 with a view to streamlining it and reversing the new rigidities. Notably, overtime limits were increased to 400 hours per year (previously limited to 150 hours); flexible types of labor contracts were introduced; the costs of separation of redundant workers were reduced; and the requirements for dismissing employees for unsatisfactory work were simplified.

The Slovak Republic has made limited use of active labor market policies. Government annual spending on such policies has hovered around 0.2–0.3 percent of GDP since 2000. Special programs initiated in 2000 to address long-term and youth unemployment

created about 60,000 and 30,000 long-term positions in 2000 and 2001, respectively. In 2003, the Slovak Republic spent 0.2 percent of GDP on active labor market policies, including training programs and policies geared toward encouraging labor mobility to enable the unemployed to find a job in the existing market rather than relying on jobs created specifically for them. However, spending on active labor market policies is expected to increase following the Slovak Republic's accession to the EU.<sup>19</sup>

### Social Safety Net

Until reforms effective in 2005, the social assistance system created disincentives to work. The social assistance system in place until end-2003 featured generous benefits and high effective marginal tax rates (EMTRs). The safety net included income assistance to reach a “Minimum Subsistence Income” (MSI), which—for all households other than single individuals—exceeded the statutory minimum wage, and even exceeded the net average wage for families with two or more children. Income assistance could be provided for an unlimited duration, but the means-testing mechanism—a simple top-up to reach the MSI—implied an EMTR of 100 percent (or higher, taking into account transportation and other work-related expenses). Moreover, the MSI applied nationwide despite significant regional variations in the cost of living. The combination of the benefit levels and EMTRs generated significant disincentives to work.

The reformed social assistance system aims to correct work incentives. EMTRs have been reduced to around 75 percent. Individuals who make active efforts to seek work are eligible for the “activation allowance.” The reform does not lower social assistance benefits for small families whose adults qualify for the activation allowance. However, benefits for large families are 10 to 20 percent lower compared with those under the old system; the reduction is larger if adults do not qualify for the activation allowance.

The pay-as-you-go pension system also weakens incentives, but reforms have been approved in this area as well. The current benefit formula is extremely redistributive and weakens incentives to work, especially for low-income workers who have incentives to retire early. Parliament has approved a pension reform, effective January 2004, that—in addition to raising retirement ages—will more closely link future pensions to earnings.

<sup>19</sup>The Slovak Republic's May 2004 Convergence Program envisages spending on active labor market policies to rise to 0.4 percent of GDP by 2007, despite a projected decline in unemployment.

## Appendix III Models of Worker and Firm Decision Making in a Regional Context

The worker's participation and location decision is considered in the framework of a simple linear model.<sup>1</sup> Let us consider the decision facing an old individual in a distressed region. The individual has four labor market options:

*The first option (S,P)* is to stay in the region and participate in the labor market. If the individual chooses this option, he will receive the imputed rents  $A$  from his house, wages  $w$  if he is employed, and benefits and income from subsistence activity if he is unemployed. His total expected income—both in real and nominal terms, since the price level is normalized to unity—can be expressed as:

$$(S,P) : A + u(b + \alpha s) + (1 - u)w,$$

where  $u$  is the probability of unemployment,  $b$  is the level of benefits, and  $s$  is income from subsistence activity. Assuming that the unemployed cannot be occupied full time with subsistence activity,  $\alpha < 1$  holds.

*The second option (S,NP)* is to stay in the region but not to participate in the labor market. In this case, the only sources of income are imputed rents, benefits, and full-time subsistence activity:

$$(S,NP) : A + \beta b + s,$$

where  $\beta < 1$  indicates that the full range of benefits is not necessarily available to nonparticipants.

*The third option (M,P)* is to move to the other region and participate in the labor market there. This requires that the individual sell his house in a costly transaction and buy another in the target region, which would yield imputed rents  $A^* < A$ . In addition to this, the individual will receive wages  $w^*$  if he is employed, and benefits and subsistence income if he is unemployed. His total real income is:

$$(M,P) : A^* + 1/Pu^*(b + \alpha s) + 1/P(1 - u^*)w^*,$$

where  $u^*$  is the probability of being unemployed in the target region, and  $P$  is the relative price level.

Because the target region is the advantaged one,  $P > 1$  is likely to hold.

*The last option (M,NP)* is to move to the other region but not to participate in the labor market. Income is derived from rents, benefits, and full-time subsistence activity:

$$(M,NP) : A^* + 1/P(\beta b + s).$$

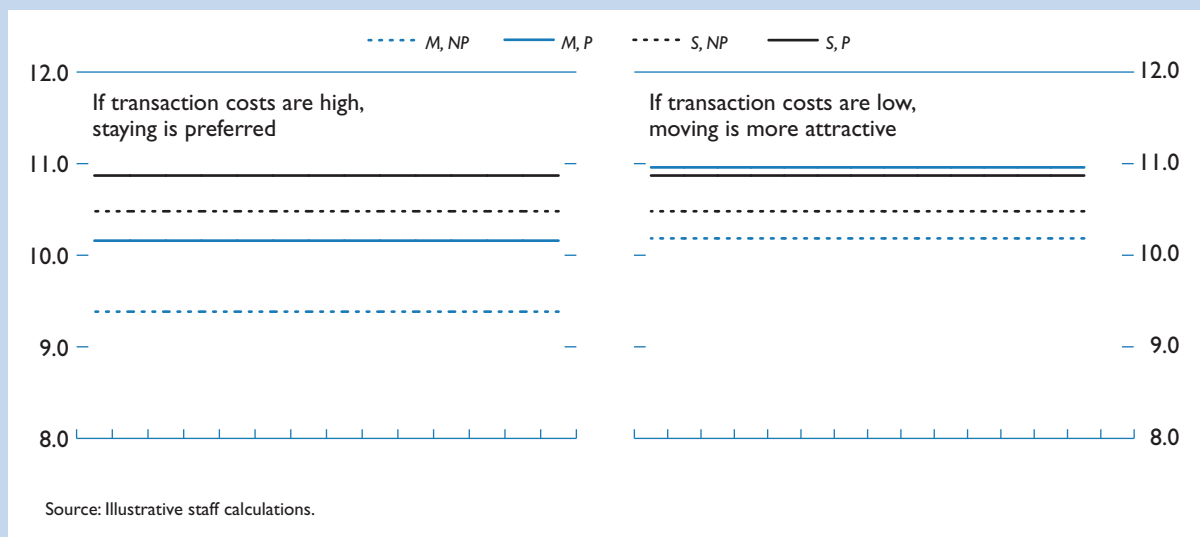
The individual compares his expected real income under the four options, treating all variables and parameters as given, and picks the most lucrative course of action. Figure A3.1 illustrates that the optimal choice depends on the costs of selling one's house—in the left-hand panel, where these costs are high, it is best not to move. The right-hand panel illustrates that with such costs sufficiently low, moving will be the top choice. In Figure A3.2 we keep transaction costs constant and show how the various choices compare under varying values of wages, probability of unemployment, benefits, and subsidies. The two figures illustrate the following:

- Limited portability of assets biases decisions toward staying. Moving is encouraged if transaction costs are small (Figure A3.1).
- Worse relative labor market conditions in the home region (lower wages or higher probability of unemployment) than in the target region tend to induce the decision to move (upper two panels of Figure A3.2).
- However, declining relative wages in the home region may lead to nonparticipation rather than out-migration.
- The level of benefits and subsistence income tends to influence the participation choice but has less impact on mobility.
- Although it depends on the design of the benefit system (in the model, the parameters  $\alpha$  and  $\beta$ ), the participation decision will in general be more strongly influenced by changes in subsistence income than changes in benefits.<sup>2</sup>

<sup>1</sup>This appendix was prepared by Kornélia Krajnyák.

<sup>2</sup>The exception is  $\alpha = \beta = 1$ , when the decision is equally sensitive to benefits and subsistence income.

**Figure A3.1. Benefits from Labor Market Choices Under Different Transaction Costs**



### Young and Old

How should we modify the model to describe the options of a young individual? In the model, the only difference between the young and the old is in their accumulated assets. While the old are expected to lose on the transaction when they sell their house and buy another in the target region, the young are yet to accumulate their assets. Instead of imputed rents,  $A$  and  $A^*$  for the young represent future labor income in the home and target regions, respectively. If prospects are significantly better in the target region,  $A < A^*$  will hold, but the four equations describing total income under the various options will remain the same. Clearly, the young will be biased toward moving—other things being equal, smaller wage and unemployment differences between the regions trigger the young individual’s move compared with the old individual’s—but all other conclusions remain similar.

### Labor Market Privileges

To accommodate labor market privilege in the model, further modifications are necessary. If we interpret  $u$  and  $u^*$  in the equations not only as the probability of unemployment for the individual in the home and the target regions, but also as the respective regional unemployment rates, the equations describe a world with random unemployment—that is, one without labor market privilege. If, however, insiders and outsiders coexist on the labor market, they

do not have the same total income from the decision to stay and participate. That is, the probability of unemployment depends on labor market privilege. Insiders (those previously employed) can expect to remain employed unless they are fired, while outsiders (those previously unemployed) can expect to remain unemployed unless they manage to exit the stagnant pool of unemployed:

$$(S, P|E) : A + f(b + \alpha s) + (1 - f)w$$

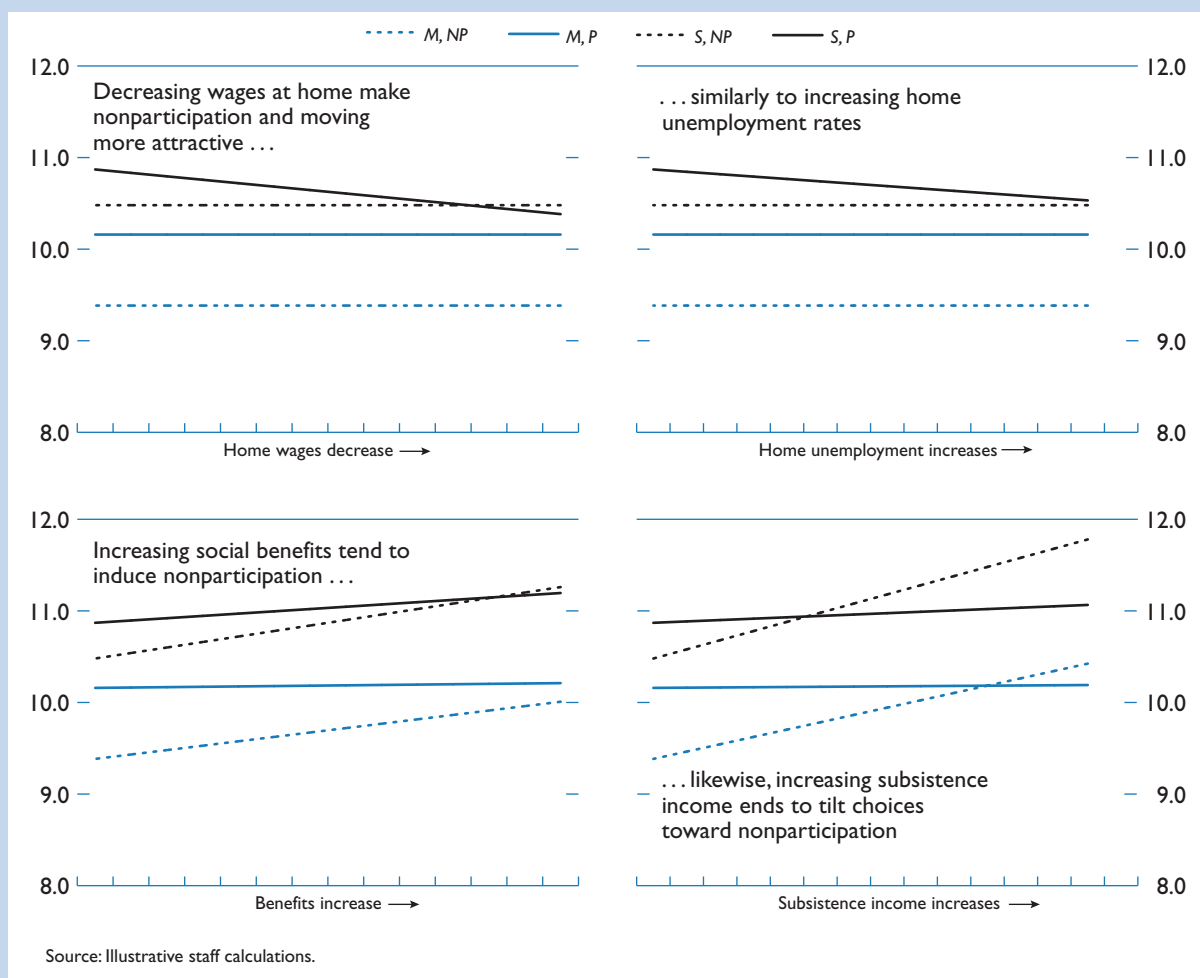
$$(S, P|U) : A + (1 - x)(b + \alpha s) + xw,$$

where  $f$  is the probability for an insider to be fired, and  $x$  is a probability of exiting unemployment for an outsider.

