
Working Paper Series on the Transition Countries
No. 6

# LABOR MARKETS IN EASTERN EUROPE AND EURASIA

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January 2007

Program Office
Bureau for Europe & Eurasia
**U.S. Agency for International Development**

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*Abstract:* This research attempts to look systematically at the available data regarding labor market characteristics of the transition in Eastern Europe and Eurasia. A primary focus is the examination of the data in light of a World Bank working hypothesis that "there are signs of an emerging divide between labor markets in the transition economies of Eastern Europe and those of low-income Eurasian countries." We find significant labor market gaps and differences between the CEE countries (particularly the Northern Tier CEE) and Eurasia but mixed evidence at best that these gaps are growing. We also find that there remain some key challenges and adverse trends in labor markets even among the Northern Tier CEE countries.

***USAID/E&E/PO Working Paper Series on the Transition Countries***
***January 2007***

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***Summary***

This research attempts to look systematically at the available data regarding labor market characteristics of the transition in Eastern Europe and Eurasia. A primary focus is the examination of the data in light of a World Bank working hypothesis that "there are signs of an emerging divide between labor markets in the transition economies of Eastern Europe and those of low-income Eurasian countries." Our analysis first includes an examination of broad transition trends in the labor markets compared to trends in other parts of the world. We then proceed to examine the evidence in terms of generalized labor market differences among the key sub-regions in the transition: Northern Tier CEE vs. Southern Tier CEE vs. Eurasian countries (and within Eurasia, the low-income countries).

***1. Salient labor market characteristics of the transition region vs. rest of the world***.

The ILO tracks global employment trends annually, and compares data in the transition region (of the Southern Tier CEE and Eurasia countries) with other parts of the world (where the Northern Tier CEE countries are included in the Developed (OECD) Country classification). These data show that the transition countries have among the lowest employment to population ratio worldwide: 52% in 2005 (for the Southern Tier CEE and Eurasian transition countries), well below the global average of 61% and less than all other regions in the world except the Middle East and North Africa (46%). Since the early 1990s, the transition region has experienced the largest percentage drop in this ratio worldwide (11% drop from 1993-2005 vs. a global trend of a 3% decrease).

This low and falling employment to population ratio in the region is consistent with very significant "jobless growth" that has prevailed in many of the transition countries. One half of the twenty-two transition countries (for which data exist) have actually experienced a decline in employment levels on average during the recent years of economic growth. This has included Northern Tier CEE countries (Lithuania, Latvia, Estonia, Slovakia, and the Czech Republic), Southern Tier CEE countries (Albania, Bulgaria, and Romania), and Eurasian countries (Armenia, Moldova, and the Kyrgyz Republic).

The proportion of the working poor in Eastern Europe and Eurasia (less the Northern Tier CEE countries) increased from 32% in 1995 to 35% in 2000, but subsequently plummeted to 12.5% by 2005. The proportion of working poor has dropped from 1995 to 2005 in all other developing regions of the world (except Sub-Saharan Africa), though nowhere near the order of magnitude as experienced in the transition region. Moreover, the proportion of working poor in the transition region is far below levels found in the developing world, which range from 32% in Latin America and the Caribbean to 87% in South Asia and Sub-Saharan Africa.

Across all three primary economic sectors (agriculture, industry, and services), women in the labor force as a percent of total labor force in each sector in the transition region is

greater than the world average; equal to the proportion of female workers in the developed economies in the service sector, and notably higher in agriculture and industry.

On average, youth unemployment rates are 2.2 times higher than national averages in the transition region. This is also very close to the order of magnitude in Western Europe, though a key difference is that the youth unemployment rates in CEE and Eurasia are much higher in absolute terms. Drawing from data as far back as 2001, youth unemployment rates have been 30% or greater in Bosnia-Herzegovina, Serbia, Macedonia, Poland, Slovakia, Georgia and (female youth only) in Estonia. Youth unemployment rates are highest relative to national averages among females in Serbia (3.9 ratio in 2002), Estonia (3.3 in 2003), and Russia (2.9 in 2001), and among males in Serbia (3.2 ratio in 2002), Romania (3.0 in 2004), the Czech Republic (2.8 in 2004), and Bosnia-Herzegovina (greater than 3.0 ratio in 2002-03 both genders combined).

Long-term unemployment in the region is very high and may still be increasing in a number of countries. In fourteen of nineteen countries for which data are available, roughly fifty percent or more of the unemployed have been unemployed for a year or more (at least through the early 2000s, latest data available). Nine of eighteen transition countries have had a notable increase in long-term unemployment as a percent of total unemployed since 1995; only five have had a clear decrease. Long term unemployment is also very high in some countries in Western Europe, though not as high. During 2002-2004, it was 49% in Germany, 38% in France, 34% in Spain, 21% in UK, and 19% in Sweden. In Japan, it was 27% in 2000-01; in the U.S., only 6%.

### *2. Significant labor market gaps and differences between transition countries*

In the CEE countries, labor market adjustments have been significant in terms of both price changes (real wages) and quantity changes (employment). In contrast, the lion's share of labor market adjustments in Eurasia has been through the price mechanism, through real wages. There has been very little change in formal employment levels in Eurasia, all the more extraordinary given the tremendous changes in economic output.

We calculated the total sum of the labor market price and quantity changes since 1990 by summing the average annual changes in real wages and employment levels in absolute terms. By this measure, the Eurasian countries have experienced much greater changes in the labor markets during the transition than the CEE countries. The low-income Eurasian countries have experienced the most changes, particularly Tajikistan, Uzbekistan, and the three Caucasus countries. These findings are broadly consistent with the scope of changes in economic output across the transition region since the collapse of communism; that is, where economic output collapsed the most and often subsequently recovered the most, one finds parallels with the scope of change in the labor markets.

We also calculated how the total labor market change has been distributed between the price and quantity adjustments and found very different results according to sub-regions. In Eurasia, 88% of the labor market adjustments occurred in the price dimension, and

only 12% in quantity changes. The distribution in CEE was closer to 75% in real wages and 25% in employment. The extremes are found in Azerbaijan and Tajikistan at one end (where 95% or more of the total changes occurred via real wages) and Macedonia at the other end (where almost 40% of the total changes occurred in employment).

With very little change in employment levels in Eurasia (alongside very significant changes in real wages and output), one might expect the existence of a large informal sector economy. The available estimates of informal sector employment and output are consistent with this observation. Estimates of informal sector employment in Eurasia range from 36% to 45% of total employment; perhaps twice the amount in the Northern Tier CEE countries (22%) and much greater than that found in the Southern Tier CEE countries as well (31%). It is estimated that informal employment is 17% of total employment in the OECD countries.

Self-employment is also highest in Eurasia, though estimates vary widely by source. One source (Eurostat) has self-employment in Eurasia to be 37% of total employment in 2002 on average (of nine countries). However, the range in estimates across the Eurasian countries is very large, from less than 10% in Belarus and Russia to at least 50% in the each of the Caucasus, in Armenia, Georgia, and Azerbaijan, as well as in the Kyrgyz Republic. According to the Eurostat data, self-employment in the Northern Tier CEE (at 17% of total employment) is about one-half the Eurasia level. Eurostat reports self-employment data for only one Southern Tier CEE, Romania at 40%.

UNECE estimates that self-employment in 2005 is roughly half the level reported by Eurostat (in 2002): 17% in Eurasia on average (for seven countries), ranging from 1% in Belarus and 5% in Russia, to 33% in Moldova. This contrasts with 9% in the Northern Tier CEE, ranging from 6% in Estonia to 17% in Poland. The Southern Tier CEE sample consists of four countries: 14% on average, ranging from 9% in Bulgaria and Macedonia to 20% in Romania.

In contrast to self-employment trends, employment in small and medium enterprises (SMEs) is much greater in the CEE, particularly in the Northern Tier CEE, than in Eurasia. SME employment (as % of total employment) in 2001 in CEE (at more than 50%) is more than twice that found in Eurasia (at 25%). There are some outliers in Eurasia: the Kyrgyz Republic at 59%; Turkmenistan at 60% and Uzbekistan at 50%. The Eurasian average minus these three outliers is 15%.

Four of the five most unequal transition countries in terms of wage inequality are Eurasian. Azerbaijan has the most unequal wage distribution of all the seventeen countries for which sufficient data exist, followed by Russia, Armenia, Estonia, and Moldova. At the other extreme, Macedonia has the most equal wage distribution, followed by all the Northern Tier CEE countries, except Estonia. Estonia, hence, is very much the Northern Tier CEE outlier on this dimension.

The sectoral share of employment (that is, employment in agriculture, services, and industry) in the Northern Tier CEE countries is much closer to advanced country norms

than is both the Southern Tier CEE and Eurasian countries. Employment in agriculture in the Northern Tier CEE is less than 10% of total employment; in services, around 60%. Employment in agriculture in Eurasia and the Southern Tier CEE countries is greater than 30% of total employment; employment in services closer to 50%. In the EU-15, agriculture employment is 5% of total employment and services employment is close to 70%.

On average, tertiary enrollments in the Northern Tier CEE countries is two times the enrollment rates in the Southern Tier CEE and Eurasia (58% vs. 29% and 29% in 2004).

***3. Evidence of growing gaps between transition countries is mixed at best.***

***(a) Where the evidence does support growing gaps:***

*Research & development persons (and labor skills).* Out of a sample of nineteen transition countries, only the eight Northern Tier CEE countries and Armenia have witnessed an increase in research and development persons per million inhabitants from the early transition years. All four Southern Tier CEE countries witnessed a decrease (Romania, Bulgaria, and Croatia by about 30%; Serbia and Montenegro by 6%). Six Eurasian countries also witnessed a decrease: Azerbaijan and Moldova by roughly 50%; Belarus, Ukraine, and the Kyrgyz Republic ranging from around 20-30%; and Russia by 7%.

*Sectoral changes*. The gap between the Northern Tier CEE countries and the rest of the transition countries has increased in regards to the structural changes in employment by economic sectors. Employment in agriculture as a percent of total employment decreased in the Northern Tier CEE since 1990 by 5%, and increased by 5% in the Southern Tier CEE and 8% in Eurasia. Only in the Northern Tier CEE has there been a notable proportionate increase in employment in services since the beginning of the transition.

***(b) Where the data don't support growing gaps***

*Real wages*. Real wages have been increasing in recent years in all the transition countries. Most transition countries had real wages reach a minimum in the early or mid 1990s; by 1999, all had real wages recovering from a fall. Still the level of real wages in 2003 (most recent data available) relative to 1989 levels varies greatly across the countries. Moreover, most countries as of 2003 have still not attained pre-transition real wage levels. In the nineteen transition countries for which data are available from 1989 to 2003, only five countries had real wages in 2003 which equaled or exceeded 1989 levels: the Czech Republic; Poland; and Hungary in the Northern Tier CEE; and Georgia and Azerbaijan in Eurasia. Most recent real wages relative to 1989 wages are lowest far and away in Tajikistan (28% in 2003) and Uzbekistan (29% in 2002); they also remain very low in Armenia (54%), Bulgaria (55%), and Macedonia (56%).

*Wage inequalities*. Roughly one-half of the sixteen countries for which time series are available have recently been experiencing a fall in wage inequality. There does not seem to be a discernable pattern by level of inequality: some of the most unequal economies have been experiencing a decline (Moldova, the Kyrgyz Republic, and possibly Russia); but so too some of the most equal (Macedonia and Slovenia). However, a much smaller proportion of Northern Tier CEE countries has been witnessing a decline in wage inequality than has the Eurasian countries: two out of seven Northern Tier CEE countries vs. five out of seven in Eurasia.

*Domestic disparities in unemployment rates*. The data series show mixed or unclear results, generally between the results from the two statistical techniques employed. Only three countries showed a clear trend of increasing disparities in regional unemployment rates: the Czech Republic, Russia, and Ukraine. In only one country, Slovakia, was there consistent evidence of disparity levels being higher than the OECD comparators. In only three countries, Poland, Romania, and Lithuania, was there consistent evidence of disparity levels being within range of the three comparison countries in the West (France, Spain, and the USA).

*Informal sector employment*. There is insufficient data to gauge trends over time in informal sector employment.

*Self-employment*. There are only nine countries for which data exist from which to make meaningful observations about time trends in self-employment (i.e., where there are more than three years of observations from the same data source). All are CEE countries. Four countries have witnessed declining self-employment as a percent of total employment from 2001 to 2005: Romania from 24% to 20%; and Poland, from 19% to 17%; Bulgaria, from 10% to 8.6%; and Slovenia, 8.1% to 6.9%. Two countries have witnessed increases during this time period: Slovakia from 6% to 9%; and Croatia, from14% to 18%. Two countries have witnessed no notable change from 2001-2005: Latvia, and the Czech Republic.

*Tertiary enrollments (and labor skills)*. Most of the transition countries have been witnessing rising tertiary enrollments (all but Turkmenistan, Uzbekistan, Azerbaijan, and Tajikistan) and virtually all of these countries which have been experiencing rising enrollments (all but Armenia) have been experiencing these increases since the early years of the transition (anywhere from 1989 to 1994).

*Functional literacy*. All eight Northern Tier CEE countries have functional literacy rates comparable to OECD rates. Among this group, the Czech Republic scores the highest (at 101 where the OECD score is 100); Slovenia the lowest (ninety-six). In stark contrast, functional literacy in the Southern Tier CEE countries is much lower, though the cross-country range is large. Of the five countries for which data are available, these rates are far and away the lowest in Albania (74% of OECD levels) and Macedonia (82% of OECD norms); higher in Serbia & Montenegro (88%) and Romania (91%), highest in the Southern Tier CEE in Bulgaria (94%). In the three Eurasia countries for which data are available, these scores range from 90% in Armenia to 91% in Moldova to 97% in Russia.

Armenia and Moldova scores are roughly comparable to Southern Tier CEE standards; Russia's scores are comparable to Northern Tier CEE.

*Growth elasticity of employment.* As previously noted, one half of the twenty-two transition countries (for which data exist) have actually experienced a decline in employment levels on average during the recent years of economic growth. This has included Northern Tier CEE countries (Lithuania, Latvia, Estonia, Slovakia, and the Czech Republic), Southern Tier CEE countries (Albania, Bulgaria, and Romania), and Eurasian countries (Armenia, Moldova, and the Kyrgyz Republic).

*Unemployment.* Overall, unemployment data show very wide ranging results across the transition region, both in terms of the magnitude of unemployment rates and trends over time. Nor is there clear differentiation between sub-regions. Nine transition countries have been experiencing falling unemployment rates and eight countries still experiencing rising unemployment rates. Countries with unemployment rates falling into the single digit range include Estonia, Kazakhstan, Ukraine, and Russia. Countries with low (i.e. single digit) but rising unemployment rates include Moldova, the Czech Republic, and Romania. Poland and Slovakia are two Northern Tier CEE countries with very high and rising unemployment rates (closer to 20%). Macedonia and Armenia have the highest unemployment rates (above 30%), and these rates have been rising.

***(c) Where the gaps are "reversed"(and CEE lags behind Eurasia)***

*Perceived labor market constraints*. On average, labor market constraints are viewed relatively more severe among Northern Tier CEE businesses than elsewhere in the transition: 12% of Northern Tier CEE businesses view labor skills to be a major constraint to doing business vs. 9% in the Southern Tier CEE and 10% in Eurasia. Labor skills as a major constraint is perceived to be highest in Ukraine (20% of businesses in Ukraine deemed it as such), the Kyrgyz Republic (19%), Latvia (18%), and Lithuania and Poland (both 15%). It is lowest in Armenia and Azerbaijan (2%), Bosnia-Herzegovina (4%), Uzbekistan, Tajikistan, and Slovenia (5%). In addition, as with labor market skills, more businesses in the Northern Tier CEE view labor market regulations as a major constraint (11%) than do businesses in Eurasia (4%) or the Southern Tier CEE (8%).

*Labor market rigidities*. Consistent with business perceptions, labor market rigidities are higher in the CEE countries than they are in Eurasia. Three types of rigidities from the standpoint of businesses are measured (by the World Bank's Doing Business series): difficulty in hiring; rigidities in employment; and difficulty in firing. An average of the three measures reveals that labor market rigidities are highest in Latvia, Estonia, and Slovenia and lowest in Georgia, Kazakhstan, and Belarus.

*Tax burden on labor*. The tax burden (or tax wedge which includes payroll taxes and income taxes) is much higher in the CEE countries than it is in Eurasia. The range is very significant, from under 30% of gross wages in Armenia, Kazakhstan, and Tajikistan, to close to 50% or more in Montenegro, the Czech Republic, Romania, and Hungary.

***Introduction***[1]

This research attempts to look systematically at the available data regarding labor market characteristics of the transition in Eastern Europe and Eurasia. The primary thrust is an attempt to explore more systematically two mutually exclusive working hypotheses that emerge from an analysis by World Bank researchers, *Enhancing Job Opportunities in Eastern Europe and the Former Soviet Union* (2005) about the large cross-country differences in labor market developments in the transition region.

The primary hypothesis is that "there are signs of an emerging divide between labor markets in the transition economies of Eastern Europe and those of low-income Eurasian countries." [According to the World Bank analysts], "labor markets in Eastern European transition economies in many respects resemble those in developed economies of Europe, in both positive (for example, productivity growth) and negative aspects (for example, high and stagnant unemployment). In contrast, labor markets in low-income Eurasian countries seem to have become similar to those in other low-income countries, with typical characteristics such as the dominant informal sector, underemployment and low-productivity employment."[2]

The secondary hypothesis is that all the transition countries are going through the same transition process, though country progress is differentiated by (at least) three primary stages: (1) some countries are in stage one characterized by high employment and low open unemployment; (2) others are in stage two characterized by low employment and higher unemployment; and (3) some are at stage three with the resumption of rising employment and falling unemployment.[3]

Are the transition countries following one transition path or two separate paths regarding labor market trends, largely differentiated by a CEE-Eurasia divide? This question has relevance in other transition dimensions as well. Life expectancy trends continue to suggest a large and growing health gap between CEE and Eurasia. Eurasian "color revolutions" notwithstanding, the democratization gap between CEE and Eurasia is also very large and still growing.

We proceed below by first comparing several broad labor market characteristics in the transition region with other country groups worldwide. How do labor market characteristics of the transition countries as a whole compare with labor market characteristics in the industrialized economies and in the developing economies? We then proceed to examine the two working hypotheses by analyzing labor market trends within the transition region by trying to assess which countries and in which dimensions are labor market trends and outcomes comparable to OECD norms or approaching these norms or, conversely, closer to developing country standards and/or approaching those standards. To do so, we examine five areas: (1) employment and unemployment trends, including youth unemployment and long-term unemployment rates; (2) real wages and

[1] Thanks to Liz McKeon, Luba Fajfer, and Hugh Haworth for very helpful feedback on earlier versions of this research.

[2] Rutkowski et al., World Bank (2005), p. 102.

[3] Ibid, p. 99.

their inter-relations with employment and output; (3) structural changes in the labor markets, including private sector vs. public sector employment, formal vs. informal, employment in agriculture vs. services; (4) labor skills and constraints, including the relationship between the two; and (5) labor market reforms, including labor regulations and labor costs due to government intervention.

***Transition country labor markets vs. rest of the world***

One of the most basic labor market indicators is the proportion of a country's population which is employed, the employment to population ratio (*Table 1*).[4] For worldwide comparisons, we draw from the International Labour Office (ILO) data and calculations which define the transition economies to include the Southern Tier CEE countries and Eurasian countries; the eight Northern Tier CEE countries are part of the developed economies.

The ILO's estimates of the employment to population ratio across the world and over time show the transition economies (of the Southern Tier CEE and Eurasia) to be very distinct from the developed and the developing economies. In 2005, 52% of the population in the transition countries was employed. This is far below the world average (of 61%) and hence well below most all of the regions worldwide, including that of the industrialized countries (of 56%). Only the Middle East and North Africa region had a lower employment to population ratio (of 46%) in 2005 than did the transition countries.

Of equal note, is a comparison of the trends in the employment ratio across the globe over time. Most world country groups show considerable stability in the proportion of the population employed since (at least) the early 1990s, and most showed a small increase; this includes the industrialized countries. In contrast, two regions saw a substantial decrease in the proportion of the population employed from 1993 to 2005. East Asia went from an extremely high 78% employment to population ratio in 1993 to a still very high ratio of 72% in 2005, a percentage decrease of 8%. The largest percentage decrease occurred in the transition countries, from 59% in 1993 to 52% in 2005 or a percentage decrease of over 11%. The transition countries, i.e., have one of the lowest employment to population ratios which has been facilitated by the most significant drop in this ratio since 1993.

*Table 2* shows the share of employment by sector (agriculture, industry, and services) by world country groups, 1995 vs. 2005, and the percentage of female employment in each sector relative to total employment. In this set of data, one does not see as much change (and development) in the Southern Tier CEE and Eurasian countries as befits a region going through transformational changes on other dimensions. The share of employment

[4] Key definitions used throughout this paper include: (1) working-age population: 15-64 years; (2) labor force: employed plus unemployed (aged 15+); (3) labor force participation rate: labor force 15-64 as a percentage of working age population; (4) employment rate: employed 15-64 as a percentage of working age population; (5) employment to population ratio: employed 15-64 as a percentage of total population; (6) unemployment rate: unemployed as a percentage of the labor force.

in agriculture has fallen and the share of employment in services has increased from 1995 to 2005, but not greatly, and not as much as it has in other parts of the world. Moreover, these structural changes lag far behind developed economy norms. Twenty-three percent of employment in the Southern Tier CEE and Eurasia in 2005 remained in agriculture vs. 4% in the developed economies. Fifty percent of employment in the Southern Tier CEE and Eurasia in 2005 was in services vs. 71% in the developed economies. These Eastern Europe and Eurasia sectoral shares compare closest to middle-income developing countries, in particular to the Middle East and North Africa countries and the Latin America and the Caribbean countries.

Across all three sectors, women in the labor force as a percent of total labor force in that sector in the transition region is greater than the world averages. This proportion is highest in employment in services: 53% of the work force in the transition region in services is female (only the developed economies have a proportion as high). Forty-five percent of transition workers in agriculture are female; only East Asia, at 47%, has a higher proportion. Thirty-three percent of transition workers in industry are female, which is also one of the highest proportions (only East Asia, at 40%, and South-East Asia, at 36%, have higher proportions).

The ILO also provides estimates of the "working poor" as a share of total employed throughout the developing and transition country world (*Table 3*). The numbers for Eastern Europe and Eurasia (less the Northern Tier CEE) stand out. With poverty defined as $2 dollars or less a day, almost half of the working world (48.4%) was considered poor in 2005. However, poverty as so defined in the transition region was much lower, at 12.5%, than this world average and hence much lower than the developing countries (where poverty ranges from 32% in Latin America and the Caribbean to 87% in Sub-Saharan Africa and South Asia). What is also striking in the transition region numbers vs. elsewhere is the trend over time. The proportion of the working poor in Eastern Europe and Eurasia increased from 1995 to 2000, from 32% to 35%, but subsequently plummeted to 12.5% by 2005. The proportion of working poor has dropped from 1995 to 2005 in all other developing regions of the world (except Sub-Saharan Africa), though nowhere near the order of magnitude as experienced in the transition region.

Labor market trends differentiated within the transition region.

***1. Employment and unemployment***. *Tables 4* and *5* summarize the employment and unemployment trends of the transition region. *Table 4* includes employment rates, labor force survey unemployment rates, and (in a very limited sample of countries) regional unemployment rate trends within countries. *Table 5* disaggregates the unemployment rates to include female and male youth unemployment rates, and long-term unemployment rates. *Tables 6-11* provide elaboration.

The summary tables attempt to take stock of both the level and trends over time in the transition countries. As part of this, we've attempted to determine whether countries are

moving in the right direction. Is the country's employment rate recovering (or at least stabilized)? Is its unemployment rate falling (or at least stabilized)? Over the duration of the transition, can minimums (of the employment rate) and maximums (of the unemployment rate) be identified? The summary assessment takes stock of these trends and attempts to group the countries into one of two categories: (1) those with employment and unemployment characteristics that are either comparable to OECD or EU standards or making appreciable progress towards those norms; and (2) those that are not getting towards those standards in any meaningful way.

***Findings***. *Summary findings*: (1) Even several of the Northern Tier CEE countries have not yet achieved OECD norms and are not appreciably moving towards those standards. Drawing from the indicators of *Table 4*, we find that five of the Northern Tier CEE countries are either "there" (i.e., OECD norms) or "getting there." The three exceptions are the Czech Republic, Slovakia, and Poland. When one expands the analysis to include youth and long-term unemployment (*Table 5*), one finds an even split among the Northern Tier CEE countries on the summary assessment; that is, half are there or getting there, half (including three mentioned above and Estonia) are not.

(2) The Southern Tier CEE countries perform worse. Of the seven countries, only Bulgaria and Romania may qualify as countries that are either OECD comparable (Romania) or moving towards the OECD thresholds (Bulgaria) on these measures. Romania has an employment rate of 66% and an unemployment rate of 8%. Bulgaria has an employment rate of 61% and a relatively high unemployment rate of 12%, though down from a peak of 19.4% in 2001.

(3) Data are less complete in the case of Eurasia and no doubt less accurate. With that caveat, the available data do suggest that more Eurasian countries are closer to the OECD thresholds (or moving towards them) on these dimensions than those countries that are not. The former group includes Russia, Belarus, and the Kyrgyz Republic on the full set of employment and unemployment indicators, and Kazakhstan, Ukraine, Georgia, and Uzbekistan on the limited set (i.e. no data are available on youth and long-term unemployment for these latter countries). However, these conclusions about employment and unemployment data should not be treated as "stand alone" conclusions. As will be shown below, to a large extent, labor markets have been adjusting differently in Eurasia than in CEE, the former adjusting more in price changes (i.e., real wages), the latter more in quantity changes (i.e. employment and unemployment). Related to that is the observation that informal employment is also much more prevalent in Eurasia than in CEE.

*Tables 6-11* form the basis of the summary conclusions and data from *Tables 4* and *5*. *Table 6* shows trends in the employment rate, or the number of employed as a percent of the working age population, 15-64 years. It shows that employment rates vary widely in the transition region, lowest in several Southern Tier CEE countries, including Serbia and Montenegro (36% in 2001), Macedonia (42% in 2003), and Albania (49% in 2003), and highest in Kazakhstan (74%), followed by Azerbaijan and the Czech Republic (71%) and Estonia and Latvia (70%). The latest data available (for 2003) show employment rates

continuing to fall in a number of countries, ranging from Eurasian countries with high employment rates (Azerbaijan and Belarus) to Southern Tier CEE countries with low employment rates (Albania and Macedonia) to a Northern Tier CEE country, Poland.

*Table 7* shows the available data on unemployment rates estimated by labor force surveys. *Figures 1-5* attempt to differentiate those transition countries where unemployment rates have been falling in the past several years (*Figures 1* and *2*) vs. those countries where unemployment rates have been rising (*Figures 3-5*). Overall, these data show very wide ranging results, both in terms of the magnitude of unemployment rates and trends over time. There is no clear differentiation between sub-regions. Nine transition countries have been experiencing falling unemployment rates and eight countries still experiencing rising unemployment rates. Available data are insufficient to permit an assessment of change over time in the remaining countries. Countries with unemployment rates falling into the single digit range include Estonia, Kazakhstan, Ukraine, and Russia. Countries with low (i.e. single digit) but rising unemployment rates include Moldova, the Czech Republic and Romania. Poland and Slovakia are two Northern Tier CEE countries with very high and rising unemployment rates (closer to 20%). Macedonia and Armenia have the highest unemployment rates (above 30%), and these rates have been rising.

In general, most transition countries compare very unfavorably to advanced economy unemployment rate trends. Unemployment rates in Western Europe (the EU-15) have fallen from around 10% in the mid 1990s to 7% on average in 2004 and early 2005. Of all the transition countries for which reliable and recent data exist, only Slovenia and Hungary have unemployment rates as low as the EU-15 average. Unemployment rates in the U.S. have ranged from 4-6% since 1990.

A key consideration is to what extent labor markets are adjusting differently in different regions within countries; to what extent regional disparities exist in this dimension, and are they increasing or decreasing. We draw from three sources (EBRD 2003, Huber 2006, and Rutkowski 2006) and two measures of disparity in domestic regional unemployment rates (standard deviation and coefficient of variation) (*Tables 8-10*). Data are limited to eleven transition countries in addition to France, Spain, and the U.S. The only Eurasian country in the sample is Russia. We tried to make two bottom line determinations from the data series: (1) is there evidence of growing or declining regional disparities in unemployment rates?; and (2) how do the level of regional disparities compare with the three OECD comparator countries? As summarized in *Table 10*, more often than not, the data series showed mixed or unclear results, generally between the results from the two statistical techniques. Only three countries showed a clear trend of increasing disparities in regional unemployment rates: the Czech Republic, Russia, and Ukraine. In only one country, Slovakia, was there consistent evidence of disparity levels being higher than the OECD comparators. In only three countries, Poland, Romania, and Lithuania, was there consistent evidence of disparity levels being within range of the three comparison countries in the West.

*Table 11* provides youth unemployment figures, that is, the unemployment rates of 15-24 year old persons as a percent of the youth labor force. Three primary observations emerge. One, youth unemployment rates in the transition region are high by various standards. In all countries for which data are available with the exception of Belarus and the Kyrgyz Republic, youth unemployment rates are double digit and notably higher than national averages. On average, youth unemployment rates are 2.2 times higher than national averages in the transition. This is also very close to the order of magnitude in Western Europe, though a key difference is that the youth unemployment rates in CEE and Eurasia are much higher in absolute terms. Drawing from data as far back as 2001, youth unemployment rates have been 30% or greater in Bosnia-Herzegovina, Serbia, Macedonia, Poland, Slovakia, Georgia and (female youth only) in Estonia. Youth unemployment rates are highest relative to national averages among females in Serbia (3.9 ratio in 2002), Estonia (3.3 in 2003), and Russia (2.9 in 2001), and among males in Serbia (3.2 ratio in 2002), Romania (3.0 in 2004), the Czech Republic (2.8 in 2004), and Bosnia-Herzegovina (greater than 3.0 ratio in 2002-03 both genders combined).[5]

Two, there is no general trend when comparing female youth unemployment rates with male youth unemployment rates. In roughly half the countries, female youth unemployment rates are less than male youth unemployment rates.

Three, as with national unemployment rates, country variation as regards trends over time in youth unemployment rates is significant. Of the ten countries for which data are available, four countries had youth unemployment rates higher in 2003-04 than in 1995 (Poland, Slovakia, Estonia, and the Czech Republic), four had rates lower in 2003-04 relative to 1995 (Bulgaria, Lithuania, Latvia, and Slovenia), and two had mixed results between the two sexes (Romania and Hungary).

*Table 12* and *Figure 6* present data on long-term unemployment rates. One is considered long-term unemployed if one is out of work (yet still in the labor force; i.e., still looking for work) for at least one year. Long-term unemployment in the region is very high and may still be increasing in a number of countries. In fourteen of nineteen countries for which data are available, roughly fifty percent or more of the unemployed have been unemployed for a year or more (at least through the early 2000s, latest data available). Nine of eighteen transition countries have had a notable increase in long-term unemployment as a percent of total unemployed since 1995; only five have had a clear decrease. Long term unemployment is also very high in some countries in Western Europe, though not as high. During 2002-2004, it was 49% in Germany, 38% in France, 34% in Spain, 21% in UK, and 19% in Sweden. In Japan, it was 27% in 2000-01; in the U.S., only 6%.

[5] The youth unemployment data for Bosnia-Herzegovina and Serbia come from World Bank country-specific reports. The data for Bosnia-Herzegovina are provided in a somewhat different way than the UNECE data shown in *Table 11*. Specifically, youth unemployment rates in Bosnia-Herzegovina are calculated separately for youth aged 15-18 (which in 2002 was 59% of the labor force of that age) and youth aged 19-24 (which in 2002 was 43%). In addition, self reported unemployment rates are cited; in 2003, they were 73% for youth aged 15-18 and 52% for youth aged 19-24. World Bank, Bosnia-Herzegovina (2005).

2. Wages, Employment, and Economic Growth

In broad terms, as in any market in a market economy, labor markets can adjust in one of two ways or a combination of the two, through changes in prices and/or changes in quantity. The price of labor is measured primarily by real wages; the quantity of labor is measured primarily by employment rates. Hence, an overall look at labor market adjustments in the transition region needs to include both. This is the focus in this section. We look at how and how much change has occurred in both dimensions, how they relate to each other, and how they relate to economic growth (or how responsive the labor market adjustments are to economic growth).

*Figures 7-9* provide a starting point for the analysis; they show trends since the transition began in economic output, real wages, and employment for the three transition sub-regions. The differences in trends between the CEE countries (both Northern Tier and Southern Tier CEE) and Eurasia are striking. In the CEE countries, labor market adjustments have been significant in terms of both price (real wages) and quantity (employment). In contrast, the lion's share of labor market adjustments in Eurasia has been through the price mechanism, through real wages. There has been very little change in formal employment levels in Eurasia, all the more extraordinary given the tremendous changes in economic output. *Appendix 1* shows the trends in real wages, employment and GDP for each of the transition countries.

As shown in *Table 13*, real wages have been increasing in recent years in all the transition countries. Most transition countries had real wages reach a minimum in the early or mid 1990s; by 1999, all had real wages recovering from a fall. Still the level of real wages in 2003 (most recent data available) relative to 1989 levels varies greatly across the countries. Moreover, most countries as of 2003 have still not attained pre-transition real wage levels. In the nineteen transition countries for which data are available from 1989 to 2003, only five countries had real wages in 2003 which equaled or exceeded 1989 levels: the Czech Republic; Poland; and Hungary in the Northern Tier CEE; and Georgia and Azerbaijan in Eurasia. Most recent real wages relative to 1989 wages are lowest far and away in Tajikistan (28% in 2003) and Uzbekistan (29% in 2002); they also remain very low in Armenia (54%), Bulgaria (55%), and Macedonia (56%).

