Unemployment, Well-Being, and Wage Curves in Eastern and Central Europe

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The paper studies the labor markets of 23 transition countries from eastern and central Europe—Albania, Armenia, Belarus, Bulgaria, Croatia, Czech Republic, East Germany, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania Macedonia, Moldova, Poland, Romania, Russia, Slovakia, Slovenia, Ukraine, and Yugoslavia. It uses new micro-data from a large number of surveys on over 200,000 randomly sampled individuals from these countries for the years 1990–1997. The microeconometric structure of unemployment regression equations in the nations of eastern Europe appears to be similar to the industrialised west. Estimation of east European wage curves produces a local unemployment elasticity of between −0.1 and −0.3. This is somewhat larger in absolute terms than has been found elsewhere. On a variety of attitudinal measures, eastern Europeans said they were less contented than their western European counterparts. The strongest support for the changes that have occurred in eastern Europe is to be found among men, the young, the most educated, students, and the employed and particularly the self-employed. Support for market reforms is particularly low amongst the unemployed who were found to be particularly unhappy on two well-being measures. *J. Japan. Int. Econ.*, December 2001, **15**(4), pp. 364–402. Department of Economics, Dartmouth College, New Hampshire 03755; and NBER. © 2001 Elsevier Science (USA)

This paper studies new micro-data on labor markets on unemployment in most of the transition nations of eastern Europe. It examines and tries to understand what has happened in these nations during the 1990s in the years since the end of the Cold War and how the unemployed have fared.

We focus on four questions.

- In what respects is unemployment in eastern and central Europe comparable to that in western Europe?
- Does unemployment have a similar impact on the wages of the employed in both east and west Europe.
- What are the attitudes of people within these countries to the reforms that have been undertaken and how have their attitudes been affected by changes in the level of unemployment?
- What policies should these ex-communist countries adopt to keep unemployment in check?

The transition countries may be classified into two main groupings. First, there are the Commonwealth of Independent States (CIS) nations of Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.[2] Second, there are also the central and east european and Baltic state (CEE) nations of Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, FYR Macedonia, Poland, Romania, the Slovak Republic, and Slovenia FR Yugoslavia. We have micro-data available on all but three of these countries—the exceptions are Tajikistan, Turkmenistan, and Uzbekistan.

As Table I shows, these former communist countries vary enormously in their levels of GNP per capita, population size, and the importance of agriculture. The countries are ranked by real GNP per capita adjusted for purchasing power parity (PPP). The rankings are very similar if GNP per capita is used without the PPP adjustment. The richest is Slovenia with a GNP per capita adjusted for PPP of $11,880 compared with $1,100 in Tajikistan. These income levels are considerably lower than in the United States ($29,080), Japan ($24,400), the United Kingdom ($20,710), or Italy ($20,100) or even in the poorer European countries such as Spain ($15,690) or Greece ($12,540). They are more similar to those of Argentina ($10,100), Mexico ($8,110), or Turkey ($6,470). With the exception of Poland the level of real GDP (column 3) has declined since 1989. By population size the federation of Russia is the largest and Estonia the smallest (column 4), while Armenia and Albania are the most agricultural (column 5). The inflation rate is very high and in double digits in most of these countries and in three digits in Bulgaria, Tajikistan, and Turkmenistan (column 6). Overall, on the United Nations' Human Development Index (HDI), Slovenia ranks highest at 33rd while Tajikistan is the lowest at 108th (column 7). The CIS countries are generally poorer and more agricultural and rank they lower on the HDI than do the CEE countries.

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[2] In 1991 the Union of Soviet Socialist Republics was dissolved into 15 countries (Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan).

TABLE I
Country Characteristics

Country	GNP/ capita[d] PPP (1) 1997$	GNP/ capita[d] (2) 1997$	Level of Real GDP (1989 = 100)[a] (3) 1997	Population (millions)[a] (4) 1997	Agriculture % GDP[a] (5) 1997	Inflation rate[c] (%) (6) 1996	Human Development Index[a] (7) 1999
Slovenia	11,880	9,840	99	2	5		33
Czech Republic	10,380	5,240	98	10		9.1	36
Slovakia	7,860	3,680	95	5	5	4.4	42
Hungary	6,970	4,510	90	10	6	21.2	47
Poland	6,510	3,590	112	39		18.7	44
Estonia	5,090	3,360	73	1	7	24.6	54
Croatia	4,930	4,060	76	5			55
Belarus	4,820	2,150	71	10	14	49.4	60
Russia	4,280	2,680	58	148	8	43.8	71
Romania	4,270	1,410	82	23	20	30.3	68
Lithuania	4,140	2,260	61	4	13	26.5	62
Latvia	3,970	2,430	56	3	7	18.0	74
Bulgaria	3,870	1,170	63	8	23	121.0	63
Kazakhstan	3,530	1,350	61	16	12	38.9	76
FYR Macedonia	3,180	1,100	56	2	12		73
Armenia	2,540	560	38	4	41		87
Uzbekistan	2,529[e]	1,020	87	23	31	81.1	92
Kyrgyzstan	2,180	480	60	5	45	35.3	97
Ukraine	2,170	1,040	37	51	12	66.2	91
Albania	2,170	760	80	3	63	14.6	100
Georgia	1,980	860	32	5	32		85
Azerbaijan	1,520	510	40	8	22	20.4	103
Moldova	1,450	460	35	4	31		104
Turkmenistan	1,410	640	42	4		694.9	96
Tajikistan	1,100	330	40	6		491	108

[a] Human Development Indicators, United Nations, 1999; downloadable at http://www.undp.org/hdro/indicators.html.

[b] European Bank for Reconstruction and Development, Transition Report Update, April 1999.

[c] Transmonee 3.0 public use database at the UNICEF International Child Development Centre in Florence, Italy; downloadable from http://eurochild.gla.ac.uk/dev_web/Documents/monee/Download.htm.

[d] World Bank World Development Indicators; downloadable from http://www.worldbank.org/data/wdi/worldview.html.

[e] GDP per capita.

In over one third of the 27 countries in transition, measured output in 1998 was still 40% or more below the 1989 figure (Monee, 1999[3]). Output fell by two thirds between 1989 and 1998 in Moldova and Georgia, and by nearly that amount in Ukraine, Tajikistan, and Turkmenistan. Most countries hit rock bottom in the mid-1990s and have been recovering in recent years. These include the economies

[3] Downloadable from http://eurochild.gla.ac.uk/dev_web/Documents/monee.

of central Europe which bottomed-out in 1992–1993, and those of the Baltics and most other former Soviet Union countries which reached their nadir in 1994 and 1995. However, by 1998 only three countries in the region, Slovakia, Poland, and Slovenia, had managed to exceed the GDP levels of 1989. Both the Czech Republic and Hungary were just below their 1989 levels.

Communist labor market policies contributed greatly to the failure of their economies, resulting in excess demand for labor, low productivity, low mobility and occupational choice, and distorted wage structures (Freeman, 1994). Under the old system operating in the east there was little or no unemployment and an enlarged state sector. However, CEE countries were not homogenous in their economic behavior under the communist regime. Poland and Hungary in particular had more experience with markets than, say, the Czech and Slovak republics (Svejnar, 1999). Basu *et al.* (1995) have shown that Polish and Hungarian firms were adjusting employment to sales way before 1990. With the end of the Cold War, employment in state enterprises declined rapidly in a number of countries—Poland, Hungary, and Czechoslovakia got off to an early start in the democratization process. However, the newly emerging private sectors were unable to absorb all the jobless, with a resulting growth of unemployment. The Czech Republic, in particular, pursued a very active labor market policy that kept unemployment benefits low to discourage workers from not working and provided lots of incentives for early retirement.[4]

By the end of the 1990s the speed of the reform movement had picked up in a number of the CEE countries (i.e., Estonia, Czech Republic, Hungary, Poland, and Slovenia) and has been boosted recently by the start of substantive negotiations for European Union (EU) membership, which will require further restructuring.[5] The pace of market-oriented reform in general and labor market reform in particular has been much slower in the CIS countries such as the Ukraine, Belarus Uzbekistan, Kazakhstan, Kyrgyzstan, and Moldova than in the CEE. European Bank of Reconstruction and Development (EBRD, 1999) makes it clear that privatization, particularly of large-scale enterprises in these countries, has been slow (e.g., Moldova, Uzbekistan, and Turkmenistan) and in some cases has actually stalled (e.g., Belarus and Tajikistan). Low unemployment levels in the CIS countries, far from reflecting well-functioning labor markets, appear to indicate slowness in the move to market.

Measuring labor market outcomes in the former communist countries is difficult. The main measure of labor market slack, the unemployment rate, shows considerable variation by country and time from one data source to another. Table II reports registered unemployment rates by country taken from UNICEF's Transmonee database while Table III reports official EBRD figures based on reports in labor force surveys. Early years' data are not necessarily reliable because of the pretransition lack of officially recognized unemployment in the countries. The reported unemployment numbers have to be treated with some caution because of

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[4] I owe this point to John L. Campbell.
[5] In December 1998, Kyrgyzstan joined the WTO, followed by Latvia in February 1999.

TABLE II
Registered Unemployment Rates, 1989–1997

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Albania	7	10	9	27	22	18	12.9	12.7	13.9	17.8
Armenia				1.6	5.3	6.1	6.6	9.3	10.6	9.3
Azerbaijan			0.1	0.2	0.7	0.8	1	1.1	1.3	1.1
Belarus			0.1	0.5	1.4	2.1	2.7	3.9	2.8	2.3
Bosnia-Herzegovina									39.6	
Bulgaria				13.2	15.8	14	11.4	11.1	14	12.2
Croatia	8.0	9.3	14.9	15.3	14.8	14.5	14.5	16.4	17.5	
Czech Republic		0.3	2.6	3.1	3	3.3	3	3.1	4.3	6
Estonia					3.9	4.4	4.1	4.4	4	3.7
FR Yugoslavia	17.9	19.7	21.4	22.8	23.1	23.1	24.6	25.7	25.9	26.8
FYR Macedonia	22.6	23	24.5	26	27.7	30	35.6	38.8	41.7	
Georgia			0.2	2.3	6.6	3.6	2.6	2.4	5	5
Hungary	0.4	0.8	8.5	12.3	12.1	10.4	10.4	10.5	10.4	9.1
Kazakhstan				0.4	0.6	1.1	2.1	4.2	3.9	3.7
Kyrgyzstan				0.1	0.2	0.7	2.9	4.3	3.1	3.1
Latvia				0.9	4.5	6.3	6.4	7	7.4	7.6
Lithuania			0.3	1.3	4.4	3.8	6.1	7.1	5.9	6.4
Moldova					0.7	1.1	1.4	1.5	1.5	2
Poland		3.4	9.2	12.9	14.9	16.5	15.2	14.3	11.5	10
Romania			3	8.2	10.4	10.9	9.5	6.6	8.8	10.3
Russia			0.1	0.8	1.1	2.2	3.2	3.4	2.8	2.7
Slovakia		0.6	6.6	11.4	12.7	14.4	13.8	12.6	12.9	14.6
Slovenia	2.9	4.7	8.2	11.5	14.4	14.4	13.9	13.9	14.4	14.5
Tajikistan				0.3	1.2	1.7	2	2.7	2.9	3.2
Ukraine				0.3	0.4	0.4	0.6	1.6	3.1	
Uzbekistan				0.1	0.3	0.4	0.4	0.4	0.4	0.4

Source. Transmonee 3.0 public use database at the UNICEF International Child Development Centre in Florence, Italy; downloadable from http://eurochild.gla.ac.uk/dev_web/Documents/monee/Download.htm.

the widely acknowledged existence of underground or shadow economies existing in many of these countries.

With a few exceptions there is considerable overlap between the two sets of numbers although, as in most OECD countries,[6] the numbers obtained from labor force surveys based on self-reports are generally larger than the registered numbers. The biggest differences between the two sets of numbers in 1996 were in the following four countries.

	Registered	Labor force surveys
Azerbaijan	1.1%	19.4%
Estonia	4.4%	10.0%
Georgia	2.6%	10.0%
Russia	3.4%	9.2%

[6] See (OECD, 1999).