If labor market privilege does not travel well, and all movers have to compete for jobs with the unemployed in the target region, prospects for insiders and outsiders differ only in the home region. Figure A3.3 compares the insiders’ and the outsiders’ decisions under varying values of wages, exit rate from unemployment, firing rate, and subsistence income. The following conclusions can be drawn:

- Outsiders tend to be more mobile than insiders: they move in response to smaller differences in regional labor market performance.
- Since insiders lose their privileged labor market position when moving, they only move if benefits are sufficiently high to provide insurance in case they remain unemployed in the target region.
- Owing to their worse labor market prospects, outsiders are more prone to dropping out of the

**Figure A3.2 Benefits from Different Labor Market Choices Under Various Labor Market Conditions**



labor force—they decide not to participate at lower levels of benefits and subsistence income than insiders do.

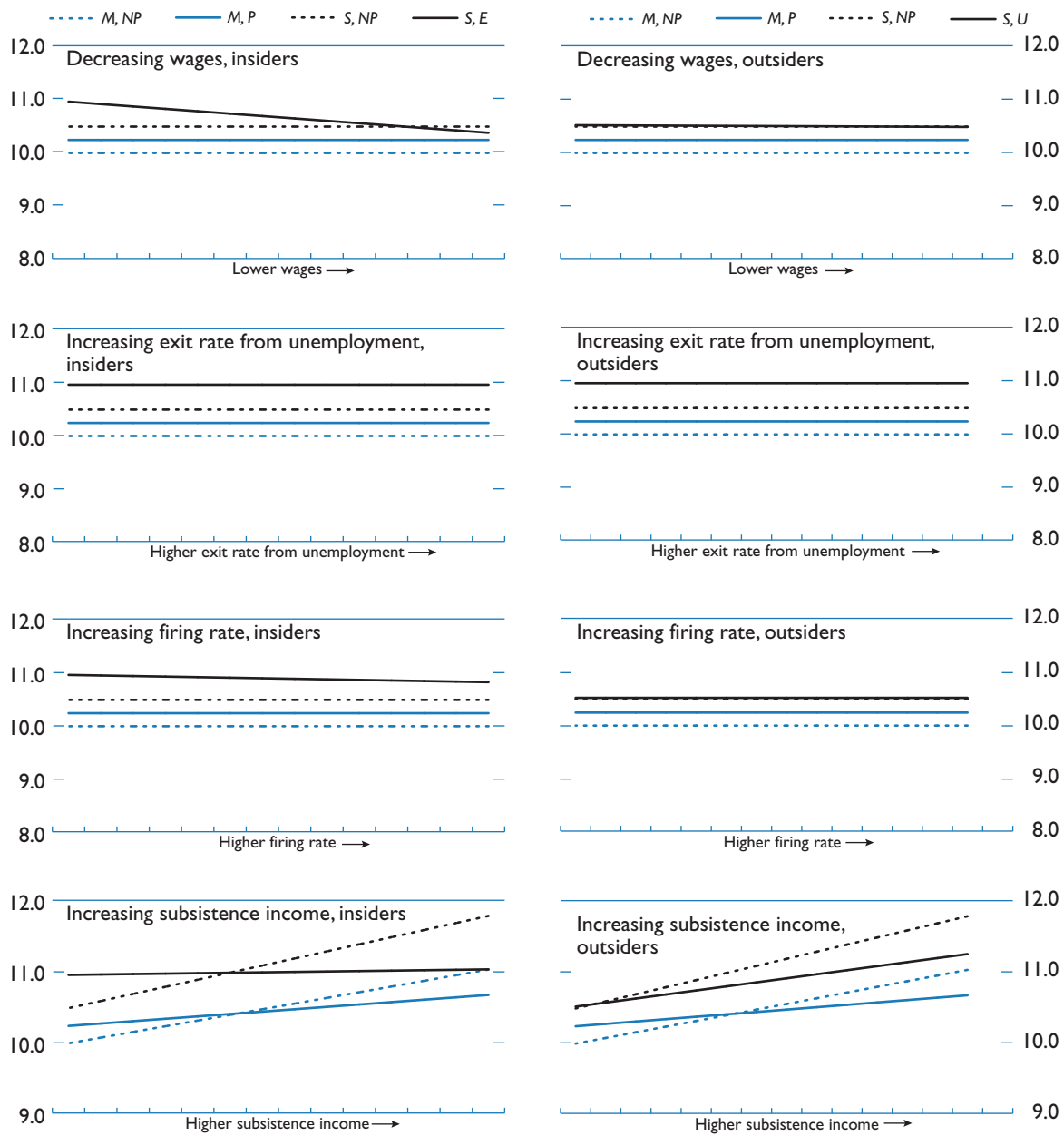
### Portable Labor Market Privileges

The first and second conclusions change completely once privileges are assumed to carry over to another region. Consistent with empirical evidence for transition countries and elsewhere in Europe, the model now predicts that insiders will have a higher propensity to move, while outsiders will tend to drop out of the labor force rather than move to another region (Figure A3.4).