*Table 14* and *Figures 10-12* provide a closer look at the inter-relationships between real wages, employment, and economic growth. We look at the data in three ways. First, we calculated the total sum of the labor market changes since 1990; that is; the sum of the average annual changes in real wages and employment levels in absolute terms. The results are shown in the first column of *Table 13* and in *Figure 10*. Overall, the Eurasian countries have experienced much greater changes in the labor markets during the transition than the CEE countries. By this measure, the Eurasian countries have experienced more than twice the changes than the Northern Tier CEE countries. The

low-income Eurasian countries have experienced the most changes, particularly Tajikistan, Uzbekistan, and the three Caucasus countries. Among the CEE countries, Lithuania and Albania have experienced the greatest changes. These findings are broadly consistent with the scope of changes in economic output across the transition region since the collapse of communism; that is, where economic output collapsed the most and often subsequently recovered the most, one finds parallels with the scope of change in the labor markets.

Second, we calculated how the total labor market change has been distributed between the price and quantity adjustments (*Figure 11* and columns 2 and 3 of *Table 14*). This is an attempt to more rigorously quantify the relative changes in these two dimensions. As expected we find very different results according to sub-regions. In Eurasia, 88% of the labor market adjustments occurred in the price dimension, and only 12% in quantity changes. The distribution in CEE was closer to 75% in real wages and 25% in employment. The extremes are found in Azerbaijan and Tajikistan at one end (where 95% or more of the total changes occurred via real wages) and Macedonia at the other end (where almost 40% of the total changes occurred in employment).

Third, we calculated the responsiveness of these labor market changes to economic growth (*Figure 12* and columns 4 and 5 of *Table 14*). This is comparable to the concept of elasticity of demand. For each country, from the start of when economic growth resumed, we calculated the average annual change in wages relative to that of GDP, and did the same for employment relative to GDP. A number of findings emerge. First, real wages have been much more responsive to economic growth than employment, particularly in Eurasia and the Northern Tier CEE. Second, in all but one country, real wages have increased in response to economic growth. Bulgaria is the exception. Third, and in striking contrast to the wages elasticity of growth, one half of the transition countries actually experienced declining employment levels on average during economic growth years. This adds a new dimension to the concept of "jobless growth." In other words, to date, economic growth has been accompanied by contracting employment in half of the transition countries. The most significant drops in employment relative to economic growth occurred in Moldova followed by Lithuania and Armenia.

### *3. Structural changes, types of employment, and wage inequality*

One of the most fundamental structural changes in the transition of the labor markets has been the shift from public sector employment to private sector employment (*Table 15*). Overall, as with private sector share of GDP, there has been very significant change in this dimension. Roughly 80% of employment in the transition region in 1990 was public sector employment. By the early 2001, it was closer to 30%. Most change has occurred in the Northern Tier CEE; the least change in Eurasia.

Another key structural change to monitor is the shift in employment in the primary economic sectors, in agriculture, industry, and services. In general, the transition in the labor market should see a shift out of employment in industry and agriculture and into

services. We capture these trends by showing the sectoral share of employment in agriculture and services in *Tables 16* and *17*, and provide a summary assessment in *Table 18*. We find that all the Northern Tier CEE countries either have sectoral shares comparable to OECD or EU-15 levels or are approaching those shares. In contrast, most of the Southern Tier CEE countries are neither "there" or "getting there"; only Croatia and Serbia and Montenegro. More than one-half of Eurasian countries are not OECD comparable and/or meaningfully approaching those norms: Russia, Moldova, Belarus, and Kazakhstan, yes; the Caucasus and most of the Central Asian Republics, no.

Perhaps the most challenging aspects of the labor markets to measure concern the informal sector. *Table 19* pulls together the estimates of informal sector employment from various sources. The primary source is the work from Friedrich Schneider, though this is supplemented with World Bank country specific studies as well as a study by Yang-Ro Yoon et. al. on informal sector employment in the CIS-7 or the poorest Eurasian economies. With the exception of the study by Yoon et. al., it's not clear how these estimates are made. With that caveat in mind, one finds some consistency in the numbers from different sources, but also three significant discrepancies, in the cases of the Kyrgyz Republic, Ukraine, and Azerbaijan.

Overall, these data suggest that informal sector employment as a percent of total employment is lowest in the transition region in the Northern Tier CEE countries (22% on average) followed by the Southern Tier CEE (31%) and then Eurasia (36-45%). It is estimated that informal employment is 17% of total employment in the OECD countries.

*Table 20* compares these sub-regional averages in informal sector employment with estimates of informal sector output. The relative orders of magnitude are comparable. That is, the Northern Tier CEE has the smallest informal economy in the transition region whether measured by employment or GDP followed by the Southern Tier CEE and then Eurasia. OECD's informal economy is much smaller still on both dimensions (and one-half the Northern Tier CEE in terms of informal sector output). Developing country averages in informal sector output are comparable to CEE levels. It is estimated that the Asian developing countries have informal economic output comparable in magnitude to that found in the Northern Tier CEE countries (roughly 30% of output); informal output in the African and Latin America and the Caribbean countries is slightly higher than that found in the Southern Tier CEE (43% vs. 40%). Informal sector output as a share of GDP is highest in Eurasia (51%).[6]

Estimates of the magnitude of self-employment come from two sources: from the UNECE over two different time periods; and from Eurostat as reported in the World

[6] The World Bank studies of Ukraine and Serbia disaggregate informal sector employment in these countries. In Ukraine, 16% of employment is informal, though the percentage of informal employment varies widely by sector; it is much higher in construction (39%), hotels and restaurants (33%) and agriculture (32%), and much lower elsewhere including in industry (8%), transport and, communications, finance, and real estate (5%). In Serbia, the informal employment is disaggregated by region: 31% of total employment for all of Serbia, vs. 21% in Belgrade, 36% in Central Serbia and 28% in Vojvodina.

Bank's *Enhancing Job Opportunities* (*Tables 21* and *22*). Many gaps and a number of apparent inconsistencies exist. The Eurostat estimates are uniformly higher than the UNECE estimates and notably higher in a number of countries.

First, the Eurostat numbers (all in 2002): self-employment is highest in Eurasia, 37% of total employment in 2002 on average (of nine countries). However, the range in estimates across the Eurasian countries is very large, from less than 10% in Belarus and Russia to at least 50% in the each of the Caucasus, in Armenia, Georgia, and Azerbaijan, as well as in the Kyrgyz Republic. According to the Eurostat data, self-employment is about one-half the Eurasia level in the Northern Tier CEE (at 17% of total employment). The range in estimates across the Northern Tier CEE countries is also large, though not as large as in Eurasia, from under 10% in Slovakia and Estonia to roughly 30% in Poland and Lithuania. Eurostat reports self-employment data for only one Southern Tier CEE, Romania at 40%.

The two UNECE series give us a time series from as early as 1993 to as recent as 2005 in some countries. According to the UNECE estimates, the Northern Tier CEE average is 9%, ranging from 6% (Estonia) to 17% (Poland). The Southern Tier CEE sample consists of four countries: 14% on average, ranging from 9% in Bulgaria and Macedonia to 20% in Romania. Self-employment is highest in Eurasia: 17% on average (for seven countries), ranging from 1% in Belarus and 5% in Russia to 33% in Moldova.

What can be said about trends over time in these self-employment data? There are only nine countries for which data exist from which to make meaningful observations about time trends (i.e., where there are more than three years of observations from the same data source). Four countries have witnessed declining self-employment as a percent of total employment from 2001 to 2005: Romania from 24% to 20%; and Poland, from 19% to 17%; Bulgaria, from 10% to 8.6%; and Slovenia, 8.1% to 6.9%. Two countries have witnessed increases during this time period: Slovakia from 6% to 9%; and Croatia, from14% to 18%. Two countries have witnessed no notable change from 2001-2005: Latvia, and the Czech Republic.

*Table 22* restates the UNECE figures of self-employment for 1993 vs. the most recent figures (anywhere from 2001 to 2005), and disaggregates them by gender. Self-employment is generally greater among men than women. The proportion of male self-employment is at least two times the proportion of the female self-employed in Macedonia, Romania, the Czech Republic, Slovenia, Estonia, and Slovakia. Moreover, in a sizable majority of countries (in nine out of fifteen countries for which data are available), the ratio of male to female self-employment has increased since 1993.

In contrast to self-employment trends, employment in small and medium enterprises (SMEs) is much greater in the CEE, particularly in the Northern Tier CEE, than in Eurasia (*Table 23*). SME employment (as % of total employment) in 2001 in CEE (at more than 50%) is more than twice that found in Eurasia (at 25%). There are some outliers: in Eurasia, the Kyrgyz Republic at 59%; Turkmenistan at 60% and Uzbekistan at 50%. The Eurasian average minus these three outliers is 15%.

***Wage inequality***. Three measures of wage inequality are compared: wage (or earnings) inequality (gini coefficient, UNICEF), the wage ratio of the ninth population decile to the first (or bottom) population decile (World Bank), and the minimum wage to average wage ratio (World Bank) (*Table 24*). We calculated the average rank of the inequality measures to decrease the variability of the results. We were able to draw observations on levels and trends over time in seventeen countries for which at least two inequality measures were available.

***Findings.*** Four of the five most unequal countries are Eurasian. Azerbaijan has the most unequal wage distribution of all the seventeen countries, followed by Russia, Armenia, Estonia, and Moldova. At the other extreme, Macedonia has the most equal wage distribution, followed by all the Northern Tier CEE countries, except Estonia. Estonia, hence, is very much the Northern Tier CEE outlier on this dimension.

The World Bank estimates that wages of the ninth population decile in the OECD countries are roughly 3.3 times greater than those of the first decile. Of the sixteen transition countries where these data are available, only the Czech Republic has a lower ratio or a more equal wage distribution than the OECD average. Wage inequality in Slovenia is OECD comparable. In contrast, wage inequality in Azerbaijan by this measure is more than four times greater than the OECD norm; such inequality in Russia is almost as high.

UNICEF provides time series trends on wage inequality. From that series, we tried to identify whether wage inequality has been increasing or decreasing, whether a maximum inequality level has been reached, and when.

Roughly one-half of the sixteen countries for which time series are available have recently been experiencing a fall in wage inequality. There does not seem to be a discernable pattern by level of inequality: some of the most unequal economies have been experiencing a decline (Moldova, the Kyrgyz Republic, and possibly Russia); but so too some of the most equal (Macedonia and Slovenia). However, a much smaller proportion of Northern Tier CEE countries have been witnessing a decline in wage inequality than have the Eurasian for which data are available and trends are clear: two out of seven Northern Tier CEE countries vs. five out of seven in Eurasia.[7]

[7] The World Bank in its *World Development Indicators* provides gini coefficient estimates (and decile estimates) worldwide for income inequality. This is a broader concept than wage inequality. It is nevertheless instructive to compare income inequality in the transition region with such inequality worldwide. One finds inequality estimates in the transition region to be comparable relative to OECD norms, but much lower than in some other parts of the world, in Sub-Saharan Africa and Latin America and Caribbean in particular. The OECD gini coefficient average is 33 (out of a possible 100), but ranges widely from the most equal economies worldwide including Sweden (25), Denmark (25), and Norway (26), to much higher inequality in Mexico (50) and the U.S. (41). The E&E average of 32 (for 25 countries) is very close to the OECD average. In contrast, there are over 20 countries, most all in Latin America and the Caribbean or Sub-Saharan Africa with income inequalities much higher, including among the highest, Namibia at 74 (in 1993), Botswana, Lesotho, and Sierra Leone at 63, Central African Republic, Swaziland, Bolivia, Colombia , Brazil, and Paraguay, ranging from 58 to 61.

### *4. Education, labor skills and constraints*

In this section, we attempt to analyze available data regarding key skills of the labor force and the extent to which these skills may impede the transition. Relevant data on the education and skills of the workforce are limited, though expanding. Most education data are "quantity" indicators, enrollment numbers at different levels of education and expenditures. Moreover, traditional "quality" of education indicators are generally not too revealing for the transition region. The most widely available quality or output indicator of education is the literacy rate. Literacy rates as traditionally defined are uniformly high in the transition region by world standards. The World Bank reports that adult literacy rates in the transition region averaged 99% for males and females alike in 2002.[8] To compare, literacy rates in Latin America and the Caribbean are 91% for adult males and 90% for adult females; in South Asia, 72% and 46%, respectively.

"Functional" literacy, or how well students and adults can function in a market economy given their formal and informal education, may be a more relevant measure of the quality of education in the transition region. The conventional wisdom has been that educational aspects of human capital in the former communist countries were largely an asset going into the transition. It has also been widely perceived that the type of education in the communist countries (with emphases on memorization at the expense of analytical and critical thinking, and perhaps premature specialization if not overspecialization) may be ill-suited for the needs of a market economy.

We've identified three surveys to qualify as meaningful cross-country measures for functional literacy: PISA; PIRLS; and TIMSS.[9] Many data gaps exist; only sixteen transition countries have participated in at least one of the three.[10] Perhaps not surprisingly, most of the data gaps exist in Eurasia; only three countries of twelve Eurasian countries have so far participated. For each survey, we compare the country score with the OECD norm, and then take the average for each of the sixteen countries across the three surveys, data permitting. *Figure 13* shows the comparability in results across the three surveys as well as the data gaps (in seven of the sixteen countries, survey data are not available for one or two surveys). Most of the country results from the different surveys show little to modest range between them. Greatest variation exists in Bulgaria and Romania.

*Table 25* provides the summary results. All eight Northern Tier CEE countries have functional literacy rates comparable to OECD rates. Among this group, the Czech Republic scores the highest; Slovenia the lowest. In stark contrast, functional literacy in the Southern Tier CEE countries is much lower, though the cross-country range is large.

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[8] World Bank, *World Development Indicators 2006* (2006).

[9] The Program for International Student Assessment (PISA); the Progress in International Reading Literacy Study (PIRLS): and the Trends in International Mathematics and Sciences Study (TIMSS). For elaboration of these surveys and an analysis of them, see Murphy, Petric, and Sprout, *Education in Eastern Europe and Eurasia*, USAID Working Paper Series on the Transition Countries, Number 2 (October 2005).

[10] Additional countries are scheduled to participate in 2006 and 2007; by 2007, as many as twenty-five transition countries will have participated in at least one survey; i.e., all Turkmenistan and Tajikistan.

Of the five countries for which data are available, these rates are far and away the lowest in Albania (74% of OECD levels) and Macedonia (82% of OECD norms); higher in Serbia & Montenegro (88%) and Romania (91%), highest in the Southern Tier CEE in Bulgaria (94%). In the three Eurasia countries for which data are available, these scores range from 90% in Armenia to 91% in Moldova to 97% in Russia. Armenia and Moldova scores are roughly comparable to Southern Tier CEE standards; Russia's scores are comparable to Northern Tier CEE.

As shown in *Figure 14*, tertiary enrollment rates and functional literacy rates generally "move together", albeit in a non-linear fashion (i.e., at some level of tertiary enrollment, around 50%, further increases in enrollment is generally not accompanied by increasing functional literacy). Hence, tertiary enrollments would seem to be a rough proxy for the quality of education (at least in countries with lower levels of human capital).

*Table 26* and *Figures 15-18* show the data on tertiary enrollments over time. Most of the transition countries have been witnessing rising tertiary enrollments (all but Turkmenistan, Uzbekistan, Azerbaijan, and Tajikistan) and virtually all of these countries which have been experiencing rising enrollments (all but Armenia) have been experiencing these increases since the early years of the transition (anywhere from 1989 to 1994). However, there remains a very large range in tertiary enrollment rates, even within the three sub-regions. In the Northern Tier CEE, these enrollments range from 36% in Slovakia and 44% in the Czech Republic to 80% in Slovenia. In the Southern Tier CEE, the range is from 19% in Albania to 34-36% in Croatia, Bulgaria, and Romania. In Eurasia, the range is from 8% in Uzbekistan, 13-14% in Azerbaijan and Tajikistan, to 45-47% in Ukraine, Belarus, Kazakhstan, and Russia. On average, tertiary enrollments in the Northern Tier CEE countries is two times the enrollment rates in the Southern Tier CEE and Eurasia (58% vs. 29% and 29% in 2004).

The World Bank provides data on research and development persons (per million inhabitants) which gives us one measure of the size of the skilled labor force across the countries and over time (*Table 27*). The range of the number of research and development (R&D) persons as a percent of the population is very large worldwide, from 2,607 per million in the EMU, to 663 in East Asia and the Pacific, to 119 in South Asia, and likely lower still in Sub-Saharan Africa (where no sufficient data exist to provide a regional average) . There are 4,484 R&D persons per million in the United States. The highest proportion worldwide is in Finland at 6,000; among the lowest in countries in Burkina Faso (17), Uganda (24) and Congo (30).

The number of R&D persons per million inhabitants in the Northern Tier CEE is 1,908, ranging from under 1,500 in Hungary and Latvia, to slightly over 2,500 per million in Slovenia and Estonia. Hence, even the highest country estimates in the Northern Tier CEE fall short of the EMU average (of 2,607). The Southern Tier CEE average (of four countries) in R&D persons at 1,142 is much below the Northern Tier CEE average. The Southern Tier CEE range is from roughly 1,000 in Serbia and Montenegro and Romania, to 1,300 in Croatia and Bulgaria. The Eurasian average of nine countries of R&D persons at 1,505 per million falls somewhere in between the Northern Tier and Southern

Tier averages. The Eurasian average ranges widely, from 172 in Moldova, 406 in the Kyrgyz Republic and 629 in Kazakhstan, to 3,319 in Russia (the highest proportion of all the transition countries).

Out of a sample of nineteen transition countries, only the eight Northern Tier CEE countries and Armenia have witnessed an increase in R&D persons per million inhabitants from the early transition years. All four Southern Tier CEE countries witnessed a decrease (Romania, Bulgaria, and Croatia by about 30%; Serbia and Montenegro by 6%). Six Eurasian countries also witnessed a decrease: Azerbaijan and Moldova by roughly 50%; Belarus, Ukraine, and the Kyrgyz Republic ranging from around 20-30%; and Russia by 7%.

We also draw from data regarding perceptions from businesses on major business constraints. To what extent do business managers view labor skills of their employers as a major constraint to doing business? The answers range widely across the countries (*Tables 28* and *29*). On average, however, labor constraints are viewed relatively more severe in the Northern Tier CEE countries than elsewhere in the transition: 12% of Northern Tier CEE businesses view labor skills to be a major constraint to doing business vs. 9% in the Southern Tier CEE and 10% in Eurasia. Labor skills as a major constraint is perceived to be highest in Ukraine (20% of businesses in Ukraine deemed it as such), the Kyrgyz Republic (19%), Latvia (18%), and Lithuania and Poland (both 15%). It is lowest in Armenia and Azerbaijan (2%), Bosnia-Herzegovina (4%), Uzbekistan, Tajikistan, and Slovenia (5%).

A key part in explaining the result that labor skills tend to be perceived to be more severe in the more advanced transition countries likely hinges on the fact that the assessment is relative to other perceived constraints (including policy uncertainties, government regulations and tax administration, physical infrastructure, finance, courts, crime and corruption). Moreover, in many countries that are further behind the transition than are the Northern Tier CEE, other constraints are likely more pressing. Tax rates, tax administration, policy uncertainty, finance, and corruption all tend to be perceived to be the most problematic of the eleven cited business challenges.

With that caveat in mind, we compare the scores of labor skills as a major constraint with tertiary enrollments (*Figures 19-20*) and with functional literacy (*Figures 21-22*). At least in this two dimensional display (i.e., not controlling for possible exogenous influences), it appears that the relationship between tertiary enrollment and labor skills and functional literacy and labor skills in the transition region is fundamentally at odds with the patterns observed outside the transition region. Specifically, as one might expect, as tertiary enrollment increases and functional literacy increases, labor skills as a major constraint decreases in countries outside the transition region; i.e. inverse relationships are observed (*Figures 19* and *21*). In striking contrast, if anything, it looks as if tertiary enrollments and functional literacy are positively related to labor skill constraints in the transition region (*Figures 20* and *22*).

***(5) Labor market reforms***

We look at three data sets to assess the extent to which government policy may be part of the solution vs. part of the problem vis-à-vis labor markets: (1) from the World Bank business surveys (and perceptions that labor market regulations are a major constraint to business); (2) labor market rigidities as defined and measured by the World Bank *Doing Business* data; and (3) tax wedges or the burden of taxes on labor.

*Tables 28* and *29* show the data regarding business perceptions of labor market regulation constraints. Overall, businesses in the transition region view labor market regulations to be even less of a constraint than labor market skills. Only seven percent of businesses across the region view labor market regulations as a major constraint. This translates into the lowest constraint out of a possible eleven constraints. As with labor market skills, more businesses in the Northern Tier CEE view labor market regulations as a major constraint (11%) than do businesses in Eurasia (4%) or the Southern Tier CEE (8%).

*Table 30* summarizes the measures of labor market rigidities from the World Bank's *Doing Business* analysis. Three indices are created (difficulty in hiring, difficulty in firing, and labor market rigidities or constraints while employed) and assessed on a 0 to 100 scale, where the lower the number, the fewer the rigidities or constraints. An average of the indices shows labor market rigidities are highest worldwide in Sub-Saharan Africa, the EU-15, and the transition region. Within the transition region, these rigidities are higher in the CEE countries than they are in Eurasia. The greatest labor market rigidities in the transition region tend to be focused on the rigidity of hours employed (and the constraints towards hiring part-time workers and time-limited contractors).

Taxes on labor include the taxes paid by employers (payroll taxes) and the taxes paid by employees (income taxes). Together, these two taxes as a percent of gross wage are referred to as the tax wedge. The higher the tax wedge, the greater the likelihood that the demand for labor may fall (due to high costs incurred by the employers) and that the supply for labor may also fall (due to high costs incurred by the employees).

*Table 31* shows the range of tax wedges in the transition region. The range is very significant, from under 30% in Armenia, Kazakhstan, and Tajikistan, to close to 50% or more in Montenegro, the Czech Republic, Romania, and Hungary. The tax wedge is much higher in the CEE countries than it is in Eurasia. Finally, *Table 32* shows one aspect of the tax wedge or burden, payroll taxes as a percent of labor costs (albeit for an earlier year). These data include OECD countries for comparison and show that the tax burden is generally higher in the transition region than in (other) OECD countries.

**TABLE 1. EMPLOYMENT TO POPULATION RATIO IN THE WORLD**

| | 1993 | 1995 | 2003 | 2005 | % Change 1993-2005 |
|---|---|---|---|---|---|
| **WORLD** | 63.3 | 62.8 | 62.5 | 61.4 | -3.0 |
| **DEVELOPED ECONOMIES** | 55.4 | 55.8 | 56.1 | 56.4 | 1.8 |
| **TRANSITION ECONOMIES** | 58.8 | 55.5 | 53.5 | 52.1 | -11.4 |
| **DEVELOPING ECONOMIES** | | | | | |
| LATIN AMERICA & CARIBBEAN | 59.3 | 59.2 | 59.3 | 60.9 | 2.7 |
| EAST ASIA | 78.1 | 75.2 | 76.6 | 71.7 | -8.2 |
| SOUTH-EAST ASIA | 68.0 | 67.2 | 67.1 | 65.8 | -3.2 |
| SOUTH ASIA | 57.0 | 58.9 | 57.0 | 57.2 | 0.4 |
| MIDDLE EAST AND NORTH AFRICA | 45.4 | 44.2 | 46.4 | 46.4 | 2.2 |
| SUB-SAHARAN AFRICA | 65.6 | 69.0 | 66.0 | 66.7 | 1.7 |

ILO, *Global Employment Trends* (January 2006). Transition economies include Southern Tier CEE and Eurasia; Northern Tier CEE countries are part of the Developed Economies.

| TABLE 2. SECTORAL SHARES IN EMPLOYMENT | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AGRICULTURE | | | | INDUSTRY | | | | SERVICE | | | |
| | 1995 | 2005 | %Change | Female % Total | 1995 | 2005 | %Change | Female % Total | 1995 | 2005 | %Change | Female % Total |
| **WORLD** | 44 | 40 | -10 | 40 | 21 | 21 | 0 | 31 | 35 | 39 | 13 | 45 |
| **DEVELOPED ECONOMIES** | 5 | 4 | -27 | 34 | 29 | 25 | -14 | 23 | 66 | 71 | 8 | 53 |
| **TRANSITION ECONOMIES** | 28 | 23 | -19 | 45 | 28 | 27 | 0 | 33 | 45 | 50 | 12 | 53 |
| **DEVELOPING ECONOMIES** | | | | | | | | | | | | |
| EAST ASIA | 54 | 50 | -9 | 47 | 26 | 26 | 1 | 40 | 20 | 24 | 24 | 44 |
| SOUTH-EAST ASIA AND THE PACIFIC | 55 | 43 | -22 | 39 | 15 | 21 | 34 | 36 | 29 | 36 | 23 | 48 |
| SOUTH ASIA | 64 | 61 | -5 | 33 | 13 | 14 | 5 | 26 | 23 | 25 | 9 | 24 |
| LATIN AMERICA AND THE CARIBBEAN | 23 | 17 | -27 | 19 | 20 | 20 | 0 | 25 | 56 | 63 | 11 | 50 |
| MIDDLE EAST AND NORTH AFRICA | 31 | 26 | -15 | 25 | 20 | 25 | 23 | 18 | 49 | 49 | 0 | 27 |
| SUB-SAHARAN AFRICA | 70 | 64 | -9 | 44 | 8 | 9 | 9 | 26 | 22 | 28 | 27 | 46 |

ILO, *Global Employment Trends(January 2006).* Transition economies include Southern Tier CEE and Eurasia; Developed economies include Northern Tier CEE.

| TABLE 3: WORKING POOR* | | | | |
|---|---|---|---|---|
| | 1995 | 2000 | 2005 | 1995-05 Difference |
| **WORLD** | 56 | 53 | 48 | -8 |
| **TRANSITION ECONOMIES** | 32 | 35 | 13 | -19 |
| **DEVELOPING ECONOMIES** | | | | |
| EAST ASIA | 64 | 57 | 47 | -17 |
| SOUTH-EAST ASIA AND THE PACIFIC | 67 | 62 | 58 | -9 |
| SOUTH ASIA | 91 | 89 | 87 | -4 |
| LATIN AMERICA AND THE CARIBBEAN | 36 | 34 | 32 | -4 |
| MIDDLE EAST AND NORTH AFRICA | 41 | 40 | 36 | -5 |
| SUB-SAHARAN AFRICA | 87 | 88 | 87 | 0 |

ILO, *Global Employment Trends* (January 2006). Transition economies include Southern Tier CEE and Eurasia;

Developed economies include Northern Tier CEE.

*Workers earning US$2 a day or less as % of total employed.

**TABLE 4. EMPLOYMENT AND UNEMPLOYMENT**

| | EMPLOYMENT RATE | | | UNEMPLOYMENT RATE | | | REGIONAL | SUMMARY |
|---|---|---|---|---|---|---|---|---|
| | | RECOVERING OR STABILIZ | | | FALLING OR STABILIZ | | DISPARITIES IN UNEMPLOYMENT | ASSESSMENT* |
| | 2003 | (min) | Year | 2005 | (max) | Year | DECREASING | |
| **NORTHERN TIER CEE** | | | | | | | | |
| SLOVENIA | 69 | yes | 1992 | 6.3 | yes | 1995 | unclear | yes |
| CZECH REPUBLIC | 71 | yes | 2000 | 7.9 | no | 1999 | no | no |
| SLOVAKIA | 56 | yes | 1999 | 16.4 | no | 2001 | unclear | no |
| LATVIA | 70 | yes | --- | 9 | yes | 1995 | unclear | yes |
| LITHUANIA | 67 | yes | 2001 | 8.3 | yes | 2001 | unclear | yes |
| ESTONIA | 70 | yes | 1999 | 7.9 | yes | 2000 | unclear | yes |
| HUNGARY | 61 | yes | 1996 | 7.2 | yes | 1995 | unclear | yes |
| POLAND | 58 | no | 2003 | 17.7 | yes | 2002 | unclear | no |
| **SOUTHERN TIER CEE** | | | | | | | | |
| MACEDONIA | 42 | yes | 1997 | 37.3 | no | 2004 | unclear | no |
| BULGARIA | 61 | yes | 2000 | 9.9 | yes | 2001 | unclear | yes (but) |
| ALBANIA | 49 | no | 2003 | 14.2 | --- | --- | --- | no |
| ROMANIA | 66 | no | 02-03 | 7.7 | no | 2000 | unclear | yes |
| CROATIA | 56 | yes | 1999 | 12.7 | yes | 2000 | --- | no |
| BOSNIA HERZEGOVINA | --- | --- | --- | 46.6 | --- | --- | --- | no |
| SERBIA & MONT. | 36 | yes | 2000 | 20.8 | no | 2003 | --- | no |
| **EURASIA** | | | | | | | | |
| RUSSIAN FEDERATION | 69 | yes | 1998 | 7.2 | yes | 1999 | no | yes (but) |
| MOLDOVA | 57 | no | 2003 | 7.3 | no | 2005 | --- | no |
| KAZAKHSTAN | 74 | yes | 1998 | 8.1 | yes | 2001 | --- | yes |
| AZERBAIJAN | 71 | no | 2003 | 1.4 | --- | --- | --- | maybe |
| UKRAINE | 68 | yes | 1999 | 7.2 | yes | 1999 | no | yes |
| BELARUS | 68 | no | 2003 | 1.5 | --- | --- | --- | yes |
| GEORGIA | 67 | no | 1993 | 12.6 | yes | 2001 | --- | yes |
| UZBEKISTAN | 64 | yes | 2001 | 6 | --- | --- | --- | yes |
| KYRGYZ REPUBLIC | 61 | no | 2003 | 3.3 | --- | --- | --- | maybe |
| ARMENIA | 55 | yes | 2001 | 7.6 | no | 2004 | --- | no |
| TAJIKISTAN | 52 | no | 2003 | 2.1 | --- | --- | --- | no |
| **EU15** | 65% | --- | --- | 7.9 | --- | --- | --- | --- |
| **OECD** | 65% | --- | --- | --- | --- | --- | --- | --- |
| **U.S.** | --- | --- | --- | 5.1 | --- | --- | --- | --- |

UNECE, *Statistical Division Database* (2006) and Trends in Europe and North America (2003).

"Yes" - at OECD standards or 'getting there'; "No" - not getting there in any meaningful way.

**TABLE 5. YOUTH AND LONG TERM UNEMPLOYMENT**

| | YOUTH UNEMPLOYMENT RATE | | | | | | LONG-TERM UNEMPLOYMENT | | | SUMMARY |
|---|---|---|---|---|---|---|---|---|---|---|
| | | DECREASING? | | | DECREASING? | | | DECREASING? | | ASSESSMENT* |
| | FEMALE | (MAX) | YEAR | MALE | (MAX) | YEAR | RATE | (MAX) | YEAR | |
| **NORTHERN TIER CEE** | | | | | | | | | | |
| SLOVENIA | 18.7 | no | 2003 | 15.8 | yes | 1995 | 47 | yes | 2000-01 | yes |
| CZECH REPUBLIC | 30.3 | no | 2004 | 26.0 | no | 2004 | 53 | no | 2002-04 | no |
| SLOVAKIA | 36.9 | yes | 2001 | 48.9 | yes | 2002 | 72 | no | 2002-04 | no |
| LATVIA | 21.3 | yes | 1995 | 16.3 | yes | 1995 | 46 | yes | 1996-98 | yes |
| LITHUANIA | 43.1 | maybe | 2003 | 34.2 | yes | 2001 | 53 | yes | 2000-01 | yes |
| ESTONIA | 32.5 | no | 2003 | 24.9 | no | 2004 | 53 | no | 2002-04 | no |
| HUNGARY | 22.1 | no | 1995 | 22.9 | no | 1995 | 45 | yes | 1996 | yes |
| POLAND | 44.8 | no | 2002 | 39.3 | no | 2002 | 58 | no | 2002-04 | no |
| **SOUTHERN TIER CEE** | | | | | | | | | | |
| MACEDONIA | 67.1 | --- | --- | 65.3 | --- | --- | 85 | no | --- | no |
| BULGARIA | 32.2 | yes | 1995 | 35.5 | yes | 2001 | 60 | no | --- | maybe |
| ALBANIA | --- | --- | --- | --- | --- | --- | 92 | no | 2000-01 | no |
| ROMANIA | 22.0 | yes | 1995 | 22.0 | no | 2002 | 56 | no | 2002-04 | maybe |
| CROATIA | 42.0 | no | 2003 | 37.5 | no | 2002 | 54 | no | --- | no |
| SERBIA | 43.0 | --- | --- | 35.0 | --- | --- | 72 | yes | 2000 | no |
| **EURASIA** | | | | | | | | | | |
| RUSSIAN FEDERATION | 23.1 | --- | --- | 21.0 | --- | --- | 39 | no | --- | yes |
| MOLDOVA | 13.9 | --- | --- | 18.3 | --- | --- | 45 | yes | --- | --- |
| KAZAKHSTAN | 16.8 | --- | --- | 13.7 | --- | --- | 39 | yes | --- | --- |
| AZERBAIJAN | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UKRAINE | 21.8 | --- | --- | 20.1 | --- | --- | 38 | yes | --- | --- |
| BELARUS | 7.9 | --- | --- | 4.2 | --- | --- | 17 | no | --- | yes |
| GEORGIA | 30.1 | --- | --- | 17.8 | --- | --- | 67 | yes | --- | --- |
| UZBEKISTAN | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| KYRGYZ REPUBLIC | 3.7 | --- | --- | 2.6 | --- | --- | 37 | no | --- | yes |
| ARMENIA | 53.8 | --- | --- | 64.2 | --- | --- | 78 | no | --- | --- |
| TAJIKISTAN | --- | --- | --- | --- | --- | --- | 25 | no | --- | --- |
| **EU15** | 15.5 | --- | --- | 14.8 | --- | --- | 35 | no | --- | --- |
| **OECD** | 12.7 | --- | 2002 | 13.5 | --- | 2002 | 32 | --- | --- | --- |
| **U.S.** | --- | --- | --- | --- | --- | --- | 13 | no | --- | --- |
| **MIDDLE EAST&NO. AFRIC/** | 24 | --- | --- | 20 | --- | --- | --- | --- | --- | --- |
| **LATIN AMERICA & CARIB.** | 23 | --- | --- | 15 | --- | --- | --- | --- | --- | --- |
| **SOUTH ASIA** | 12 | --- | --- | 10 | --- | --- | --- | --- | --- | --- |

UNECE, *Statistical Division Database* (2006) and Trends in Europe and North America (2003) and ILO.