TABLE III
EBRD Unemployment Rates by Country, 1991–1998 (%)

	1991	1992	1993	1994	1995	1996	1997	1998
Albania	8.3	27.9	29.0	19.6	16.9	12.4	—	—
Armenia	—	1.8	5.3	6.7	6.7	9.2	10.7	9.9
Azerbaijan	—	15.4	16.0	15.2	17.0	19.4	19.3	—
Belarus	0.1	0.5	1.4	2.1	2.7	3.9	2.8	2.3
Bulgaria	11.1	15.3	16.4	12.8	11.1	12.5	13.7	12.0
Croatia	13.2	13.2	14.8	14.5	14.5	16.4	17.5	17.6
Czech Republic	4.1	2.6	3.5	3.2	2.9	3.5	5.2	7.5
Estonia			6.5	7.6	9.7	10.0	9.7	9.6
FYR Macedonia	19.2	27.8	28.3	31.4	37.7	31.9	36.0	
Georgia	0.2	2.3	6.6	3.6	2.6	12.0	5.1	14.0
Hungary	7.4	12.3	12.1	10.4	10.4	10.5	10.4	7.8
Kazakhstan	0.0	0.5	0.6	0.8	1.7	3.6	4.1	
Kyrgyzstan	0.0	0.1	0.2	0.7	3.0	4.5	3.2	
Latvia	0.6	3.9	8.7	16.7	18.1	19.4	14.8	9.2
Lithuania	0.3	1.3	4.4	3.8	6.2	7.0	5.9	6.4
Moldova		0.1	0.7	1.1	1.4	1.8	1.6	
Poland	11.8	13.6	16.4	16.0	14.9	13.2	10.5	10.4
Romania	3.0	8.2	10.4	10.9	9.5	6.6	8.8	10.3
Russia	0.0	4.8	5.3	7.1	8.3	9.2	10.9	12.4
Slovakia			12.2	13.7	13.1	11.1	11.6	11.9
Slovenia	8.2	11.5	14.4	14.4	13.9	13.9	14.4	14.5
Tajikistan		0.3	1.2	1.7	2.0	2.7	2.9	3.1
Turkmenistan	2.0				3.0			
Ukraine	0.0	0.3	0.4	0.4	0.5	1.1	2.3	3.7
Uzbekistan	0.0	0.1	0.3	0.4	0.4	0.4	0.4	0.6

Source. European Bank for Reconstruction and Development, Transition Report Update, April 1999.

The likely reason for this is the absence of benefits or ineligibility for such payments in these countries and hence a lack of an incentive to register.

On both measures, unemployment appears to have been growing across most of central and eastern Europe during the 1990s. Unemployment rates average around one in ten of the labor force, which is similar to rates found in the OECD countries in the mid-1990s. Unemployment rates are generally higher in the CEE countries than they are in the CIS countries which delayed stabilization and transformation (e.g., Ukraine). High unemployment rates have usually been accompanied by long spells of unemployment. The main exception to this is the Czech Republic which has been particularly in keeping low levels of unemployment and keeping the length of those spells relatively short. High levels of unemployment contributed to a "political backlash as the post revolutionary governments were soon voted out of office in all the CEE countries except for the Czech Republic" (Svejnar, 1999, p. 2814). Ham *et al*. (1998, 1999) found that the success of the Czech Republic compared with other CEE countries had little to do with the generosity of unemployment benefits. Svejnar attributes the success of the Czech Republic

in keeping unemployment down principally to (a) a rapid increase in vacancies, (b) a high outflow rate from unemployment, (c) a matching process with strongly increasing returns, and (d) an ability to keep the long term unemployed at relatively low levels (1999, p. 2852).

When random samples of individuals are available, it is possible to examine the correlations between joblessness and other characteristics (such as age and education). Although causal connections are not easily proved, this kind of work paints a useful picture of the unemployed. It is natural to begin by looking at the patterns in individuals' unemployment experiences in eastern Europe and how they compare to those in western Europe. The main data source is the East Europe Eurobarometers and the EU Eurobarometer Surveys for data on western Europe, including East Germany, both of which are available from the Interuniversity Consortium for Political and Social Research (ICPSR). These offer an especially valuable statistical resource, because they have been designed to provide comparable information across many countries and have now been collected for a longish run of years in the 1990s. In total there are over 130,000 observations available in the dataset for 8 years and 22 east European countries. The numbers of observations by country are presented in the Appendix.

Column 1 of Table IV estimates probit unemployment equations using the micro-data described above for 21 East European nations for a sample of individuals up to the age of 70 for the years 1990–1997.[7] The equation predicts the probability of being unemployed compared to being in work—hence the sample consists of the labor force—and includes country and year dummies, age and its square, gender, and three education dummies. It uses a sample of just over 65,000 men and women over the 1990s in column 1. The sample drops from 133,500 because of the exclusion of those who are out of the labor force (OLF). In this table, the excluded country is Yugoslavia. East Germany is not included in this table. The dependent variable measures whether the individuals who are being sampled report themselves as unemployed and it is zero if employed. Male unemployment is approximately 2% lower than female unemployment. Unemployment is U-shaped in age reaching a minimum in the mid-60s. Using the micro-data files unemployment is lowest in the Czech Republic and highest in Armenia.

In columns 2 and 3 of Table IV the unemployment equation is estimated for men and women, respectively. The similarity of the coefficients between the male and female equations is striking. In columns 4 and 5 the equations are estimated separately for CEE and CIS countries. Unemployment has risen more rapidly in the CEE countries but has also risen in the CIS. Unemployment is U-shaped in age minimizing at age 56 in the CEE countries and at 63 in the CIS. The important statistical correlates with higher probabilities of being unemployed in both the CEE and CIS countries turn out to be:

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[7] We report here and in subsequent tables the results of estimating the dprobit procedure in STATA which gives the change in the probability for an infinitesimal change in each independent continuous variable and the discrete change in the probability for dummy variables.

TABLE IV
Probit Unemployment Equations in Eastern Europe, 1990–1997

	All	Male	Female	CEE	CIS
1991	.1280 (5.42)	.1280 (3.73)	.1201 (3.67)	.1219 (5.38)	
1992	.2334 (10.06)	.2102 (6.24)	.2550 (7.92)	.2460 (10.52)	
1993	.2768 (10.91)	.2689 (7.17)	.2808 (8.11)	.2972 (11.42)	.0192 (2.04)
1994	.2930 (12.11)	.2695 (7.67)	.3133 (9.32)	.3093 (12.64)	.0424 (4.91)
1995	.3153 (12.88)	.2948 (8.21)	.3324 (9.86)	.2967 (12.32)	.1010 (11.02)
1996	.3331 (13.49)	.3021 (8.44)	.3626 (10.55)	.3020 (12.61)	.1333 (13.76)
1997	.3286 (12.33)	.3089 (7.90)	.3439 (9.39)	.3117 (12.31)	n/a
Age	−.0132 (20.73)	−.0134 (16.43)	−.0118 (11.69)	−.0138 (18.58)	−.0120 (9.90)
Age^2	.0001 (13.53)	.0001 (11.64)	.00009 (6.33)	.0001 (12.52)	.0001 (6.05)
Male	−.0193 (8.10)	n/a	n/a	−.0208 (7.55)	−.0144 (3.07)
Some secondary	−.0335 (8.46)	−.0424 (8.41)	−.0185 (2.88)	−.0304 (7.41)	−.0105 (0.64)
Secondary education	−.0805 (20.41)	−.0828 (16.04)	−.0766 (12.66)	−.0786 (20.08)	−.0429 (2.61)
Higher education	−.1084 (30.68)	−.1083 (23.35)	−.1075 (19.81)	−.1051 (28.05)	−.0916 (6.59)
Bulgaria	.1484 (8.29)	.1892 (5.88)	.2138 (6.16)	.1213 (7.22)	
Czech Republic	−.0746 (7.11)	−.0582 (3.13)	−.0557 (2.67)	−.0816 (8.17)	
Estonia	.0267 (1.86)	.0520 (2.02)	.0780 (2.70)	.0101 (0.76)	
Hungary	.0843 (5.16)	.0774 (2.82)	.1857 (5.52)	.0585 (3.86)	
Latvia	.0827 (5.10)	.1189 (4.06)	.1391 (4.36)	.0636 (4.18)	
Lithuania	.0594 (3.80)	.1026 (3.60)	.0994 (3.27)	.0422 (2.89)	
Poland	.0264 (1.80)	.0277 (1.12)	.1082 (3.51)	.0101 (0.74)	
Russia	.0224 (1.55)	.0400 (1.56)	.0806 (2.75)		
Romania	.0000 (0.00)	.0300 (1.23)	.0337 (1.27)	−.0147 (1.19)	
Albania	.0912 (5.54)	.1179 (4.02)	.1588 (4.84)	.0660 (4.32)	
Armenia	.2235 (11.31)	.2636 (7.52)	.3019 (7.95)		.1820 (18.35)
Belarus	−.0258 (2.03)	−.0000 (0.00)	.0046 (0.18)		−.0473 (5.91)
Slovakia	.0006 (0.05)	.0333 (1.33)	.0335 (1.25)	−.0122 (0.96)	
Georgia	.1378 (7.58)	.1916 (5.77)	.1926 (5.53)		.0985 (9.90)
FYR Macedonia	.1006 (5.99)	.1228 (4.16)	.1811 (5.32)	.0739 (4.73)	
Moldova	−.0264 (1.45)	−.0363 (1.43)	.0435 (1.58)		−.0270 (1.59)
Slovenia	.0052 (0.38)	.0476 (1.84)	.0749 (2.60)	−.0075 (0.58)	
Ukraine	.0233 (1.62)	.1633 (5.00)	.1826 (5.17)		.0017 (0.21)
Kazakhstan	.1208 (6.68)	.0365 (1.30)	.0581 (1.89)		.0749 (7.23)
Croatia	.0123 (0.78)	.0140 (0.49)	.0576 (1.65)	.0088 (0.58)	
N	66461	35227	31234	47567	18894
Chi^2(33)	6442.5	3240.7	3288.0	4617.5	1954.6
Log likelihood	−23234.3	−11980.4	−11197.8	−16286.5	−6872.6
Pseudo R^2	.1218	.1191	.1280	.1242	.1245

Source. Eurobarometer Surveys (East Germany) and Central and East European Eurobarometers—surveys as follows with ICPSR study numbers in parentheses.

1. Central and East European Eurobarometer 1: Public opinion in Central & Eastern Europe, 1990 (6104).

2. Central and East European Eurobarometer 2: Current affairs and the media, Sept.–Oct. 1991 (6105).

3. Central and East European Eurobarometer 3: Political disintegration, Oct.–Nov. 1992 (6106).

4. Central and East European Eurobarometer 4: Political & economic change, Nov. 1993 (6466).

5. Central and East European Eurobarometer 5: European Union, Nov. 1994 (6656).

6. Central and East European Eurobarometer 6: Economic & political trends, Oct.–Nov. 1995 (6835).

7. Central and East European Eurobarometer 7: Status of the EU, Oct.–Nov. 1996 (2296).

8. Central and East European Eurobarometer 8: Public opinion & the EU, Oct.–Nov. 1997 (2624).

Note. Omitted category Yugoslavia and 1990, columns 1–4 and Russia and 1992, column 5.

TABLE V
Unemployment Equations by Country in Eastern and Central Europe, 1990–1997

	Time trend	Male	Higher education/ No education	N	Years
Bulgaria	.018*	−.023*	−.215*	3683	1990–1997
Czech Republic	.005*	−.003*	−.021*	5588	1990–1997
Estonia	.011*	−.012*	−.107*	4583	1991–1996
Hungary	.022*	−.078*	−.133*	3713	1990, 1992–1997
Latvia	.026*	−.010	−.136*	4005	1991–1992, 1994–1997
Lithuania	.019	.004	−.088*	3829	1991–1992, 1994–1997
Russia	.024*	−.025*	−.090*	3570	1992–1996
Romania	.008*	−.002	−.100*	4466	1992–1997
Albania	.028*	−.034*	−.169*	3396	1992–1996
Armenia	.032*	−.026*	−.074*	2943	1992–1996
Slovakia	.003	−.004	−.119*	3184	1992–1996
Macedonia	.006	−.027*	−.088*	3221	1992–1997
Slovenia	.009*	−.017	−.110*	3005	1992–1996
Ukraine	.024*	−.016*	−.115*	3686	1992–1996
Belarus	.009*	−.004	−.023	3580	1992–1996

* implies significance at the 5% level. Sample only includes countries with at least 5 years of data.