### Framework for the Firm's Decision

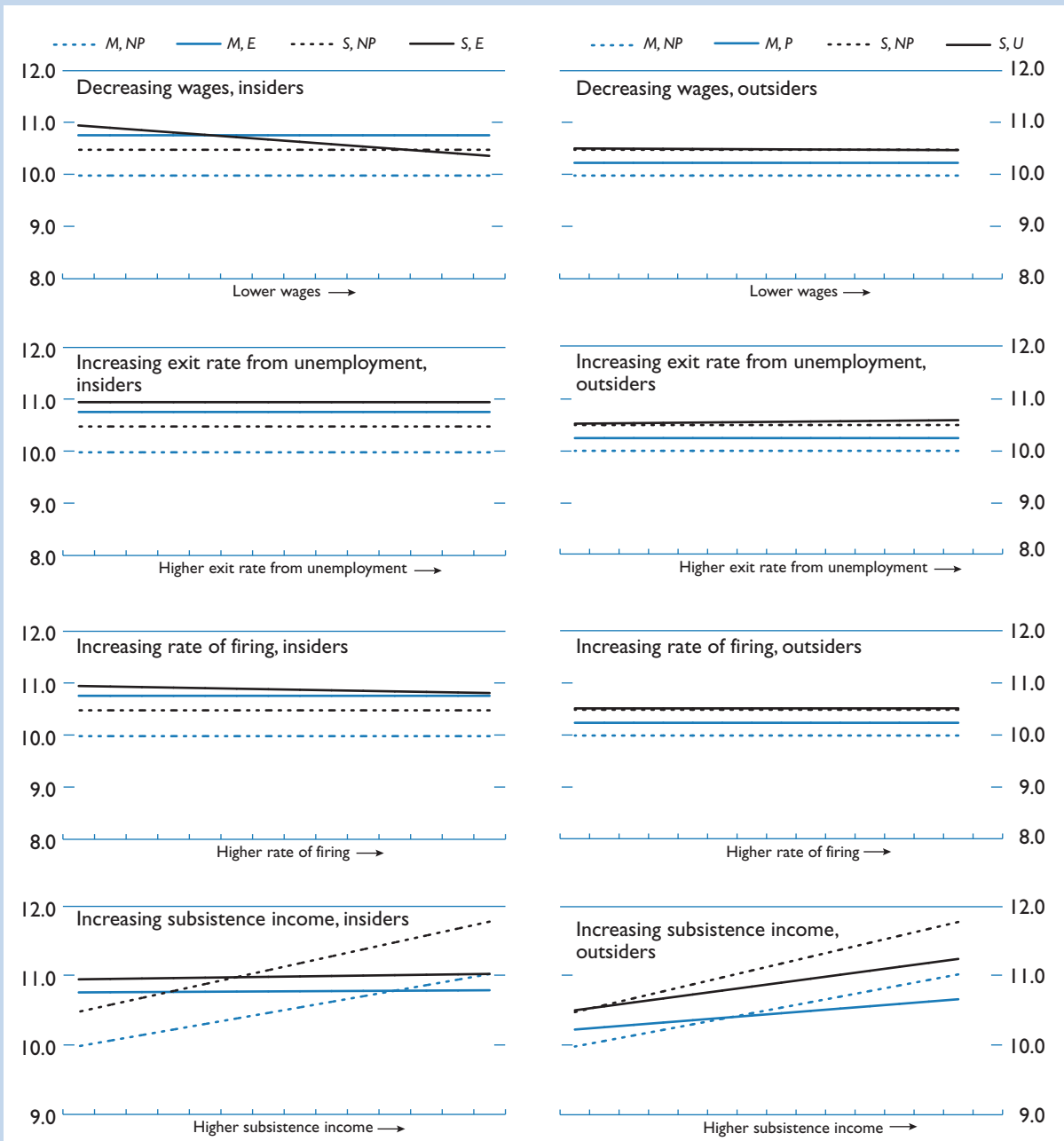
The firm's location decision is considered in the framework of an economic geography model presented by Puga (1999). In the model, two industries—agriculture and manufacturing—locate across two regions. The regions are endowed with labor (used by both industries and perfectly mobile across them) and a fixed amount of arable land (used only by agriculture). While agriculture is perfectly competitive and produces a costlessly tradable homogeneous output, manufacturing is imperfectly competitive and produces differentiated goods that can only be traded at a cost. Workers and landowners consume both the agricultural good and manufactures.

**Figure A3.3. Benefits from Different Labor Market Choices for Insiders and Outsiders if Privilege Is Not Portable**



Source: Illustrative staff calculations.

**Figure A3.4. Benefits from Different Labor Market Choices for Insiders and Outsiders if Privilege Is Portable**



Source: Illustrative staff calculations.



# Bibliography

- Aghion, Philippe, and Olivier Blanchard, 1994, "On the Speed of Transition in Central Europe," NBER Working Paper No. 4736 (Cambridge, Massachusetts: National Bureau of Economic Research).
- Baker, Dean, Andrew Glyn, David Howell, and John Schmitt, 2002, "Labour Market Institutions and Unemployment: A Critical Assessment of the Case for Deregulation" (New York: MacArthur Foundation and the Center for Economic Policy Analysis of New School University).
- Baldwin, Richard E., 1998, "Trade and Growth: Any Unfinished Business?" *European Economic Review*, Vol. 42, Nos. 3–5, pp. 695–703.
- , Rikard Forslid, Philippe Martin, Gianmarco Ottaviano, and Frederic Robert-Nicoud, 2003, *Economic Geography and Public Policy* (Princeton, New Jersey: Princeton University Press).
- Baldwin, Richard, and Philippe Martin, 2003, "Agglomeration and Regional Growth," CEPR Discussion Paper No. 3960 (London: Centre for Economic Policy Research).
- Bilsen, Valentijn, and Jozef Konings, 1996, "Job Creation, Job Destruction, and Growth of Newly Established Private Firms in Transition Economies: Survey Evidence from Bulgaria, Hungary, and Romania," Working Paper No. 59 (Leuven, Belgium: Leuven Institute for Central and East European Studies).
- Bisogo, Marcelo, 2002, "Croatian Labor Market in Transition," background paper for "Croatia: Economic Vulnerability and Welfare Study" (unpublished; Washington: World Bank).
- Blanchard, Olivier, 2000a, "The Economics of Unemployment. Shocks, Institutions, and Interactions," *Lionel Robbins Lectures* (London: London School of Economics).
- , 2000b, "Employment Protection, Sclerosis, and the Effect of Shocks on Unemployment," *Lionel Robbins Lectures*, Lecture 3 (London: London School of Economics).
- , 2002, "Designing Labor Market Institutions," remarks at the conference "Beyond Transition," Warsaw, Poland.
- , 2004, "Explaining European Unemployment," Research Summary, *NBER Reporter* (Summer). Available via the Internet: <http://www.nber.org/reporter/summer04/blanchard.html>.
- Blanchard, Olivier, and Pedro Portugal, 2004, "What Hides Behind an Unemployment Rate: Comparing Portuguese and U.S. Labor Markets," *American Economic Review* (March), pp. 187–207.
- Blanchard, Olivier, and Justin Wolfers, 2000, "The Role of Shocks and Institutions in the Rise of European Unemployment: The Aggregate Evidence," *Harry Johnson Lecture, Economic Journal*, No. 110 (March), pp. 1–33.
- , and Michael Kremer, 1997, *Quarterly Journal of Economics*, Vol. 112, No. 4 (November), pp. 1091–1126.
- , and Lawrence Katz, 1999, "Wage Dynamics: Reconciling Theory and Evidence," NBER Working Paper No. 6924 (Cambridge, Massachusetts: National Bureau of Economic Research).
- Blanchflower, David, 2001, "Unemployment, Well-Being, and Wage Curves in Eastern and Central Europe," *Journal of the Japanese and International Economies*, Vol. 15, pp. 364–402.
- , and Andrew Oswald, 1994, "The Wage Curve" (Cambridge, Massachusetts: MIT Press).
- Boeri, Tito, 2001, "Transition with Labour Supply," Discussion Paper No. 257 (Bonn: Universität Bocconi-IGIER; and London: Centre for Economic Policy Research).
- , Giuseppe Nicoletti, and Stefano Scarpetta, 2000, "Regulation and Labour Market Performance," Discussion Paper No. 2420 (London: Centre for Economic Policy Research).
- Brücker, Herbert, and Parvati Trübswetter, 2004, "Do the Best Go West? An Analysis of the Self-Selection of Employed East-West Migrants in Germany," Discussion Paper No. 986 (Bonn, Germany: Institute for Labor Studies, IZA).
- Chadha, Bankim, Fabrizio Coricelli, and Kornélia Krajnyák, 1993, "Economic Restructuring, Unemployment, and Growth in a Transition Economy," IMF Working Paper 93/16 (Washington: International Monetary Fund).
- Choueiri, Nada, 2005, "The Labor Market in Poland," in *Republic of Poland: Selected Issues*, IMF Country Report No. 05/264 (Washington: International Monetary Fund), pp. 31–50.
- Cseres-Gergely, Zsombor, 2002, "Residential Mobility, Migration, and Economic Incentives—The Case of Hungary in 1990–1999," Budapest Working Papers on the Labour Market No. 7 (Budapest: University of Economics and Public Administration).
- CSO, *Labor Force Survey* (Budapest: Hungarian Central Statistical Office).
- , *Survey on the Number of Employees and Earnings in the National Economy* (Budapest: Hungarian Central Statistical Office).
- Disney, Richard, 2000, "The Impact of Tax and Welfare Policies on Employment and Unemployment in OECD