"Yes" - at OECD standards or 'getting there'; "No" - not getting there in any meaningful way.

Drawing from indicators from Tables 4&5.

**TABLE 6. EMPLOYMENT RATE (NUMBER OF EMPLOYED AS % OF 15-59 POP.)**

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TURKMENISTAN | 78 | 74 | 74 | 73 | 73 | 72 | 72 | 72 | 73 | 73 | 79 | --- | 82 | --- | --- |
| KAZAKHSTAN | 83 | 81 | 80 | 78 | 71 | 68 | 69 | 69 | 70 | 67 | 67 | 68 | 73 | 72 | 74 |
| AZERBAIJAN | 69 | 87 | 87 | 86 | 85 | 82 | 80 | 80 | 80 | 79 | 78 | 76 | 75 | 73 | 71 |
| CZECH REPUBLIC | 87 | 86 | 77 | 75 | 76 | 76 | 76 | 75 | 74 | 73 | 71 | 71 | 71 | 71 | 71 |
| ESTONIA | 88 | 87 | 86 | 82 | 78 | 77 | 73 | 73 | 73 | 72 | 69 | 69 | 69 | 70 | --- |
| LATVIA | --- | --- | --- | --- | --- | --- | --- | 64 | 67 | 67 | 67 | 65 | 67 | 69 | 70 |
| SLOVENIA | 75 | 72 | 66 | 63 | 67 | 67 | 69 | 69 | 70 | 71 | 69 | 69 | 71 | 71 | 69 |
| RUSSIAN FEDERATION | 84 | 83 | 82 | 80 | 78 | 75 | 72 | 72 | 70 | 69 | 69 | 70 | 70 | 70 | 69 |
| UKRAINE | 83 | 82 | 80 | 78 | 76 | 73 | 77 | 77 | 77 | 75 | 66 | 67 | 67 | 68 | 68 |
| BELARUS | 84 | 84 | 82 | 80 | 79 | 76 | 72 | 71 | 71 | 72 | 72 | 71 | 70 | 69 | 68 |
| GEORGIA | 82 | 84 | 76 | 60 | 57 | 59 | 67 | 73 | 81 | 75 | 75 | 75 | 76 | 69 | 67 |
| LITHUANIA | 84 | 82 | 84 | 82 | 80 | 75 | 74 | 74 | 73 | 69 | 68 | 66 | 63 | 66 | 67 |
| ROMANIA | 77 | 77 | 77 | 75 | 72 | 78 | 79 | 78 | 78 | 77 | 76 | 76 | 75 | 66 | 66 |
| UZBEKISTAN | 72 | 74 | 75 | 74 | 72 | 71 | 70 | 69 | 69 | 68 | 67 | 65 | 64 | 64 | 64 |
| HUNGARY | 83 | 83 | 80 | 71 | 64 | 60 | 59 | 58 | 58 | 58 | 59 | 60 | 60 | 60 | 61 |
| BULGARIA | 82 | 78 | 68 | 63 | 63 | 63 | 64 | 64 | 62 | 62 | 60 | 58 | 59 | 60 | 61 |
| KYRGYZ REPUBLIC | 74 | 73 | 72 | 75 | 67 | 65 | 64 | 63 | 64 | 64 | 65 | 63 | 63 | 62 | 61 |
| POLAND | 75 | 71 | 67 | 65 | 63 | 63 | 64 | 65 | 66 | 65 | 64 | 62 | 60 | 59 | 58 |
| MOLDOVA | 81 | 80 | 80 | 79 | 65 | 65 | 64 | 63 | 68 | 73 | 66 | 66 | 65 | 64 | 57 |
| SLOVAKIA | 80 | 77 | 67 | 67 | 65 | 64 | 64 | 63 | 60 | 59 | 56 | 57 | 57 | 57 | 56 |
| CROATIA | --- | --- | --- | --- | --- | --- | --- | 56 | 56 | 56 | 53 | 58 | 54 | 54 | 56 |
| ARMENIA | 76 | 77 | 78 | 72 | 70 | 67 | 66 | 63 | 60 | 57 | 55 | 53 | 52 | 56 | 55 |
| TAJIKISTAN | 73 | 72 | 72 | 69 | 67 | 66 | 65 | 60 | 61 | 59 | 56 | 54 | 55 | 53 | 52 |
| ALBANIA | 75 | 74 | 74 | 60 | 57 | 62 | 60 | 58 | 57 | 55 | 54 | 56 | 50 | 50 | 49 |
| MACEDONIA | --- | --- | --- | --- | --- | --- | --- | 44 | 41 | 43 | 43 | 43 | 46 | 43 | 42 |
| SERBIA & MONT. | --- | --- | --- | --- | --- | --- | 44 | 44 | 42 | 42 | 35 | 36 | 36 | --- | --- |
| BOSNIA & HERZ. | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CEE & EURASIA*** | 79 | 79 | 77 | 73 | 70 | 69 | 68 | 66 | 66 | 65 | 63 | 63 | 63 | 63 | 62 |
| **NORTHERN TIER CEE** | 81 | 79 | 75 | 72 | 70 | 69 | 68 | 68 | 68 | 67 | 65 | 65 | 65 | 65 | 65 |
| **SOUTHERN TIER CEE** | --- | --- | --- | --- | --- | --- | --- | 57 | 56 | 56 | 54 | 55 | 53 | 55 | 52 |
| **EURASIA*** | 78 | 80 | 79 | 76 | 72 | 70 | 70 | 69 | 70 | 69 | 67 | 66 | 66 | 65 | 64 |

UNICEF, *TransMonee Database* (December 2005).

Country minimum is highlighted with boxes.

EU-15 employment rate in 2003 was 65% (World Bank, World Development Indicators (2005).

* Does not include Turkmenistan.

**TABLE 7. LABOR FORCE SURVEY UNEMPLOYMENT RATE (UNEMPLOYED AS A % OF LABOR FORCE)**

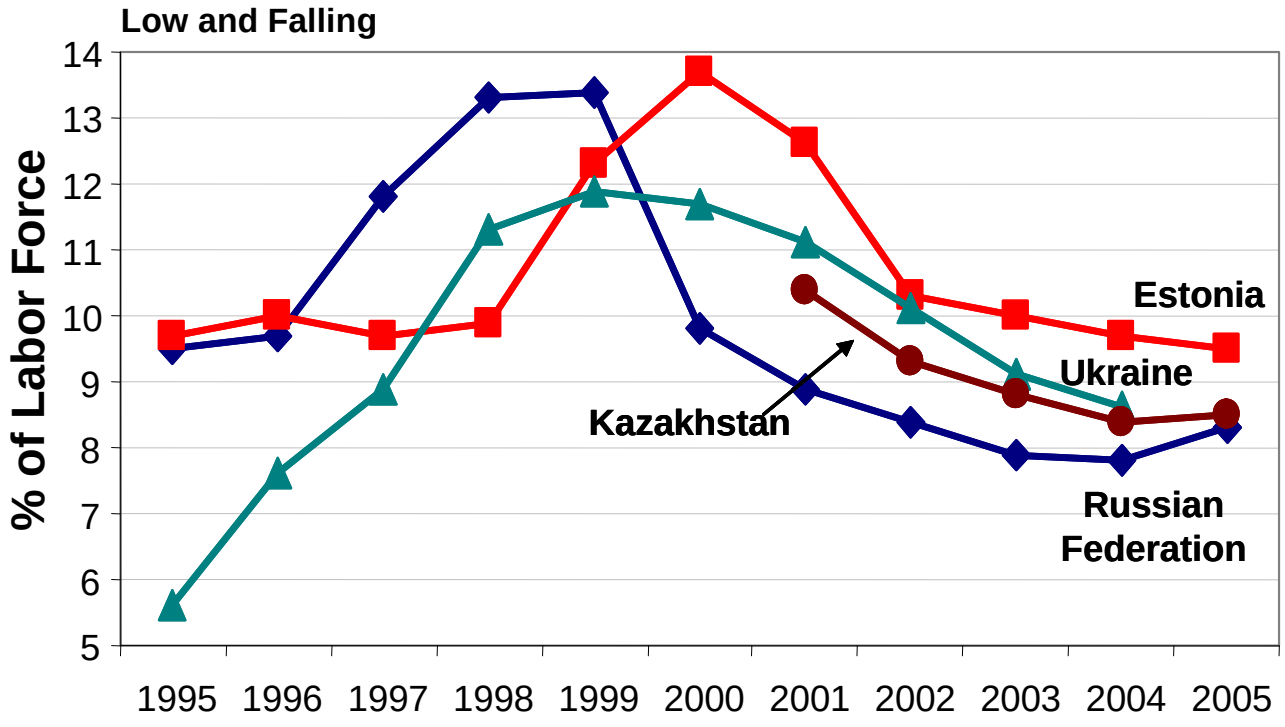
| | 1990 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | Q1 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UZBEKISTAN | --- | --- | --- | --- | --- | --- | --- | 6.0 | --- | --- | --- | --- |
| SLOVENIA | --- | 7.4 | 7.3 | 7.1 | 7.7 | 7.4 | 7.2 | 5.9 | 5.9 | 6.7 | 6.3 | 6.9 |
| HUNGARY | --- | 10.2 | 9.9 | 8.7 | 7.8 | 7.0 | 6.4 | 5.7 | 5.8 | 5.9 | 6.1 | 7.1 |
| ROMANIA | --- | 8.0 | 6.7 | 6.0 | 6.3 | 6.8 | 7.1 | 6.6 | 8.4 | 7.0 | 8.0 | --- |
| RUSSIAN FEDERATION | --- | 9.5 | 9.7 | 11.8 | 13.3 | 13.4 | 9.8 | 8.9 | --- | 7.9 | 7.8 | 8.3 |
| CZECH REPUBLIC | --- | 4.0 | 4.1 | 5.4 | 7.3 | 9.0 | 8.8 | 8.1 | 7.3 | 7.8 | 8.3 | 8.4 |
| KAZAKHSTAN | --- | --- | --- | --- | --- | --- | --- | 10.4 | 9.3 | 8.8 | 8.4 | 8.5 |
| UKRAINE | --- | 5.6 | 7.6 | 8.9 | 11.3 | 11.9 | 11.7 | 11.1 | 10.1 | 9.1 | 8.6 | --- |
| ESTONIA | --- | 9.7 | 10.0 | 9.7 | 9.9 | 12.3 | 13.7 | 12.6 | 10.3 | 10.0 | 9.7 | 9.5 |
| MOLDOVA | --- | --- | --- | --- | --- | 1.1 | 8.5 | 7.3 | 6.8 | 7.9 | 8.1 | 9.6 |
| LATVIA | --- | 20.2 | 18.3 | 14.4 | 13.8 | 14.5 | 14.5 | 13.1 | 12.0 | 10.6 | 10.4 | 9.9 |
| KYRGYZ REPUBLIC | --- | --- | --- | --- | --- | --- | --- | --- | 12.5 | 9.9 | --- | --- |
| ALBANIA | --- | --- | --- | --- | --- | --- | --- | --- | 10.3 | --- | --- | --- |
| LITHUANIA | --- | 14.1 | 16.4 | 14.1 | 13.3 | 14.1 | 15.4 | 17.0 | 13.8 | 12.4 | 11.4 | 10.6 |
| AZERBAIJAN | --- | --- | --- | --- | --- | --- | --- | --- | --- | 10.7 | --- | --- |
| BULGARIA | 21.4 | 15.7 | 14.2 | 14.4 | 14.1 | 15.7 | 16.3 | 19.4 | 17.6 | 13.7 | 12.0 | 11.3 |
| TAJIKISTAN | --- | --- | --- | --- | --- | 16.0 | --- | --- | 12.0 | --- | --- | --- |
| GEORGIA | --- | --- | --- | --- | --- | --- | 15.2 | 15.8 | 12.3 | 11.5 | 12.6 | --- |
| CROATIA | --- | --- | 10.0 | 9.9 | 11.4 | 13.5 | 16.1 | 15.8 | 14.8 | 14.3 | 13.6 | --- |
| BOSNIA & HERZEGOVINA | --- | --- | --- | --- | --- | --- | --- | 16.1 | --- | --- | --- | --- |
| SLOVAKIA | --- | 13.1 | 11.3 | 11.8 | 12.5 | 16.2 | 18.6 | 19.2 | 18.5 | 17.4 | 18.1 | 17.5 |
| POLAND | 13.5 | 13.3 | 12.3 | 11.2 | 10.5 | 13.9 | 16.1 | 18.2 | 19.9 | 19.6 | 19.0 | 18.9 |
| SERBIA & MONTENEGRO | --- | 13.4 | 13.2 | 13.8 | 13.7 | 13.7 | 12.6 | 12.8 | 13.8 | 20.8 | --- | --- |
| ARMENIA | --- | --- | --- | --- | 27.3 | 24.4 | --- | 31.0 | 29.0 | 31.2 | 31.6 | --- |
| MACEDONIA | --- | --- | 31.9 | 36.0 | 34.5 | 32.4 | 32.2 | 30.5 | 31.9 | 36.7 | 37.2 | --- |
| **CEE & EURASIA** | **---** | 11.1 | 12.2 | 12.2 | 13.4 | 13.5 | 13.5 | 14.3 | 13.4 | 13.3 | 13.2 | 10.5 |
| **NORTHERN TIER CEE** | --- | 11.5 | 11.2 | 10.3 | 10.4 | 11.8 | 12.6 | 12.5 | 11.7 | 11.3 | 11.2 | 11.1 |
| **ADVANCED ECONOMIES** | 6.5 | 7.0 | 7.1 | 6.9 | 6.8 | 6.4 | 5.8 | 5.9 | 6.4 | 6.6 | 6.3 | 6.1 |
| **USA** | 5.6 | 5.6 | 5.4 | 4.9 | 4.5 | 4.2 | 4.0 | 4.8 | 5.8 | 6.0 | 5.5 | 5.3 |
| **EU-15** | 6.9 | 9.9 | 9.8 | 9.2 | 8.4 | 7.6 | 6.8 | 6.2 | 6.6 | 7.0 | 7.0 | 6.9 |

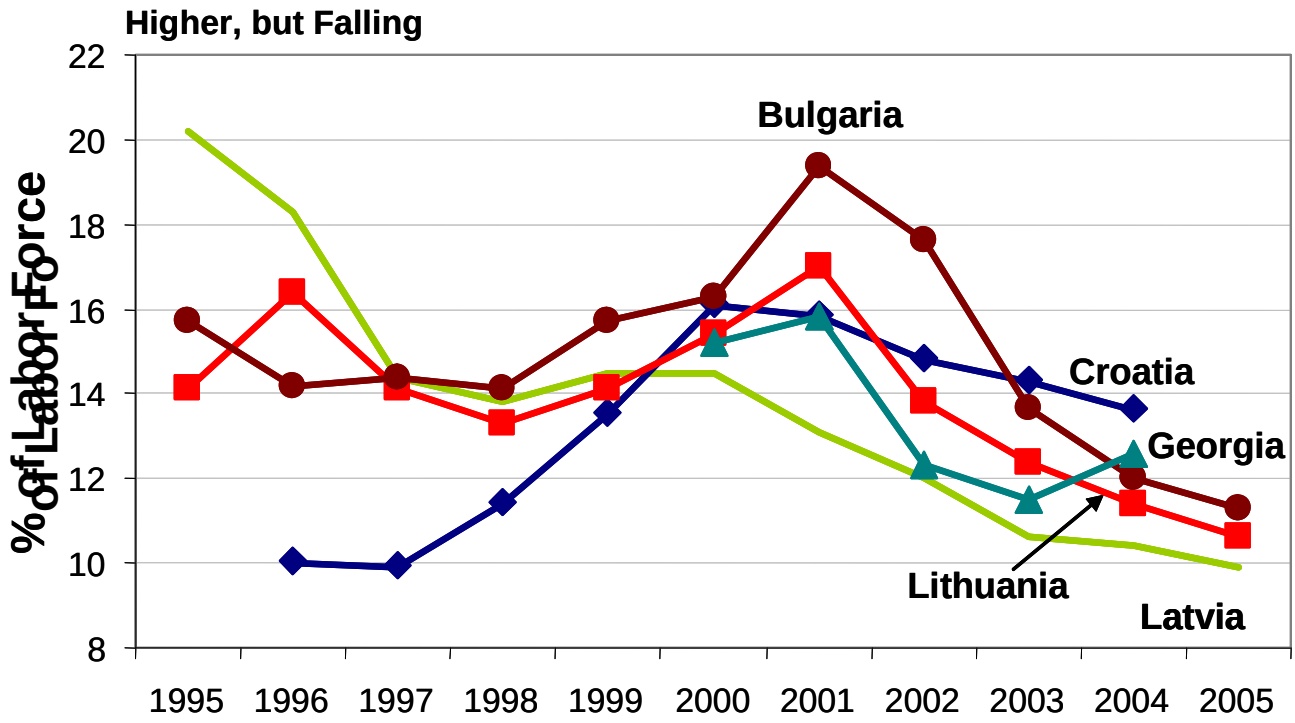
UNECE, *Trends in Europe and North America 2003 and 2005* (2003 and 2005), *ILO LABORSTA* (2005), IMF *World Economic Outlook* (2005) World Bank, *Albania Country Economic Memorandum, Sustaining Growth Beyond the Transition* (2004), World Bank, *Tajikistan Poverty Assessment Update* (2005), World Bank, *Bosnia and Herzegovina Labor Market in Postwar Bosnia and Herzegovina* (2002), World Bank, *Armenia, Poverty Reduction Support Credit* (2005), World Bank, *Armenia Poverty Update* (2002), *Uzbekistan Living Standard Assessment* (2003), *Poland Labor Force Survey* (2004), *Macedonia Labor Force Survey* (2004), *Slovakia Labor Force Survey* (2004), *Lithuania Labor Force Survey* (2004).

Peak years are highlighted with boxes.

Figures 1-2

# Labor Force Survey Falling Unemployment Rates

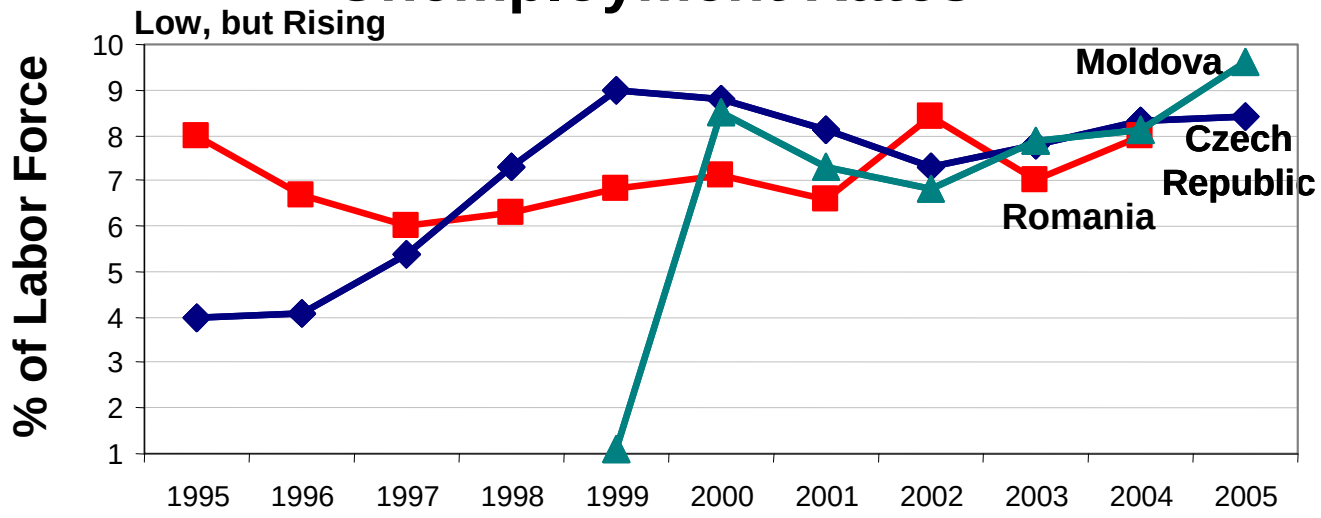


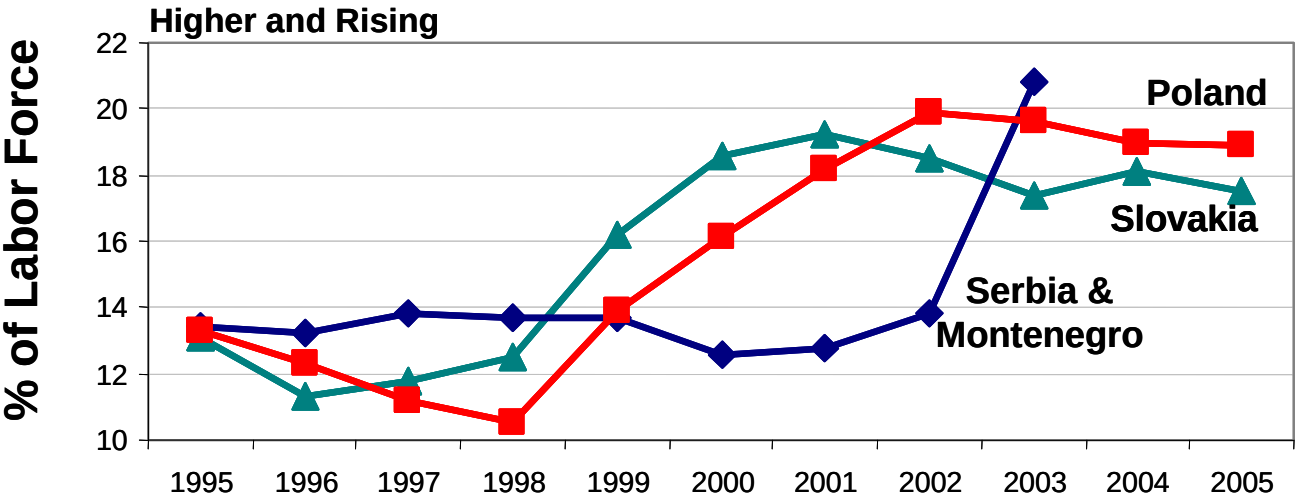



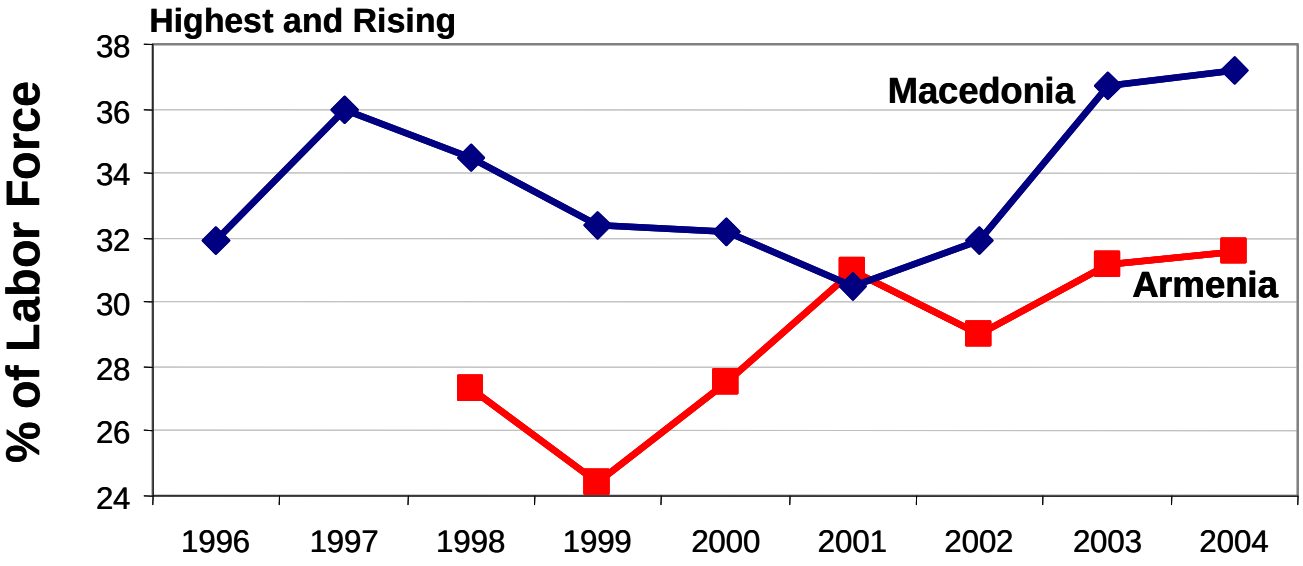

UNECE, *Trends in Europe and North America* (2003 and 2005); and National Surveys.

Figures 3-5

# Labor Force Survey Rising Unemployment Rates




UNECE, *Trends in Europe and North America* (2003 and 2005); and National Surveys.

**TABLE 8. REGIONAL DISPARITIES IN UNEMPLOYMENT RATES**
**STANDARD DEVIATION**

| | source | 1991-98 | 2001 | 2003 | 2004 |
|---|---|---|---|---|---|
| SLOVENIA | a | 4.5 | 2 | --- | --- |
| LATVIA | a | 7.7 | 7.3 | --- | --- |
| SLOVAKIA | a | 5.5 | 5.3 | --- | --- |
| | b | --- | --- | --- | 6 |
| ESTONIA | a | 3.2 | 3.8 | --- | --- |
| POLAND | a | 2.8 | 3.4 | --- | --- |
| | b | --- | --- | --- | 3.2 |
| ROMANIA | a | 1 | 1.8 | --- | --- |
| | b | --- | --- | --- | 3.4 |
| BULGARIA | a | 6.1 | 7.1 | --- | |
| | b | --- | --- | --- | 5.2 |
| LITHUANIA | a | 3.1 | 4.5 | --- | --- |
| CZECH REPUBLIC | a | 1.4 | 3.3 | --- | --- |
| | b | --- | --- | 3.3 | --- |
| HUNGARY | a | 2 | 4.8 | --- | --- |
| | b | --- | --- | --- | 1.9 |
| RUSSIAN FEDERATION | a | 1 | 3.8 | --- | --- |
| UKRAINE | c | 1.4 | 1.7 | --- | 5.3 |
| **FRANCE** | a | --- | 2.5 | --- | --- |
| **SPAIN** | a | --- | 5.6 | --- | --- |
| **USA** | a | --- | 1.1 | --- | --- |

a EBRD, *Transition Report* 2003

b Rutkowski 2006

c World Bank, Ukraine 2005.

**TABLE 9. REGIONAL DISPARITIES IN UNEMPLOYMENT RATES**
**COEFFICIENT OF VARIATION**

| | source | 1991-98 | 1998 | 1999 | 2001 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| SLOVENIA | a | 26.6 | --- | --- | 34.7 | --- | --- |
| | d | --- | --- | --- | 27 | 29.8 | --- |
| LATVIA | a | 53.2 | --- | --- | 55.4 | --- | --- |
| | d | --- | --- | 30 | 11 | 22.7 | --- |
| SLOVAKIA | a | 39.2 | --- | --- | 27.2 | --- | --- |
| | d | --- | --- | 31 | 28 | 36 | --- |
| | b | --- | --- | --- | --- | --- | 34.3 |
| ESTONIA | a | 33.5 | --- | --- | 30.3 | --- | --- |
| | d | --- | --- | 37 | 35 | 32 | --- |
| POLAND | a | 23.1 | --- | --- | 18.5 | --- | --- |
| | d | 29 | 34 | --- | --- | --- | --- |
| | d | --- | --- | 39 | 34 | 25 | --- |
| | b | --- | --- | --- | --- | --- | 16.8 |
| ROMANIA | a | 33.1 | --- | --- | 20.4 | --- | --- |
| | d | 41 | 29 | --- | --- | --- | --- |
| | d | --- | --- | 14 | 15 | 15 | --- |
| | b | --- | --- | --- | --- | --- | 21.2 |
| BULGARIA | a | 83.4 | --- | --- | 35.8 | --- | --- |
| | d | 24 | 30 | --- | --- | --- | --- |
| | b | --- | --- | --- | --- | --- | 22.4 |
| LITHUANIA | a | 24.8 | --- | --- | 27.3 | --- | --- |
| | d | --- | --- | --- | --- | 20.4 | --- |
| CZECH REPUBLIC | a | 32.6 | --- | --- | 41.1 | --- | --- |
| | d | 40 | 37 | --- | --- | --- | --- |
| | d | --- | --- | 36 | 42 | 40 | --- |
| | b | --- | --- | --- | --- | --- | 40 |
| HUNGARY | a | 48.6 | --- | --- | 56.3 | --- | --- |
| | d | 34 | 35 | --- | --- | --- | --- |
| | d | --- | --- | 26 | 28 | 30 | --- |
| | b | --- | --- | --- | --- | --- | 26.6 |
| RUSSIAN FEDERATION | a | 20.8 | --- | --- | 30.5 | --- | --- |
| | d | 32 | --- | --- | --- | --- | --- |
| | d | --- | --- | 42 | 45 | 56 | --- |
| UKRAINE | c | 14.5 | --- | --- | 12.1 | --- | 37.4 |
| **FRANCE** | a | --- | --- | --- | --- | 20.5 | --- |
| **SPAIN** | a | --- | --- | --- | --- | 26.5 | --- |
| **USA** | a | --- | --- | --- | --- | 19.5 | --- |

a EBRD, *Transition Report* 2003

b Rutkowski 2006

c World Bank, Ukraine 2005.

d Huber 2006

**TABLE 10. REGIONAL DISPARITIES IN UNEMPLOYMENT RATES**
**SUMMARY TRENDS**

| | TIME TREND | LEVEL (VS. WEST) |
|---|---|---|
| SLOVENIA | unclear | unclear |
| LATVIA | unclear | unclear |
| SLOVAKIA | unclear | higher |
| ESTONIA | unclear | unclear |
| | | |
| POLAND | unclear | w/in range |
| ROMANIA | unclear | w/in range |
| BULGARIA | unclear | unclear |
| LITHUANIA | unclear | w/in range |
| | | |
| CZECH REPUBLIC | increase | unclear |
| HUNGARY | unclear | unclear |
| RUSSIAN FEDERATION | increase | unclear |
| UKRAINE | increase | unclear |

Drawing from indicators from Tables 8 & 9.