- having a low level of education,
- being young,
- being female,
- having been sampled at the end of the 1990s rather than at the beginning.

Table V summarizes the results of estimating the probability of being unemployed using a similar specification to that reported in Table IV but is now done separately country by country.[8] Each equation contains a time trend plus age, gender, and education dummies. There are several thousand observations per country. There is evidence of a positive and significant time trend in unemployment for 12 of the 15 countries; a positive but insignificant time trend is found in the others (Lithuania, Slovakia, and Macedonia). In every country the highest education-dummy has a negative coefficient and is insignificant only in Belarus. The male dummy is negative in all of the country equations but significant in less than half of the countries examined. Hence the patterns observed in Table IV for the east as a whole appear to hold fairly generally for each east European country.

As can be seen from Table VI, which presents unemployment equations for the countries of western Europe, the patterns in the data are very similar to those reported in Table IV for the east. East Germany is the excluded category. Column 1 of Table VI is for the period 1975–1998 and shows that unemployment in Europe over this time period has trended up—the coefficient on the time trend has a positive coefficient (.0036) and a t-statistic of over 40. Column 2 is limited to

[8] Countries are only included if they have at least 5 years of data—hence results are not reported for Poland, Kazakhstan, Georgia, or Croatia.

TABLE VI
Probit Unemployment Equations in Western Europe, 1975–1998

	All 1975–1998	All 1990–1998	Male 1990–1998	Female 1990–1998
1991	n/a	.0050 (1.29)	.0090 (1.91)	−.0010 (0.15)
1992	n/a	.0132 (4.24)	.0124 (3.27)	.0166 (3.18)
1993	n/a	.0298 (7.79)	.0274 (5.84)	.0344 (5.43)
1994	n/a	.0259 (7.60)	.0204 (4.88)	.0352 (6.19)
1995	n/a	−.0178 (0.55)	.0272 (0.73)	−.0033 (0.06)
1996	n/a	.0938 (29.05)	.0854 (21.47)	.1069 (19.97)
1997	n/a	.0093 (2.69)	.0067 (1.57)	.0162 (2.79)
1998	n/a	.0197 (4.43)	.0191 (3.46)	.0235 (3.21)
Time	.0036 (41.95)	n/a	n/a	n/a
Age	−.0083 (39.66)	−.0060 (18.65)	−.0044 (11.21)	−.0081 (15.29)
Age squared	.00008 (33.12)	.00005 (12.85)	.00004 (8.57)	.00006 (9.67)
Male	−.0263 (26.05)	−.0272 (18.82)	n/a	n/a
Married	−.0778 (56.68)	−.0838 (42.22)	−.0990 (39.70)	−.0676 (20.74)
Living together	−.0286 (14.93)	−.0300 (11.65)	−.0354 (11.58)	−.0224 (5.12)
Divorced	.0121 (4.77)	.0148 (4.28)	.0158 (3.34)	.0216 (4.15)
Separate	.0018 (0.51)	.0056 (1.05)	−.0008 (0.12)	.0169 (2.06)
Widowed	−.0468 (16.94)	−.0489 (11.42)	−.0440 (6.49)	−.0387 (6.04)
15 years schooling	−.0048 (2.55)	.0016 (0.50)	.0012 (0.34)	.0027 (0.48)
16 years schooling	−.0260 (15.75)	−.0241 (9.23)	−.0255 (8.34)	−.0184 (4.01)
17 years schooling	−.0417 (23.89)	−.0403 (14.59)	−.0401 (12.24)	−.0331 (6.86)
18 years schooling	−.0439 (27.50)	−.0477 (19.51)	−.0468 (16.04)	−.0439 (10.40)
19 years schooling	−.0448 (23.15)	−.0507 (17.85)	−.0474 (13.76)	−.0505 (10.48)
20 years schooling	−.0536 (26.30)	−.0604 (20.65)	−.0527 (14.58)	−.0670 (13.76)
21 years schooling	−.0590 (27.14)	−.0656 (21.08)	−.0552 (14.14)	−.0754 (14.75)
22 years schooling	−.0614 (41.37)	−.0689 (30.23)	−.0620 (22.84)	−.0740 (18.86)
Still studying	−.0360 (8.39)	−.0072 (0.68)	.0064 (0.46)	−.0180 (1.24)
≤15 years schooling[a]	−.0443 (9.41)	.0033 (0.09)	.0554 (1.10)	−.0338 (0.64)
16–19 years schooling[a]	−.0592 (18.46)	−.0237 (0.74)	−.0021 (0.05)	−.0381 (0.73)
≥20 years schooling[a]	−.0683 (17.42)	−.0442 (1.51)	−.0255 (0.68)	−.0617 (1.30)
France	−.0562 (26.13)	−.0794 (31.45)	−.0689 (20.87)	−.0900 (22.65)
Belgium	−.0454 (19.78)	−.0474 (15.99)	−.0425 (10.97)	−.0508 (10.90)
Netherlands	−.0528 (23.18)	−.0730 (26.30)	−.0425 (11.04)	−.1068 (25.85)
West Germany	−.0862 (46.14)	−.1017 (43.99)	−.0783 (24.94)	−.1278 (36.28)
Italy	−.0693 (33.33)	−.0745 (27.58)	−.0661 (19.15)	−.0801 (18.12)
Luxembourg	−.0983 (41.95)	−.1087 (32.52)	−.0917 (21.84)	−.1276 (23.27)
Denmark	−.0647 (30.46)	−.0493 (16.56)	−.0449 (11.48)	−.0524 (11.33)
Eire	−.0473 (20.81)	−.0528 (17.73)	.0168 (4.21)	−.0991 (21.89)
Great Britain	−.0697 (34.54)	−.0696 (26.85)	−.0367 (10.01)	−.1054 (27.74)
Northern Ireland	−.0407 (13.79)	−.0399 (9.02)	.0022 (0.36)	−.0854 (13.07)
Greece	−.0784 (38.35)	−.0780 (28.32)	−.0703 (20.44)	−.0800 (17.15)
Spain	−.0530 (23.08)	−.0607 (21.74)	−.0379 (10.15)	−.0843 (18.92)
Portugal	−.0870 (44.88)	−.0928 (36.24)	−.0775 (23.03)	−.1088 (27.00)
Norway	−.0648 (16.52)	−.0700 (15.48)	−.0451 (7.41)	−.0964 (13.92)
Finland	−.0257 (7.06)	−.0354 (8.92)	−.0138 (2.50)	−.0553 (9.36)
Sweden	−.0513 (15.58)	−.0627 (17.33)	−.0471 (9.75)	−.0787 (14.11)
Austria	−.0820 (29.66)	−.0958 (31.07)	−.0799 (19.35)	−.1139 (24.14)
N	375477	200411	115246	85165
Chi^2	21894.75	13712.81	8013.2	6446.9
Log likelihood	123457.1	−70578.9	−37376.0	−32599.6
Pseudo R^2	.0815	.0885	.0968	.0900

Source. Eurobarometer Surveys (various).

Note. Excluded category East Germany; up to 14 years of schooling, single.

[a] 1975 only.

the years 1990–1998 and, as in Table IV for eastern Europe, has a series of year dummies. There is no obvious time trend during the 1990s.[9] As in eastern Europe, unemployment is higher amongst the young, females, and those with lower levels of education. In western Europe the unemployment equations for men and women reported in columns 3 and 4 are similar to each other. The one major difference is that the country dummies tend to be larger in absolute terms in the female equation than they are in the male. Quantitatively there are some differences between west and east: the coefficient on the male dummy is larger in western Europe than in the east (−.027 in column 2 of Table VI compared with −.019 in column 1 of Table IV). There is a bigger gap in the east between those with the least education and those with the most than in the west. Interestingly, unemployment minimizes at around age 60 in both east and west. Hence, the picture that emerges from this section is one of an eastern Europe that looks approximately like the west. Similarities in the functioning of labor markets between west and east were reported by Svejnar in his recent survey of labor markets in transition economies. Svejnar concluded that "as transition unfolded, firms in all the CEE economies started adjusting employment to output changes and the estimated elasticities rapidly rose to levels that are by and large comparable to those estimated in western countries" (1999, p. 2827; OECD, 1999b).

DOES UNEMPLOYMENT HAVE THE SAME IMPACT ON THE WAGE IN EASTERN EUROPE AS IT DOES IN THE WEST?

The next natural issue is whether east European unemployment might be the result of unusually inflexible wages. To explore this, a series of wage curves are estimated. The analysis examines whether wage equations should include a regressor for the area unemployment rate. The empirical chapters in the 1994 book *The Wage Curve* (Blanchflower and Oswald, 1994) had no results for eastern Europe. They were based upon information on approximately 3.5 million people in 12 developed nations. The size of sample varied greatly from one country to another. The years sampled also varied. For the United States, for example, the analysis drew upon the Current Population Surveys from 1963 to 1990. This provided a sample of approximately 1.5 million American workers. Some completed their interview survey sheets in the 1960s; others did so a quarter of a century later. A similarly large sample was available for South Korea. This country's Occupational Wage Surveys of 1971, 1983, and 1986 offered us information on approximately 1.4 million employees. At the other end of the spectrum, the book also reported results for countries such as Switzerland and Norway. The data were from the International Social Survey Programme (ISSP) and came from the late 1980s. In this case the samples were of less than 3,000 people in each country.

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[9] The large coefficient in 1996 arises because of the inclusion of Eurobarometer 44.3OVR—Employment, Unemployment, and Gender Equality, February–April 1996 (ICPSR 2443) which includes an over-sample of the unemployed.

The Blanchflower and Oswald book found a downward-sloping convex curve in wage–unemployment space. A worker who is employed in an area of high unemployment earns less than an identical individual who works in a region with low joblessness. The nature of the relationship appears to be the same in different countries. The wage curve in the United States is very similar to the wage curves in, for example, Britain, Canada, and Norway. As a crude characterization of the data, the wage curve in the countries that have been studied to date is described by the formula

$$\ln w = -0.1 \ln U + \text{other terms}, \tag{1}$$

where $\ln w$ is the log of the wage, $\ln U$ is the log of unemployment in the worker's area, and the other terms in the equation are control variables for further characteristics of the worker and his or her sector. The equation, which seems to hold in each country, implies that the unemployment elasticity of pay is approximately -0.1. A hypothetical doubling of unemployment is then associated with a drop in pay of 10% (that is, a fall of one tenth).

Since *The Wage Curve* was written a number of new papers have established similar results in a number of new countries across all continents: Europe (Belgium, Denmark, France, and Spain); Latin America (Argentina and Brazil); Africa (Ghana, South Africa, Burkina Faso), and Asia (Taiwan). The wage curve appears to slopes down in *all* 30 countries studied with an approximate elasticity of -0.1. Kingdom and Knight (1998), for example, concluded

> when we use the definition of unemployment that is most plausible for South Africa i.e. the broad definition, there is evidence of a remarkable OECD-type wage curve in South Africa, a country with several times the typical unemployment rate of OECD countries. The relationship between broad unemployment and wages is downward sloping, becomes flat at high unemployment rates and yields a wage unemployment elasticity of -0.11. (1998, p. 21)

Other examples of wage curves outside the OECD are Hoddinott (1998) for the Cote d'Ivoire, Galiani (1999) for Argentina, Amadeo and Camargo (1997) and Barros and Mendonca (1994) for Brazil, and van der Meulen Rodgers and Nataraj (1998) for Taiwan. The degree of wage flexibility may be more similar across countries whether in the OECD or outside it than has been previously believed.