- Countries,” IMF Working Paper No. 00/164 (Washington: International Monetary Fund).
- ECOSTAT, 2003, *ECOSTAT Newsletter* 9/2003, 30 September (Budapest: CSO ECOSTAT). Available via the Internet: <http://www.ecostat.hu/hirlevel/hirlevel37.html>.
- Elhorst, Paul, 2000, “The Mystery of Regional Unemployment Differentials: A Survey of Theoretical and Empirical Explanations” (unpublished; Goettingen, Germany).
- Erbenova, Michaela, Vit Sorm, and Katherine Terrell, 1998, “Work Incentive and Other Effects of Social Assistance and Unemployment Benefit Policy in the Czech Republic,” *Empirical Economics*, No. 23, pp. 87–120.
- Estevão, Marcello, 2003, “Structural and Cyclical Labor Market Changes in Poland,” in *Republic of Poland: Selected Issues*, IMF Country Report No. 03/188 (Washington: International Monetary Fund), pp. 14–43.
- European Training Foundation, 1999, “Employment and Labor Market in Bulgaria,” Working Document (Torino, Italy, August).
- Faggio, Giulia, and Jozef Konings, 1998, “Gross Job Flows in Transition Countries: Results from Company Accounts Data for Bulgaria, Estonia, and Romania,” LICOS Centre for Transition Economics Discussion Paper No. 77 (Leuven, Belgium: Katholieke Universiteit Leuven).
- , 2001, “Job Creation, Job Destruction, and Employment Growth in Transition Countries in the 90’s,” LICOS Centre for Transition Economics Discussion Paper No. 242 (Leuven, Belgium: Katholieke Universiteit Leuven).
- Farrell, Diana, 2004, “The Hidden Dangers of the Informal Economy,” *McKinsey Quarterly*, No. 3, pp. 27–37 (New York).
- Fazekas, Károly, 2000, “The Impact of Foreign Direct Investment Inflows on Regional Labor Markets in Hungary,” SOCO Project Paper No. 77c (Vienna, Austria: Institute for Human Sciences).
- , 2003, “Effects of Foreign Direct Investment on the Performance of Local Labour Markets: The Case of Hungary,” Budapest Working Paper No. 3 (Budapest, Hungary: University of Economics and Public Administration).
- , 2004, *Quarterly Labor Market Update* (Budapest: Institute of Economics, January).
- Fidrmuc, Jan, 2002, “Migration and Regional Adjustment to Asymmetric Shocks in Transition Economies,” Center for European Integration Studies (ZEI) (Bonn, Germany: University of Bonn).
- , and Peter Huber, 2003, “On the Puzzle of Rising Regional Disparities and Falling Migration Rates During Transition,” Center for European Integration Studies (ZEI) (Bonn, Germany: University of Bonn).
- Fischer, Stanley, and Ratna Sahay, 2000, “The Transition Economies After Ten Years,” IMF Working Paper No. 00/30 (Washington: International Monetary Fund).
- Fortaleza, Alvaro, and Martín Rama, 2001, “Labor Market Rigidity and the Success of Economic Reforms Across More Than One Hundred Countries,” Vol. 1, WPS No. 2521 (Washington: World Bank).
- Francis, John, 2003, “The Declining Costs of International Trade and Unemployment,” *Journal of International Trade and Development*, Vol. 12, No. 4, pp. 337–57.
- Galušćák, Kamil, and Daniel Münich, 2004, “Regional Wage Adjustments and Unemployment: Estimating the Time-Varying Wage Curve,” Czech National Bank Working Papers (Prague, forthcoming).
- Garibaldí, Pietro, Lubomir Dimitrov, and Gabriella Stoyanova, 2000, “The Bulgarian Labor Market: An Overview” (unpublished; Washington: World Bank, February).
- GKI, 2003, “Forecast of GKI Economic Research Co. on Developments in the Hungarian Economy in 2003” (Budapest: GKI Economic Research Co., 29 September). Available via the Internet: <http://www.gki.hu/frame.php>.
- Grogan, Louise, and Luc Moers, 2001, “Growth Empirics with Institutional Measures for Transition Countries,” *Economic Systems*, No. 28 (Hamilton, Ontario, Canada: McMaster University), pp. 1–22.
- Ham, John C., Jan Svejnar, and Katherine Terrell, 1998, “Unemployment and the Social Safety Net During Transitions to a Market Economy: Evidence from the Czech and Slovak Republics,” *American Economic Review*, Vol. 88, No. 5, pp. 1117–42.
- Helpman, Elhanan, 1997, “The Size of Regions,” in D. Pines, E. Sadka, and I. Zilcha, eds., *Topics in Public Economics: Theoretical and Applied Analysis* (Cambridge and New York: Cambridge University Press).
- Institute of Economics, 2002, “Croatian Economic Outlook—Quarterly,” No. 9 (Zagreb).
- International Monetary Fund, 2003, *World Economic Outlook* (Washington: International Monetary Fund, April).
- Johnson, Simon, Daniel Kaufmann, and Pablo Zoido-Lobaton, 1998, “Corruption, Public Finances, and the Unofficial Economy” (unpublished; Washington: World Bank).
- Jurajda, Štěpán, 2005, “Czech Relative Wages and Returns to Schooling: Does the Short Supply of College Education Bite?” *Czech Journal of Economics and Finance* (Charles University, Prague), Vol. 55 (January), pp. 83–95.
- , and Daniel Münich, 2002, “Understanding Czech Long-term Unemployment,” William Davidson Institute Working Paper No. 498 (Ann Arbor, Michigan: University of Michigan Business School).
- , and Katherine Terrell, 2002, “What Drives the Speed of Job Reallocation During Episodes of Massive Adjustment?” Discussion Paper No. 601 (Bonn, Germany: IZA, October).
- Kaminski, Bartłomiej, and Michele Riboud, 2000, “Foreign Investment and Restructuring: The Evidence from Hungary,” Technical Paper No. 453 (Washington: World Bank).
- Kertesi, Gábor, and János Köllő, 1999, “Unemployment, Wage Push, and the Labour Cost Competitiveness of Regions: The Case of Hungary, 1986–96,” Working Papers on the Labour Market No. 5 (Budapest: Institute of Economics, Hungarian Academy of Sciences [HAS]).
- , 2003, “The Employment Effects of Nearly Doubling the Minimum Wage—The Case of Hungary,” Working Papers on the Labour Market No. 6 (Budapest: Institute of Economics, HAS).