**TABLE 11. YOUTH UNEMPLOYMENT RATES (15-24 YRS).**

| | UNEMPLOYED YOUNG WOMEN AS % OF MALE YOUTH LABOR FORCE | | | | | | UNEMPLOYED YOUNG MEN AS % OF MALE YOUTH LABOR FORCE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1995** | **2000** | **2001** | **2002** | **2003** | **2004** | **1995** | **2000** | **2001** | **2002** | **2003** | **2004** |
| KYRGYZ REPUBLIC | --- | 3.7 | --- | --- | --- | --- | --- | 2.6 | --- | --- | --- | --- |
| BELARUS[2] | --- | 7.9 | --- | --- | --- | --- | --- | 4.2 | --- | --- | --- | --- |
| HUNGARY | 15.6 | 10.9 | 9.8 | 11.9 | 12.9 | 14.1 | 20.7 | 13 | 11.5 | 13.3 | 13.7 | 15.8 |
| MOLDOVA | --- | 14.9 | 13.9 | --- | --- | --- | --- | 16.6 | 18.3 | --- | --- | --- |
| CZECH REPUBLIC | 8.7 | 17.4 | 17.3 | 17.2 | 18.8 | 19.1 | 7.2 | 16.7 | 16.0 | 16.6 | 18.3 | 22.0 |
| SLOVENIA | 19.7 | 19.0 | 17.5 | 18.6 | 19.8 | 18.7 | 18.1 | 14.8 | 15.1 | 15.1 | 15.6 | 13.0 |
| ROMANIA | 23.1 | 17.2 | --- | 21.8 | 18.8 | 18.9 | 18.8 | 19.6 | --- | 24.4 | 20.4 | 24.2 |
| RUSSIAN FEDERATION | 24.8 | 22.9 | 23.1 | --- | --- | --- | 21.2 | 23.6 | 21.0 | --- | --- | --- |
| LATVIA | 31.1 | 24.3 | 21.5 | 24.1 | 20.0 | 21.3 | 31.8 | 21.8 | 22.6 | 18.4 | 16.7 | 16.3 |
| LITHUANIA | 21.9 | 26.3 | 23.6 | 23.1 | 28.0 | 23.4 | 27.4 | 30.7 | 34.9 | 23.1 | 22.9 | 22.0 |
| ESTONIA | 16.4 | 23.9 | 26.4 | --- | 32.5 | --- | 13.1 | 23.8 | 19.1 | --- | --- | 24.9 |
| GEORGIA | --- | 28.2 | 31.0 | --- | --- | --- | --- | 28.8 | 29.0 | --- | --- | --- |
| BULGARIA | 37.6 | 29.8 | 34.5 | 33.5 | 24.9 | 23.7 | 38.0 | 36.0 | 42.0 | 40.3 | 31.0 | 26.8 |
| SLOVAKIA | 23.1 | 33.8 | 35.7 | 35.5 | 31.7 | 31.1 | 26.0 | 36.4 | 38.4 | 39.5 | 34.8 | 35.0 |
| SERBIA | --- | --- | --- | 35 | --- | --- | --- | --- | --- | 43 | --- | --- |
| CROATIA | --- | 35.4 | --- | 36.3 | 38.2 | --- | --- | 29.4 | --- | 34.7 | 34.1 | --- |
| POLAND[1] | 33.8 | 37.2 | 42.0 | 43.3 | 43.1 | 42.3 | 29.0 | 33.3 | 40.1 | 41.9 | 40.9 | 38.3 |
| ARMENIA | 53.8 | --- | --- | --- | --- | --- | 64.2 | --- | --- | --- | --- | --- |
| MACEDONIA | --- | 62.4 | 54.5 | --- | --- | --- | --- | 58.1 | 57.4 | --- | --- | --- |
| **NORTHERN TIER CEE** | 21.3 | 24.1 | 24.2 | 24.8 | 25.9 | --- | --- | 23.8 | 24.7 | 24.0 | 23.3 | --- |
| **UNITED STATES** | 11.6 | 8.9 | 9.7 | --- | --- | --- | 12.5 | 9.7 | 11.4 | --- | --- | --- |
| **EUROPEAN UNION - 15** | 21.7 | 16.3 | 16.4 | 15.0 | 15.4 | --- | 17.9 | 12.7 | 12.9 | 14.3 | 15.5 | --- |

UNECE, *Trends in Europe and North America* (2003) and EuroStat, *NewCronos Database* (2004). World Bank, *Serbia & Montenegro* (December 2004).

Peak years are highlighted with boxes.

1. Registered Unemployment

2. 16 to 24 years of age

**TABLE 12. LONG-TERM UNEMPLOYMENT (% OF TOTAL UNEMPLOYED)**

| | - 1992 | 1993 | 1994 | 1995 | 1996 | 96-98 | 98-00 | 00-01 | 02-04 | % Change: 1995-04 |
|---|---|---|---|---|---|---|---|---|---|---|
| ALBANIA | --- | 65 | --- | 73 | --- | --- | --- | 91 | 93 | 27 |
| MACEDONIA | 86 | 87 | 88 | 82 | 81 | --- | --- | 85 | 85 | 4 |
| ARMENIA[1] | --- | --- | --- | 55 | --- | --- | --- | 76 | --- | 37 |
| SERBIA & MONTENEGRO | --- | --- | --- | 75 | 78 | 78 | 84 | 70 | 72 | -4 |
| SLOVAKIA | --- | 33 | 43 | 54 | 56 | 50 | 46 | 55 | 65 | 20 |
| BULGARIA | --- | 53 | 59 | 66 | 64 | 60 | 59 | 60 | 64 | -4 |
| CROATIA[2] | 58 | 58 | 55 | --- | --- | --- | 61 | 54 | 58 | 10 |
| ROMANIA | 21 | --- | 45 | 47 | 42 | 47 | 44 | 51 | 58 | 24 |
| POLAND | 24 | 36 | 38 | 42 | 38 | 38 | 38 | 48 | 55 | 31 |
| SLOVENIA | 46 | 55 | 57 | 53 | 53 | 55 | 41 | 61 | 53 | 1 |
| LITHUANIA | --- | --- | --- | 52 | --- | --- | 22 | 53 | 51 | -3 |
| CZECH REPUBLIC | 14 | 19 | 22 | 31 | 33 | 31 | 49 | 50 | 50 | 61 |
| ESTONIA | --- | --- | --- | 32 | --- | --- | 47 | 47 | 50 | 56 |
| UKRAINE[3] | --- | --- | --- | --- | --- | 62 | 68 | 50 | 45 | -27 |
| LATVIA | --- | --- | --- | 58 | --- | 63 | 52 | 57 | 44 | -25 |
| HUNGARY | 18 | 33 | 41 | 48 | 52 | 51 | 44 | 47 | 42 | -12 |
| RUSSIAN FEDERATION | --- | --- | --- | --- | --- | --- | --- | 40 | --- | |
| KYRGYZ REPUBLIC | --- | --- | --- | 9 | --- | --- | --- | 29.4 | 37 | 312 |
| BELARUS | --- | --- | --- | 16 | --- | --- | --- | 12 | 15 | -2 |
| **NORTHERN TIER CEE** | --- | --- | --- | 46 | --- | --- | 42 | 52 | 51 | 10 |
| **FRANCE** | 36 | 34 | 38 | 40 | 38 | 41 | 43 | 35 | 38 | -6 |
| **GERMANY** | 33 | 36 | 38 | 40 | --- | 48 | 52 | 50 | 51 | 28 |
| **SPAIN** | 47 | 50 | 56 | 57 | --- | 56 | 47 | 39 | 33 | -42 |
| **SWEDEN** | 8 | 11 | 17 | 16 | 17 | 30 | 30 | 23 | 19 | 19 |
| **UK** | 30 | 38 | 40 | 38 | 36 | 39 | 30 | 26 | 21 | -44 |
| **US** | 11 | 12 | 12 | 10 | 9 | 9 | 6 | 6 | 11 | 10 |
| **JAPAN[1]** | 16 | 14 | 18 | 17 | 19 | 20 | 24 | 27 | --- | 58 |

UNECE, *Statistical Division Database* (2006) and *Trends in Europe and North America* (2003); C. Allison and D. Ringold, Labor Markets in Transition in Central and Eastern Europe: 1989-1995.

The long-term unemployed are those who are unemployed for more than one year. Peak years are highlighted with boxes.

1. % change 1995-04 is change from 1995-01.

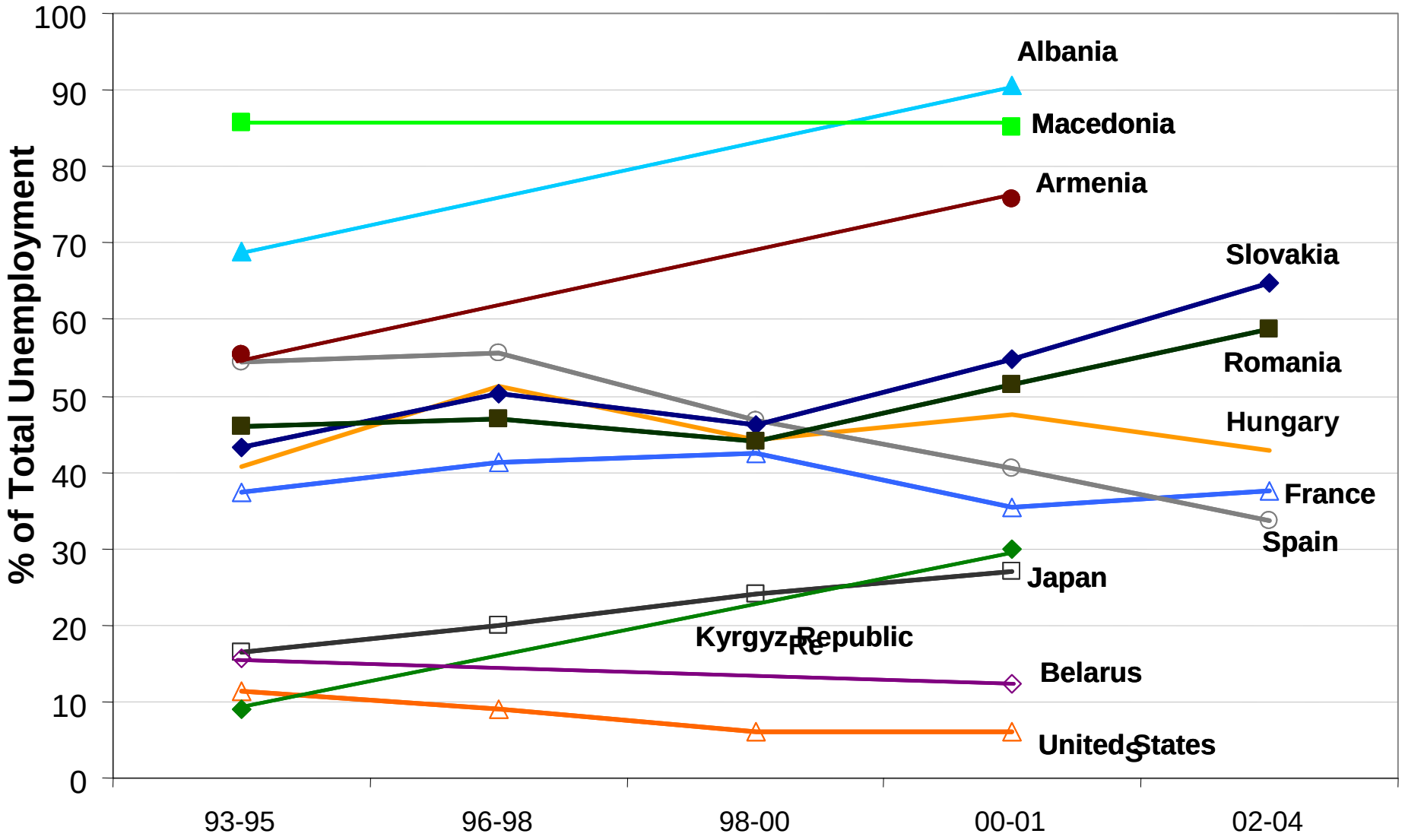
2. % change 1995-04 is change from 1994-01.

3. % change 1995-04 is change from 96-98 to 04.

USAID
FROM THE AMERICAN PEOPLE

Figure 6

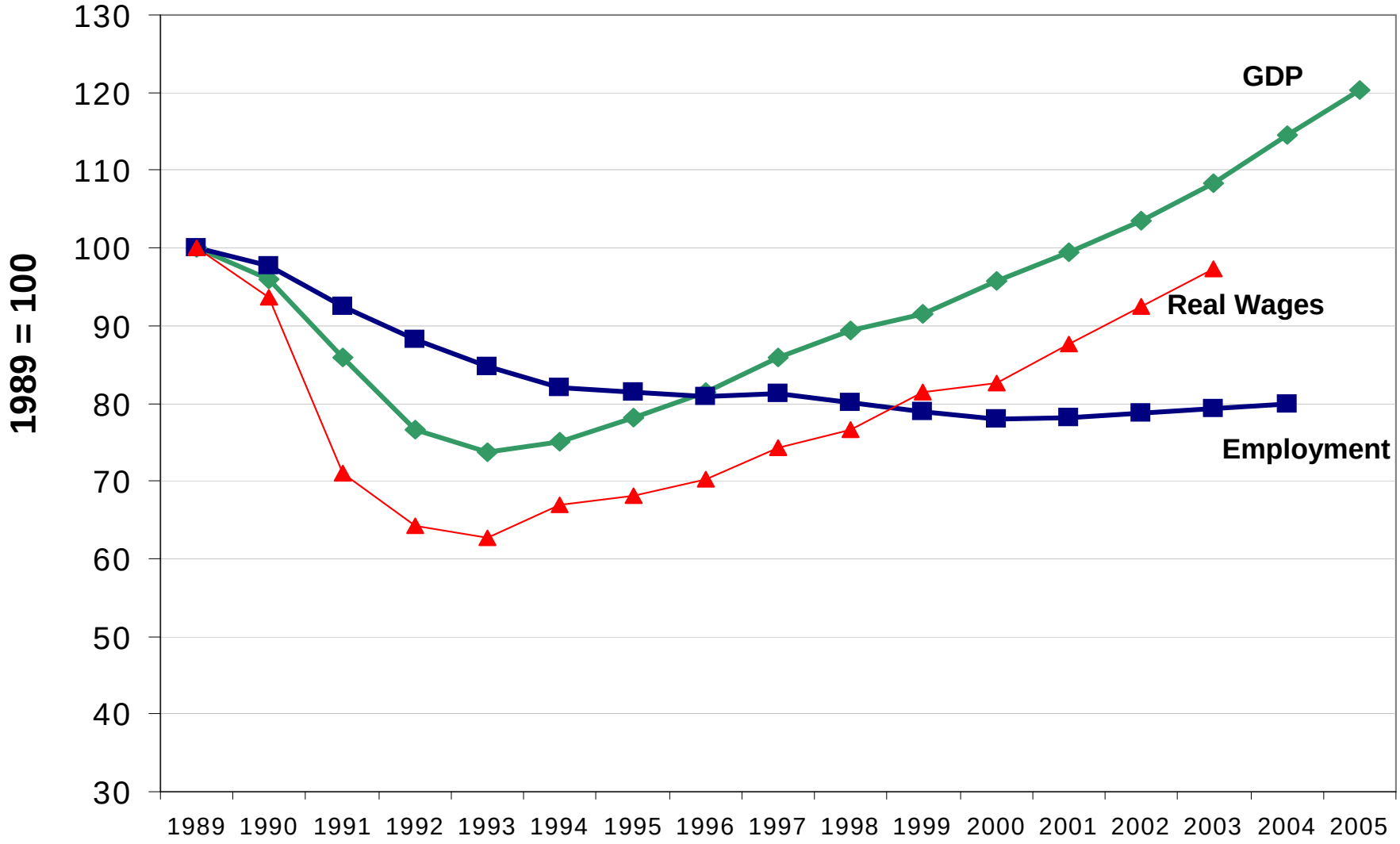
# Long Term Unemployment




Western Europe includes France, Germany, Spain and Sweden. World Bank, World Development Indicators 2004 (2004); C. Allison and D. Ringold, Labor Markets in Transition in Central and Eastern Europe: 1989-1995; World Bank, Social Challenges of Transition Series (December 1996); Bureau of the Census, Populations at Risk in CEE: Labor Markets, No. 2, prepared for USAID/ENI/PCS (February 1995), UNECE, Trends in Europe and North America (2003) and EuroStat, NewCronos Database (2004).

Figure 7

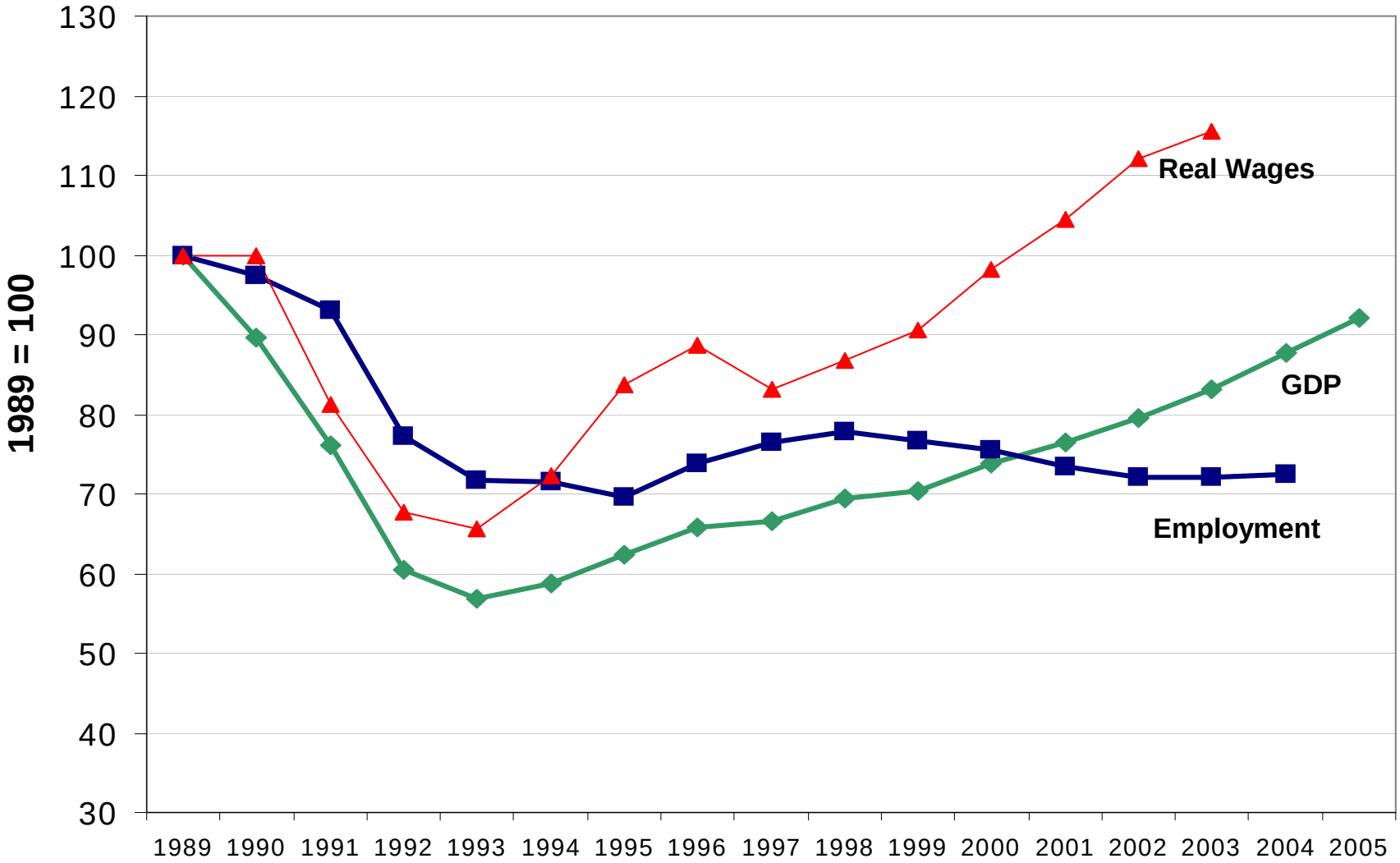
# Price, Quantity & Output Adjustments in Labor Markets in Northern Tier CEE




EBRD, *Transition Report 2005* (November 2005). UNICEF, *TransMONEE Database* (December 2005).

Figure 8

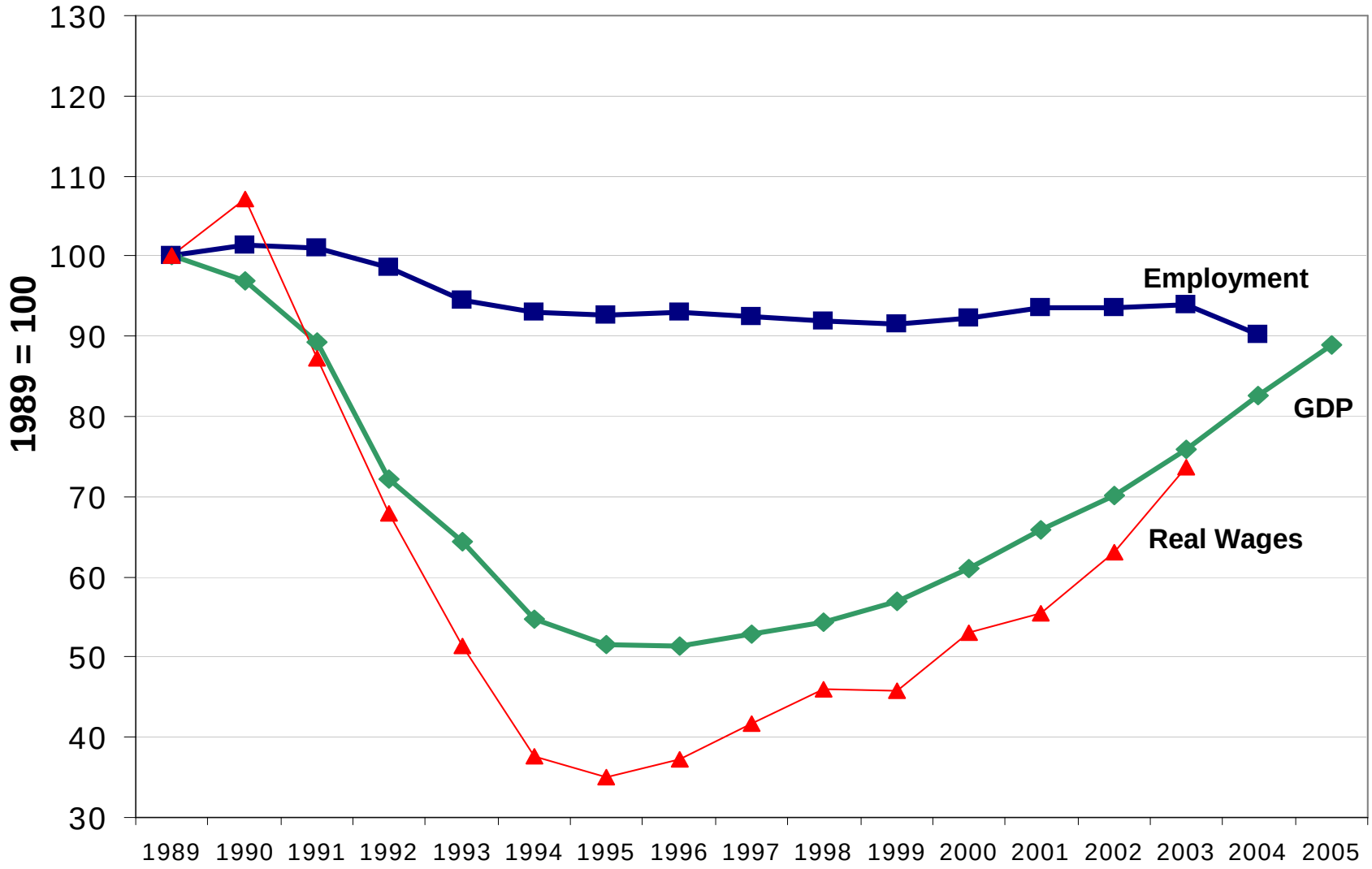
# Price, Quantity & Output Adjustments in Labor Markets in Southern Tier CEE




EBRD, *Transition Report 2005* (November 2005). UNICEF, *TransMONEE Database* (December 2005).

Figure 9

# Price, Quantity & Output Adjustments in Labor Markets in Eurasia




EBRD, *Transition Report 2005* (November 2005). UNICEF, *TransMONEE Database* (December 2005).

**TABLE 13. REAL WAGES INDEX (1989=100)**

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CZECH REPUBLIC | 100 | 94 | 72 | 79 | 82 | 88 | 96 | 104 | 106 | 105 | 111 | 114 | 118 | 124 | 132 |
| POLAND | 100 | 76 | 75 | 73 | 71 | 72 | 74 | 78 | 83 | 85 | 110 | 111 | 114 | 115 | 119 |
| GEORGIA | 100 | 111 | 77 | 50 | 24 | 34 | 28 | 44 | 60 | 75 | 77 | 79 | 99 | 112 | 118 |
| HUNGARY | 100 | 94 | 88 | 86 | 83 | 89 | 82 | 79 | 82 | 84 | 86 | 89 | 96 | 109 | 117 |
| AZERBAIJAN | 100 | 101 | 80 | 95 | 62 | 25 | 20 | 24 | 36 | 43 | 52 | 61 | 71 | 84 | 100 |
| SLOVENIA | 100 | 74 | 62 | 60 | 69 | 73 | 77 | 80 | 82 | 83 | 86 | 87 | 90 | 92 | 93 |
| MOLDOVA | 100 | 114 | 105 | 62 | 62 | 50 | 51 | 54 | 56 | 60 | 52 | 53 | 65 | 78 | 90 |
| ESTONIA | 100 | 103 | 57 | 45 | 46 | 51 | 54 | 55 | 59 | 64 | 66 | 70 | 75 | 80 | 87 |
| ROMANIA | 100 | 108 | 92 | 81 | 69 | 70 | 79 | 88 | 69 | 67 | 69 | 72 | 77 | 78 | 86 |
| SLOVAKIA | 100 | 94 | 67 | 74 | 71 | 73 | 76 | 81 | 87 | 88 | 85 | 81 | 82 | 87 | 85 |
| UKRAINE | 100 | 109 | 114 | 124 | 63 | 56 | 62 | 59 | 58 | 56 | 48 | 49 | 59 | 71 | 83 |
| LATVIA | 100 | 105 | 72 | 49 | 51 | 58 | 57 | 54 | 60 | 64 | 66 | 68 | 71 | 76 | 82 |
| RUSSIAN FEDERATION | 100 | 109 | 102 | 69 | 69 | 63 | 45 | 51 | 54 | 47 | 36 | 44 | 53 | 61 | 68 |
| LITHUANIA | 100 | 109 | 77 | 51 | 33 | 37 | 39 | 41 | 47 | 54 | 57 | 55 | 55 | 57 | 62 |
| MACEDONIA | 100 | 79 | 68 | 42 | 57 | 51 | 49 | 49 | 49 | 51 | 53 | 53 | 52 | 54 | 56 |
| BULGARIA | 100 | 109 | 67 | 75 | 68 | 53 | 51 | 42 | 45 | 43 | 47 | 49 | 51 | 53 | 55 |
| ARMENIA | 100 | 104 | 37 | 21 | 7 | 18 | 22 | 32 | 29 | 35 | 39 | 44 | 46 | 51 | 54 |
| TAJIKISTAN | 100 | 106 | 90 | 39 | 14 | 7 | 24 | 15 | 13 | 17 | 17 | 17 | 19 | 23 | 28 |
| UZBEKISTAN | 100 | 109 | 96 | 95 | 18 | 10 | 9 | 13 | 13 | 15 | 19 | 23 | 26 | 29 | --- |
| BOSNIA & HERZEGOVINA | --- | --- | --- | --- | --- | --- | --- | --- | 100 | 118 | 135 | 143 | 151 | 165 | --- |
| SERBIA & MONTENEGRO | --- | --- | --- | --- | --- | 100 | 116 | 116 | 116 | 119 | 107 | 132 | 147 | --- | --- |
| CROATIA | --- | --- | --- | --- | --- | --- | 100 | 109 | 118 | 126 | 133 | 134 | 133 | 138 | 142 |
| ALBANIA | --- | --- | --- | --- | --- | --- | --- | 100 | 83 | 83 | 91 | 107 | 120 | 130 | 138 |
| BELARUS | --- | --- | --- | --- | 100 | 61 | 58 | 61 | 69 | 81 | 87 | 98 | --- | --- | --- |
| TURKMENISTAN | --- | --- | --- | --- | 100 | 53 | 25 | 20 | 24 | 30 | 30 | 50 | 65 | 64 | 111 |
| KYRGYZ REPUBLIC | --- | 100 | 71 | 59 | 50 | 42 | 43 | 44 | 49 | 55 | 51 | 50 | 55 | 63 | 69 |
| KAZAKHSTAN | --- | --- | 100 | 65 | 49 | 33 | 33 | 34 | 36 | 39 | 44 | 47 | 52 | 58 | 62 |
| **CEE & EURASIA*** | 100 | 100 | 79 | 67 | 54 | 51 | 52 | 55 | 57 | 60 | 62 | 64 | 69 | 75 | 84 |
| **NORTHERN TIER CEE** | 100 | 94 | 71 | 65 | 63 | 68 | 69 | 72 | 76 | 78 | 83 | 85 | 88 | 92 | 97 |
| **EURASIA**** | 100 | 108 | 81 | 60 | 31 | 24 | 26 | 30 | 35 | 41 | 43 | 46 | 54 | 63 | 78 |

UNICEF, *TransMonee Database 2005* (December 2005).

Country minimum is highlighted with boxes.

*Excludes countries for which data do not start in 1989: Albania, Croatia, Bosnia-Herzegovina, and Serbia-Montenegro.

**Excludes countries for which data do not start in 1989: Belarus, Turkmenistan, Kazakhstan and Kyrgyz Republic.

## TABLE 14. LABOR MARKET ADJUSTMENTS

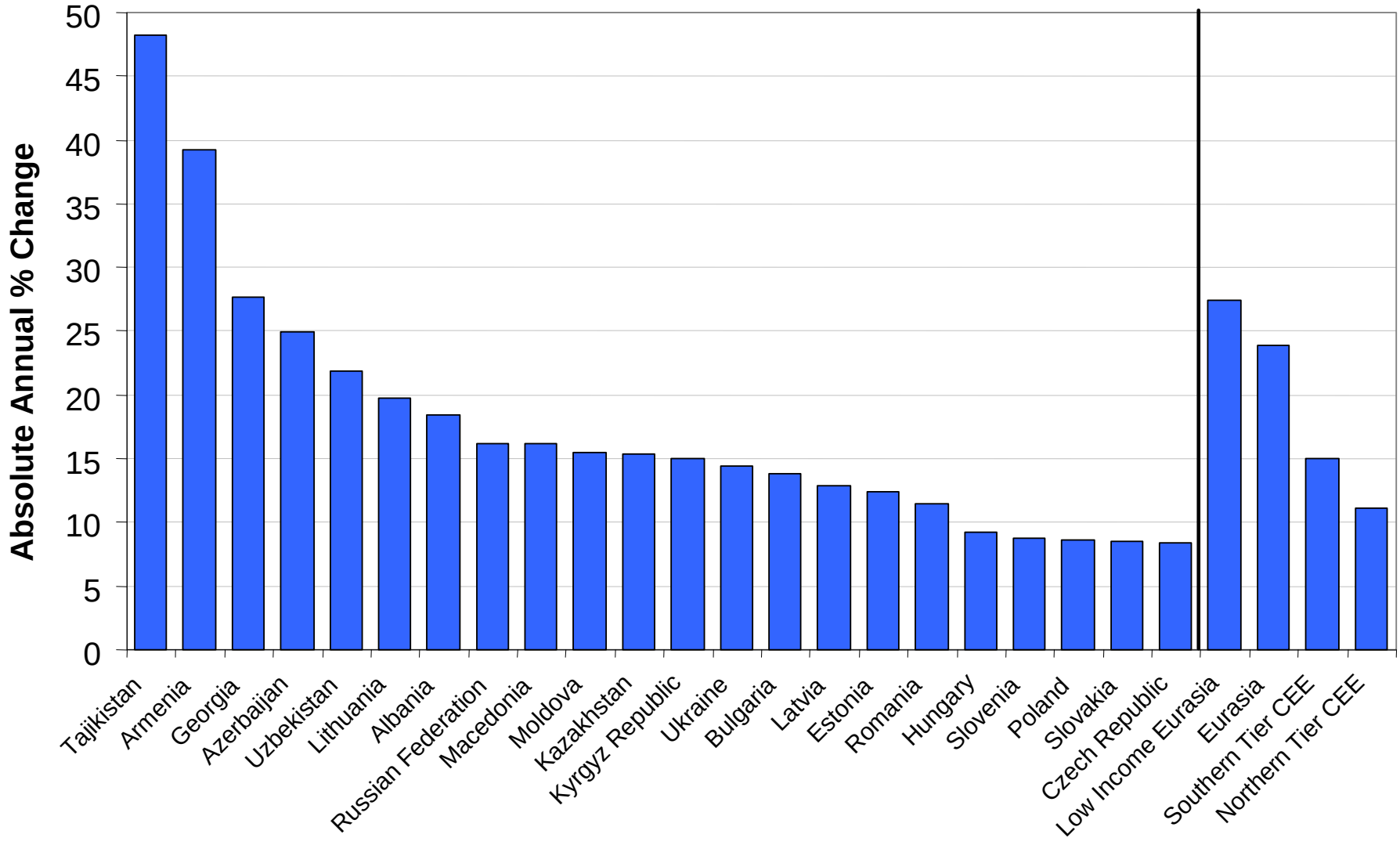
| | Overall Absolute Labor Market Change: Wages & Employment from 1990 | Distribution of Absolute Labor Market Changes from 1990 | | Responsiveness to GDP Change from Resumption of Growth | |
|---|---|---|---|---|---|
| | | Wages | Employment | Wages | Employment |
| TAJIKISTAN | 48 | 95 | 5 | 1.20 | 0.06 |
| ARMENIA | 39 | 92 | 8 | 0.74 | -0.42 |
| GEORGIA | 28 | 90 | 10 | 5.60 | 0.03 |
| AZERBAIJAN | 25 | 97 | 3 | 1.09 | 0.08 |
| UZBEKISTAN | 22 | 92 | 8 | 4.95 | 0.40 |
| LITHUANIA | 20 | 76 | 24 | 1.92 | -0.62 |
| ALBANIA | 18 | 77 | 23 | 0.88 | -0.10 |
| RUSSIAN FEDERATION | 16 | 91 | 9 | 1.61 | 0.10 |
| MACEDONIA | 16 | 62 | 38 | 0.49 | 0.13 |
| MOLDOVA | 15 | 80 | 20 | 3.80 | -1.03 |
| KAZAKHSTAN | 15 | 86 | 14 | 1.01 | 0.19 |
| KYRGYZ REPUBLIC | 15 | 76 | 24 | 0.95 | -0.04 |
| UKRAINE | 14 | 86 | 14 | 1.48 | 0.03 |
| BULGARIA | 14 | 77 | 23 | -0.66 | -0.05 |
| LATVIA | 13 | 75 | 25 | 0.66 | -0.21 |
| ESTONIA | 12 | 78 | 22 | 1.01 | -0.17 |
| ROMANIA | 12 | 78 | 22 | 0.72 | -0.16 |
| HUNGARY | 9 | 70 | 30 | 1.41 | 0.29 |
| SLOVENIA | 9 | 74 | 26 | 0.60 | 0.11 |
| POLAND | 9 | 71 | 29 | 1.13 | 0.02 |
| SLOVAKIA | 9 | 73 | 27 | 0.29 | -0.02 |
| CZECH REPUBLIC | 8 | 82 | 18 | 1.65 | -0.09 |
| **NORTHERN TIER CEE** | 11 | 75 | 25 | 1.08 | -0.09 |
| **SOUTHERN TIER CEE** | 15 | 73 | 27 | 0.36 | -0.05 |
| **EURASIA** | 24 | 88 | 12 | 2.24 | -0.06 |
| **LOW INCOME EURASIA, N=7** | 27 | 89 | 11 | 2.62 | -0.13 |

EBRD, Transition Report 2005 (November 2005). UNICEF, TransMONEE Database (December 2005).