Equations such as (1) serve another purpose. When treated in the way just described, the data provide a method for the calculation of an index of wage rigidity or inflexibility. The concept of wage stickiness has long been central to much of macroeconomics. It has proved harder, however, to agree on a measure of wage inflexibility. The analysis developed here can be seen as offering such a measure. The responsiveness of workers' remuneration to the state of the labor market is captured by the coefficient on log unemployment in an equation for log earnings.

Why does a wage curve exist? The competitive-market model gives an unconvincing rationalization for it, because high wages should be associated with higher unemployment (as workers are priced out of jobs). It does not appear that the wage

curve is really a labor supply curve (see Blanchflower and Oswald, 1994, 1995). Thus a possible way to make the wage curve consistent with a demand-and-supply analysis is to suggest that it is a kind of labor supply function. The key assumption then is, of necessity, that unemployment is in some sense the negative of employment. If the potential labor force is fixed at some number greater than the level of employment on a labor supply curve, unemployment does not have to be thought of as a gap between supply and demand. It could be viewed as the gap between labor supply and a fixed labor force. Unfortunately, logical difficulties then spring up. In particular, the unemployed, according to this definition, are not part of the labor supply curve. They are not offering their labor for sale. This seems inconsistent with the technical definition of unemployment used by most government survey agencies and perhaps runs counter to common sense. However, neoclassical analysts are still likely to see the wage curve as a mismeasured version of the upward-sloping supply curve of labor found in most textbooks. The possibility of a labor–supply interpretation of the wage curve is considered in detail in some of the research on the wage curve for western countries. This is done by comparing the explanatory power, within a wage equation, of both unemployment and conventional measures of the supply of labor. If unemployment is a mismeasured version of a normal labor supply relationship, it should perform statistically less well than supply variables such as the participation rate or the employment/population rate. Empirically, however, it does not in OECD countries. The evidence does not offer support for the idea that the negative correlation between pay and unemployment is explained by a labor supply function. Blanchflower and Oswald (1994, 1995) have argued that the demand-and-supply framework is the wrong way to think about the labor market. As Robert Solow's 1989 lectures at Berkeley suggest, there may be something special about labor as a commodity and therefore about the labor market itself (Solow, 1990, p. 3).

Noncompetitive accounts of the labor market have to be considered. In a bargaining model, a high degree of joblessness in the surrounding labor market might be expected to reduce the ability of workers to claim a large share of the surplus to be divided. Noneconomists probably think such an idea too obvious to be worth pondering, but economists are required to outline the mechanism at work. A possible story is that outside unemployment frightens workers. This is because if something goes wrong, and the bargaining reaches permanent impasse, the individual workers involved will need to obtain other jobs. Finding jobs is likely to be harder when the local labor market is depressed. Therefore, although some details of the process here remain cloudy, rising joblessness might be thought to spawn declining levels of pay.

Another way to provide an intellectual rationale for the wage curve is by appealing to efficiency wage theory. This approach is intrinsically nonunion, so it is potentially suitable for economies that are more like the United States' than Sweden's. The well-known characteristic of efficiency wage analysis is that firms set pay in an environment where the wage influences productivity. Shapiro and Stiglitz (1984) is an archetypal case. In equilibrium, firms try to maximize profits, and workers

choose how hard to work. If the costs of shirking at work are low, employees put in little effort. The outside rate of unemployment plays a role, because it determines the ease with which a sacked worker can get another job. In a highly depressed labor market, employees are frightened of losing their jobs, and so put in high effort even if pay is comparatively low. Put differently, a marginal rise in unemployment leads to a corresponding marginal fall in the level of wages. The reason is that firms can reduce pay slightly while maintaining a motivated workforce. Unemployment is a discipline device: when it is high the generosity of workers' remuneration can be low. Hence there is an efficiency wage interpretation of the pattern.

There is a small literature that estimates wage curves using micro-data for eastern Europe. Kollo (1998) uses data for Hungary and concludes, after estimating Mincer-style equations, that in 1989 the unemployment elasticity of pay was -0.05 and in 1992 it was -0.15. Kertese and Kallo (1997) find that slope of the wage curve in Hungary was $-.09$ in 1992–1993 and $-.11$ in 1994 and 1995. Another example is a new paper by Pannenberg and Schwarze (1998), who find some evidence for an East German wage curve. Using data for the early 1990s Basu *et al.* (1995) find evidence of a wage curve in Slovakia and Poland (with an elasticity of -0.03) but obtained no evidence of wage curves for the Czech Republic or Hungary. More recently, Baltagi *et al.* (2000) use data on the total population gainfully employed and covered by social security in East Germany (80% of all employment) for the period 1993–1998. Each year has more than 5 million records. The overall unemployment elasticity of pay is estimated at -0.15 and is higher for females than males.

This section of the paper assembles new data and attempts to estimate the unemployment elasticity of pay in the transition economies. In doing such work, two questions seem of particular interest. First, does any kind of wage curve exist in the emerging labor markets of eastern Europe? In other words, in microeconometric wage or earnings equations, does the local rate of unemployment enter with a negative coefficient? Second, if so, is the elasticity similar to the -0.1 found by Blanchflower and Oswald (1994) and others for the advanced economies of the west? The figure of -0.1 also has been derived in certain developing countries (Kingdon and Knight, 1998; Hoddinott, 1996), and there is perhaps a sense in which transition economies are developing nations.

Newly available data at the level of the individual worker from three new sources allow these questions to be explored.

(1) The ISSP series from 1991 to 1997 which contains data on nine east European countries—Bulgaria, Czech Republic, GDR, Hungary, Latvia, Poland, Russia, Slovakia, and Slovenia.

(2) The Russian Survey of Employment, Income, and Attitudes (RSEIA), 1998.

(3) World Bank HEIDE Database 1993–1995 which contains data collected in comparable ways from six east European countries—Estonia, Hungary, Kyrgyzstan, Poland, Russia, and Slovakia.

In total there are approximately 115,000 worker observations.

Table VII finds evidence for the existence of wage curves for nine of the 11 east European countries examined. Wage curves are found in Bulgaria, Czech Republic, Estonia, GDR, Hungary, Latvia, Poland, Russia, and Slovakia. Although the estimated wage–unemployment elasticity in Kyrgyz is not significantly different from zero it is also not significantly different from −.1. No evidence of a wage curve is found in the case of Slovenia. In the table the dependent variable is the logarithm of worker earnings defined at various levels.[10] The key independent variable is the logarithm of the area unemployment rate. This is measured at a disaggregated level. To obtain the unemployment information, the data files themselves were used to compute the unemployment rates for every area × year cell. As well as having the log of unemployment as an independent variable, the regressions include at least the age and age squared of the respondent and a dummy variable for whether the respondent was male or female. Where multiple years of data were available, year dummies were also used. Schooling dummies were added when the RSEIA was used. The HEIDE database additionally permits the inclusion of size of firm dummies, industry and occupation dummies, a self-employment dummy, and five marital status dummies. Results in every case are presented without regional dummies, but in the ISSP where multiple years of data are available, it is possible to also include a full set of region fixed effects. While the structure of Table VII's regression equations are simpler than those used in the richer and more reliable micro-data sets of the west, it seems likely that the essence of wage-curve estimation is captured.

The results for the east are similar to those found in the other nations. In the first column of results in Table VII, for example, the estimated unemployment elasticity for eastern Europe, with the exception of Slovenia, is everywhere negative and significant.[11] Of the 17 negative coefficients on the log of the unemployment rate, eight are smaller than −.20. Latvia at −0.46 is particularly notable. The longer the sweep of years, the smaller the estimated wage–unemployment elasticity tends to be. The inclusion of region fixed effects in the ISSP sample—which is a tough test given the small number of region × year cells involved—produces significant wage curves in Bulgaria (−.20), East Germany (−.10), Latvia (−.5), Poland (−.13), and Russia (−.18). Pooling the six countries included in the World Bank's HEIDE database in the final row of Table VII, along with a full set of country dummies, produces a wage–unemployment elasticity of −.23.

There is evidence in the transition economies for a downward-sloping function linking pay to the area rate of unemployment, and the estimated effect in a number of countries (East Germany, Hungary, Poland, Russia, Slovakia) is of similar size to the −0.1 found elsewhere in the world. In a number of other countries (Bulgaria, Latvia, and Estonia) the estimated wage–unemployment elasticity is considerably

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[10] The various definitions are provided in Table VI.

[11] Many of the employed have seen the value of their wages slump. Real wages fell by 45% in Russia between 1989 and 1997 and by more than 50% in Bulgaria, Lithuania, Moldova, Azerbaijan, Kazakhstan, Kyrgyzstan, and Turkmenistan (see Monee, 1999). Hence the need for year dummies.

TABLE VII
Wage Curves in Eastern Europe

	Years	Coefficient on $\log U$ – no region dummies	Coefficient on $\log U$ + region dummies	Number of regions	N
		1. ISSP[a]			
Bulgaria	1992–1997	−.243 (6.36)	−.206 (3.81)	9	4707
Czech Republic	1992, 1994–1997	−.021 (4.35)	.003 (0.41)	8	3151
GDR	1990–1993, 1995–1997	−.107 (4.75)	−.096 (3.85)	6	5395
Hungary	1990–1997	−.052 (2.07)	.042 (1.23)	20	6825
Latvia	1995–1996	−.462 (5.86)	−.520 (6.32)	5	1067
Poland	1991–1997	−.153 (3.59)	−.127 (2.28)	8	4747
Russia	1995–1997	−.065 (1.84)	−.175 (3.93)	14	2633
Slovakia	1995	−.049 (3.85)	n/a	42	877
Slovenia	1991–1997	.013 (1.59)	−.007 (0.62)	12	4891
		2. Russian Survey of Employment, Income & Attitudes			
Russia[b]	1998	−.290 (6.05)	n/a	11	2035
Russia II[c]	1998	−.265 (5.94)	n/a	11	1934
		3. World Bank HEIDE Database[b]			
Estonia	1995	−.291 (8.67)	n/a	16	3561
Hungary	1993	−.364 (9.88)	n/a	20	8145
Kyrgyz	1993	−.082 (1.42)	n/a	7	2070
Poland	1993	−.188 (21.90)	n/a	49	16201
Russia	1993–1994	−.258 (11.25)	n/a	18	7489
Slovakia	1993	−.186 (3.50)	n/a	44	1804
All[d]	1993–1995	−.229 (25.24)	n/a	—	39270

Note. t-statistics in parentheses

Dependent variables are natural logarithms of (for the employed only):

　　1. ISSP

　　　　Bulgaria: respondent' monthly earnings.

　　　　Czech Republic: "What is your average total net income per month? Count your net salary or wage, income from additional employment, unemployment benefits, entrepreneurial profit."

　　　　GDR: Respondent's net earnings per month after taxes and social insurance in DM.

　　　　Hungary: Respondent's net earnings per month in Forint.

　　　　Latvia: Monthly net income in Latvian Lats.

　　　　Poland: "What is your average monthly earnings from your present job or business after taxes in new Zloty?"

　　　　Russia: "What is your monthly wage together with all the bonuses, compensations, and other payments in thous. RUR?"

　　　　Slovakia: Earnings in SK

　　　　Slovenia: "What was your last regular monthly income after taxes and social insurances from all sources in Tolar?"

　　2. Russian EIA: After tax earnings in main job the month preceding the survey.

　　3. HEIDE: Log of monthly wage which is the sum of monetary earnings and monetary value of earnings in kind.

　　[a] Controls: age, age squared, gender dummy, and year dummies.

　　[b] Controls: age, age squared, 6 schooling dummies, gender dummy.

　　[c] Controls: age, age squared, 6 schooling dummies, gender dummy, 17 industry dummies, 7 size of firm dummies, 10 occupation dummies, self-employed with employees dummy, 5 marital status dummies.