- Köllő, János, 2001, "The Patterns of Non-Employment in Hungary's Least Developed Regions," Working Papers on the Labour Market, No. 1 (Budapest: Institute of Economics, HAS).
- , 2002a, "The Role of Commuting Costs in Maintaining Regional Unemployment Differentials—An Attempt at Estimation," Working Papers on the Labour Market, No. 2 (Budapest: Institute of Economics, HAS).
- , 2002b, "Wage-Setting Practices: Some Indirect Observations," in Fazekas and Koltay, eds., *The Hungarian Labor Market* (Budapest: Institute of Economics and HAS, Hungarian Employment Foundation).
- , and Mária Vincze, 1999, "Self-Employment, Unemployment and Wages: Regional Evidence from Hungary and Romania," Working Papers on the Labour Market, No. 1 (Budapest: Institute of Economics, HAS).
- Krajnyák, Kornélia, and Jeromino Zettelmeyer, 1998, "Competitiveness in Transition Economies: What Scope for Real Appreciation?" *IMF Staff Papers*, Vol. 45 (June), pp. 309–62.
- Krugman, Paul, and Anthony Venables, 1995, "Globalization and the Inequality of Nations," *Quarterly Journal of Economics*, Vol. 110, No. 4, pp. 857–80.
- Lindley, J., R. Upward, and P. Wright, 2002, "Regional Mobility and Unemployment Transitions in the UK and Spain," Research Paper Series, Globalization and Labour Markets Programme, No. 19 (Nottingham, United Kingdom: University of Nottingham).
- Lubyova, Martina, and Jan van Ours, 1998, "Work Incentives and Other Effects of the Transition to Social Assistance: Evidence from the Slovak Republic," *Empirical Economics*, Vol. 23, pp. 121–53.
- McCormick, Barry, 1997, "Regional Unemployment and Labour Mobility in the UK," *European Economic Review*, Vol. 41, pp. 581–89.
- McHugh, Jimmy, 2002, "Wage Centralization, Union Bargaining, and Macroeconomic Performance," IMF Working Paper No. 02/143 (Washington: International Monetary Fund).
- Marin, Dalia, 2004, "A Nation of Poets and Thinkers—Less So With Eastern Enlargement? Austria and Germany," CEPR Discussion Paper No. 4358 (London: Centre for Economic Policy Research).
- Markov, Nikolay, Nasko Dochev, and Rummen Dobrinsky, 2002, "Labor Adjustment, Wage Formation, and Corporate Efficiency in Bulgarian Manufacturing" (Sofia: Centre for Economic and Strategic Research).
- Martin, John, and David Grubb, 2001, "What Works and For Whom: A Review of OECD Countries' Experiences With Active Labor Market Policies," IFAU Working Paper No. 14 (Uppsala, Sweden: The Institute for Labour Market Policy Evaluation).
- Ministry of Finance of the Slovak Republic, 2004, "Convergence Program for the Slovak Republic, Covering the Period 2004–2010" (May).
- MNB, *Quarterly Inflation Report* (Budapest: Hungarian National Bank). Available via the Internet: <http://english.mnb.hu/modulei.asp?id=136>.
- Munich, Daniel, Jan Svejnar, and Katherine Terrell, 1998, "Worker-Firm Matching in Transition Economies," William Davidson Institute Working Paper No. 107 (Ann Arbor, Michigan: University of Michigan Business School).
- Murphy, Kevin M., Andrei Shleifer, and Robert W. Vishny, 1992, "The Transition to a Market Economy: Pitfalls of Partial Reform," *Quarterly Journal of Economics*, Vol. 107, No. 3, pp. 889–906.
- Nesporova, Alena, 2002, "Why Unemployment Remains So High in Central and Eastern Europe," ILO Employment Paper No. 43 (Geneva: International Labor Office).
- Newell, Andrew, and Francesco Pastore, 2000, "Regional Unemployment and Industrial Restructuring in Poland," IZA Discussion Paper No. 194 (Bonn, Germany: IZA).
- Nickell, Stephen, 1998, "Unemployment: Questions and Some Answers," *Economic Journal*, Vol. 108, No. 448, pp. 802–16.
- OECD, 2002a, *Employment Outlook* (Paris).
- , 2002b, *OECD Economic Surveys: Slovak Republic*, Vol. 2002/11 (Paris, June).
- , 2003a, "Beyond Rhetoric: Adult Learning Policies and Practices" (Paris).
- , 2003b, *Economic Review—Hungary* (Paris).
- , 2003c, *Economic Review—Slovak Republic* (Paris).
- , 2004a, *Employment Outlook* (Paris).
- , 2004b, *Benefits and Wages: OECD Indicators* (Paris).
- Ott, Katarina, 2002, "The Underground Economy in Croatia" (unpublished; Zagreb: Institute of Public Finance).
- Ours, Jan C. van, 2002, "The Locking-In Effect of Subsidized Jobs," CEPR Discussion Paper Series No. 3489 (London: Centre for Economic Policy Research).
- Pani, Marco, 2000, "Unemployment in Slovakia," in *Slovak Republic: Selected Issues and Statistical Appendix*, IMF Staff Country Report No. 00/115 (Washington: International Monetary Fund).
- Puga, Diego, 1999, "The Rise and Fall of Regional Inequalities," *European Economic Review*, Vol. 43, pp. 303–34.
- , 2001, "European Regional Policies in Light of Recent Locational Theories," CEPR Discussion Paper No. 2767 (London: Centre for Economic Policy Research).
- Raiser, Martin, Mark E. Schaffer, and Johannes Schuchardt, 2003, "Benchmarking Structural Change in Transition," CEPR Discussion Paper No. 3820 (London: Centre for Economic Policy Research).
- Riboud, Michele, Carolina Sánchez-Páramo, and Carlos Silva-Jáuregui, 2002, "Does Eurosclerosis Matter? Institutional Reform and Labor Market Performance in Central and Eastern European Countries in the 1990s," World Bank Technical Paper No. 519 (Washington: World Bank).
- Rutkowski, Jan, 2002, "Why Is Unemployment High in Bulgaria?" (unpublished; Washington: World Bank, March).
- , 2003, "Does Strict Employment Protection Discourage Job Creation? Evidence from Croatia" (unpublished; Washington: World Bank).
- Schneider, Friedrich, 2002a, "The Size and Development of the Shadow Economies and Shadow Economy Labor Force of 22 Transition and 21 OECD Countries: What Do We Really Know?" (Zagreb: Institute of Public Finance).
- , 2002b, "Unofficial Activities in Transition Countries: Ten Years of Experience" (Zagreb: Institute of Public Finance).