Low income Eurasia include Tajikistan, Kyrgyz Republic, Uzbekistan, Moldova, Georgia, Azerbaijan and Armenia.

Figure 10

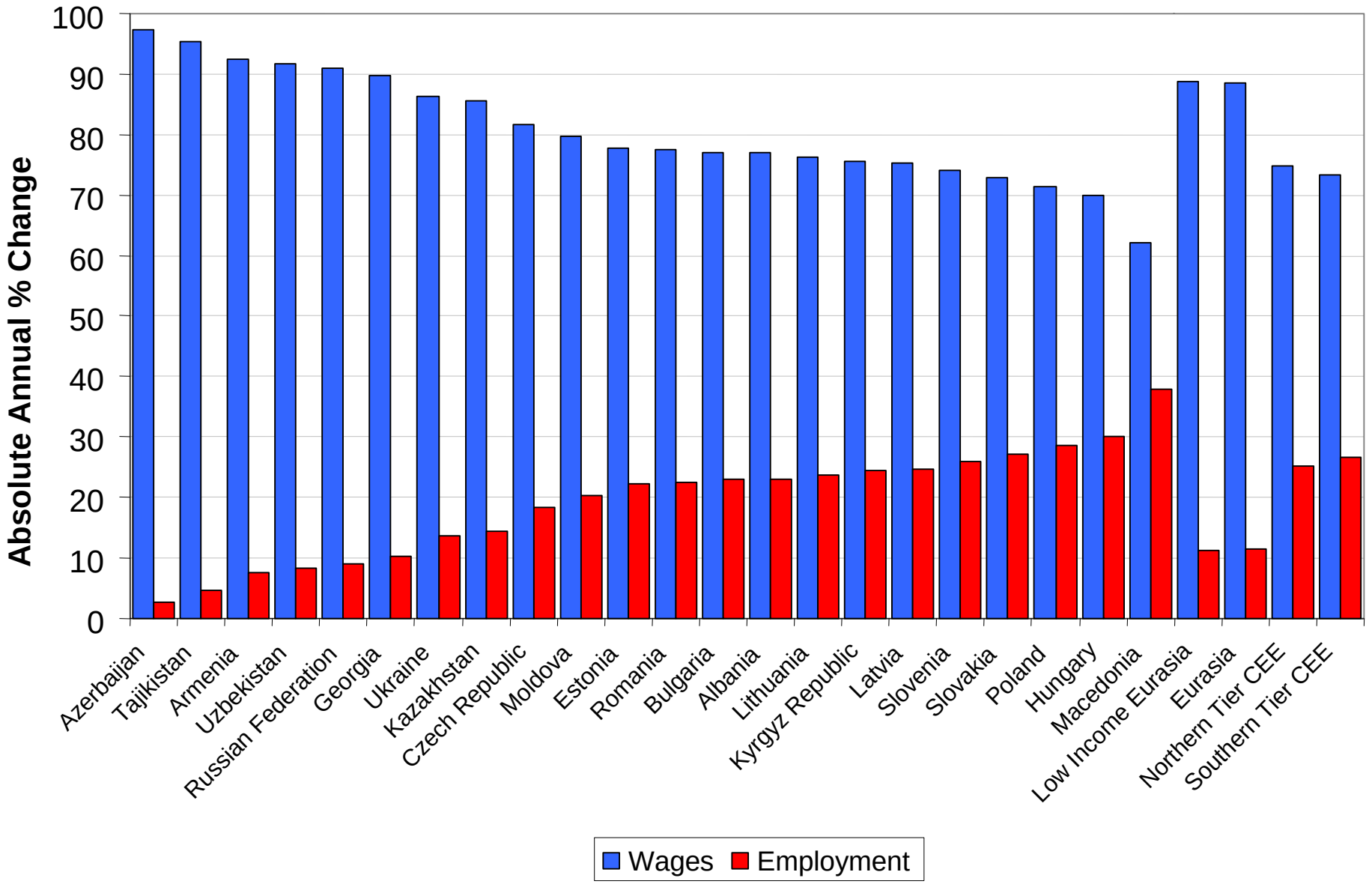
# Absolute Labor Market Change over the Transition: Wages and Employment




EBRD, *Transition Report 2005* (November 2005). UNICEF, *TransMONEE Database* (December 2005).

Figure 11

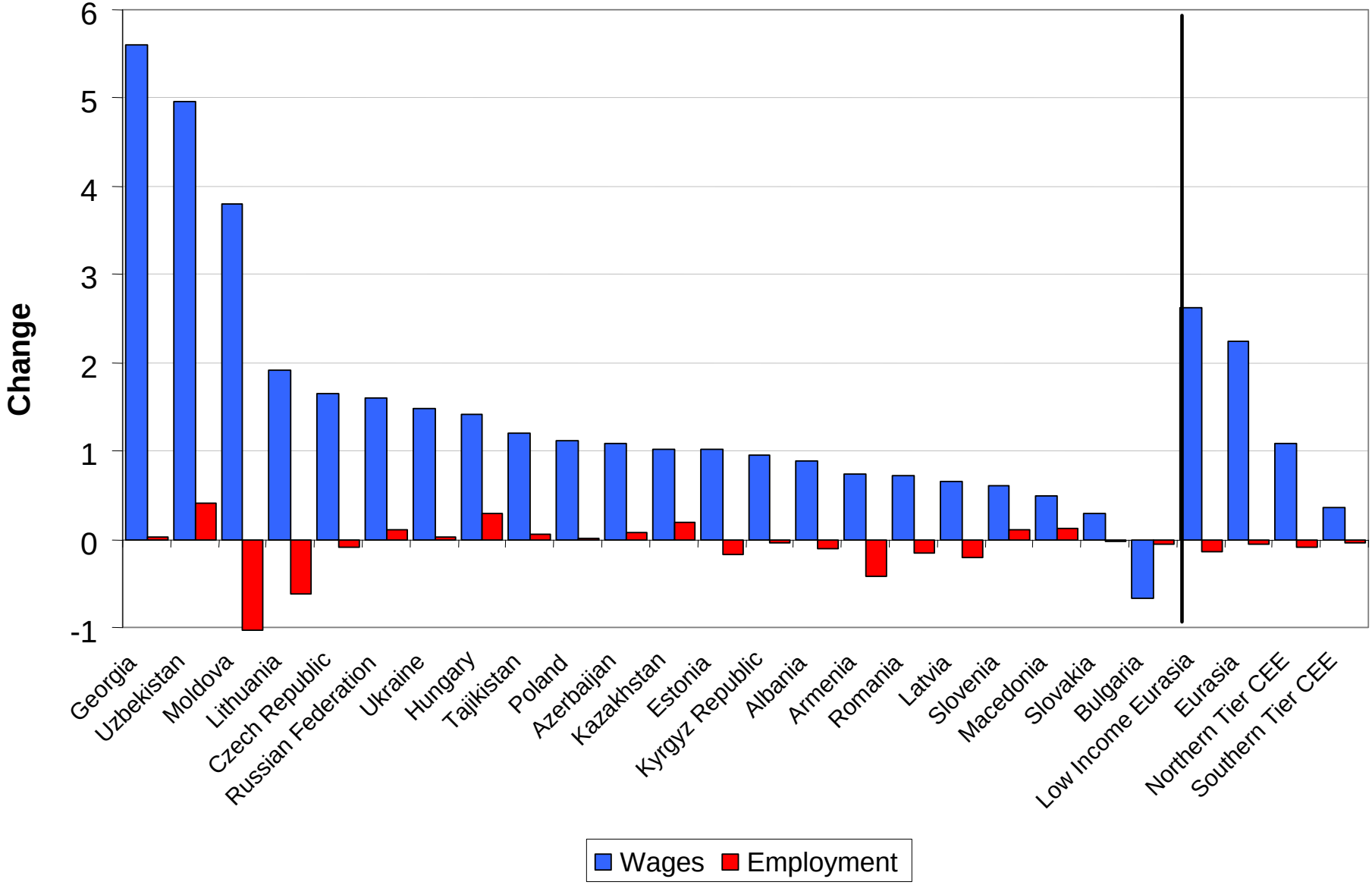
# Distribution of Absolute Labor Market Changes from 1990




EBRD, *Transition Report 2005* (November 2005). UNICEF, *TransMONEE Database* (December 2005).

Figure 12

# Responsiveness to GDP Change from Resumption of Growth




EBRD, *Transition Report 2005* (November 2005). UNICEF, *TransMONEE Database* (December 2005).

**TABLE 15. PRIVATE SECTOR SHARE OF EMPLOYMENT (%)**

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | PRIVATE SECTOR SHARE OF GDP IN 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HUNGARY | 32 | 34 | 36 | 59 | --- | 71 | 77 | 83 | 81 | 82 | 84 | 85 | --- | --- | --- | 80 |
| ALBANIA | --- | 39 | 44 | 59 | 70 | 74 | 79 | 80 | 80 | 81 | 82 | 79 | 80 | 80 | 80 | 75 |
| KYRGYZSTAN | 23 | 31 | 40 | 52 | 42 | 69 | 73 | 74 | 76 | 78 | 78 | 79 | 80 | 80 | --- | 75 |
| LATVIA | 19 | 23 | 41 | 51 | 58 | 60 | 63 | 66 | 68 | 70 | 72 | 73 | 75 | 76 | 76 | 70 |
| ARMENIA | 18 | 32 | 38 | 44 | 47 | 49 | 50 | 51 | 69 | 73 | 74 | 75 | 74 | 76 | --- | 75 |
| KAZAKHSTAN | 22 | 24 | 29 | 35 | 48 | 54 | --- | --- | 73 | 77 | 79 | 75 | 75 | 75 | 75 | 65 |
| ESTONIA | 25 | 28 | 32 | 35 | 38 | 61 | 63 | 69 | 69 | 69 | 71 | 71 | 73 | 74 | 75 | 70 |
| ROMANIA | 9 | 34 | 41 | 44 | 49 | 51 | 52 | 58 | 62 | 72 | 75 | 75 | --- | --- | --- | 55 |
| SERBIA & MONTENEGRO | --- | --- | 28 | 41 | 53 | 60 | 63 | 65 | 69 | 70 | 75 | 75 | --- | --- | --- | 80 |
| SLOVAKIA | 20 | 26 | 28 | 41 | 53 | 60 | 63 | 65 | 69 | 70 | 75 | 75 | --- | --- | --- | 80 |
| LITHUANIA | 22 | 30 | 41 | 54 | 62 | 64 | 67 | 67 | 68 | 69 | 69 | 67 | 70 | 72 | --- | 25 |
| POLAND | --- | 50 | 54 | 57 | 59 | 61 | 63 | 67 | 69 | 71 | 72 | 73 | 70 | 70 | 71 | 75 |
| CZECH REPUBLIC | 8 | 20 | 31 | 47 | 53 | 57 | 59 | 60 | 61 | 65 | 65 | 70 | 70 | 70 | 70 | 75 |
| RUSSIA | 18 | 25 | 31 | 46 | 55 | 57 | 57 | 59 | 61 | 70 | 70 | 70 | 70 | 70 | 70 | 60 |
| AZERBAIJAN | 25 | 35 | 37 | 37 | 40 | 42 | 49 | 54 | 58 | 64 | 66 | 67 | 68 | 69 | 68 | 45 |
| BULGARIA | 6 | 10 | 18 | 28 | 36 | 41 | 47 | 55 | 41 | 46 | 55 | 59 | 61 | 62 | 66 | 60 |
| TAJIKISTAN | --- | --- | 44 | 46 | 48 | 52 | 55 | 58 | 57 | 63 | 60 | 63 | 65 | 63 | 63 | 80 |
| MOLDOVA | --- | 36 | 39 | 45 | 59 | 60 | 64 | 65 | 66 | --- | --- | --- | --- | 60 | 60 | 65 |
| CROATIA | 15 | 19 | 26 | 36 | 45 | 48 | 53 | 54 | 54 | 58 | 56 | 58 | 58 | 60 | --- | 65 |
| SLOVENIA | --- | 39 | 43 | 45 | 49 | 53 | 55 | 58 | 57 | --- | --- | --- | --- | --- | --- | 65 |
| MACEDONIA | --- | --- | 2 | 2 | 2 | 3 | --- | --- | --- | 45 | 45 | 50 | 50 | 50 | 55 | 75 |
| TURKMENISTAN | --- | 21 | 24 | 24 | 28 | 26 | 48 | 47 | 54 | --- | --- | --- | --- | --- | --- | 60 |
| UZBEKISTAN | 37 | 39 | 42 | 44 | 47 | --- | 54 | 56 | 58 | 43 | --- | --- | --- | --- | --- | 65 |
| UKRAINE | 19 | --- | 43 | 44 | 47 | 51 | 54 | --- | --- | 21 | 26 | 31 | 36 | 38 | --- | 45 |
| GEORGIA | 24 | 25 | 31 | 35 | 37 | 43 | 46 | 55 | 30 | 40 | 35 | 35 | 35 | 33 | 34 | 65 |
| BELARUS | 26 | 29 | 35 | 37 | 40 | 40 | 9 | 12 | 16 | 19 | --- | --- | --- | --- | --- | 25 |
| **CEE & EURASIA** | 20 | 29 | 34 | 41 | 47 | 51 | 56 | 59 | 60 | 61 | 65 | 66 | 65 | 65 | 66 | 64 |
| **NORTHERN TIER CEE*** | 21 | 31 | 38 | 49 | 53 | 61 | 64 | 67 | 68 | 71 | 73 | 73 | --- | --- | --- | 68 |
| **SOUTHERN TIER CEE**** | 10 | 25 | 27 | 35 | 42 | 46 | 59 | 62 | 61 | 62 | 65 | 66 | --- | --- | --- | 68 |
| **EURASIA***** | 24 | 30 | 36 | 41 | 45 | 49 | 51 | 53 | 56 | 55 | --- | --- | --- | --- | --- | 60 |

EBRD, *Transition Report 2005* (2005), IMF, *Uzbekistan Recent Economic Developments* (2000); IMF, Turkmenistan Country Report.

*Does not include Hungary in 1994, or Poland and Slovenia in 1990 and 1999-2001.

**Does not include Serbia or Macedonia in 1991 or 1996-2001, or Bosnia-Herzegovina at any time.

**Does no include Turkmenistan and Moldova in 1990, Tajikistan in 1990 and 1991, the Ukraine in 1991, 1997 and 1998, and in Moldova 1999.

**TABLE 16: SECTORAL SHARE OF EMPLOYMENT IN AGRICULTURE (%)**

| | PERCENTAGE OF TOTAL EMPLOYMENT IN AGRICULTURE | | | | | | | CHANGE | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1995 | 2001 | 2002 | 2003 | 2004 | 2005 | 1990-95 | 1995-03 | 1990 to 03-05 |
| CZECH REPUBLIC | 10 | 7 | 5 | 5 | 5 | 4 | 4 | -3 | -2 | -6 |
| SLOVAKIA | 12 | 9 | 6 | 6 | 6 | 5 | 5 | -3 | -3 | -6 |
| HUNGARY | 18 | 8 | 6 | 6 | 5 | 5 | 5 | -9 | -3 | -13 |
| ESTONIA | 12 | 10 | 7 | 7 | 6 | 6 | 5 | -2 | -4 | -6 |
| BULGARIA | 18 | 24 | 26 | 10 | 10 | 10 | 9 | 6 | -14 | -8 |
| SLOVENIA | 12 | 10 | 10 | 9 | 8 | 10 | 9 | -2 | -2 | -4 |
| RUSSIAN FEDERATION | 13 | 12 | 12 | 12 | 11 | --- | --- | -1 | -2 | -3 |
| LATVIA | 16 | 17 | 15 | 15 | 14 | 13 | 12 | 1 | -3 | -2 |
| LITHUANIA | 19 | 21 | 16 | 18 | 18 | 16 | 14 | 2 | -3 | -1 |
| CROATIA | --- | 20 | 16 | 15 | 17 | 16 | 17 | --- | -3 | --- |
| BELARUS* | 19 | 21 | 16 | --- | --- | --- | --- | 2 | -5 | -3 |
| POLAND | 26 | 23 | 19 | 19 | 18 | 18 | 17 | -3 | -4 | -8 |
| UKRAINE | 20 | 20 | 22 | 20 | 19 | --- | --- | 0 | -1 | -1 |
| MACEDONIA | --- | 19 | 25 | 24 | 22 | --- | --- | --- | 3 | --- |
| ROMANIA | 28 | 40 | 43 | 37 | 36 | 32 | 32 | 12 | -5 | 8 |
| KAZAKHSTAN | 23 | 21 | 22 | 36 | 35 | --- | --- | -2 | 14 | 12 |
| UZBEKISTAN* | 39 | 44 | 39 | --- | --- | --- | --- | 5 | -5 | 0 |
| AZERBAIJAN | 31 | 31 | 40 | 40 | 40 | --- | --- | 0 | 9 | 9 |
| MOLDOVA | 33 | 44 | 22 | 50 | 43 | --- | --- | 11 | -1 | 10 |
| KYRGYZ REPUBLIC | 33 | 47 | 53 | 49 | 43 | --- | --- | 14 | -4 | 10 |
| ARMENIA* | 17 | 37 | 44 | --- | --- | --- | --- | 20 | 7 | 27 |
| TAJIKISTAN* | 43 | 59 | 46 | --- | --- | --- | --- | 16 | -13 | 3 |
| TURKMENISTAN* | 42 | 43 | 49 | --- | --- | --- | --- | 1 | 6 | 7 |
| GEORGIA | 25 | 31 | 62 | 54 | 55 | --- | --- | 6 | 24 | 30 |
| SERBIA & MONTENEGRO* | --- | 6 | 6 | --- | --- | --- | --- | --- | 0 | --- |
| ALBANIA | 49 | 68 | 72 | --- | --- | --- | --- | 19 | --- | --- |
| BOSNIA & HERZEGOVINA | 11 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CEE & EURASIA** | 24 | 27 | 27 | 23 | 22 | --- | --- | 2.9 | 0.2 | 3.2 |
| **NORTHERN TIER CEE** | 16 | 13 | 11 | 11 | 10 | 10 | 9 | -2.5 | -2.6 | -5.1 |
| **SOUTHERN TIER CEE** | 27 | 30 | 31 | --- | --- | --- | --- | 3.1 | 1.6 | 4.7 |
| **EURASIA** | 28 | 34 | 36 | --- | --- | --- | --- | 6.0 | 1.4 | 7.5 |
| **EU-15** | 8.9 | 6.8 | 5.3 | 5.2 | 4.4 | --- | --- | -2.1 | -2.4 | -4.5 |
| **UNITED STATES*** | 2.9 | 2.9 | 2.5 | 2.5 | --- | --- | --- | 0.0 | -0.4 | -0.4 |

World Bank, *World Development Indicators* (2006); UNECE, *Statistical Division Database* (2006) and *Trends in Europe and North America* (2003).

*Change in years are calculated through 2001 instead of 2003.

**TABLE 17. SECTORAL SHARE OF EMPLOYMENT IN SERVICES**

| | PERCENTAGE OF TOTAL EMPLOYMENT IN SERVICES | | | | | | | CHANGE | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1995 | 2001 | 2002 | 2003 | 2004 | 2005 | 1990-95 | 1995-03 | 1990 to 03-05 |
| HUNGARY | 51 | 59 | 59 | 60 | 61 | 62 | 63 | 7.6 | 2.5 | 7.7 |
| LATVIA | 45 | 56 | 58 | 59 | 59 | 60 | 62 | 10.5 | 3.6 | 29.0 |
| ESTONIA | 42 | 56 | 60 | 62 | 61 | 59 | 61 | 13.8 | 5.8 | 43.8 |
| SERBIA & MONTENEGRO | --- | 57 | 59 | --- | --- | --- | --- | --- | --- | --- |
| LITHUANIA | 52 | 58 | 56 | 55 | 54 | 56 | 57 | 6.3 | -4.5 | 3.5 |
| RUSSIAN FEDERATION | 36 | 45 | 50 | 59 | 58 | --- | --- | 9.5 | 12.9 | 40.8 |
| BULGARIA | 37 | 43 | 46 | 58 | 57 | 57 | 57 | 5.3 | 14.4 | 8.8 |
| CZECH REPUBLIC | 42 | 51 | 55 | 55 | 56 | 56 | 57 | 8.9 | 4.7 | 12.6 |
| SLOVAKIA | 54 | 52 | 56 | 55 | 56 | 56 | 56 | -2.0 | 4.0 | 4.5 |
| CROATIA | --- | 46 | 54 | 55 | 53 | 54 | 54 | --- | --- | --- |
| SLOVENIA | 44 | 46 | 51 | 52 | 53 | 53 | 54 | 2.5 | 7.0 | 6.9 |
| POLAND | 36 | 45 | 50 | 52 | 53 | 53 | 53 | 9.5 | 7.7 | 14.6 |
| UKRAINE | 49 | 54 | 50 | 49 | 51 | --- | --- | 4.9 | -2.6 | 0.6 |
| AZERBAIJAN | 31 | 36 | 49 | 48 | 48 | --- | --- | 4.7 | 12.6 | 18.1 |
| KAZAKHSTAN | 41 | 50 | 48 | 48 | 48 | --- | --- | 9.0 | -1.9 | 18.2 |
| UZBEKISTAN* | 46 | 43 | 48 | --- | --- | --- | --- | -3.3 | 5.2 | 1.9 |
| TAJIKISTAN* | 18 | 22 | 47 | --- | --- | --- | --- | 3.7 | 25.2 | 28.9 |
| MACEDONIA | | 43 | 49 | 43 | 44 | --- | --- | --- | --- | 48.5 |
| KYRGYZ REPUBLIC | 39 | 36 | 37 | 39 | 42 | --- | --- | -3.3 | 5.6 | -2.7 |
| ARMENIA* | 38 | 36 | 42 | --- | --- | --- | --- | -2.3 | 6.2 | 3.9 |
| MOLDOVA | 47 | 40 | 35 | 36 | 41 | --- | --- | -6.5 | 0.9 | -11.4 |
| TURKMENISTAN* | 48 | 47 | 38 | --- | --- | --- | --- | -1.0 | -8.5 | -9.5 |
| ROMANIA | 27 | 29 | 32 | 34 | 34 | 37 | 37 | 1.3 | 5.3 | 4.1 |
| GEORGIA | --- | --- | 38 | 38 | 37 | | | --- | --- | --- |
| ALBANIA | --- | 23 | 22 | --- | --- | --- | --- | --- | --- | --- |
| BELARUS | 36 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BOSNIA & HERZEGOVINA | 41 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CEE & EURASIA** | 50 | 50 | 53 | 50 | 51 | --- | --- | -0.1 | 2.8 | 2.7 |
| **NORTHERN TIER CEE** | 52 | 59 | 62 | 56 | 57 | 57 | 58 | 6.8 | 3.1 | 9.8 |
| **SOUTHERN TIER CEE** | 42 | 41 | 45 | --- | --- | --- | --- | -0.4 | 3.2 | 2.9 |
| **EURASIA** | 51 | 49 | 51 | --- | --- | --- | --- | -2.5 | 2.5 | 0.0 |
| **EU-15** | 60 | 64 | 67 | 68 | 68 | --- | --- | 3.6 | 4.4 | 8.0 |
| **UNITED STATES*** | 71 | 74 | 75 | 76 | --- | --- | --- | 3.3 | 0.9 | 4.2 |

World Bank, *World Development Indicators* (2006); UNECE, *Statistical Division Database* (2006) and *Trends in Europe and North America* (2003).

*Change in years are calculated through 2001 instead of 2003.

**TABLE 18. STRUCTURAL CHANGES: SECTOR COMPOSITION OF LABOR**

| | AGRICULTURE | | SERVICES | | OVERALL |
|---|---|---|---|---|---|
| | SHARE | DECREASING? | SHARE | INCREASING? | |
| **NORTHERN TIER CEE** | | | | | |
| SLOVENIA | 9 | yes | 54 | yes | Yes |
| CZECH R. | 4 | yes | 57 | yes | Yes |
| SLOVAKIA | 5 | yes | 56 | yes | yes |
| LATVIA | 12 | yes | 62 | yes | yes |
| LITHUANIA | 14 | yes | 57 | yes | yes |
| ESTONIA | 5 | yes | 61 | yes | yes |
| HUNGARY | 5 | yes | 63 | yes | yes |
| POLAND | 17 | yes | 53 | yes | yes |
| **SOUTHERN TIER CEE** | | | | | |
| MACEDONIA | 22 | no | 44 | yes | no |
| BULGARIA | 9 | yes | 57 | no | no |
| ALBANIA | 72 | no | 22 | no | no |
| ROMANIA | 32 | yes | 37 | yes | no |
| CROATIA | 17 | yes | 54 | yes | yes |
| SERBIA & MONTENEGRO | 6 | no | 59 | yes | yes |
| **EURASIA** | | | | | |
| RUSSIAN FEDERATION | 11 | no | 58 | yes | yes |
| MOLDOVA | 43 | yes | 41 | yes | yes |
| KAZAKHSTAN | 35 | no | 48 | no | yes |
| AZERBAIJAN | 40 | no | 48 | no | no |
| UKRAINE | 19 | no | 51 | yes | maybe/yes |
| BELARUS | 16 | yes | 36 | yes | yes |
| GEORGIA | 55 | no | 37 | no | no |
| UZBEKISTAN | 39 | yes | 48 | yes | no |
| KYRGYZ REPUBLIC | 43 | yes | 42 | yes | no |
| ARMENIA | 44 | no | 42 | no | no |
| TAJIKISTAN | 46 | no | 47 | yes | no |
| **OECD** | --- | --- | 71.4 | --- | |
| **EU15** | 4.4 | --- | 68 | --- | |
| **U.S.** | 2.5 | --- | 76 | --- | |
| **S-S AFRICA** | 64 | --- | 27.5 | --- | |

Drawing from indicators from Tables 16 & 17.

*yes - there; or getting there or close; no - not close or not getting there

**TABLE 19. INFORMAL SECTOR EMPLOYMENT % OF TOTAL EMPLOYMENT**

| | source | 1995-1997 | 1998-99 | 2000-2001 | 2003-04 |
|---|---|---|---|---|---|
| KYRGYZ REPUBLIC | (a) | --- | 34 | --- | --- |
| | (e) | 71 | 59 | --- | --- |
| KAZAKHSTAN | (a) | --- | 54 | --- | --- |
| AZERBAIJAN | (a) | --- | 51 | --- | --- |
| | (e) | 38 | --- | --- | --- |
| ARMENIA | (a) | --- | 40 | --- | --- |
| | (e) | 32 | 45 | --- | --- |
| GEORGIA | (a) | --- | 33 | --- | --- |
| | (e) | --- | 42 | --- | --- |
| RUSSIAN FEDERATION | (a) | --- | 41 | --- | --- |
| BELARUS | (a) | --- | 41 | --- | --- |
| UKRAINE | (a) | --- | 41 | --- | --- |
| | (b) | --- | --- | --- | 16 |
| TAJIKISTAN | (e) | --- | 41 | --- | --- |
| BOSNIA & HERZEGOVINA | (c) | --- | --- | --- | 41 |
| UZBEKISTAN | (a) | --- | 33 | --- | --- |
| | (e) | --- | | 40 | --- |
| MACEDONIA | (a) | --- | 35 | --- | --- |
| MOLDOVA | (a) | --- | 35 | --- | --- |
| | (e) | 31 | --- | 26 | --- |
| ESTONIA | (a) | --- | 33 | --- | --- |
| SERBIA | (d) | --- | --- | 31 | --- |
| BULGARIA | (a) | --- | 30 | --- | --- |
| LATVIA | (a) | --- | 29 | --- | --- |
| CROATIA | (a) | --- | 27 | --- | --- |
| ROMANIA | (a) | --- | 24 | --- | --- |
| SLOVENIA | (a) | --- | 22 | --- | --- |
| POLAND | (a) | --- | 21 | --- | --- |
| HUNGARY | (a) | --- | 21 | --- | --- |
| LITHUANIA | (a) | --- | 20 | --- | --- |
| SLOVAKIA | (a) | --- | 16 | --- | --- |
| CZECH REPUBLIC | (a) | --- | 12 | --- | --- |
| **NORTHERN TIER CEE** | | --- | --- | --- | 22 |
| **SOUTHERN TIER CEE** | | --- | --- | --- | 31 |
| **EURASIA** | | --- | --- | --- | 36-45 |
| **OECD** | | --- | --- | --- | 17 |

(a) WB drawing from Schneider

(b) WB Ukraine(2005)

(c) WB B-H (2005)

(d) WB Serbia (2004)

(e) Yoon et al (2003)

| TABLE 20. INFORMAL SECTOR EMPLOYMENT VS. INFORMAL SECTOR OUTPUT | | |
|---|---|---|
| | **INFORMAL EMPLOYMENT AS % TOTAL EMPLOYMENT** | **INFORMAL OUTPUT AS % TOTAL GDP** |
| **NORTHERN TIER CEE** | 22 | 30 |
| **SOUTHERN TIER CEE** | 31 | 40 |
| **EURASIA** | 36-45 | 51 |
| **OECD** | 17 | 16 |
| **DEVELOPING** | | |
| AFRICA | --- | 43 |
| LAC | --- | 43 |
| ASIA | --- | 31 |

Drawing from Table 19 and Schneider, Size of Shadow Economies (Dec 2004).

| TABLE 21. SELF EMPLOYMENT AS % OF TOTAL EMPLOYMENT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **source** | **1993** | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** |
| AZERBAIJAN | (a) | --- | --- | --- | 68 | --- | --- | --- |
| KYRGYZ REPUBLIC | (a) | --- | --- | --- | 61 | --- | --- | --- |
| | (c) | --- | --- | 22 | --- | --- | --- | --- |
| GEORGIA | (a) | --- | --- | --- | 57 | --- | --- | --- |
| | (c) | --- | --- | 22.5 | 24.4 | --- | --- | --- |
| ARMENIA | (a) | --- | --- | | 50 | --- | --- | --- |
| | (c) | --- | --- | 16 | --- | --- | --- | --- |
| TAJIKISTAN | (a) | --- | --- | --- | 42 | --- | --- | --- |
| MOLDOVA | (a) | --- | --- | --- | 41 | --- | --- | --- |
| | (b) | 18 | 16 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 31 | 32.3 | 33 | --- | --- |
| ROMANIA | (a) | --- | --- | --- | 40 | --- | --- | --- |
| | (b) | 22 | 25 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 24.1 | 22.5 | 21.5 | 18.6 | 19.8 |
| LITHUANIA | (a) | --- | --- | --- | 30 | --- | --- | --- |
| | (b) | 10 | 11 | --- | --- | --- | --- | --- |
| POLAND | (a) | --- | --- | --- | 28 | --- | --- | --- |
| | (b) | 31 | 23 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 19 | 18.9 | 18 | 17.2 | 16.5 |
| UZBEKISTAN | (a) | --- | --- | --- | 25 | --- | --- | --- |
| LATVIA | (a) | --- | --- | --- | 17 | --- | --- | --- |
| | (b) | 0.1 | --- | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 6.1 | 6.2 | 6 | 6.3 | 5.9 |
| CZECH REPUBLIC | (a) | --- | --- | --- | 16 | --- | --- | --- |
| | (b) | 13 | 15 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 10.6 | 11.4 | 12.4 | 12.2 | 11.6 |
| SLOVENIA | (a) | --- | --- | --- | 16 | --- | --- | --- |
| | (b) | 12 | 11 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 8.1 | 7.6 | 6.8 | 6.6 | 6.9 |
| HUNGARY | (a) | --- | --- | --- | 14 | --- | --- | --- |
| | (b) | 15 | 15 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 7 | --- | --- | --- | --- |
| UKRAINE | (a) | --- | --- | --- | 12 | --- | --- | --- |
| | (b) | --- | 9 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 8.3 | 8.8 | --- | --- | --- |
| SLOVAKIA | (a) | --- | --- | --- | 9 | --- | --- | --- |
| | (b) | 7 | 8 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 5.6 | 6.1 | 6.9 | 8.5 | 9.3 |
| ESTONIA | (a) | --- | --- | --- | 8 | --- | --- | --- |
| | (b) | 8 | 8 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 4.8 | 4.8 | 5.5 | --- | --- |
| RUSSIA | (a) | --- | --- | --- | 7 | --- | --- | --- |
| | (b) | 8 | 7 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 5 | --- | --- | --- | --- |
| BELARUS | (a) | --- | --- | --- | 5 | --- | --- | --- |
| | (c) | --- | --- | 1 | --- | --- | --- | --- |
| MACEDONIA | (b) | 72 | --- | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 9 | --- | --- | --- | --- |
| CROATIA | (b) | 21 | 19 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 14.3 | 14 | 15.6 | 15.6 | 17.8 |
| BULGARIA | (b) | 11 | 15 | --- | --- | --- | --- | --- |
| | (c) | --- | --- | 10 | 9.5 | 9.6 | 9.3 | 8.6 |
| **OECD** | | **---** | **---** | **---** | 14 | **---** | **---** | --- |
| **EU** | | **---** | **---** | **---** | 15 | --- | --- | --- |

(a) WB study drawing from Eurostat
(b) UNECE 2002
(c) UNECE, *Statistical Division Database* (2006).

| TABLE 22. SELF-EMPLOYMENT AS A SHARE OF TOTAL EMPLOYMENT, 1993 AND 2005 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | SELF-EMPLOYMENT 1993 | | | SELF-EMPLOYMENT 2001-05 | | | Ratio of male to female self-employment | |
| | MEN | WOMEN | TOTAL | MEN | WOMEN | TOTAL | 1993 | 2001-05 |
| MACEDONIA | 74 | 69 | 72 | 12.2 | 4.8 | 9.2 | 1.1 | 2.5 |
| ROMANIA | 24.4 | 19.4 | 22.1 | 25.7 | 12.7 | 19.8 | 1.3 | 2.0 |
| POLAND | 32.2 | 29.9 | 31.2 | 19.2 | 13.3 | 16.5 | 1.1 | 1.4 |
| CROATIA | 25.1 | 15.4 | 20.7 | 18.1 | 17.4 | 17.8 | 1.6 | 1.0 |
| MOLDOVA | 21.5 | 14.6 | 18.3 | 34.9 | 31.1 | 33 | 1.5 | 1.1 |
| BULGARIA | 12.9 | 9.2 | 11.2 | 10.5 | 6.5 | 8.6 | 1.4 | 1.6 |
| HUNGARY | 17.4 | 11.3 | 14.6 | --- | --- | 6.5 | 1.5 | --- |
| CZECH REPUBLIC | 15.8 | 9.4 | 12.8 | 14.9 | 7.2 | 11.6 | 1.7 | 2.1 |
| SLOVENIA | 16.0 | 7.6 | 12.2 | 9.5 | 3.9 | 6.9 | 2.1 | 2.4 |
| LITHUANIA | 12.4 | 6.9 | 9.8 | 12.5 | 8.4 | 10.5 | 1.8 | 1.5 |
| UKRAINE | --- | --- | --- | 8.8 | 9.6 | 9.2 | --- | 0.9 |
| ESTONIA | 10.4 | 6.2 | 8.4 | 7.4 | 3.7 | 5.5 | 1.7 | 2.0 |
| SLOVAKIA | 9.0 | 3.5 | 6.6 | 12.8 | 5.0 | 9.3 | 2.6 | 2.6 |
| RUSSIAN FEDERATION | 10.1 | 5.6 | 8.0 | 5.0 | 5.0 | 5.0 | 1.8 | 1.0 |
| LATVIA | 0.1 | 0.2 | 0.1 | 6.5 | 5.2 | 5.9 | 0.5 | 1.3 |

UNECE, *Statistical Division Database* (2006) and Trends in Europe and North America (2003).