　　[d] Controls also include 5 country dummies.

higher than this. It is likely that the absolute size of these estimates will fall as more years of data become available and full sets of region fixed dummies are included. This is generally what happens in OECD countries (Blanchflower and Oswlad, 1994). The unemployed serve to bid down the wages of those in work in both the east and the west and to an approximately similar degree. The basic structure of east Europe's wage curve is apparently like that of other nations.

WHAT ARE THE ATTITUDES OF THE EAST EUROPEANS TO CAPITALISM?

A recent strand of empirical economics has begun to employ data on people's reported well-being. Important early work was done by Easterlin (1974, 1995). The literature includes that by noneconomists Andrews and Withey (1976), Campbell *et al*. (1976), Cantril (1965), Diener (1984), Argyle (1989), Jahoda (1982), Jackson *et al*. (1983), Whelan (1992), and Gallie and Russell (1995). Work by economists includes Blanchflower and Oswald (1999a, 1999b, 2000), Ng (1996), Clark *et al*. (1996), Bjorklund (1985), Gerlach and Stephan (1996), Korpi (1997), Winkelmann and Winkelmann (1998), and Di Tella *et al*. (1996).

While economists are surely right to be wary of subjective well-being statistics, it is now well known that there are systematic patterns in micro-data on people's subjective well-being. If one takes a random sample of people, and estimates a well-being regression equation of form

$$\text{reported well-being} = f(\text{personal characteristics}),$$

the results tend to be the same across different periods, different countries, and even different measures of well-being. Reported happiness is high among those who are married, on high income, women, whites, the well-educated, the self-employed, the retired, and those looking after the home. Happiness is apparently U-shaped in age (minimizing around the 30s). The unemployed are especially unhappy—they do not appear to be volunteers; they are an army of conscripts.

Blanchflower and Freeman (1998) compare reported well-being levels in early micro-data for Hungary in 1991 and compared it with a number of countries from the west. They show that levels appear much lower among individuals who live in eastern Europe. Are these patterns repeated elsewhere in eastern Europe and has there been any closing of the gap over time? Micro-data are not available to answer this question but early tabulations from the 1996 World Values survey are available. Table VIII presents responses for 1995–8[12] to the following question:

"Taking all things together would you say you are: not at all happy (=1), not very happy (=2), quite happy (=3), very happy (=4)?"

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[12] The exact date the survey was implemented varied by country between 1995 and 1998; most were conducted in 1995 and 1996.

TABLE VIII
Happiness Scores, 1995–1997

Country	Employed	Unemployed
Armenia	2.61	2.40
Azerbaijan	2.85	2.92
Belarus	2.48	2.30
Bosnia Herzegovina	2.90	2.79
Bulgaria	2.70	2.47
Croatia	2.69	2.62
East Germany	2.96	2.61
Estonia	2.71	2.38
Georgia	2.60	2.58
Latvia	2.77	2.45
Lithuania	2.61	2.39
Macedonia	2.81	2.63
Moldova	2.52	2.30
Montenegro	2.87	2.82
Russia	2.58	2.37
Serbia	2.83	2.82
Slovenia	2.92	2.71
Tambov	2.52	2.42
Ukraine	2.55	2.37
Average	2.71	2.54
Finland	3.18	3.01
Japan	3.21	3.11
Mexico	3.03	2.92
Norway	3.29	2.96
South Africa	3.18	2.84
Spain	3.09	3.00
Sweden	3.38	3.17
United States	3.40	3.24
West Germany	3.00	2.55
Average	3.20	2.98

Source. World Values Survey.

Note. Question is "Taking all things together would you say you are: not at all happy (=1), not very happy (=2), quite happy (=3), very happy (=4)?

The mean response levels for a number of countries are presented in the table for both the employed and the unemployed. The main findings are as follows.

1. Happiness is highest among the employed in eastern Europe in East Germany (2.96) and lowest in Belarus (2.48).

2. Happiness levels in east Europe for the employed are everywhere lower than they are for OECD countries, e.g., United States is 3.4 and East Germany is 2.96.

3. In both east and west the unemployed are less happy than are the employed. The only exception to this is found in Azerbaijan where the reverse is true.

TABLE IX

Life Satisfaction in East and West Germany, 1992–1998

	Employed				Unemployed			
	Not at all satisfied	Not very satisfied	Fairly satisfied	Very satisfied	Not at all satisfied	Not very satisfied	Fairly satisfied	Very satisfied
(A) East Germany								
1992	3	20	68	9	14	41	42	3
1993	2	17	69	12	10	45	42	2
1994	3	20	69	8	16	42	40	2
1995	2	18	68	11	19	39	37	5
1996	2	18	68	12	16	47	35	2
1997	3	28	64	5	21	44	32	3
1998	5	27	62	6	22	44	33	1
(B) West Germany								
1992	1	10	66	23	11	36	48	5
1993	2	10	67	22	16	42	33	9
1994	1	11	69	18	9	32	52	7
1995	2	9	69	21	16	38	42	4
1996	2	12	66	19	14	37	43	7
1997	3	21	65	11	31	35	33	2
1998	2	14	69	14	20	36	39	5

Source. Eurobarometer Surveys as follows with ICPSR study numbers in parentheses.

34.1   Health Problems, Fall 1990 (#9577).
37   Awareness of Maastricht and the Future of the EEC, Mar.–Apr. 1992 (#9847).
37.1   Consumer Goods and Social Security, Apr.–May, 1992 (#9957).
38.1   Consumer Protection & Perceptions of Science & Technology, Nov. 1992 (#6045).
39   European Community Policies and Family Life, Mar.–Apr. 1993 (#6195).
40   Poverty and Social Exclusion, Oct.–Nov. 1993 (#6360).
41   Trade Issues, Blood Donation, AIDS, and Smoking, Mar.–Jun. 1994 (#6422).
42   The First Year of the New European Union, Nov.–Dec. 1994 (#6518).
43.1   International Trade and Radiation Protection, Apr.–May 1995 (#6839).
44.2b   BIS Mega Survey Policies & Practices in Building EU Jan.–Mar. 1996 (#6748).
44.3   Employment, Unemployment and Gender Equality, Feb.–Apr. 1996 (#2443).
47.1   Images of Switzerland, Education, & Work Status, Mar.–Apr. 1997 (#2089).
49   Food Safety, Child Sex Tourism, Health Care, & Cancer, Apr.–May 1998 (#2559).

Hence, with this one exception there seems to be evidence in both east and west that the unemployed are conscripts rather than volunteers.

An obvious comparison that should be of interest here is between East and West Germany. Table IX compares the distribution of life satisfaction scores in East and West Germany for the employed and the unemployed and finds consistent results.[13] Here respondents were asked a slightly different question. "On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?" Consistent with the happiness results reported in Table VIII, East

[13] For a comparison of the labor markets of East and West Germany in the early 1990s, see Krueger and Pischke (1995).

German workers appear to be less satisfied with their lives than are West German workers. Far from closing, the gap appears to be widening slightly over time. In both East and West Germany the unemployed are less happy than the employed: more than half of the unemployed in both parts of Germany reported that they were not at all or not very satisfied with their lives.

Information is also available on survey respondents' degree of satisfaction with democracy in their country. A number of political scientists have examined the correlates of this variable. Examples are Anderson and Guillory (1997), Klingemann (1999), Waldron-Moore (1999), and Rose *et al*. (1998). Generally such analyses have been restricted to reporting means from a single year of data across countries. Their main findings are first that the level of satisfaction with democracy is lower in eastern Europe than in the west (Klingemann, 1999; Rose *et al*., 1998). Second, support for democracy is highest in eastern Europe in Albania and lowest in Bulgaria (Rose *et al*., 1998). Third, where multivariate analysis has been conducted, satisfaction with democracy is found to be positively correlated with income but uncorrelated with age, education, or gender (Anderson and Guillory, 1997). Fourth, support in western democracies is influenced by whether people belong to the political majority. Those who voted for the incumbent government in the most recent election are significantly more satisfied with the way democracy works than are those who did not (Anderson and Guillory, 1997).

Respondents in the East Europe Eurobarometer surveys were asked, "On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the way democracy is developing in our country?" Overall there are 124,000 observations available for eastern Europe and 216,000 for western Europe.[14] Columns 1–3 of Table X report for three representative years, 1991, 1994, and 1997, the percentage of the population that report that they were very or fairly satisfied with democracy. The evidence suggests that in most countries satisfaction with democracy fell between 1991 and 1994 but rose a little in 1997, yet remained below 1991 levels. The main exceptions where satisfaction levels increased over the period were in Romania where 76% were very or fairly satisfied in 1997 compared with 44% in 1991 and to a lesser extent in Poland (60 and 35%), Estonia (43 and 36%), and the Czech Republic (36 and 29%).

The first column of Table XI reports the results of estimating an ordered logit for a longer sample of years (1991–1997) than in Table X, with the satisfaction with democracy variable as the dependent variable. Satisfaction with democracy is U-shaped in age, reaching a minimum at age 47. It is lowest among the least educated, females, and the unemployed. Unsurprisingly support for democracy is lowest the higher is the country × year unemployment rate. Support for democracy is higher

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[14] A longer Eurobarometer time series for all EU member countries plus Norway from 1972 to 1997 is also available, which contains over 500,000 observations.

TABLE X
Views on the Free Market by Country

	% very or fairly satisfied with democracy			% saying free market right for the country's future			% saying things in country going in the right direction		
	1991	1994	1997	1991	1994	1997	1991	1994	1997
Bulgaria	46	4	22	79	49	64	75	28	63
Czech Republic	29	45	36	75	56	36	53	64	30
Estonia	36	36	43	70	58	63	72	61	66
Hungary	34	28	34	85	64	55	41	19	34
Latvia	42	27	27	69	47	50	77	44	55
Lithuania	62	36	41	87	55	65	72	24	49
Poland	35	27	60	72	68	77	25	29	62
Russia	18	8	9[b]	58	25	29[b]	46	19	22[b]
Romania	43	31	49	42	77	71	59	47	56
Albania	44	34	76[b]	80	71	85	83	66	85[b]
Armenia	14[a]	10	20[b]	37[a]	26	27[b]	21[a]	18	33[b]
Belarus	12[a]	13	20[b]	38[a]	32	48[b]	40[a]	29	50[b]
Slovakia	24[a]	17	26	58[a]	50	43	49	28	29
Georgia	51[a]	20	46[b]	59[a]	32	57[b]	40[a]	23	42[b]
FYR Macedonia	51[a]	36	41[b]	33[a]	41	52[b]	53[a]	57	48[b]
Moldova	38[a]	n/a	n/a	46[a]	n/a	n/a	23[a]	n/a	n/a
Slovenia	50[a]	35	40	72[a]	59	50	73[a]	55	54
Ukraine	21[a]	18	21[b]	43[a]	38	32[b]	35[a]	16	24[b]
Kazakhstan	n/a	14	18[b]	n/a	31	36[b]	n/a	29	31[b]
Croatia	n/a	n/a	39[b]	n/a	n/a	74[b]	n/a	n/a	67[b]
East Germany	58[c]	37	29	n/a	n/a	n/a	n/a	n/a	n/a

[a] 1992.

[b] 1996.

[c] 1990.

among the self-employed than among employees.[15,16] Looking at the country dummies, the strongest support for democracy is found in Albania and Poland and the lowest is in Ukraine.

A number of papers have used attitudinal data to examine the development of markets in general, but not specifically labor markets, in eastern Europe in the years before the fall of the Berlin wall. Akerlof and Yellen (1991) looked at various worker attitudes in East Germany and compared them with comparable samples from West Germany. Shiller *et al.* (1991) compared random samples of the Moscow and New York populations in their attitudes toward free markets. In another paper

[15] Results are not reported but are available from the author on request. Self-employment is only available for a subset of years.

[16] When a satisfaction with democracy equation is estimated for the EU countries over the same period ($n = 195,118$), support was found to be U-shaped in age (minimized at age 44) and is also higher amongst men, the more educated, the employed, and students. The unemployed were also especially dissatisfied with democracy. The country ranking in order is Denmark, Luxembourg, Norway, Southern Ireland, Netherlands, Austria, West Germany, Portugal, Finland, Sweden, Great Britain, Spain, Belgium, France, Northern Ireland, Greece, and Italy. Results available on request.