- , and Dominik Enste, 2000, “Shadow Economies: Size, Causes, and Consequences,” *Journal of Economic Literature*, Vol. 108, pp. 77–114.
- Schneider, Friedrich, and Günter Pöll, 1999, “Schattenwirtschaft,” *Handbuch der Wirtschaftsethik* (Gütersloh, Germany: Gütersloher Verlagshaus).
- Selassie, Abebe, 2001, “Unemployment, Wage Flexibility, and the Minimum Wage in Poland: Some Evidence from Micro Data” (unpublished; Washington: International Monetary Fund).
- Shleifer, Andrei, and Robert W. Vishny, 1993, “Corruption,” *Quarterly Journal of Economics*, Vol. 103, pp. 599–617.
- Suedekum, Jens, 2003, “Increasing Returns and Spatial Unemployment Disparities” University of Goettingen Department of Economics Discussion Paper No. 117 (Goettingen, Germany).
- Svejnar, Jan, 2002, “Labor Market Flexibility in Central and East Europe,” William Davidson Institute Working Paper No. 496 (Ann Arbor, Michigan: University of Michigan Business School).
- Taheri, Javid, 2000, “On the Alternative Explanations of Persistence of Unemployment in the OECD Countries,” *Applied Economics*, No. 32, pp. 1051–57.
- Tervu, Hannu, 2000, “Migration and Labour Market Adjustment: Empirical Evidence from Finland 1985–90,” *International Review of Applied Economics*, Vol. 14, No. 3, pp. 343–60.
- World Bank, 2001, “Slovak Republic: Living Standards, Employment and Labor Market Study,” Report No. 22351-SK (Washington).
- , 2002a, “Bulgaria: Poverty Assessment” (Washington).
- , 2002b, “Bulgaria: Poverty Assessment” (unpublished; Washington, May).
- , 2002c, “Transition: The First Ten Years. Analysis and Lessons from Eastern Europe and the Former Soviet Union” (Washington).
- , 2003, “Croatia: Country Economic Memorandum” (Washington).
- , 2004, *Doing Business in 2004* (Washington).
- World Economic Forum, 2004, *The Global Competitiveness Report 2002–2003* (London: Palgrave Macmillan).