## TABLE 23. SMALL AND MEDIUM ENTERPRISES

| | SME SHARE OF EMPLOYMENT (%) 1990-94 | SME SHARE OF EMPLOYMENT (%) 2001 |
|---|---|---|
| CZECH REPUBLIC | 25.0 | 56.2 |
| ESTONIA | --- | 55.5 |
| HUNGARY | 35.0 | 49.5 |
| SLOVAKIA | --- | 57.7 |
| POLAND | 19.0 | 65.4 |
| | | |
| LITHUANIA | 25.0 | 31.6 |
| BULGARIA | --- | 64.7 |
| ALBANIA | --- | 75 |
| ARMENIA | --- | 25.8 |
| KYRGYZ REPUBLIC | --- | 59 |
| | | |
| LATVIA | 40.0 | 69.9 |
| ROMANIA | --- | 20.8 |
| RUSSIAN FEDERATION | 5.0 | 20 |
| SLOVENIA | --- | 64.4 |
| KAZAKHSTAN | 12.0 | 12.9 |
| | | |
| MACEDONIA | --- | 64.3 |
| GEORGIA | --- | 12 |
| UKRAINE | 4.0 | 10.8 |
| CROATIA | --- | 67 |
| AZERBAIJAN | --- | 2.7 |
| | | |
| MOLDOVA | --- | 8.2 |
| SERBIA & MONTENEGRO | --- | 32.4 |
| BOSNIA & HERZEGOVINA | --- | 53 |
| TAJIKISTAN | --- | 35.9 |
| UZBEKISTAN | --- | 49.7 |
| | | |
| TURKMENISTAN | --- | 60 |
| BELARUS | 2.0 | 4.6 |
| | | |
| **CEE & EURASIA** | 18.6 | 41.8 |
| **NORTHERN TIER CEE** | 28.8 | 56.3 |
| **SOUTHERN TIER CEE** | --- | 53.9 |
| **EURASIA** | 5.8 | 25.2 |
| **ROM & BULG 2002** | --- | 43.5 |
| **NORTHERN TIER CEE AT GRADUATION** | --- | 48.3 |

SME data for 2001 are from UNECE, SME Databank (2003); 1990 -94 SME data are from World Bank, Transition: The First

Ten Years (2002); and Ayyagari, Beck, and Demirguc-Kunt, Small and Medium Enterprises across the Globe: A New Database, World Bank Policy Research Working Paper 3127, (August 2003).

## TABLE 24. MEASURES OF WAGE INEQUALITY

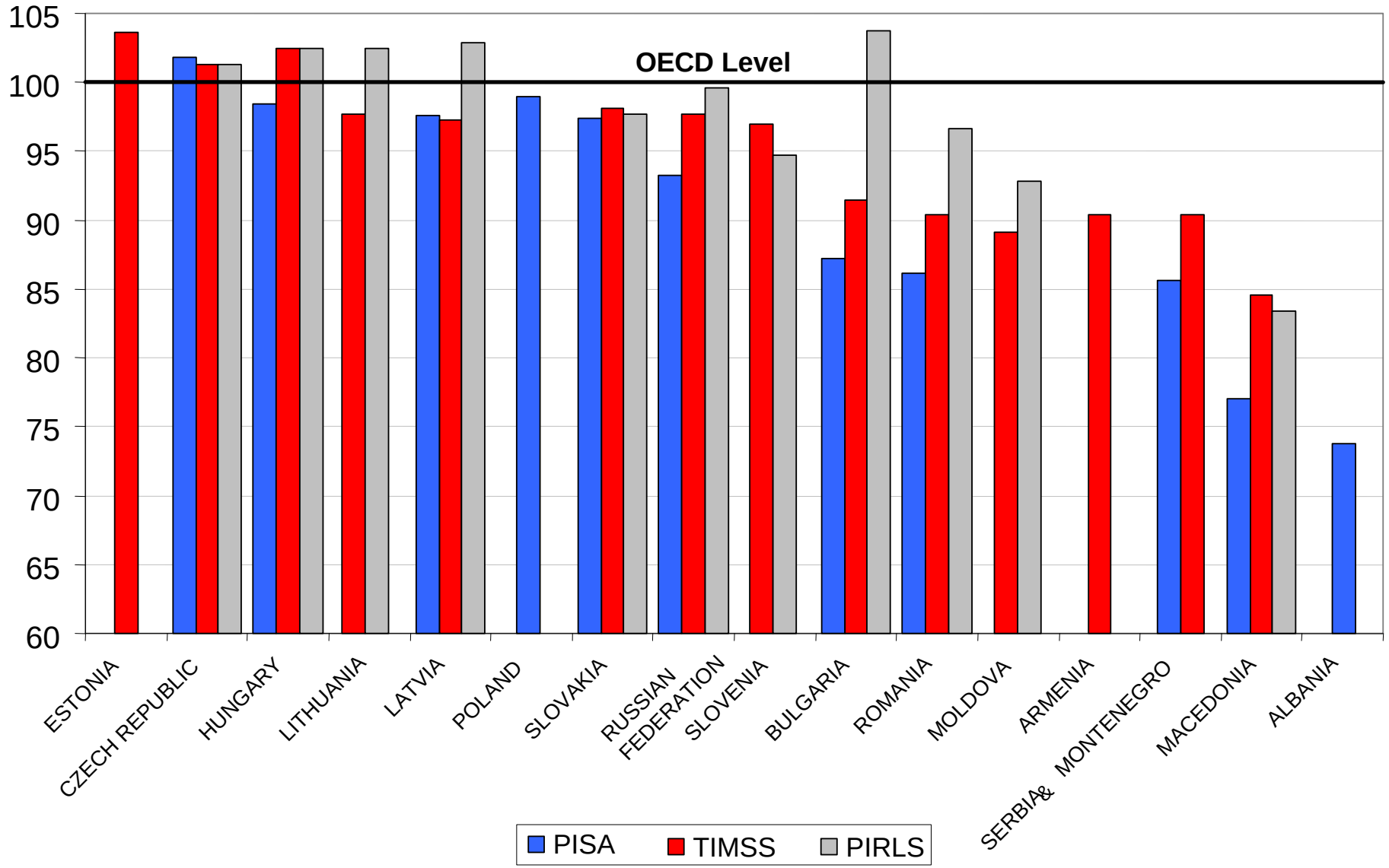
| | WAGE INEQUALITY 9TH DECILE TO 1ST DEC. 2002 | RANK | EARNINGS INEQUALITY UNICEF GINI 03 OR LATER | EVIDENCE OF DECREASING? | MAX | RANK | MIN. WAGE TO AVE WAGE | RANK | AVERAGE RANK OF 3 MEASURES OF INEQUALITY | ANY EVIDENCE OF INEQUALITY DECREASING? |
|---|---|---|---|---|---|---|---|---|---|---|
| AZERBAIJAN | 13.8 | 1 | 0.508 | no | 2002 | 2 | 8 | 1 | 1.3 | no |
| RUSSIAN FEDERATION | 11 | 2 | 0.491 | maybe | 2001 | 4 | 10 | 3 | 3.0 | yes |
| ARMENIA | 7 | 5 | 0.543 | no | --- | 1 | 18 | 5 | 3.7 | no |
| ESTONIA | 6.1 | 6 | 0.388 | unclear | 1999 | 8 | 33 | 7 | 7.0 | no |
| MOLDOVA | --- | --- | 0.372 | yes | 1999 | 10 | 15 | 4 | 7.0 | yes |
| KYRGYZ REPUBLIC | 9.5 | 3 | 0.478 | yes | 2001 | 11 | --- | --- | 7.0 | yes |
| BULGARIA | 5.8 | 9 | --- | --- | --- | --- | 32 | 6 | 7.5 | no |
| BELARUS | 5.8 | 9 | 0.34 | yes | 1995 | 13 | 9 | 2 | 8.0 | yes |
| ROMANIA | 5.9 | 7 | 0.358 | yes | 2000 | 12 | 33 | 7 | 8.7 | yes |
| UKRAINE | 5.9 | 7 | 0.408 | yes | 2000 | 6 | 44 | 15 | 9.3 | yes |
| HUNGARY | 4.9 | 12 | 0.386 | no | 2001 | 9 | 41 | 14 | 11.7 | yes |
| LITHUANIA | 5.4 | 11 | 0.393 | no | 2003 | 7 | 58 | 18 | 12.0 | no |
| LATVIA | 4.5 | 13 | 0.332 | yes maybe | 1996 | 14 | 35 | 10 | 12.3 | yes maybe |
| POLAND | 4 | 14 | 0.305 | no | --- | 15 | 34 | 9 | 12.7 | no |
| SLOVENIA | 3.4 | 15 | 0.305 | yes | 2001 | 15 | 40 | 13 | 14.3 | yes |
| CZECH REPUBLIC | 3 | 16 | 0.273 | no | 2001 | 17 | 37 | 11 | 14.7 | no |
| MACEDONIA | --- | --- | 0.262 | yes | 2001 | 19 | 46 | 16 | 17.5 | yes |
| SERBIA & MONTENEGRO | 8.5 | 4 | --- | --- | --- | --- | --- | --- | 4.0 | no |
| BOSNIA HERZEGOVINA | --- | --- | --- | --- | --- | --- | 56 | 17 | 17.0 | --- |
| SLOVAKIA | --- | --- | --- | --- | --- | --- | 38 | 12 | 12.0 | --- |
| KAZAKHSTAN | --- | --- | 0.359 | --- | --- | 11 | --- | --- | 11.0 | --- |
| **OECD** | 3.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- |

World Bank, *World Development Indicators* (2006), *Growth, Poverty and Inequality* (2005); and UNICEF, TransMONEE Database (December 2005).

Figure 13

# Functional Literacy

## PISA vs. TIMSS vs. PIRLS




OECD, Learning for Tomorrow's World: First Results from PISA 2003 (2004); IEA, TIMSS 2003 International Mathematics Report (2004) and PIRLS 2001 International Report (2003).

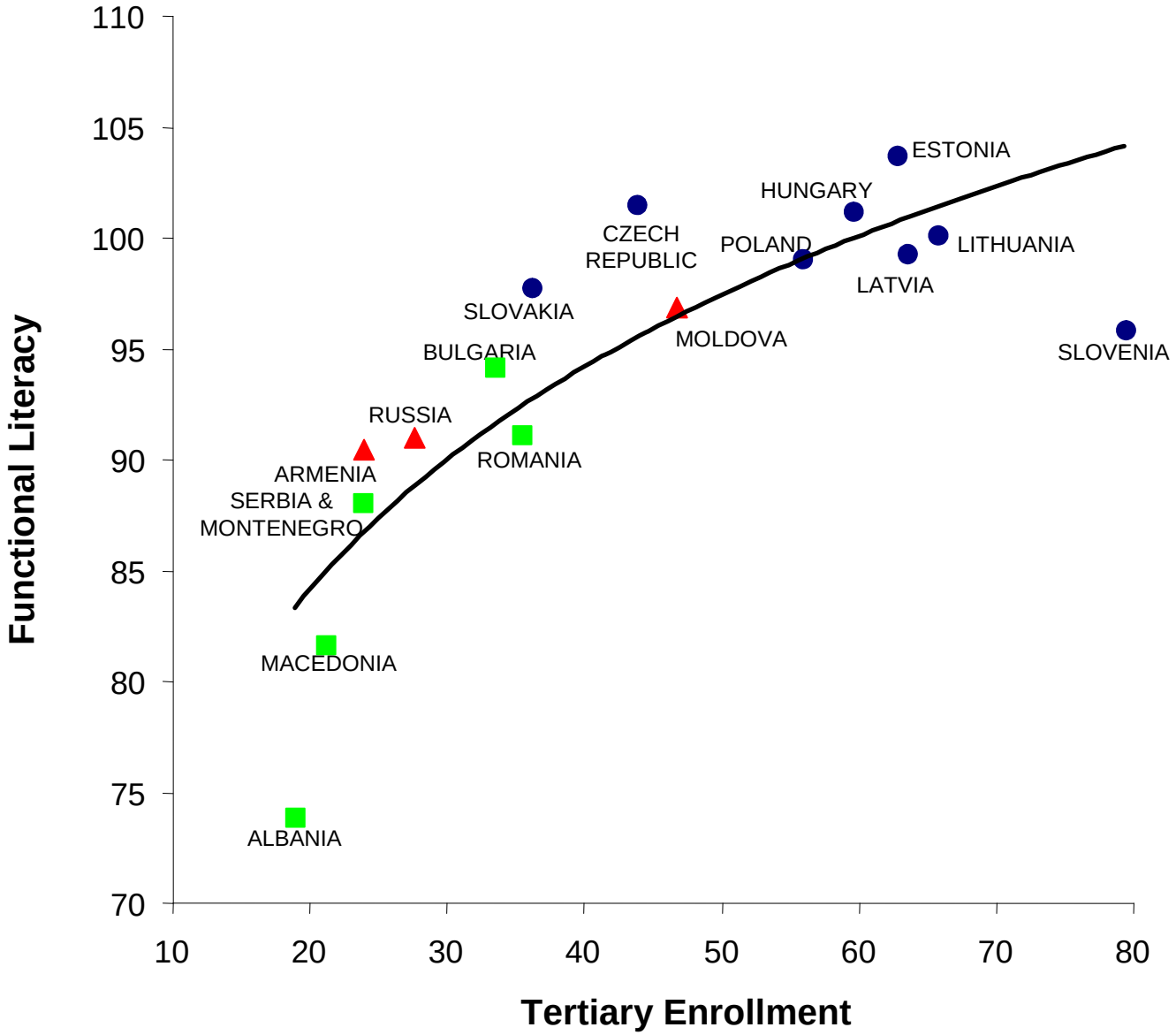
**TABLE 25: FUNCTIONAL LITERACY**

| | PISA | | TIMSS | | PIRLS | | AVERAGE OF 3 SCORES (OR LESS) | |
|---|---|---|---|---|---|---|---|---|
| | SCORE | vs. OECD | SCORE | vs. OECD | SCORE | vs. OECD | SCORE | vs. OECD |
| **NORTHERN TIER CEE** | | | | | | | | |
| SLOVENIA | --- | --- | 507 | 0.97 | 502 | 0.95 | 505 | 0.96 |
| CZECH REPUBLIC | 509 | 1.02 | 530 | 1.01 | 537 | 1.01 | 525 | 1.01 |
| SLOVAKIA | 487 | 0.97 | 513 | 0.98 | 518 | 0.98 | 506 | 0.98 |
| LATVIA | 488 | 0.98 | 509 | 0.97 | 545 | 1.03 | 514 | 0.99 |
| LITHUANIA | --- | --- | 511 | 0.98 | 543 | 1.02 | 527 | 1.00 |
| ESTONIA | --- | --- | 542 | 1.04 | --- | --- | 542 | 1.04 |
| HUNGARY | 492 | 0.98 | 536 | 1.02 | 543 | 1.02 | 524 | 1.01 |
| POLAND | 495 | 0.99 | --- | --- | --- | --- | 495 | 0.99 |
| **SOUTHERN TIER CEE** | | | | | | | | |
| MACEDONIA | 385 | 0.77 | 442 | 0.85 | 442 | 0.83 | 423 | 0.82 |
| BULGARIA | 436 | 0.87 | 478 | 0.91 | 550 | 1.04 | 488 | 0.94 |
| ALBANIA | 369 | 0.74 | --- | --- | --- | --- | 369 | 0.74 |
| ROMANIA | 431 | 0.86 | 473 | 0.90 | 512 | 0.97 | 472 | 0.91 |
| SERBIA & MONTENEGRO | 428 | 0.86 | 473 | 0.90 | --- | --- | 451 | 0.88 |
| **EURASIA** | | | | | | | | |
| RUSSIAN FEDERATION | 466 | 0.93 | 511 | 0.98 | 528 | 1.00 | 502 | 0.97 |
| MOLDOVA | --- | --- | 466 | 0.89 | 492 | 0.93 | 479 | 0.91 |
| ARMENIA | --- | --- | 473 | 0.90 | --- | --- | 473 | 0.90 |
| **OECD** | **500** | **1.00** | **523** | **1.00** | **530** | **1.00** | **518** | **1.00** |
| **SINGAPORE** | --- | --- | 592 | 1.13 | 528 | 1.00 | 560 | 1.06 |
| **HONG KONG** | 533 | 1.07 | 571 | 1.09 | 529 | 1.00 | 544 | 1.05 |
| **GERMANY** | 499 | 1.00 | --- | --- | 539 | 1.02 | 519 | 1.01 |
| **NEW ZEALAND** | 522 | 1.04 | 507 | 0.97 | 529 | 1.00 | 519 | 1.00 |
| **U.S.** | 490 | 0.98 | 516 | 0.99 | 542 | 1.02 | 516 | 1.00 |
| **IRAN** | --- | --- | 432 | 0.83 | 414 | 0.78 | 423 | 0.80 |
| **MOROCCO** | --- | --- | 392 | 0.75 | 350 | 0.66 | 371 | 0.70 |

OECD, *Learning for Tomorrow's World: First Results from PISA 2003* (2004); IEA, *TIMSS 2003 International Mathematics Report* (2004) and *PIRLS 2001 International Report* (2003).

Figure 14

# Tertiary Education vs. Functional Literacy




OECD, Learning for Tomorrow's World: First Results from PISA 2003 (2004); IEA, TIMSS 2003 International Mathematics Report (2004) and PIRLS 2001 International Report (2003) and UNICEF, *TransMONEE Database* (2006).

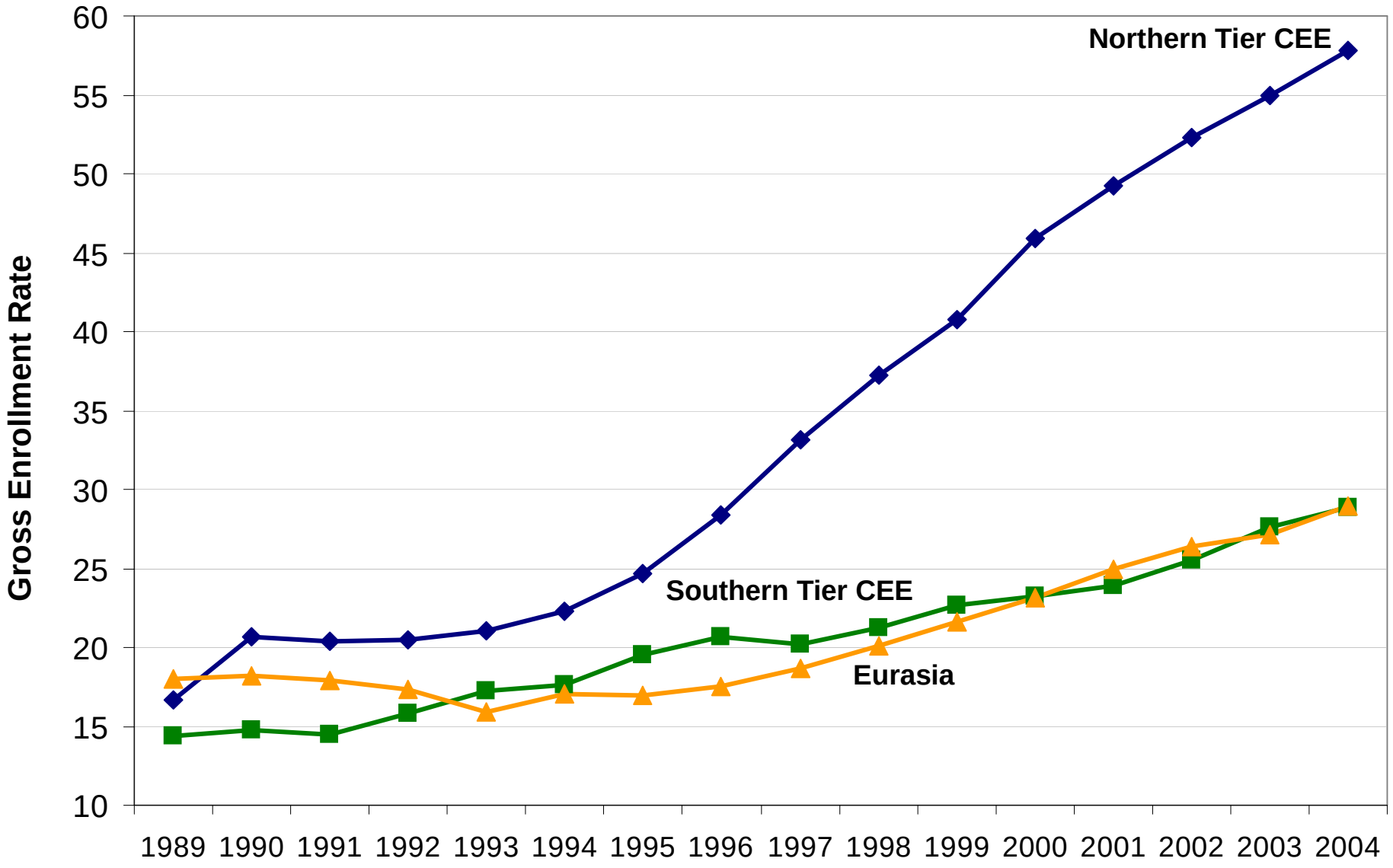
**TABLE 26. HIGHER EDUCATION ENROLLMENTS**
**(GROSS RATES, PER CENT OF POPULATION AGED 19-24)**

| | 1990 | 1995 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| SLOVENIA | 22.9 | 32.6 | 61.0 | 67.2 | 70.1 | 73.7 | 79.5 |
| ESTONIA | 34.5 | 33.9 | 60.1 | 61.5 | 62.9 | --- | --- |
| LITHUANIA | 26.3 | 25.2 | 49.3 | 53.5 | 58.4 | 62.3 | 65.9 |
| LATVIA | 20.8 | 21.7 | 56.4 | 60.0 | 62.5 | 64.8 | 63.6 |
| HUNGARY | 12.1 | 18.2 | 35.3 | 39.3 | 44.6 | 56.8 | 59.6 |
| | | | | | | | |
| POLAND | 17.0 | 27.2 | 47.4 | 50.6 | 52.4 | 53.9 | 55.9 |
| RUSSIAN FEDERATION | 24.6 | 22.2 | 35.4 | 39.6 | 42.0 | 44.5 | 46.7 |
| BELARUS | 34.0 | 31.4 | 39.1 | 40.7 | 42.0 | 43.2 | 45.4 |
| UKRAINE | 21.7 | 20.8 | 32.6 | 36.7 | 38.7 | 41.4 | 44.8 |
| KAZAKHSTAN | 18.7 | 16.6 | 29.0 | 33.4 | 37.6 | 40.7 | 44.7 |
| | | | | | | | |
| CZECH REPUBLIC | 17.2 | 19.8 | 28.2 | 30.9 | 35.1 | 39.9 | 43.9 |
| GEORGIA | 20.9 | 29.2 | 34.9 | 37.3 | 38.5 | 35.2 | 39.6 |
| SLOVAKIA | 14.3 | 18.3 | 29.4 | 31.2 | 32.0 | 33.3 | 36.3 |
| KYRGYZ REPUBLIC | 12.9 | 12.9 | 34.5 | 37.4 | 35.0 | 34.7 | 36.2 |
| ROMANIA | 9.2 | 17.5 | 26.8 | 29.5 | 32.5 | 34.0 | 35.5 |
| | | | | | | | |
| CROATIA | 18.1 | 22.2 | 28.2 | 29.5 | 31.5 | 32.7 | 35.1 |
| BULGARIA | 21.7 | 30.2 | 31.8 | 31.2 | 32.2 | 31.9 | 33.6 |
| SERBIA AND MONTENEGRO | 20.6 | 20.2 | 25.3 | 23.9 | --- | --- | --- |
| MOLDOVA | 15.7 | 16.2 | 21.1 | 22.6 | 24.1 | 25.7 | 27.7 |
| ARMENIA | 20.1 | 15.2 | 15.5 | 16.3 | 21.8 | 22.7 | 23.9 |
| | | | | | | | |
| BOSNIA HERZEGOVINA | 8.5 | --- | 17.9 | 18.6 | 19.8 | --- | --- |
| MACEDONIA | 17.6 | 17.1 | 18.6 | 20.2 | 22.9 | 22.6 | 21.2 |
| ALBANIA | 7.8 | 10.2 | 14.3 | 14.3 | 14.3 | 17.1 | 19.0 |
| TAJIKISTAN | 11.8 | 12.1 | 11.4 | 11.9 | 13.0 | 13.8 | 14.4 |
| AZERBAIJAN | 12.6 | 12.7 | 14.3 | 14.0 | 13.5 | 13.2 | 13.2 |
| | | | | | | | |
| UZBEKISTAN | 15.2 | 7.6 | 6.6 | 7.3 | 7.9 | 8.3 | 8.3 |
| TURKMENISTAN | 9.9 | 6.4 | 3.0 | 2.7 | 2.6 | 2.5 | 2.5 |
| **NORTHERN TIER CEE** | 20.6 | 24.6 | 45.9 | 49.3 | 52.2 | 54.9 | 57.8 |
| **SOUTHERN TIER CEE** | 14.8 | 19.6 | 23.3 | 23.9 | 25.5 | 27.6 | 28.9 |
| **EURASIA** | 18.2 | 17.0 | 23.1 | 25.0 | 26.4 | 27.2 | 28.9 |
| | | | | | | | |
| **FINLAND** | | | 82.8 | 84.3 | 84.8 | 86.9 | 89.5 |
| **UNITED STATES** | | | 69.2 | 70.1 | 80.7 | 82.6 | 82.4 |
| **LEBANON** | | | 37.0 | 42.3 | 44.8 | 44.7 | 47.6 |
| **THAILAND** | | | 34.2 | 37.9 | 39.1 | 40.1 | 41.0 |
| **COLOMBIA** | | | 23.1 | 24.0 | 24.2 | 24.0 | 26.9 |
| **CHINA (P.R.C.)** | | | 7.6 | 9.8 | 12.6 | 15.4 | 19.1 |
| **TANZANIA** | | | . | 0.7 | 0.8 | 0.9 | 1.2 |

UNICEF, *TransMONEE Database* (2006) and World Bank, *World Development Indicators 2006.*

Figure 15

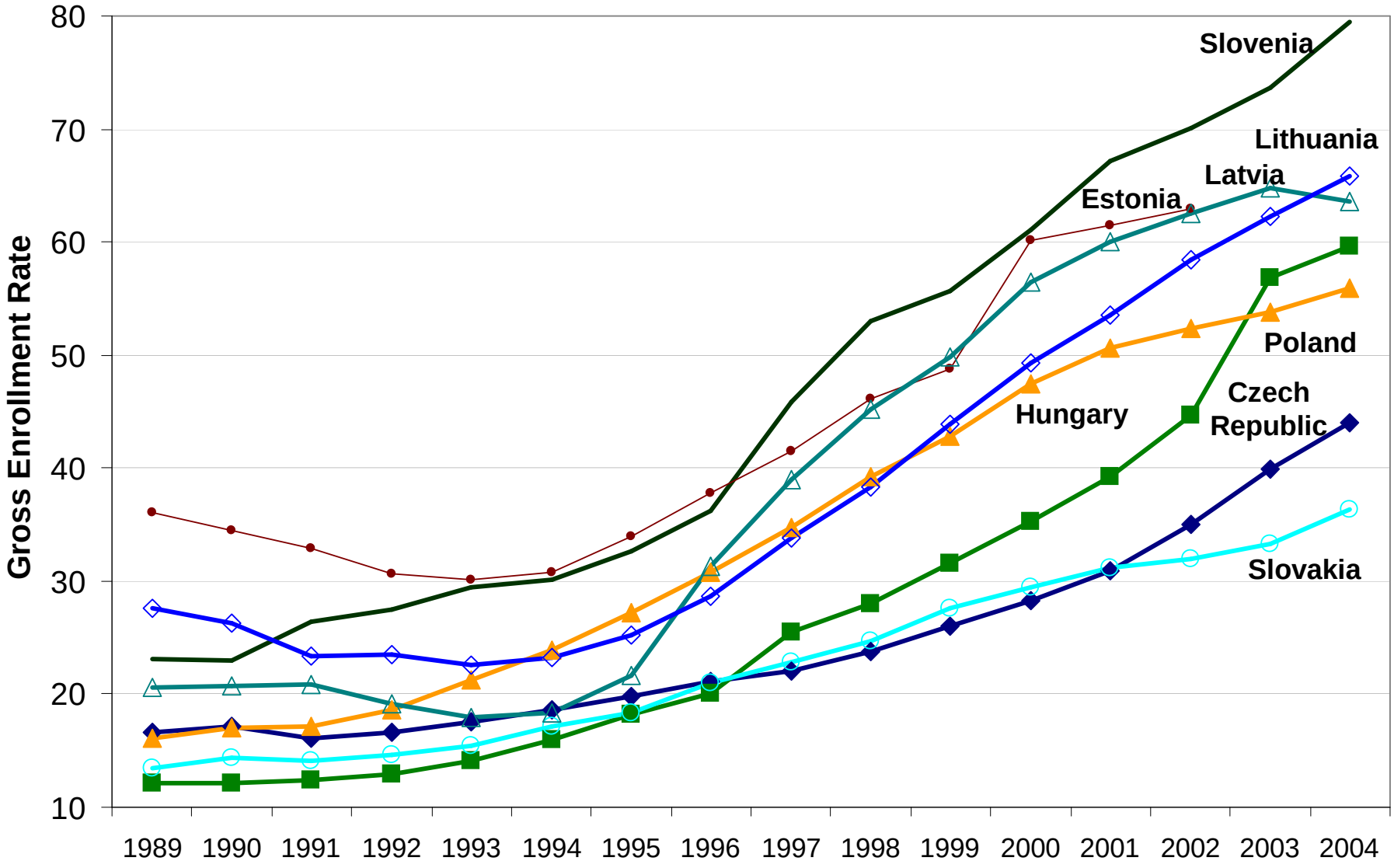
# Higher Education Enrollment




UNICEF, *TransMONEE Database* (2006).