TABLE XI
Attitudes to the Free Market, the Direction of Reforms, and Democracy, 1991–1997

	(1) Satisfaction with democracy (Ordered logit)		(2) Free market (Dprobit)		(3) Direction of reforms (probit)	
Age	−.0372	(15.60)	−.0091	(12.97)	−.0051	(7.53)
Age^2	.0004	(13.25)	.00006	(7.44)	.00005	(5.94)
Male	.1019	(8.01)	.0572	(15.38)	.0396	(10.79)
Some secondary education	−.0647	(3.11)	.0142	(2.31)	.0158	(2.63)
Secondary education	.0702	(3.65)	.1076	(19.06)	.0768	(13.89)
Higher education	.1165	(5.06)	.1965	(30.67)	.1375	(20.69)
Log unemployment rate	−.1864	(15.31)	−.0469	(13.23)	−.0733	(20.89)
Czech Republic	.7831	(20.92)	−.1094	(9.86)	.0466	(4.36)
Estonia	.8567	(23.23)	−.0360	(3.34)	.1630	(15.56)
Hungary	.2356	(6.65)	.0110	(1.03)	−.2023	(20.90)
Latvia	.4064	(11.42)	−.1482	(14.11)	.0027	(0.27)
Lithuania	.7258	(18.32)	−.0383	(3.21)	−.1868	(17.45)
Poland	1.2211	(32.37)	.1545	(14.36)	.0451	(4.21)
Russia	−.6166	(16.59)	−.3487	(33.76)	−.2112	(21.26)
Romania	.8912	(26.00)	.1313	(13.25)	.0776	(8.04)
Albania	1.5741	(41.15)	.1746	(16.71)	.3861	(38.25)
Armenia	−.6780	(17.32)	−.3756	(35.81)	−.2489	(24.80)
Belarus	−.5464	(12.25)	−.3538	(28.86)	−.2600	(22.90)
Slovakia	.3127	(8.21)	−.1473	(13.03)	−.1412	(13.41)
Georgia	.3831	(8.67)	−.1983	(16.04)	−.1138	(9.78)
FYR Macedonia	1.1480	(29.19)	−.1631	(14.46)	.1714	(15.96)
Moldova	−.0927	(1.03)	−.3984	(17.41)	−.4049	(23.23)
Slovenia	1.0411	(29.23)	−.0391	(3.72)	.1869	(18.21)
Ukraine	−.9610	(17.73)	−.4074	(28.31)	−.3916	(32.77)
Kazakhstan	−.4213	(8.40)	−.3766	(28.10)	−.2110	(16.08)
Croatia	1.1848	(23.06)	.1671	(11.35)	.2834	(19.49)
Unemployed	−.2673	(11.54)	−.0627	(9.30)	−.0911	(13.84)
Retired	−.0304	(1.28)	−.0387	(5.60)	−.0094	(1.38)
Housewife	.0784	(2.64)	.0000	(0.01)	−.0096	(1.12)
Student	.1841	(6.40)	.0533	(6.29)	.0528	(6.33)
Cut1	−1.9513					
Cut2	.1106					
Cut3	2.8301					
N	92517		82500		84530	
Chi^2(30)	10449.3		12104.5		11113.1	
Log likelihood	−103739.2		−50528.5		−52653.9	
Pseudo R^2	.0479		0.1070		.0955	

Source. East European Eurobarometers #1–8.
Notes. Excluded categories: up to elementary education; employed; Bulgaria.

Shiller *et al*. (1992) studied individual attitudes in three ex-communist countries—Russia, the Ukraine, and East Germany—and compared them with three advanced capitalist economies—the United States, Japan, and West Germany. In addition, Rose and Haerpfer (1994) have contrasted attitudes toward the transformation of

ex-communist societies, and Frentzel-Zagorska and Zagorski (1993) have examined Polish opinion toward privatization and state interventionism. Blanchflower and Freeman (1997) found that the citizens of four former communist countries (Hungary, East Germany, Poland, and Slovenia) evinced a greater desire for egalitarianism and were more supportive of state interventions in the job market and economy than westerners between 1987 and 1991.

The East Europe Eurobarometers have more recent micro-data available, and for many more countries and years, than was the case in these earlier studies. Information is available on attitudes to market reforms by country for the years 1991–1997 on the following.

(a) Attitudes to the free market: "Do you personally feel that the creation of a free market economy, that is one largely free from state control, is right or wrong for our country's future?"

(b) The direction of reforms: "In general, do you feel things in our country are going in the right or in the wrong direction?"

The questions are answered with yes–no responses. Table IX presents the distributions for the two variables for 1991, 1994, and 1997. A number of facts emerge that are common to these variables and the satisfaction with democracy variable described above

1. Support for market reforms fell between 1991 and 1994, but increased somewhat by 1997, yet were still lower than the 1991 levels.

2. In 1997, on all three measures, support for the reforms was highest in Poland, Croatia, Estonia, and Albania and lowest in Armenia, Ukraine, and Russia.

In the last two columns of Table XI probit equations are presented where the dependent variable is set to one if the respondent reported he or she supported the free market (column 2) or the direction of reforms (column 3). There are considerable similarities between the two equations in the performance of the various independent variables. In both cases the strongest support for the move to capitalism is to be found in Albania, Croatia, and Poland. The most opposition is to be found in Ukraine and Moldova. Once again support is U-shaped in age and is lowest among females, the least educated, and when the unemployment rate is high.[17] The unemployed are strongly opposed to the reforms, do not believe in the free market, and are dissatisfied with democracy in their country. Rather surprisingly given the very different wordings of the questions and response patterns to the three market reform variables, the patterns in the data are similar for each.

Because the task of measuring well-being is a difficult and relatively unconventional one, this section's results cannot be accepted uncritically. It might, for example, be argued that interview responses to happiness and satisfaction questions do not mean anything reliable. There is no wholly convincing way to dispose of such objections: as in any area of social science it is prudent to view the paper's

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[17] The self-employed are strongly in favor of the reforms (results not reported).

punchlines cautiously. Nevertheless, a simple reply to such critics would be that these kinds of statistics are probably the only ones available to us if we wish to measure well-being and that, at the very least, they raise doubts about routine beliefs. Moreover, counterarguments to the methodological criticisms have been produced many times. It is known in the psychological and medical literatures that objective economic events are correlated with happiness scores and with suicide (and para-suicide). Perhaps the best reason to take this section's statistical work seriously is that psychologists themselves make extensive use of reported well-being data. It seems possible that economists should also do so.

WHAT CAN BE DONE TO REDUCE UNEMPLOYMENT IN EASTERN AND CENTRAL EUROPE?

Unemployment seems to be a serious problem both in the east and in the west. What policies should the newly developing market economies in eastern Europe follow to ensure that unemployment will not continue as a major problem in the future? More pressingly, what can countries with high unemployment rates right now, such as Albania, Armenia, Croatia, Macedonia, and Slovenia, do to get unemployment down?

Unfortunately we are a long way from understanding why aggregate unemployment in western Europe is so high and why it has trended upward over the past couple of decades. There is some evidence that overly generous benefits can increase unemployment, but the correlation is rather weak in the data—Italy has high unemployment and low benefits.[18] Despite conventional wisdom (OECD, 1994; Layard *et al.,* 1991; Nickell, 1997; Nickell and Layard, 1999), high unemployment does not seem to be primarily the result of job protection, labor taxes, trade union power, or wage inflexibility (Oswald, 1996, 1997a, 1999; OECD, 1999b). The view that these variables have little role to play in explaining changes in unemployment that have occurred in western Europe is broadly consistent with the views expressed in ILO (1995):

> The foregoing review of the evidence suggests that labour market rigidities have *not* been an underlying cause of past labour market performance. Labour market performance has deteriorated since the first oil shock irrespective of differences in labour market regulation, suggesting that a more fundamental common factor (or factors) has been at work. (1995, p. 20) (Italics added)

What is true is that unemployment in Europe is higher than it is in the United States and western Europe has more job protection, higher unemployment benefits, more union power, and a more generous welfare state. But that is a cross-section correlation and it tells us little or nothing about time series changes. Blanchard and Wolfers (2000) have argued that "the interaction of shocks and institutions does a good statistical job of fitting the evolution of unemployment both over time

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[18] For a fuller discussion of these issues see Blanchflower (1999).

and across countries." This result is questionable because it is obtained in an over-fitted model—few data points and lots of variables—and the results appear to be driven by the cross-section variation rather than by any time series changes. In many OECD countries unemployment has increased a lot over the past decade or so[19] but unemployment benefits have been cut, union density has fallen and union power has weakened (Blanchflower, 1996), job protection has changed little, and there is a new flexibility in wage bargaining, so they say, than there was in the past. If these were the culprits then surely unemployment ought to have gone down and not up. If these were not, why not? Current research on unemployment has been unable to find a convincing answer. Recent research suggests some promising new candidates that merit consideration—changes in commodity prices in general and the oil price in particular seem to predict reasonably well cyclical movements in unemployment. One promising line of inquiry is into the interregional mobility of the population and the role of home ownership which seem able to explain at least some of the upward trend in unemployment. Labor market immobility has been unduly neglected by researchers as an explanation for the high levels of unemployment prevailing today.

The large increase in European home ownership may well be the "missing piece of the unemployment puzzle because it impairs people's mobility" (Oswald, 1997a). It has considerable advantage over the other possible explanations as it seems to fit the facts! Over the past few decades European governments have made concerted efforts to reduce the size of the private rented sector and to increase home ownership. Yet homeowners are relatively immobile, partly because they find it much more costly than private renters to move around. Unemployment rates have grown most rapidly in the nations with the fastest growth in home ownership. Of the major industrial nations Spain has the highest unemployment and the highest rate of home ownership and Switzerland the lowest unemployment and the lowest rate of home ownership. In the 1950s and 1960s the United States had the highest unemployment and the highest rate of home ownership (Oswald, 1999).

High home ownership rates, for example, block young people's ability to enter an area to find a job. If we look at countries such as Spain and the United Kingdom a key part of the unemployment problem is young unemployed people living at home unable to move out because the rental sector hardly exists. The rise in home ownership and declining internal migration appears to be part of the explanation for the upward trend in European unemployment over the past couple of decades or so. There is a strong positive correlation in the European countries between the level of unemployment and the extent of home ownership ($R^2 = .645$). The data on unemployment rates and home ownership used in this calculation are presented below (source: Oswald, 1999) with the countries ranked by 1990s unemployment level. Home ownership rates for the 1960s and the 1990s are presented in Table XII. Country ranks on home ownership for the 1990s are in parentheses. Spain and the

TABLE XII
Unemployment and Home Ownership

	Unemployment rate (%) 1990s	Home ownership rate 1960s	Home ownership rate 1990s
Spain	18.9	52	75 (3)
Ireland	14.8	60	76 (2)
Denmark	10.8	43	55 (13)
Finland	10.5		78 (1)
France	10.4	41	56 (14)
Canada	9.8	66	63 (10)
Australia	9.0		70 (5)
New Zealand	8.9	69	71 (4)
United Kingdom	8.9	42	65 (7)
Italy	8.2	45	68 (6)
Belgium	8.1	50	65 (7)
Netherlands	7.0	29	45 (15)
United States	6.2	64	64 (9)
Norway	5.5	53	60 (11)
West Germany	5.4	29	42 (17)
Portugal	5.0		58 (13)
Sweden	4.4	36	43 (16)
Switzerland	2.3	34	28 (18)
Japan	2.3		59 (12)

Source. Oswald (1999).

Netherlands had the most dramatic increase in home ownership between the 1960s and the 1990s.