## Recent Occasional Papers of the International Monetary Fund

248. Labor Market Performance in Transition: The Experience of Central and Eastern European Countries, by Jerald Schiff, Philippe Egoumé-Bossogo, Miho Ihara, Tetsuya Konuki, and Kornélia Krajnyák. 2006.
247. Rebuilding Fiscal Institutions in Post-Conflict Countries, by Sanjeev Gupta, Shamsuddin Tareq, Benedict Clements, Alex Segura-Ubiergo, Rina Bhattacharya, and Todd Mattina. 2005.
246. Experience with Large Fiscal Adjustments, by George C. Tsibouris, Mark A. Horton, Mark J. Flanagan, and Wojciech S. Maliszewski. 2005.
245. Budget System Reform in Emerging Economies: The Challenges and the Reform Agenda, by Jack Diamond. 2005.
244. Monetary Policy Implementation at Different Stages of Market Development, by a staff team led by Bernard J. Laurens. 2005.
243. Central America: Global Integration and Regional Cooperation, edited by Markus Rodlauer and Alfred Schipke. 2005.
242. Turkey at the Crossroads: From Crisis Resolution to EU Accession, by a staff team led by Reza Moghadam. 2005.
241. The Design of IMF-Supported Programs, by Atish Ghosh, Charis Christofides, Jun Kim, Laura Papi, Uma Ramakrishnan, Alun Thomas, and Juan Zalduendo. 2005.
240. Debt-Related Vulnerabilities and Financial Crises: An Application of the Balance Sheet Approach to Emerging Market Countries, by Christoph Rosenberg, Ioannis Halikias, Brett House, Christian Keller, Jens Nystedt, Alexander Pitt, and Brad Setser. 2005.
239. GEM: A New International Macroeconomic Model, by Tamim Bayoumi, with assistance from Douglas Laxton, Hamid Faruqee, Benjamin Hunt, Philippe Karam, Jaewoo Lee, Alessandro Rebucci, and Ivan Tchakarov. 2004.
238. Stabilization and Reforms in Latin America: A Macroeconomic Perspective on the Experience Since the Early 1990s, by Anoop Singh, Agnès Belaisch, Charles Collyns, Paula De Masi, Reva Krieger, Guy Meredith, and Robert Rennhack. 2005.
237. Sovereign Debt Structure for Crisis Prevention, by Eduardo Borensztein, Marcos Chamon, Olivier Jeanne, Paolo Mauro, and Jeromin Zettelmeyer. 2004.
236. Lessons from the Crisis in Argentina, by Christina Daseking, Atish R. Ghosh, Alun Thomas, and Timothy Lane. 2004.
235. A New Look at Exchange Rate Volatility and Trade Flows, by Peter B. Clark, Natalia Tamirisa, and Hang-Jin Wei, with Azim Sadikov and Li Zeng. 2004.
234. Adopting the Euro in Central Europe: Challenges of the Next Step in European Integration, by Susan M. Schadler, Paulo F. Drummond, Louis Kuijs, Zuzana Murgasova, and Rachel N. van Elkan. 2004.
233. Germany's Three-Pillar Banking System: Cross-Country Perspectives in Europe, by Allan Brunner, Jörg Decressin, Daniel Hardy, and Beata Kudela. 2004.
232. China's Growth and Integration into the World Economy: Prospects and Challenges, edited by Eswar Prasad. 2004.
231. Chile: Policies and Institutions Underpinning Stability and Growth, by Eliot Kalter, Steven Phillips, Marco A. Espinosa-Vega, Rodolfo Luzio, Mauricio Villafuerte, and Manmohan Singh. 2004.
230. Financial Stability in Dollarized Countries, by Anne-Marie Gulde, David Hoelscher, Alain Ize, David Marston, and Gianni De Nicoló. 2004.
229. Evolution and Performance of Exchange Rate Regimes, by Kenneth S. Rogoff, Aasim M. Husain, Ashoka Mody, Robin Brooks, and Nienke Oomes. 2004.
228. Capital Markets and Financial Intermediation in The Baltics, by Alfred Schipke, Christian Beddies, Susan M. George, and Niamh Sheridan. 2004.
227. U.S. Fiscal Policies and Priorities for Long-Run Sustainability, edited by Martin Mühleisen and Christopher Towe. 2004.



226. Hong Kong SAR: Meeting the Challenges of Integration with the Mainland, edited by Eswar Prasad, with contributions from Jorge Chan-Lau, Dora Iakova, William Lee, Hong Liang, Ida Liu, Papa N'Diaye, and Tao Wang. 2004.
225. Rules-Based Fiscal Policy in France, Germany, Italy, and Spain, by Teresa Dában, Enrica Detragiache, Gabriel di Bella, Gian Maria Milesi-Ferretti, and Steven Symansky. 2003.
224. Managing Systemic Banking Crises, by a staff team led by David S. Hoelscher and Marc Quintyn. 2003.
223. Monetary Union Among Member Countries of the Gulf Cooperation Council, by a staff team led by Ugo Fasano. 2003.
222. Informal Funds Transfer Systems: An Analysis of the Informal Hawala System, by Mohammed El Qorchi, Samuel Munzele Maimbo, and John F. Wilson. 2003.
221. Deflation: Determinants, Risks, and Policy Options, by Manmohan S. Kumar. 2003.
220. Effects of Financial Globalization on Developing Countries: Some Empirical Evidence, by Eswar S. Prasad, Kenneth Rogoff, Shang-Jin Wei, and Ayhan Kose. 2003.
219. Economic Policy in a Highly Dollarized Economy: The Case of Cambodia, by Mario de Zamaroczy and Sopenha Sa. 2003.
218. Fiscal Vulnerability and Financial Crises in Emerging Market Economies, by Richard Hemming, Michael Kell, and Axel Schimmelpfennig. 2003.
217. Managing Financial Crises: Recent Experience and Lessons for Latin America, edited by Charles Collyns and G. Russell Kincaid. 2003.
216. Is the PRGF Living Up to Expectations?—An Assessment of Program Design, by Sanjeev Gupta, Mark Plant, Benedict Clements, Thomas Dorsey, Emanuele Baldacci, Gabriela Inchauste, Shamsuddin Tareq, and Nita Thacker. 2002.
215. Improving Large Taxpayers' Compliance: A Review of Country Experience, by Katherine Baer. 2002.
214. Advanced Country Experiences with Capital Account Liberalization, by Age Bakker and Bryan Chapple. 2002.
213. The Baltic Countries: Medium-Term Fiscal Issues Related to EU and NATO Accession, by Johannes Mueller, Christian Beddies, Robert Burgess, Vitali Kramarenko, and Joannes Mongardini. 2002.
212. Financial Soundness Indicators: Analytical Aspects and Country Practices, by V. Sundararajan, Charles Enoch, Armida San José, Paul Hilbers, Russell Krueger, Marina Moretti, and Graham Slack. 2002.
211. Capital Account Liberalization and Financial Sector Stability, by a staff team led by Shogo Ishii and Karl Habermeier. 2002.
210. IMF-Supported Programs in Capital Account Crises, by Atish Ghosh, Timothy Lane, Marianne Schulze-Ghattas, Aleš Bulříř, Javier Hamann, and Alex Mourmouras. 2002.
209. Methodology for Current Account and Exchange Rate Assessments, by Peter Isard, Hamid Faruquee, G. Russell Kincaid, and Martin Fetherston. 2001.
208. Yemen in the 1990s: From Unification to Economic Reform, by Klaus Enders, Sherwyn Williams, Nada Choueiri, Yuri Sobolev, and Jan Walliser. 2001.
207. Malaysia: From Crisis to Recovery, by Kanitta Meesook, Il Hounng Lee, Olin Liu, Yougesh Khatri, Natalia Tamirisa, Michael Moore, and Mark H. Krysl. 2001.
206. The Dominican Republic: Stabilization, Structural Reform, and Economic Growth, by a staff team led by Philip Young comprising Alessandro Giustiniani, Werner C. Keller, and Randa E. Sab and others. 2001.
205. Stabilization and Savings Funds for Nonrenewable Resources, by Jeffrey Davis, Rolando Ossowski, James Daniel, and Steven Barnett. 2001.
204. Monetary Union in West Africa (ECOWAS): Is It Desirable and How Could It Be Achieved? by Paul Masson and Catherine Pattillo. 2001.

Note: For information on the titles and availability of Occasional Papers not listed, please consult the IMF's *Publications Catalog* or contact IMF Publication Services.