Figure 16

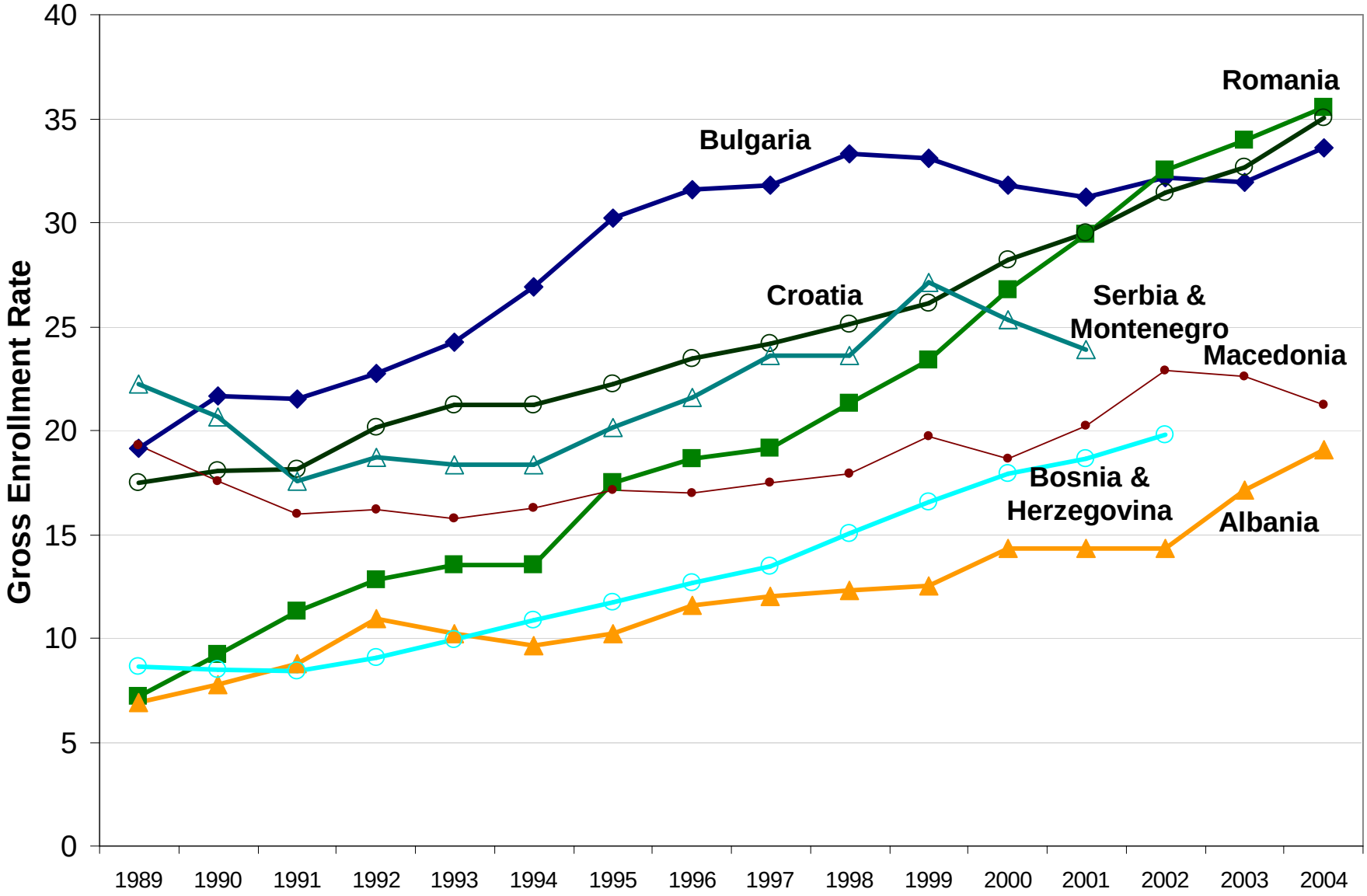
# Higher Education Enrollment: Northern Tier CEE




UNICEF, *TransMONEE Database* (2006).

Figure 17

# Higher Education Enrollment: Southern Tier CEE

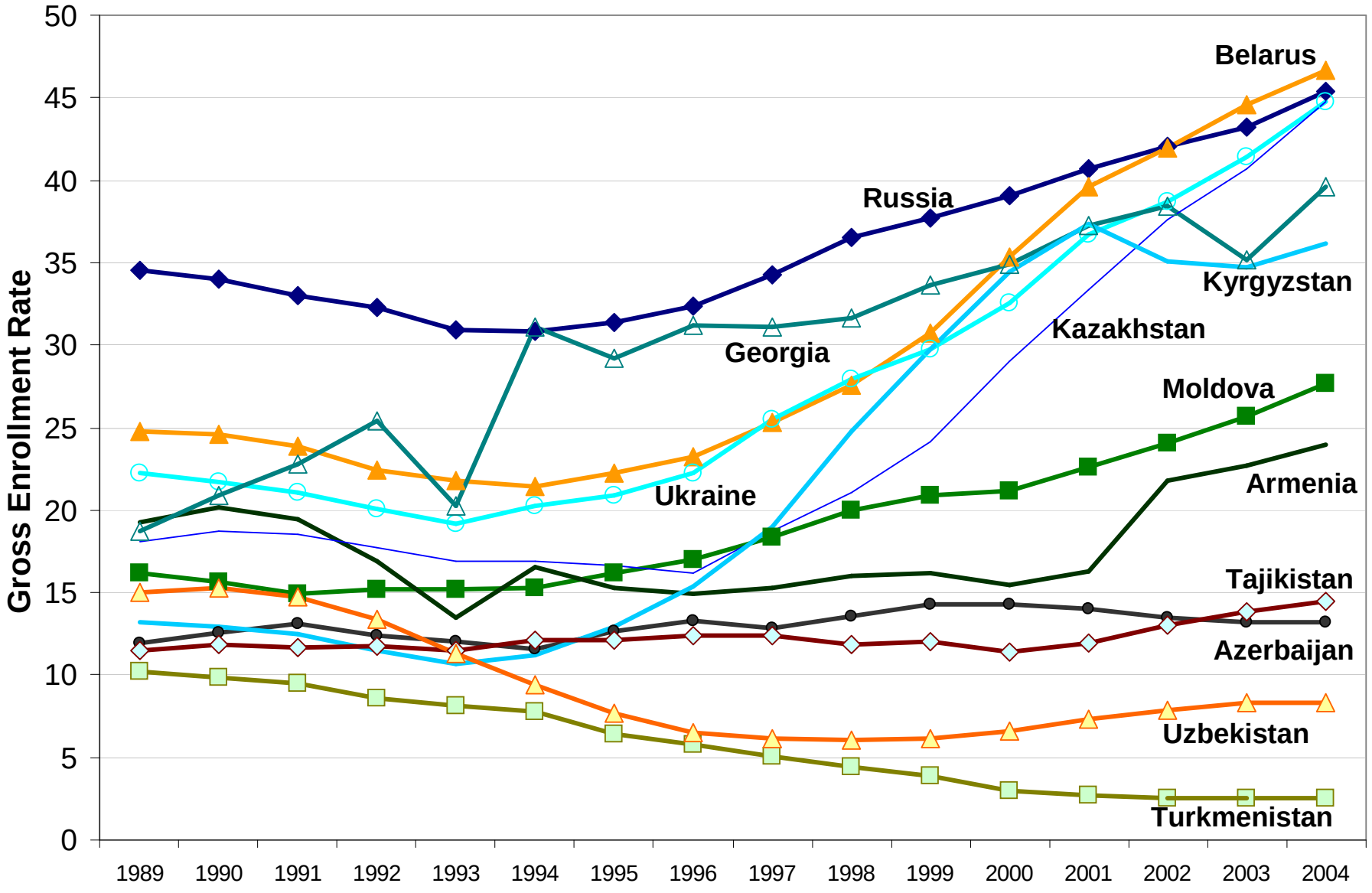



UNICEF, *TransMONEE Database* (2006). Missing data were interpolated.

USAID
FROM THE AMERICAN PEOPLE

Figure 18

# Higher Education Enrollment: Eurasia






UNICEF, *TransMONEE Database* (2006).

**TABLE 27. R&D PERSONNEL PER MILLION INHABITANTS (PROXY FOR BRAIN DRAIN)**

| | 1987-1997 | 1996-2004 | % CHANGE |
|---|---|---|---|
| HUNGARY | 1099 | 1472 | 34 |
| CZECH REPUBLIC | 1222 | 1594 | 30 |
| POLAND | 1358 | 1581 | 16 |
| LITHUANIA | 2028 | 2136 | 5 |
| SLOVAKIA | 1866 | 1984 | 6 |
| | | | |
| RUSSIA | 3587 | 3319 | -7 |
| ESTONIA | 2017 | 2523 | 25 |
| MOLDOVA | 330 | 172 | -48 |
| ARMENIA | 1485 | 1537 | 4 |
| LATVIA | 1049 | 1434 | 37 |
| | | | |
| SLOVENIA | 2251 | 2543 | 13 |
| KYRGYZ REPUBLIC | 584 | 406 | -30 |
| BELARUS | 2248 | 1871 | -17 |
| ROMANIA | 1387 | 976 | -30 |
| UKRAINE | 2171 | 1774 | -18 |
| | | | |
| BULGARIA | 1747 | 1263 | -28 |
| GEORGIA | --- | 2600 | --- |
| CROATIA | 1916 | 1296 | -32 |
| AZERBAIJAN | 2791 | 1236 | -56 |
| KAZAKHSTAN | --- | 629 | --- |
| | | | |
| MACEDONIA | 1335 | --- | --- |
| SERBIA & MONTENEGRO | 1099 | 1031 | -6 |
| TAJIKISTAN | 666 | --- | --- |
| UZBEKISTAN | 1763 | --- | --- |
| **NORTHERN TIER CEE** | 1611 | 1908 | 21 |
| **JAPAN** | 4933 | 5124 | 4 |
| **FINLAND** | 2576 | 6052 | 135 |
| **GREECE** | 1014 | 1294 | 28 |
| **HONG KONG** | 93 | 1271 | 1263 |
| | | | |
| **SOUTH AFRICA** | 491 | 308 | -37 |
| **PHILIPPINES** | 156 | 48 | -69 |
| **COLOMBIA** | 86 | 91 | 6 |
| **BURMA (MYANMAR)** | 7 | 9.03 | 25 |

World Bank, *World Development Indicators* (2006 and earlier editions).

**TABLE 28. WORLD BANK INVESTMENT CLIMATE SURVEYS: MAJOR CONSTRAINTS TO BUSINESS**

| | Policy | Labor Constraints | | Regulations and Tax Admin. | | |
|---|---|---|---|---|---|---|
| | Uncertainty | Regulations | Skills | Tax Rates | Tax Admin. | Licensing |
| | (%) | (%) | (%) | (%) | (%) | (%) |
| POLAND | 42.7 | 17.9 | 15.3 | 57.7 | 41.0 | 13.5 |
| GEORGIA | 45.2 | 7.6 | 14.1 | 35.7 | 47.1 | 9.9 |
| SERBIA & MONTENEGRO | 61.2 | 13.4 | 10.7 | 29.5 | 29.3 | 7.8 |
| ROMANIA | 33.9 | 16.4 | 14.2 | 34.1 | 33.2 | 23.2 |
| MOLDOVA | 31.6 | 8.2 | 12.0 | 37.8 | 47.6 | 24.6 |
| UKRAINE | 31.3 | 6.5 | 19.8 | 45.7 | 34.9 | 18.2 |
| ALBANIA | 19.1 | 2.5 | 10.4 | 40.9 | 25.0 | 22.9 |
| CZECH REPUBLIC | 22.0 | 15.6 | 12.5 | 59.1 | 19.8 | 10.2 |
| KYRGYZ REPUBLIC | 33.2 | 2.5 | 18.9 | 31.3 | 35.1 | 11.6 |
| MACEDONIA | 27.9 | 9.2 | 6.1 | 20.7 | 15.1 | 17.4 |
| BOSNIA & HERZEGOVINA | 35.1 | 3.2 | 3.6 | 15.6 | 26.0 | 11.9 |
| BULGARIA | 27.6 | 7.8 | 10.4 | 20.4 | 13.0 | 15.1 |
| HUNGARY | 26.3 | 10.3 | 12.9 | 50.6 | 13.7 | 3.3 |
| LITHUANIA | 23.2 | 8.9 | 15.3 | 40.9 | 19.8 | 8.1 |
| RUSSIAN FEDERATION | 26.2 | 3.1 | 13.1 | 21.8 | 31.8 | 14.6 |
| ARMENIA | 12.2 | 2.9 | 2.3 | 38.4 | 37.7 | 9.0 |
| BELARUS | 23.4 | 3.4 | 6.6 | 20.4 | 44.2 | 25.8 |
| LATVIA | 22.3 | 3.5 | 17.8 | 29.4 | 27.6 | 9.2 |
| CROATIA | 17.9 | 3.0 | 7.2 | 12.0 | 7.7 | 9.2 |
| UZBEKISTAN | 11.5 | 3.0 | 4.6 | 18.3 | 22.7 | 7.7 |
| TAJIKISTAN | 5.6 | 1.5 | 4.6 | 22.2 | 21.8 | 14.2 |
| SLOVAKIA | 13.0 | 4.6 | 8.2 | 8.3 | 19.8 | 17.9 |
| KAZAKHSTAN | 9.2 | 2.5 | 8.6 | 15.6 | 14.3 | 9.0 |
| AZERBAIJAN | 2.9 | 1.5 | 1.8 | 22.9 | 17.5 | 10.1 |
| ESTONIA | 5.3 | 18.8 | 7.1 | 3.0 | 4.5 | 11.2 |
| SLOVENIA | 11.5 | 4.5 | 5.4 | 12.7 | 5.9 | 3.2 |
| **CEE & EURASIA** | 23.9 | 7.0 | 10.1 | 28.7 | 25.2 | 13.0 |
| **NORTHERN TIER CEE** | 20.8 | 10.5 | 11.8 | 32.7 | 19.0 | 9.6 |
| **SOUTHERN TIER CEE** | 31.8 | 7.9 | 8.9 | 24.7 | 21.3 | 15.4 |
| **EURASIA** | 21.1 | 3.9 | 9.7 | 28.2 | 32.2 | 14.1 |
| **BRAZIL** | 75.9 | 56.9 | 39.6 | 84.5 | 66.1 | 29.8 |
| **CHINA** | 32.9 | 20.7 | 30.7 | 36.8 | 26.7 | 21.3 |
| **ERITREA** | 31.5 | 5.2 | 41.0 | 31.1 | 16.2 | 2.7 |
| **KENYA** | 51.5 | 22.5 | 27.6 | 68.2 | 50.9 | 15.2 |
| **UGANDA** | 27.6 | 10.8 | 30.8 | 48.3 | 36.1 | 10.1 |
| **ZAMBIA** | 57.0 | 16.9 | 35.7 | 57.5 | 27.5 | 10.1 |

World Bank, *World Development Indicators* (2006) and *World Development Report* 2004.

Percentage of businesses surveyed which find this aspect of doing business to be a major obstacle.

**TABLE 28 CONT. WORLD BANK INVESTMENT CLIMATE SURVEYS: MAJOR CONSTRAINTS TO BUSINESS**

| | Infrastructure and Business Environment | | | | | Average of 11 Indicators |
|---|---|---|---|---|---|---|
| | Electricity (%) | Finance (%) | Courts (%) | Crime (%) | Corruption (%) | (%) |
| POLAND | 4.1 | 39.6 | 21.0 | 15.0 | 18.2 | 26.0 |
| GEORGIA | 33.5 | 25.4 | 13.5 | 24.5 | 20.1 | 25.1 |
| SERBIA & MONTENEGRO | 4.7 | 43.9 | 30.0 | 13.5 | 25.5 | 24.5 |
| ROMANIA | 8.1 | 22.6 | 19.7 | 15.3 | 30.1 | 22.8 |
| MOLDOVA | 2.9 | 31.9 | 22.1 | 10.1 | 17.6 | 22.4 |
| UKRAINE | 4.9 | 29.9 | 15.2 | 12.3 | 22.6 | 21.9 |
| ALBANIA | 34.7 | 19.5 | 23.9 | 8.6 | 31.8 | 21.8 |
| CZECH REPUBLIC | 15.5 | 17.4 | 25.2 | 15.8 | 20.5 | 21.2 |
| KYRGYZ REPUBLIC | 4.0 | 23.1 | 17.1 | 19.4 | 32.8 | 20.8 |
| MACEDONIA | 12.0 | 31.6 | 31.0 | 12.8 | 34.7 | 19.9 |
| BOSNIA & HERZEGOVINA | 8.2 | 25.8 | 21.5 | 19.9 | 24.7 | 17.8 |
| BULGARIA | 6.4 | 22.0 | 17.2 | 11.5 | 19.0 | 15.5 |
| HUNGARY | 2.1 | 27.9 | 7.4 | 5.6 | 9.4 | 15.4 |
| LITHUANIA | 3.9 | 10.3 | 15.3 | 9.5 | 14.0 | 15.4 |
| RUSSIAN FEDERATION | 5.1 | 15.7 | 9.5 | 9.3 | 16.5 | 15.2 |
| ARMENIA | 3.2 | 20.8 | 12.4 | 2.3 | 20.1 | 14.7 |
| BELARUS | 0.9 | 22.5 | 3.0 | 2.9 | 6.6 | 14.5 |
| LATVIA | 4.5 | 6.5 | 5.8 | 3.1 | 9.6 | 12.7 |
| CROATIA | 2.1 | 12.7 | 29.3 | 3.9 | 18.5 | 11.2 |
| UZBEKISTAN | 7.2 | 12.5 | 6.6 | 8.9 | 8.9 | 10.2 |
| TAJIKISTAN | 10.1 | 7.2 | 4.9 | 4.1 | 15.7 | 10.2 |
| SLOVAKIA | 2.7 | 7.9 | 13.1 | 5.1 | 10.6 | 10.1 |
| KAZAKHSTAN | 2.7 | 14.9 | 8.2 | 5.3 | 12.7 | 9.4 |
| AZERBAIJAN | 4.9 | 7.0 | 4.4 | 2.4 | 21.3 | 8.8 |
| ESTONIA | 3.3 | 6.1 | 2.0 | 1.9 | 4.3 | 6.1 |
| SLOVENIA | 2.7 | 9.5 | 8.1 | 0.9 | 3.7 | 5.0 |
| **CEE & EURASIA** | 7.5 | 19.8 | 14.9 | 9.4 | 18.1 | 16.1 |
| **NORTHERN TIER CEE** | 4.9 | 15.7 | 12.2 | 7.1 | 11.3 | 14.0 |
| **SOUTHERN TIER CEE** | 10.9 | 25.4 | 24.7 | 12.2 | 26.3 | 19.1 |
| **EURASIA** | 7.2 | 19.2 | 10.6 | 9.2 | 17.7 | 15.7 |
| **BRAZIL** | 20.3 | 71.7 | 32.8 | 52.2 | 67.2 | 45.8 |
| **CHINA** | 29.7 | 22.3 | | 20.0 | 27.3 | 22.0 |
| **ERITREA** | 38.2 | 53.7 | | 1.3 | 2.7 | 18.6 |
| **KENYA** | 48.1 | 58.3 | | 69.8 | 73.8 | 44.4 |
| **UGANDA** | 44.5 | 52.8 | | 26.8 | 38.2 | 29.3 |
| **ZAMBIA** | 39.6 | 67.7 | 38.6 | 48.8 | 46.4 | 36.2 |

World Bank, *World Development Indicators* (2006).
Percentage of businesses surveyed which find this aspect of doing business to be a major obstacle.

**TABLE 29. WORLD BANK INVESTMENT CLIMATE SURVEYS: MAJOR CONSTRAINTS TO BUSINESS--RANKINGS**

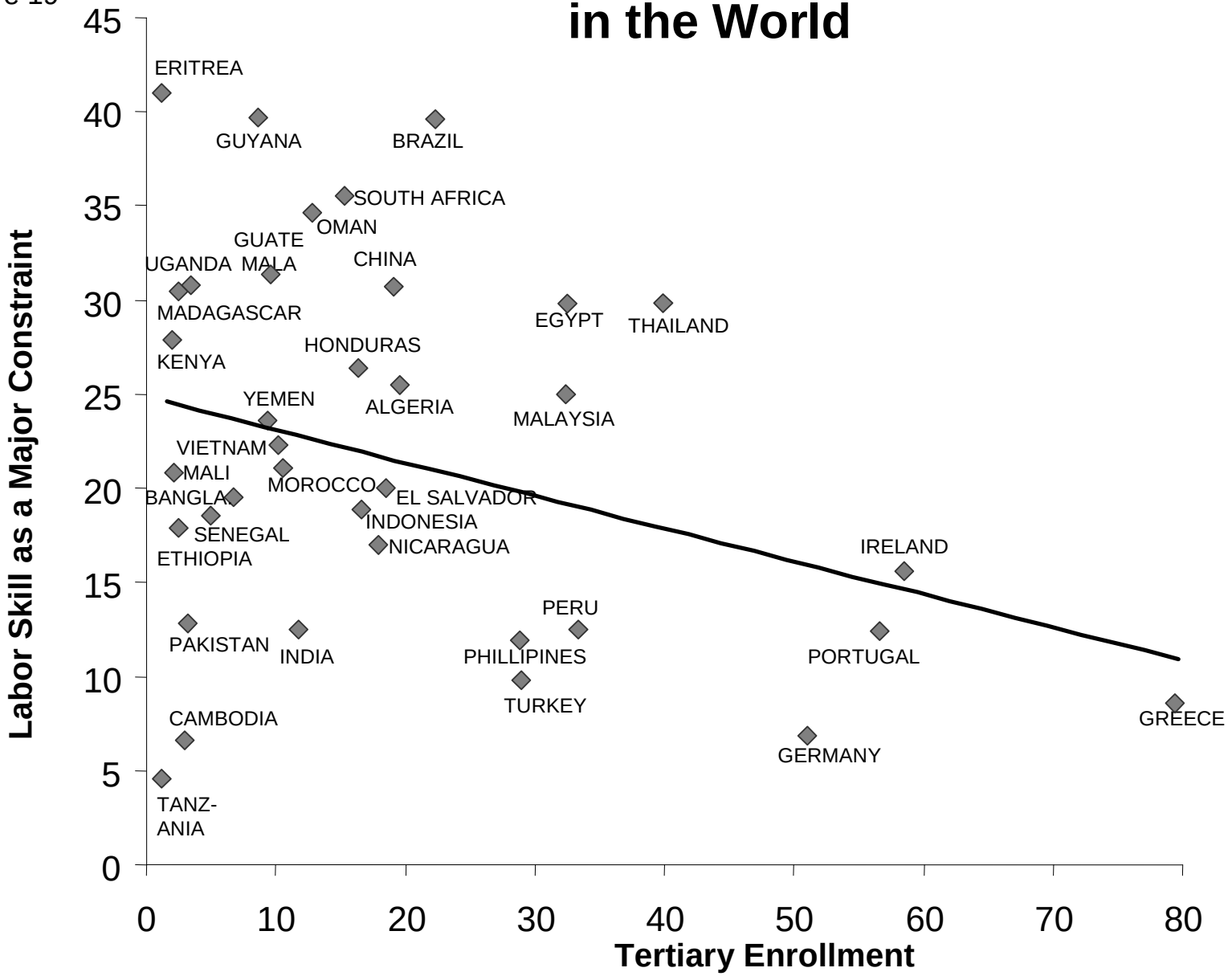
| | Policy | Regulations and Tax Admin. | | | Labor Constraints | | Infrastructure and Business Environment | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Uncertainty | Tax Rates | Tax Admin. | Licensing | Regulations | Worker Skills | Electricity | Finance | Courts | Crime | Corruption |
| POLAND | 2 | 1 | 3 | 10 | 7 | 8 | 11 | 4 | 5 | 9 | 6 |
| GEORGIA | 2 | 3 | 1 | 10 | 11 | 8 | 4 | 5 | 9 | 6 | 7 |
| SERBIA & MONTENEGRO | 1 | 4 | 5 | 10 | 8 | 9 | 11 | 2 | 3 | 7 | 6 |
| ROMANIA | 2 | 1 | 3 | 5 | 8 | 10 | 11 | 6 | 7 | 9 | 4 |
| MOLDOVA | 4 | 2 | 1 | 5 | 10 | 8 | 11 | 3 | 6 | 9 | 7 |
| UKRAINE | 3 | 1 | 2 | 7 | 10 | 6 | 11 | 4 | 8 | 9 | 5 |
| ALBANIA | 8 | 1 | 4 | 6 | 11 | 9 | 2 | 7 | 5 | 10 | 3 |
| CZECH REPUBLIC | 3 | 1 | 5 | 11 | 8 | 10 | 9 | 6 | 2 | 7 | 4 |
| KYRGYZ REPUBLIC | 2 | 4 | 1 | 8 | 11 | 7 | 10 | 5 | 8 | 6 | 3 |
| MACEDONIA | 4 | 5 | 7 | 6 | 10 | 11 | 9 | 2 | 3 | 8 | 1 |
| BOSNIA & HERZEGOVINA | 1 | 7 | 2 | 8 | 11 | 10 | 9 | 3 | 5 | 6 | 4 |
| BULGARIA | 1 | 3 | 7 | 6 | 10 | 9 | 11 | 2 | 5 | 8 | 4 |
| HUNGARY | 3 | 1 | 4 | 10 | 6 | 5 | 11 | 2 | 8 | 9 | 7 |
| LITHUANIA | 2 | 1 | 3 | 10 | 9 | 4 | 11 | 7 | 4 | 8 | 6 |
| RUSSIAN FEDERATION | 2 | 3 | 1 | 6 | 11 | 7 | 10 | 5 | 8 | 9 | 4 |
| ARMENIA | 6 | 1 | 2 | 7 | 9 | 10 | 8 | 3 | 5 | 10 | 4 |
| BELARUS | 3 | 5 | 1 | 2 | 8 | 6 | 11 | 4 | 9 | 10 | 6 |
| LATVIA | 3 | 1 | 2 | 6 | 10 | 4 | 9 | 7 | 8 | 11 | 5 |
| CROATIA | 3 | 5 | 7 | 6 | 10 | 8 | 11 | 4 | 1 | 9 | 2 |
| UZBEKISTAN | 4 | 2 | 1 | 7 | 11 | 10 | 8 | 3 | 9 | 5 | 5 |
| TAJIKISTAN | 7 | 1 | 2 | 4 | 11 | 9 | 5 | 6 | 8 | 10 | 3 |
| SLOVAKIA | 4 | 6 | 1 | 2 | 10 | 7 | 11 | 8 | 3 | 9 | 5 |
| KAZAKHSTAN | 5 | 1 | 3 | 6 | 11 | 7 | 10 | 2 | 8 | 9 | 4 |
| AZERBAIJAN | 8 | 1 | 3 | 4 | 11 | 10 | 6 | 5 | 9 | 9 | 2 |
| ESTONIA | 5 | 9 | 6 | 2 | 1 | 3 | 8 | 4 | 10 | 11 | 7 |
| SLOVENIA | 2 | 1 | 5 | 9 | 7 | 6 | 10 | 3 | 4 | 11 | 8 |
| **CEE & EURASIA** | 3 | 1 | 2 | 7 | 11 | 8 | 10 | 4 | 6 | 9 | 5 |
| **NORTHERN TIER CEE** | 2 | 1 | 3 | 9 | 8 | 6 | 11 | 4 | 5 | 10 | 7 |
| **SOUTHERN TIER CEE** | 1 | 4 | 6 | 7 | 11 | 10 | 9 | 3 | 4 | 8 | 2 |
| **EURASIA** | 3 | 2 | 1 | 6 | 11 | 8 | 10 | 4 | 7 | 9 | 5 |
| **BRAZIL** | 2 | 1 | 5 | 10 | 6 | 8 | 11 | 3 | 9 | 7 | 4 |
| **CHINA** | 2 | 1 | 6 | 8 | 9 | 3 | 4 | 7 | --- | 10 | 5 |
| **ERITREA** | 4 | 5 | 6 | 8 | 7 | 2 | 3 | 1 | --- | 10 | 8 |
| **KENYA** | 5 | 3 | 6 | 10 | 9 | 8 | 7 | 4 | --- | 2 | 1 |
| **UGANDA** | 7 | 2 | 5 | 10 | 9 | 6 | 3 | 1 | --- | 8 | 4 |
| **ZAMBIA** | 3 | 2 | 9 | 11 | 10 | 8 | 6 | 1 | 7 | 4 | 5 |

World Bank, *World Development Indicators* (2006).

"1" represents the largest perceived business obstacle in the country.

Figure 19

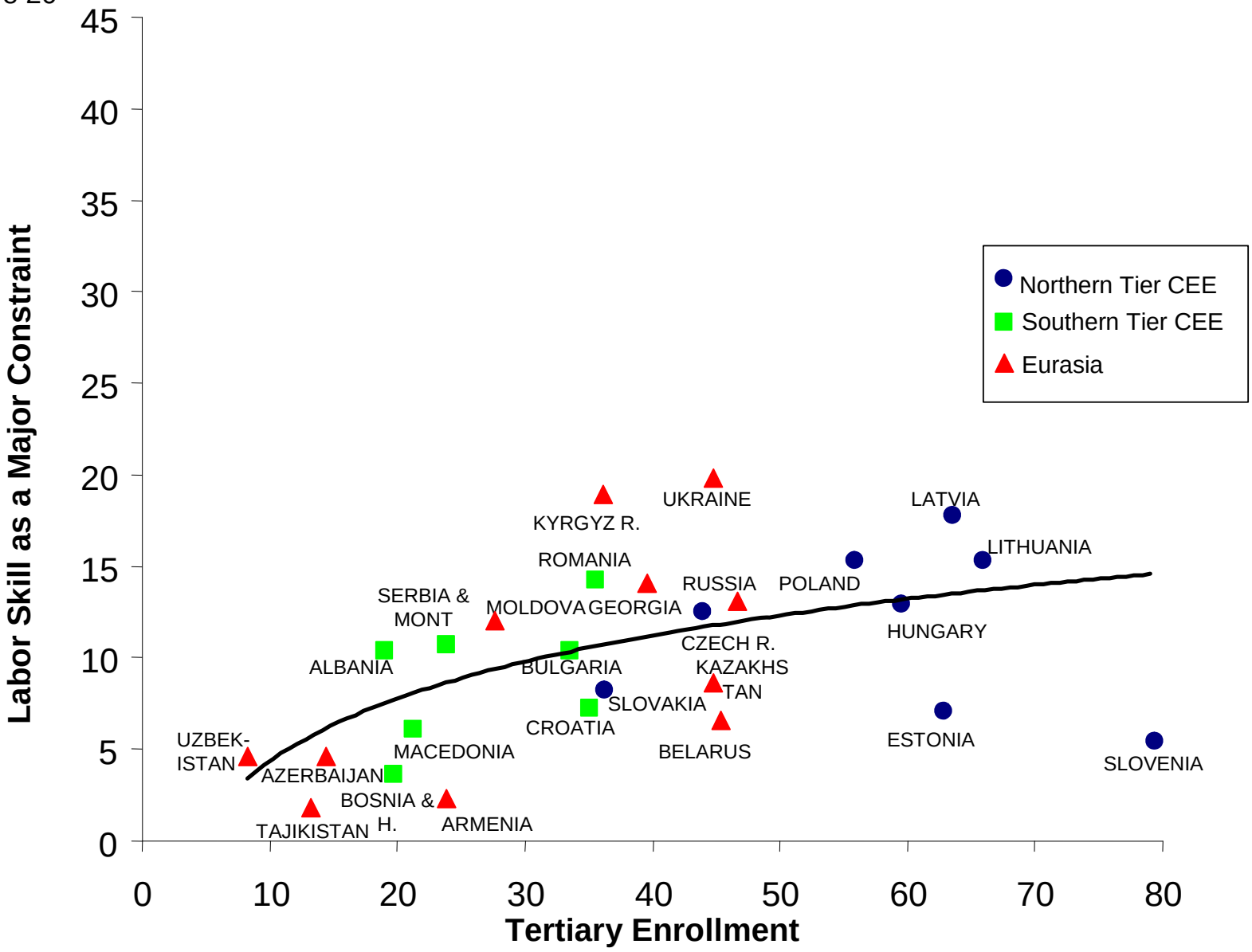
# Labor Skill Constraints vs. Tertiary Education in the World




World Bank, *World Development Indicators* (2006) and UNICEF, *TransMONEE Database* (2006).