The processes behind these correlations are not fully understood, but Oswald (1999) has suggested six plausible links in the chain. First, there is a direct effect from home ownership. Selling a home and moving is expensive. For this reason, indeed, many homeowners who lose their jobs are willing to commute long distances to find work. Hence owner-occupiers are less mobile than renters, and therefore more vulnerable to economic downturns in their region. Nevertheless, this probably cannot be the whole story. If we look at countries such as Spain and the United Kingdom, a key part of the problem is young unemployed people living at home, unable to move out because the rental sector hardly exists. Therefore, the second part of the difficulty is not that unemployed people are themselves the homeowners; it is that unemployed men and women cannot move into the right places. High home ownership levels block people's ability to enter an area to find a job. Those without capital to buy are at a particular disadvantage in a world where ownership is the dominant form of housing tenure. Third, in an economy in which people are immobile, workers perform jobs for which they are not ideally suited. This inefficiency is harmful to everyone: it raises costs of production and lowers real incomes in a country. Prices thus have to be higher, and real wages lower, than in a more mobile society. Jobs get destroyed—or more precisely priced

out of existence—by such inefficiencies. Fourth, areas with high home ownership levels may act to deter entrepreneurs from setting up new operations. Planning laws and restrictions on land development, enforced by the local political power of groups of homeowners, may discourage business start-ups. Fifth, we know from survey data that home owners commute much more than renters, and over longer distances, and this may lead to transport congestion that makes getting to work more costly and difficult for everyone. Technically speaking, this acts like higher unemployment benefits, because it reduces the gain from having a job. If getting to work is more expensive, that has the same net effect as raising the attractiveness of not working. Sixth, negative (or even low) equity, which has occurred at times in a number of countries (e.g., the United Kingdom and the Netherlands) usually after a pronounced housing boom when house prices have fallen rapidly when the value of the house is less than the mortgage owed. The existence of negative equity may restrict the ability of home owners to leave their home to find alternative employment elsewhere—it is hard for them to leave if there is no private rental market to run to.

The *low* unemployment countries of Norway, Sweden, Japan, and the United States all have *high* proportions of their populations that move across regions. High unemployment Italy had comparatively low mobility (1.1%) in 1970 and which actually fell to 0.5% in 1987. Mobility is low and unemployment—especially youth unemployment—is particularly high in Italy (32% in 1998): Faini *et al.* (1997) have shown that migrations between northern and southern Italy declined steadily from 1970 to 1990. The 1990 level was approximately one seventh the 1970 level. Over this period the unemployment differential between north and south doubled from just under 7% to just under 14%. Faini *et al.* argue that in Italy "punitive housing taxation and widespread rent controls have surely played a substantial role in increasing the costs of geographic mobility" (1997, p. 578).

There is only a weak positive relation in the OECD between unemployment and benefits.[20] A similar picture is seen if a comparison is drawn between unemployment rates and the proportion of GDP spent on unemployment compensation. On both measures Italy has low benefits and high unemployment. In 1996 Italy spent 0.68% of GDP on unemployment compensation, which are the latest numbers available even though it had a 12% unemployment rate (OECD, 1999, Table H). In contrast, as a proportion of GDP Canada spent 1.28% (9.7%); Spain 2.11% (9.6%); Switzerland 1.27% (3.9%); France 1.44% (12.4%); Austria 1.29% (4.4%); Belgium 2.12% (9.7); Denmark 2.54% (6.8); Germany 2.38% (8.9%); Finland 3.27% (14.6%); and the Netherlands 4.17% (6.3%), where 1996 unemployment rates are in parentheses. Japan and the United States are counterexamples having low unemployment and low spending on benefits (0.40% of GDP and an

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[20] The countries are Austria (unemployment, 3.7%; benefits, 31.0%), Belgium (8.1, 42.3), Denmark (10.8, 51.9), Finland (10.5, 38.8), France (10.4, 37.2), West Germany (5.4, 28.1), Ireland (14.8, 29.3), Italy (8.2, 2.5), Netherlands (7.0, 51.3), Norway (5.5, 38.8), Portugal (5.0, 34.4), Spain (18.9, 33.5), Sweden (4.4, 29.4), Switzerland (2.3, 21.9), United Kingdom (8.9, 17.5), Canada (9.8, 27.8), United States (6.2, 11.1), Japan (2.3, 9.9), Australia (9.0, 26.5), and New Zealand (8.9, 30.4). (Source: Oswald, 1999.)

unemployment rate of 3.4% and 0.26% of GDP and an unemployment rate of 5.4%, respectively). The R^2 between the percentage of GDP spent on unemployment compensation and the unemployment rate across these 13 countries is only .084. There is some evidence from Denmark and the United States and to a lesser degree the United Kingdom, New Zealand, and the Netherlands that reducing the generosity and the duration of benefits can cut unemployment. However, the degree of responsiveness of unemployment to cuts in benefits, although significant, has been surprisingly small. There is *no* correlation between unemployment and taxes ($R^2 = .066$)[21] and no relation at all with union density ($R^2 = .00$)[22] in western Europe. Spain and France have very low union density rates and high unemployment while Austria has low unemployment and quite high union density.

Econometric support for the importance of home ownership and mobility in explaining unemployment in Europe is provided in OECD (1999), who model unemployment across countries and find home ownership to be the only significant influence; job protection, benefits, and unions play *no* role at all.[23,24] Their regression results are as follows, which make use of the Layard–Nickell panel of 17 countries $\times$ 2 years and most of their preferred variables ($n = 34$).

> -0.05 (0.5) Employment protection -0.23 (1.4) Union coordination $-.20$ (0.8) Union centralization -0.01 (1.7) Union density $+0.01$ (1.4) Bargaining coverage $+0.01$ (1.3) Replacement ratio $+0.00$ (1.0) Unemployment duration $+0.02$ (1.4) Tax wedge $+0.04$ (0.01) ALMP spending -0.09 (2.8) Output gap $+0.02$ (2.1) Home ownership rate % $+0.06$ (0.4) Earnings dispersion,

where *t*-statistics are in parentheses. (Source: OECD, 1999, Table 2.8, p. 78, column 5.)

There are good reasons to be deeply suspicious of any regression that has so few observations and so many variables, but even so there is *no* support here from the OECD for the belief that unions, benefits, the tax wedge, ALMP spending, or

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[21] The countries are Austria (unemployment, 3.7%; payroll tax rate, 22.6%), Belgium (8.1, 21.5), Denmark (10.8, 0.6), Finland (10.5, 25.5), France (10.4, 38.8), West Germany (5.4, 23.0), Ireland (14.8, 7.1), Italy (8.2, 40.2), Netherlands (7.0, 27.5), Norway (5.5, 17.5), Portugal (5.0, 14.5), Spain (18.9, 33.2), Sweden (4.4, 37.8), Switzerland (2.3, 14.5), United Kingdom (8.9, 13.8), Canada (9.8, 13.0), United States (6.2, 20.9), Japan (2.3, 16.5), and Australia (9.0, 2.5). Data on payroll taxes in New Zealand were unavailable. Fitting a line through the scatter produces a horizontal slope. The R-squared is less than 0.01. (Source: Oswald, 1999.)

[22] The countries are Austria (unemployment, 3.7%, unionized proportion, 46.2%), Belgium (8.1, 51.2), Denmark (10.8, 71.4), Finland (10.5, 72.0), France (10.4, 9.8), West Germany (5.4, 32.9), Ireland (14.8, 49.7), Italy (8.2, 38.8), Netherlands (7.0, 25.5), Norway (5.5, 56.0), Portugal (5.0, 31.8), Spain (18.9, 11.0), Sweden (4.4, 82.5), Switzerland (2.3, 26.6), United Kingdom (8.9, 39.1), Canada (9.8, 35.8), United States (6.2, 15.6), Japan (2.3, 25.4), Australia (9.0, 40.4), and New Zealand (8.9, 44.8). Fitting a line through the scatter produces a negative slope. The R-squared is less than 0.01. (Source: Oswald, 1999.)

[23] Indeed the various union variables included are close to significance but actually have the wrong sign—higher unionization *lowers* unemployment. The output gap is included to control for the effects of the cycle.

[24] These results are in marked contrast to those reported in earlier Employment Outlooks (e.g., OECD, 1993, p. 70).

earnings dispersion influence unemployment. This runs contrary to claims made in Layard *et al.* (1991) which appear to be based upon misspecified cross-country unemployment equations which appear to suffer from serious omitted variable bias, probably the most serious of which are the omission of country specific fixed effects, the home ownership rate, and a further macro-variable—the real oil price. The home ownership rate does a good job of explaining the upward trend in unemployment. Movements in oil prices appear to cause cyclical changes in unemployment in the United States and Europe but seem unable to explain the upward trend in European unemployment. Carruth *et al.* (1995, 1998) find that oil prices help to explain unemployment in the United Kingdom and Canada and the United States, respectively.

Countries such as the United Kingdom and New Zealand have attempted to make their labor markets more flexible by amongst other things cutting unemployment benefits, loosening labor market regulations, and restricting the power of unions. Has this worked? The first thing to look at is how these two countries have done in the economic rankings—if these policies worked they ought to have risen up the league tables. Unfortunately they have not. In 1980, New Zealand ranked 5th in the OECD in terms of the level of its unemployment rate; by 1998 it was ranked 10th. The United Kingdom was ranked 9th in 1980 when Mrs. Thatcher first came to power; in 1998 it ranked 8th. A similar story applies to employment–population rates for the United Kingdom, which was ranked 6th in 1980 and 5th in 1998. New Zealand showed some improvement over the period moving from 13th to 8th.

Maloney and Savage (1996) document the labor market reforms that have occurred in New Zealand since 1984. Over the past 15 years or so the economy was made more decentralized: unemployment benefits were cut, welfare eligibility criteria were tightened, and industrial relations legislation was passed to restructure the industrial relations system by eliminating national awards and removing compulsory unionism. Union density fell dramatically from 40.8% in 1991 to 24.1% in 1994 (Maloney and Savage, 1996, p. 201). Interestingly product markets were protected and made immune from many competitive pressures. In subsequent work Maloney (1998, 1999) found that neither changes in unionization nor benefits had *any* significant effect on unemployment although they do appear to have some effects on employment and labor force participation. Chapple *et al.* (1996) concluded at the end of their examination of unemployment in New Zealand that

> despite ten years of stabilization, liberalization and labour market reform, it should be a source of some discomfort that these changes have yet to be reflected in an unemployment rate lower than when the reforms began. (p. 169)

Just as in New Zealand, reforms conducted in the United Kingdom focused on lowering benefits and reducing the power of unions as well as encouraging self-employment. A program to privatize many of the nationalized industries was also undertaken. Little or nothing was done to reform the product market: many of the newly privatized industries retained substantial monopoly power. Prices rose as did the salaries of the managers as the quality of many services declined (e.g., in water supply and railways) after privatization, which generated a public outcry.

Subsequently the incoming Labour Government imposed a windfall tax on the newly privatized utilites to claw back some of their gains. Interestingly the main success stories of the privatizations were British Steel and British Airways that were privatized to competition. These labor market changes have been accompanied by a dramatic increase in the crime rate. According to crime victim studies the rape, assault, burglary, robbery, and motor vehicle theft rates all increased strongly in England and Wales between 1981 and 1996. In 1995, the American burglary and motor vehicle theft rates were less than half the rates in England and Wales (Langan and Farrington, 1998, pp. 4–5).

Blanchflower and Freeman (1994) analyzed the effectiveness of the Thatcherite reforms on the U.K. labor market. They concluded that the reforms had succeeded in their goals of weakening union power, may have marginally increased employment and wage responsiveness to market conditions, and may have increased self-employment. The reforms were accompanied by a substantial improvement in the labor market position of women, but they failed to improve the responsiveness of real wages to unemployment; they were associated with a slower transition from nonemployment to employment for men and a devastating loss in full-time jobs for male workers and produced substantial seemingly noncompetitive increases in wage inequality.

> While we cannot rule out the possibility that the reforms created the preconditions for an economic 'miracle' in the mid 1990s there is little in the data to support such a sanguine reading of the British experience. Higher inequality and poverty and lower full-time employment are not normally viewed as an ideal stepping stage for economic success. (Blanchflower and Freeman, 1994, p. 52)

The Netherlands and Denmark have both seen a strong improvement in their position in these rankings, whether measured by unemployment or EPOP. For example, the unemployment rate in the Netherlands fell from 7.1% in 1994 to 4.0% in 1998 while Denmark's unemployment rate fell even faster from 10.1% in 1993 to 5.1% in 1998. Denmark's rise in the rankings is even more pronounced than that of the Netherlands. Denmark shows a rapid jump up the rankings in GDP per capita, from 12th in 1980 to 5th in 1997: the Netherlands' position remained unchanged at 11th. It does not appear that this decline in unemployment in either country was brought about by declines in union power, changes in job protection, mismatch, or labor taxes. Overall strictness of employment protection measures, according to the OECD, remained *unchanged* in both countries between the 1980s and the 1990s (OECD, 1999; Barrell and Genre, 1999). Apparently there were significant declines in the level of disability benefits paid in the years in the Netherlands since 1993 which arose primarily because of reductions in the numbers of people counted as disabled (Nickell and van Ours, 1999). What is puzzling is that over this period of rapidly declining unemployment in the Netherlands there was an *increase* in spending on labor market programs: as a proportion of GDP spending increased from 3.22% in 1990 to 4.69% in 1993–1994 to 4.86% in 1996–1997. Spending on unemployment compensation (which is included as one part of the total spending measure reported above) in the Netherlands went from 3.22% of

GDP in 1990 to 3.82% in 1994 to 3.14% in 1998 despite the decline in the level of unemployment.

In the case of Denmark there is more evidence of declines in benefits being correlated with declining unemployment. In 1994 Denmark introduced a reform package which seemed to work—it reduced the generosity of its unemployment compensation system, job placement interviews were introduced, paid leave schemes were made less generous, the maximum duration of benefits was reduced, and the eligibility criteria were tightened. A tax reform package was also implemented to lower taxes on labour and increase incentives to work (Barrell and Genre, 1999). As a percentage of GDP, spending on labor programs in Denmark went from 5.66% in 1990 to 7.0% in 1994 to 5.63% in 1998; however, those on unemployment compensation did decrease from 3.78% in 1994 to 1.86% in 1998. This program appears to have been working. Union power does not seem to fit the story very well either as union membership in the Netherlands *increased* during the 1990s—the number of members went from 1.4 million in 1990 to 1.87 million in 1995 and union density increased from 26 to 28% over this period (*Statistical Yearbook of the Netherlands,* Statistics Netherlands). Union density in Denmark was the same in 1994 as in 1980. Bargaining coverage and the degree of centralization or coordination of their bargaining remained roughly constant in both countries over this period. (OECD, 1997, Table 3.3, p. 71). There certainly does not appear to have been a "miracle," to use Nickell and van Ours' (1999) term in the United Kingdom or the Netherlands, or in New Zealand for that matter, but it looks as if the labor market improved quite miraculously in Denmark where unemployment was halved from 10.1% in 1993 to 5.1% in 1998.

Spain is an interesting test case. Unemployment in Spain is the highest in the OECD (18.8% in 1998 compared with an OECD average of 7.0%) and considerably higher than neighboring Portugal (1998, 4.9%). There is relatively little evidence for Spain that firing costs, unemployment benefits, unions, the size of the tax wedge (the difference between take-home pay and the cost of labor to employers), skills mismatch, or labor unions had much to do with the rise in unemployment in Spain (see Blanchflower, 1999). This runs contrary to claims made in Layard *et al*. (1991) and repeated in OECD (1994) for the role of these variables. Interestingly in their main unemployment regression Layard *et al*. (1991) appear to be unable to explain *any* of the growth in unemployment in Spain, as they simply include in their regressions a dummy variable for Spain for each year since 1973 (Chap. 9, p. 434), which unsurprisingly enters positively and significantly.

Spain has a high home ownership rate while Portugal has a low one (76 and 58%, respectively). Home ownership in Spain has increased dramatically since the 1960s until by the end of the 1990s it was the highest home ownership rate in the world. Remarkably, it also has a legal requirement that no rental contract can be less than five years, so even the small renting sector is heavily distorted.[25] Growth in the home ownership rate tracks, and most important *precedes,* movements in the unemployment rate. The direction of causation is clear: it appears to run from

[25] We owe this point to Andrew Oswald.

home ownership to unemployment and not vice versa.[26]

	Home ownership rate	Unemployment rate
1960	52%	2.5%
1970	64%	2.4%
1980	73%	11.2%
1990	76%	16.2%

As far as internal migration goes Blanchard *et al*. (1995) note in an appendix, "Spain shows one of the lowest rates of regional mobility of all OECD countries" (p. 132). Interestingly, however, Blanchard and co-authors do not appear to believe that this has anything to do with Spain's high unemployment. Jimeno and Bentolila have shown that "the responses of migration and participation to rates to labor demand shocks, seem to be significantly slower than in the US states and EU regions" (1998, p. 46). Antolin and Bover (1997) report that "migration does not seem to be working as a mechanism for alleviating the very high levels of unemployment in Spain" (1997, p. 230). They attribute this in part to an individuals' family situation and in part to the unemployment registration system which appears to have a direct negative effect on the probability of migration. Antolin and Bover find further that higher than average unemployment in Spain barely induces unemployed workers to migrate. Gonzalez and Puebla (1996) documented that during the 1980s less than 1% of the population moved regions reaching a minimum of 0.45% in 1981 and a second period which starts in 1986 when migration trends increased annually to affect 1.76% of the population by 1990 while unemployment fell. They go on to argue that the

> two distinct periods in migration patterns coincide *exactly* with the turning point in the Span-
> ish economy during the 1980s, when there was an economic crisis and structural adjustment
> up until 1986, followed by a very strong growth situation in the second half of the decade.
> (p. 180)

Bentolila and Dolado (1991) note that interprovincial migration flows have followed a U-shaped path since the 1960s. The interregional migration rate declined steadily through the 1960s in Spain from an average of 1.22% in 1962–1969 to 0.92% in the 1976–1986 period and started to rise again from 1982. The decline is even steeper for interregional flows which fell from over 0.9% in 1964 to just over 0.3% in 1982 and rose back to just under 0.6% in 1994.

It does not make sense to make unemployment too attractive—governments must not set unemployment benefits too high. There needs to be incentives for individuals to work and for firms to hire them. A delicate balance has to be struck between helping the unemployed through a crisis and assisting them to find a new job on the one hand and being overly generous on the other. The cost of setting benefit levels too high imposes a heavy burden on those who do work. At the same

[26] Source of the table is Layard *et al*., 1991, and Oswald, 1999.

time there is little benefit in trading poverty out of work for poverty in work. *It is important to reward work over nonwork*.

Labor market mobility also appears to be an important factor in explaining unemployment across OECD countries. Workers need to be able to move freely between areas of the country in search of work. More detailed evidence on the effects of increased home ownership is obviously needed in the long run as researchers get to grips with the fact that it seems to fit the facts better than other explanations. A direct recommendation would be for governments in the transition economies to subsidize mobility in the form of allowances for moving as well as subsidies to individuals and firms to help in building a fully functioning and large private rental housing sector. Workers must be free to move in search of jobs. The evidence from countries such as New Zealand and the United Kingdom suggests that there is little payoff in terms of lowering unemployment from only reforming the labor market and making it more competitive if other markets such as the product market are not functioning efficiently. It seems vital for governments in eastern and central Europe to concentrate on making product, capital, and housing markets as competitive as possible.[27]

CONCLUSIONS

This paper studies the labor markets of the transition nations of eastern Europe. Microeconomic data are used from many different micro-surveys. Equivalent western data are analyzed and compared with those from the east.

The analysis produces five main results.

1.   The microeconometric structure of unemployment regression equations appears to be qualitatively similar in the nations of eastern Europe as in the

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[27] Capital constraints appear to restrict the ability of individuals to set up their own businesses. There is evidence that many more people would like to run their own businesses (Blanchflower *et al.,* 2000). Economists have also amassed considerable evidence that potential entrepreneurs are held back by lack of capital. (see, for example, Blanchflower and Oswald, 1998; Evans and Jovanovic, 1989; Evans and Leighton, 1989; Holtz-Eakin *et al*., 1994; Black *et al*., 1996; Lindh and Ohlsson, 1994). There is particularly strong evidence in the United States that suggests that liquidity constraints bind especially tightly on blacks, which may help to explain why the self-employment rate of black males is about one third that of white males (see Fairlie (1999) and Blanchflower *et al*. (1998)). The literature on micro-enterprises also identifies a lack of capital as a primary constraint to enterprise development (see, for example, Todd (1996) and Counts (1996)). The Grameen Bank in Bangladesh has demonstrated very successfully that the poor will repay small, noncollateralized loans or microloans (see Yaron, 1994). Grameen organizes borrowers into peer groups usually clustered together in villages; if any member of the group defaults, no member can ever again borrow from the bank. By getting borrowers to monitor each other, Grameen has consistently been able to recover 98% of its loans from its mostly female customers, enabling it to offer credit to over 1 million families a year. The Grameen Bank's data suggest that a good percentage of its members manage to pull themselves out of poverty. The main lesson to be learnt is that there is a demonstrated need in Bangladesh and many other developing countries such as Thailand, Indonesia, and Botswana for institutional changes which channel loanable funds to micro-enterprises. This helps to overcome the capital constraints confronted by the poor. There may be a place for such schemes in eastern Europe.

industrialised west. Variables such as education and age, for example, enter unemployment equations with the same signs in the two halves of Europe. However, there are substantial quantitative differences.

    2. In eastern Europe higher levels of unemployment reduce pay. This is the pattern found for the advanced nations. Estimation of east European wage curves produces a local unemployment elasticity of between -0.1 and -0.3. This is somewhat larger in absolute terms than has been found elsewhere, but the same processes appear to be at work in the west and the east.

    3. The unemployed are unhappy and are dissatisfied with the direction of reform, presumably because it has excluded them. Something needs to be done to include them.

    4. The strongest support for the changes that have occurred in eastern Europe is to be found among men, the young, the most educated, students, and the employed and particularly the self-employed.

    5. East European governments need to ensure that they reward work over nonwork—benefits must not be too generous. Further it is vital to encourage internal mobility. Workers must be free to move in search of jobs. Competitive capital, product, and housing markets grease the wheels of the labor market and help it to function properly.

There is much work to be done.

APPENDIX

Number of Observations by Country in Eastern Europe

	1990	1991	1992	1993	1994	1995	1996	1997	Total
Albania	0	1000	1049	1054	1034	1003	1013	0	6153
Armenia	0	0	918	1000	1000	1000	1000	0	4918
Belarus	0	0	1030	1143	1099	1021	1061	0	5354
Bulgaria	1492	989	1312	1198	1045	1098	1035	1014	9183
Croatia	0	0	0	0	0	990	988	0	1978
Czech Republic	1490	1076	924	817	1062	1075	1021	967	8432
East Germany	837	1085	1014	2186	3509	1049	1346	2067	13093
Estonia	0	999	1000	1011	1002	1001	1071	1007	7091
Georgia	0	0	1038	0	1000	1059	1006	0	4103
Hungary	989	987	1000	972	1018	1004	1002	1080	8052
Kazakhstan	0	0	0	0	1000	1000	1002	0	3002
Latvia	0	999	1000	992	1000	1094	1017	1025	7127
Lithuania	0	1000	1000	1020	1008	1003	1012	1013	7056
Macedonia	0	0	1002	1097	1000	1000	1000	0	5099
Moldova	0	0	1000	0	0	0	0	0	1000
Poland	1014	1000	999	1004	1004	1000	1004	997	8022
Romania	0	1000	1000	1176	1281	1141	1195	1044	7837
Russia	0	975	1000	1377	1000	1178	1065	0	6595
Slovakia	0	0	734	684	995	1137	1066	1160	5776
Slovenia	0	0	1063	1000	1086	1164	1114	1042	6469
Ukraine	0	0	1400	1171	1200	1199	1200	0	6170
Yugoslavia	0	0	0	0	0	0	993	0	993
Total	5822	11110	19483	18902	22343	21216	22211	12416	133503

Source. East European Eurobarometers and European Eurobarometers for East Germany.

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