# Labor Skill Constraints vs. Tertiary Education in E&E

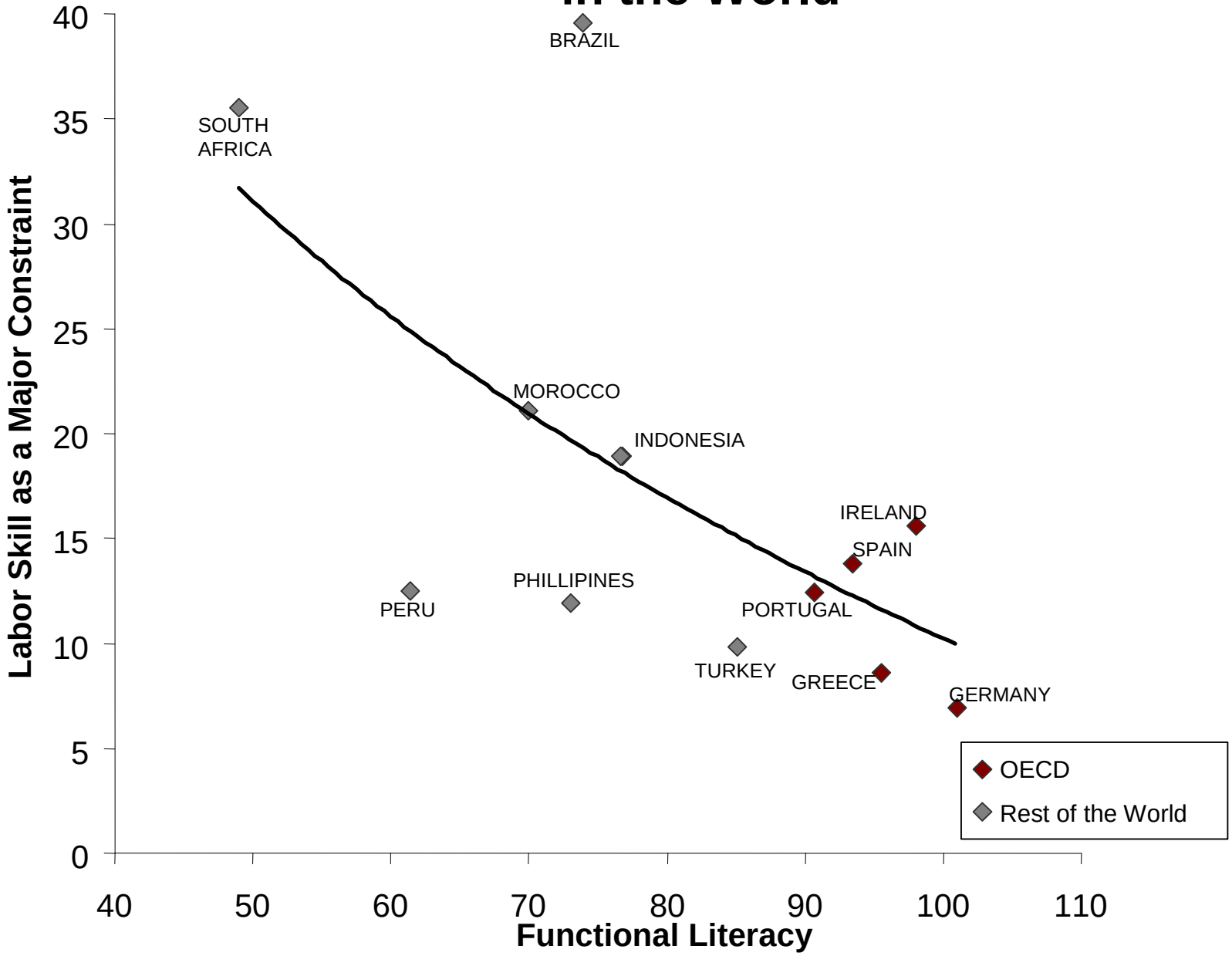
Figure 20




World Bank, *World Development Indicators* (2006) and UNICEF, *TransMONEE Database* (2006).

Figure 21

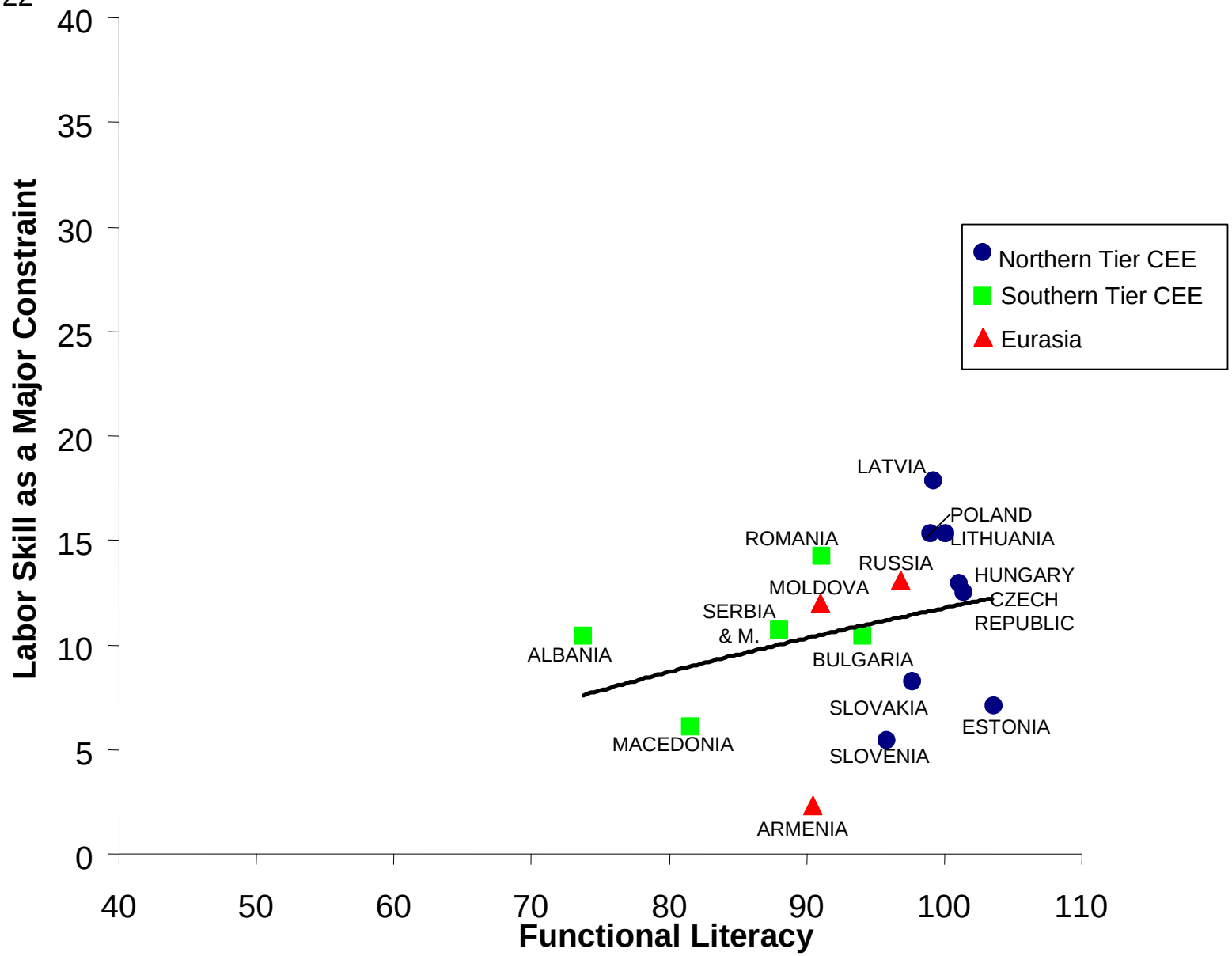
# Labor Skill Constraints vs. Functional Literacy in the World




OECD, Learning for Tomorrow's World: First Results from PISA 2003 (2004); IEA, TIMSS 2003 International Mathematics Report (2004) & PIRLS 2001 International Report (2003); and World Bank, *World Development Indicators* (2006).

Figure 22

# Labor Skill Constraints vs. Functional Literacy in E&E




OECD, Learning for Tomorrow's World: First Results from PISA 2003 (2004); IEA, TIMSS 2003 International Mathematics Report (2004) & PIRLS 2001 International Report (2003); and World Bank, *World Development Indicators* (2006).

**TABLE 30. DOING BUSINESS: LABOR MARKET RIGIDITIES**

| | DIFFICULTY OF HIRING | | RIGIDITY OF HOURS | | DIFFICULTY OF FIRING | | FIRING COSTS | | AVERAGE OF 3 INDICES | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2004 | 2005 | 2004 | 2005 | 2004 | 2005 | 2004 | 2005 |
| GEORGIA | 0 | 0 | 60 | 20 | 70 | 0 | 4 | 4 | 43 | 7 |
| KAZAKHSTAN | 0 | 0 | 60 | 60 | 10 | 10 | 9 | 9 | 23 | 23 |
| BELARUS | 0 | 0 | 40 | 40 | 40 | 40 | 22 | 22 | 27 | 27 |
| CZECH REPUBLIC | 33 | 33 | 20 | 20 | 30 | 30 | 22 | 22 | 28 | 28 |
| ARMENIA | 0 | 33 | 40 | 40 | 30 | 20 | 17 | 13 | 23 | 31 |
| TAJIKISTAN | --- | 33 | --- | 20 | --- | 40 | --- | 22 | --- | 31 |
| POLAND | 11 | 0 | 60 | 60 | 40 | 40 | 13 | 13 | 37 | 33 |
| HUNGARY | 11 | 11 | 80 | 80 | 10 | 10 | 35 | 35 | 34 | 34 |
| UZBEKISTAN | 33 | 33 | 40 | 40 | 30 | 30 | 30 | 30 | 34 | 34 |
| MONTENEGRO | --- | 33 | --- | 40 | --- | 30 | --- | 39 | --- | 34 |
| KYRGYZ REPUBLIC | 33 | 33 | 40 | 40 | 40 | 40 | 17 | 17 | 38 | 38 |
| AZERBAIJAN | 33 | 33 | 40 | 40 | 40 | 40 | 22 | 22 | 38 | 38 |
| SERBIA | 28 | 33 | 20 | 40 | 30 | 40 | 19 | 27 | 26 | 38 |
| ALBANIA | 44 | 44 | 40 | 40 | 30 | 30 | 64 | 64 | 38 | 38 |
| SLOVAKIA | 17 | 17 | 60 | 60 | 40 | 40 | 13 | 13 | 39 | 39 |
| BOSNIA & HERZEGOVINA | 56 | 56 | 40 | 40 | 30 | 30 | 33 | 33 | 42 | 42 |
| RUSSIA | 33 | 33 | 60 | 60 | 40 | 40 | 17 | 17 | 44 | 44 |
| BULGARIA | 61 | 50 | 80 | 80 | 10 | 10 | 9 | 9 | 50 | 47 |
| LITHUANIA | 33 | 33 | 80 | 80 | 30 | 30 | 30 | 30 | 48 | 48 |
| CROATIA | 61 | 61 | 40 | 40 | 50 | 50 | 39 | 39 | 50 | 50 |
| ROMANIA | 67 | 33 | 80 | 80 | 40 | 40 | 3 | 3 | 62 | 51 |
| MACEDONIA | 61 | 61 | 40 | 60 | 40 | 40 | 35 | 22 | 47 | 54 |
| MOLDOVA | 33 | 33 | 60 | 60 | 70 | 70 | 29 | 29 | 54 | 54 |
| UKRAINE | 44 | 44 | 40 | 40 | 80 | 80 | 13 | 13 | 55 | 55 |
| SLOVENIA | 61 | 61 | 60 | 60 | 50 | 50 | 40 | 40 | 57 | 57 |
| ESTONIA | 33 | 33 | 80 | 80 | 60 | 60 | 35 | 35 | 58 | 58 |
| LATVIA | 67 | 67 | 40 | 40 | 70 | 70 | 17 | 17 | 59 | 59 |
| **CEE & EURASIA** | 34 | 33 | 52 | 50 | 40 | 37 | 23 | 24 | 42 | 40 |
| **NORTHERN TIER CEE** | 33 | 32 | 60 | 60 | 41 | 41 | 26 | 26 | 45 | 44 |
| **SOUTHERN TIER CEE** | 54 | 46 | 49 | 53 | 33 | 34 | 29 | 30 | 45 | 44 |
| **EURASIA** | 21 | 25 | 48 | 42 | 45 | 37 | 18 | 18 | 38 | 35 |
| **EU-15** | 33 | 33 | 54 | 53 | 38 | 38 | 39 | 39 | 42 | 41 |
| **OECD** | 26 | 27 | 48 | 45 | 27 | 27 | 31 | 31 | 34 | 33 |
| **LATIN AMERICA & CARIB.** | 44 | 34 | 43 | 35 | 25 | 26 | 65 | 59 | 37 | 32 |
| **SUB-SAHARAN AFRICA** | 46 | 44 | 53 | 52 | 43 | 45 | 69 | 71 | 47 | 47 |
| **EAST ASIA & PACIFIC** | 24 | 24 | 25 | 25 | 20 | 20 | 42 | 42 | 23 | 23 |
| **MIDDLE EAST & N. AFRICA** | 28 | 30 | 45 | 45 | 33 | 33 | 57 | 57 | 35 | 36 |
| **SOUTH ASIA** | 39 | 42 | 25 | 25 | 38 | 38 | 70 | 72 | 34 | 35 |

World Bank, *Doing Business in 2007* (2006). Eurasia average excludes Turkmenistan.

| TABLE 31. TAX WEDGE ON LABOR | |
|---|---|
| | THE DIFFERENCE BETWEEN LABOR COST TO THE EMPLOYER AND TAKE HOME PAY AS % OF LABOR COST |
| ARMENIA | 23 |
| KAZAKHSTAN | 24 |
| TAJIKISTAN | 25 |
| SLOVENIA | 32.5 |
| ALBANIA | 33 |
| AZERBAIJAN | 34.5 |
| RUSSIAN FEDERATION | 36 |
| BELARUS | 36.4 |
| KYRGYZ REPUBLIC | 36.7 |
| UKRAINE | 36.8 |
| UZBEKISTAN | 39.5 |
| GEORGIA | 40.5 |
| SERBIA | 41 |
| MACEDONIA | 42.5 |
| LATVIA | 42.75 |
| CROATIA | 42.9 |
| ESTONIA | 43.5 |
| LITHUANIA | 45 |
| POLAND | 45.2 |
| TURKEY | 45.5 |
| MONTENEGRO | 48 |
| CZECH REPUBLIC | 48.1 |
| ROMANIA | 51.5 |
| HUNGARY | 62 |

World Bank, *Enhancing Job Opportunities, Eastern Europe and the Former Soviet Union* (2005).

| TABLE 32. PAYROLL TAXES ON LABOR | |
|---|---|
| | % TAX BURDEN ON LABOR |
| DENMARK | 1 |
| AUSTRALIA | 2.5 |
| IRELAND | 7.5 |
| CANADA | 13 |
| UNITED KINGDOM | 13.5 |
| | |
| PORTUGAL | 14.5 |
| JAPAN | 16 |
| NORWAY | 18 |
| UNITED STATES | 21.5 |
| BELGIUM | 22 |
| | |
| AUSTRIA | 23 |
| GERMANY | 24 |
| NETHERLANDS | 28 |
| ESTONIA | 33 |
| SPAIN | 34 |
| | |
| FINLAND | 36.5 |
| SWEDEN | 37.5 |
| FRANCE | 38.5 |
| ITALY | 40.5 |
| RUSSIA | 41 |
| | |
| UKRAINE | 41 |
| HUNGARY | 43 |
| BULGARIA | 45 |
| SLOVENIA | 47.5 |
| POLAND | 48 |
| | |
| CZECH REPUBLIC | 48.5 |
| SLOVAKIA | 50 |

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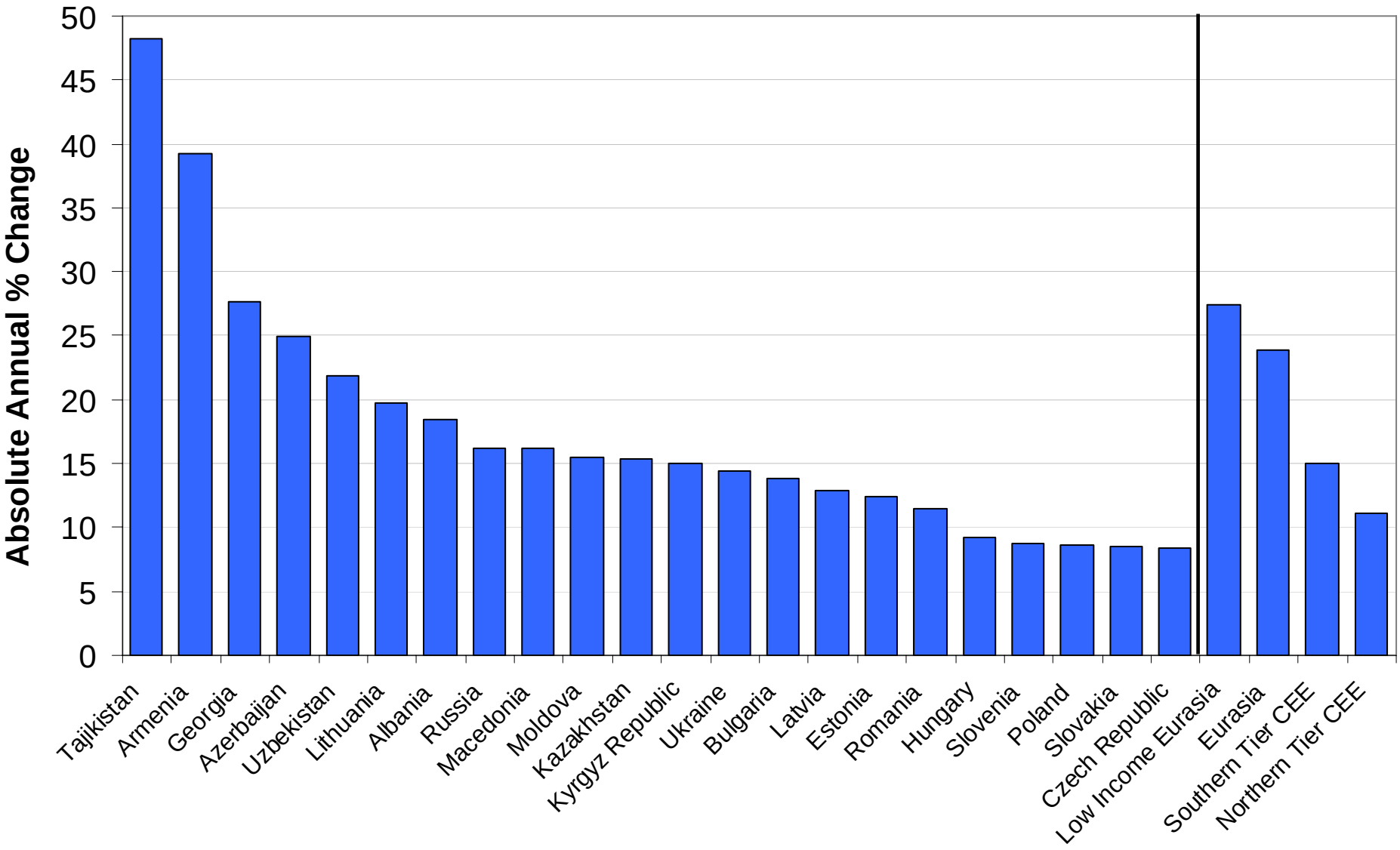
# Labor Markets in Eastern Europe and Eurasia

## APPENDIX: Trends in Real Wage, Employment and GDP

USAID/E&E/PO
Program Office
Bureau for Europe & Eurasia
U.S. Agency for International Development

January 2007
Working Paper No. 6

# Absolute Labor Market Change over the Transition: Wages and Employment

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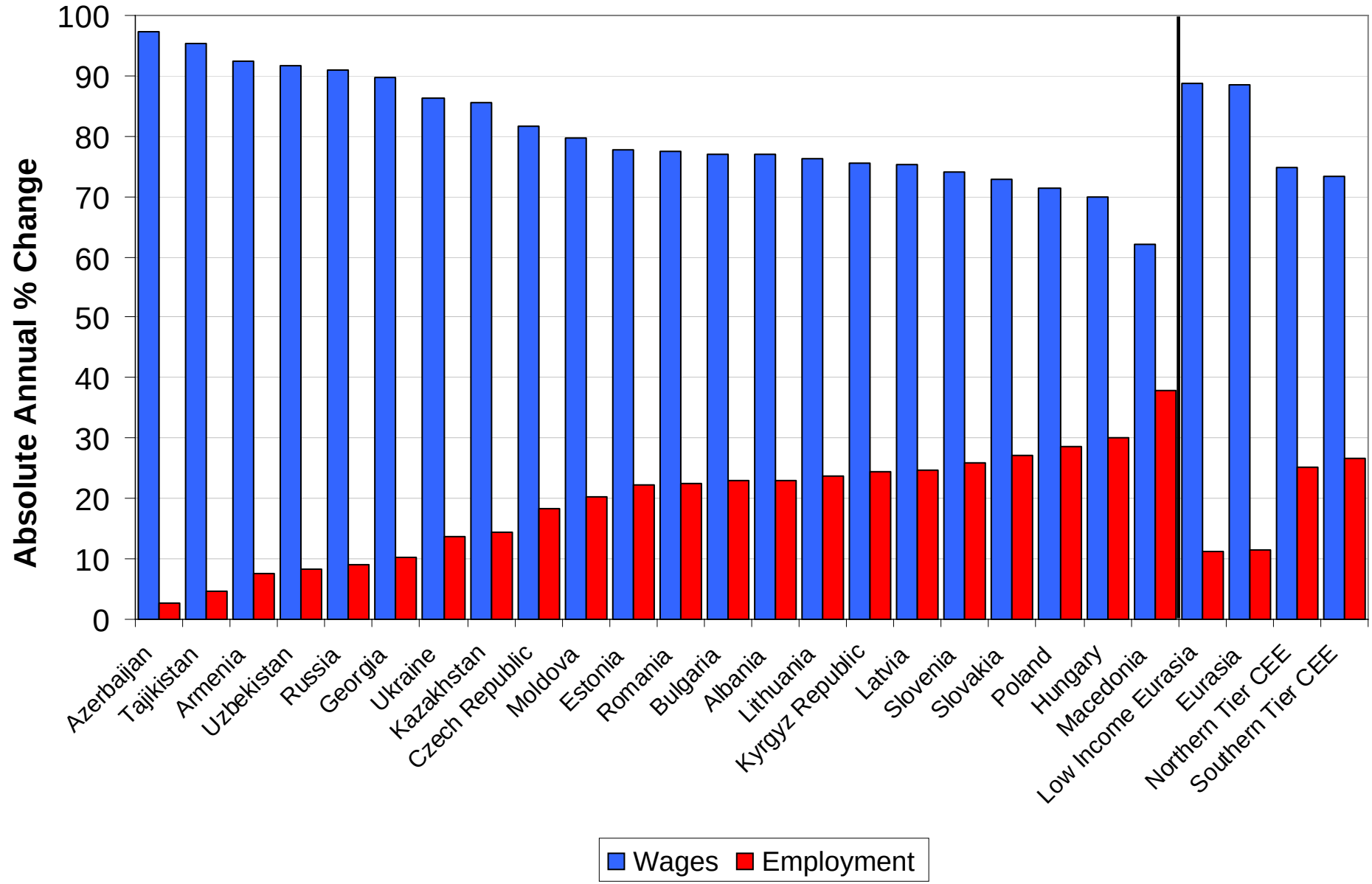
# Distribution of Absolute Labor Market Changes from 1990

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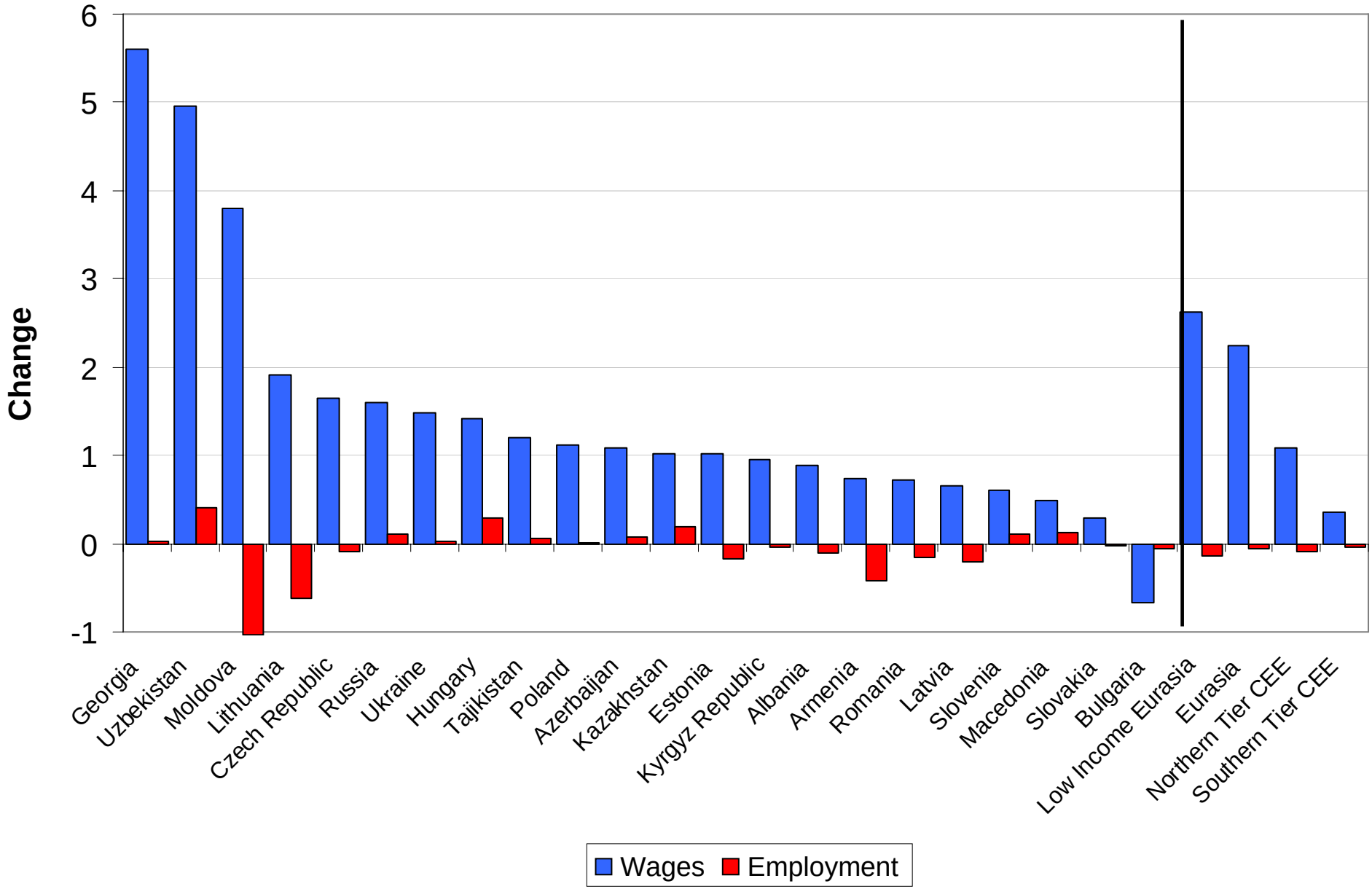
# Responsiveness to GDP Change from Resumption of Growth

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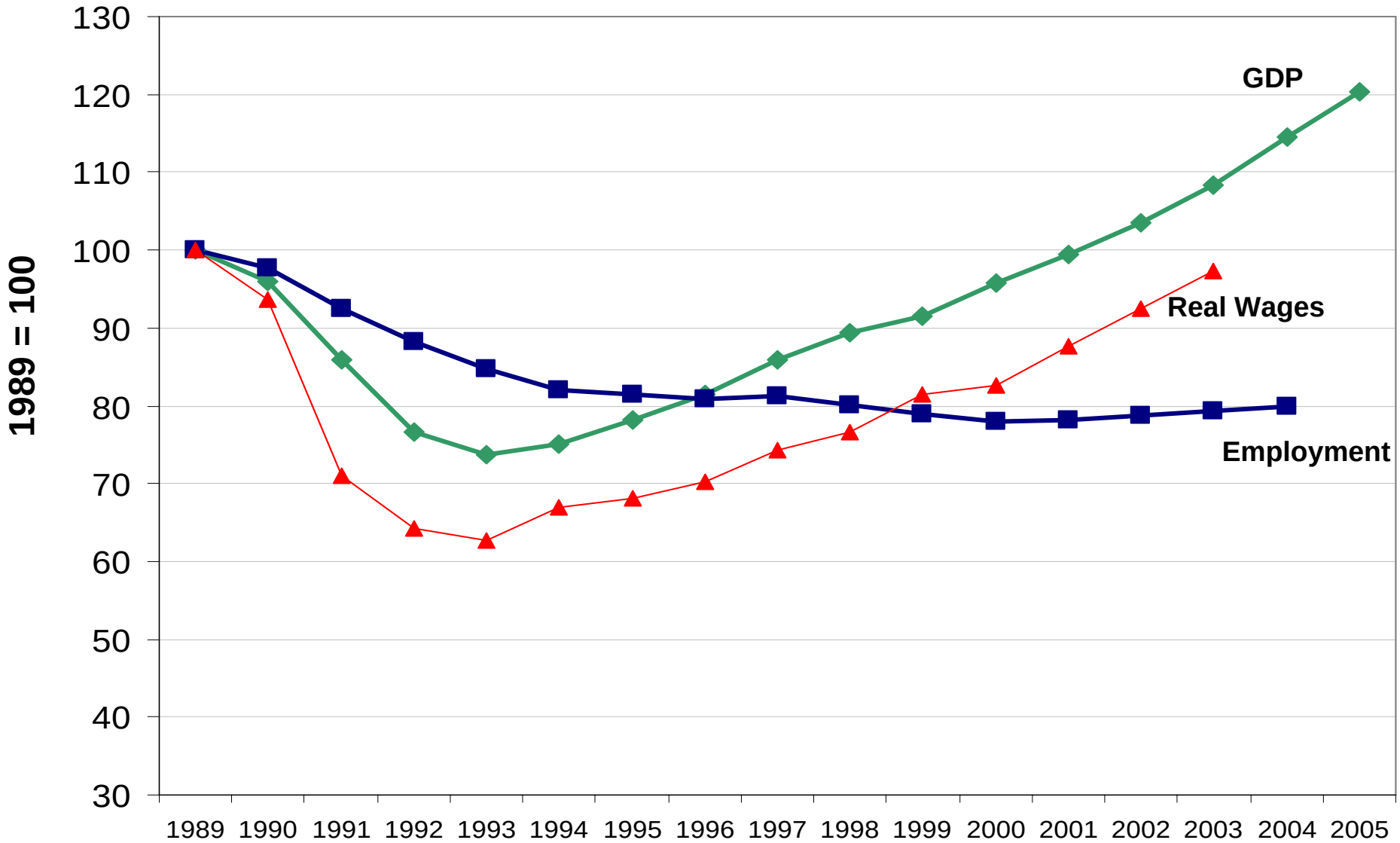
# Price, Quantity & Output Adjustments in Labor Markets in Northern Tier CEE

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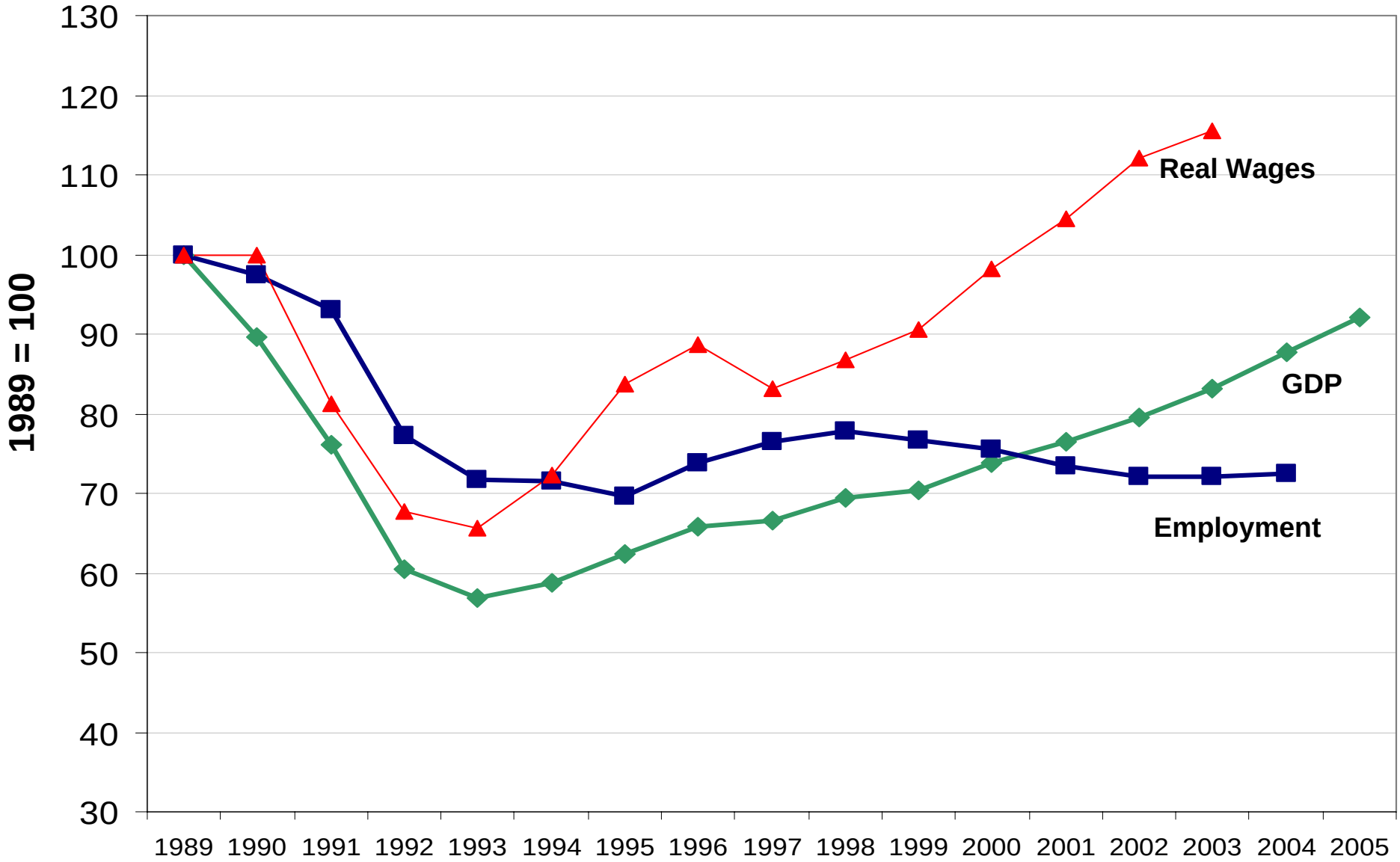
# Price, Quantity & Output Adjustments in Labor Markets in Southern Tier CEE

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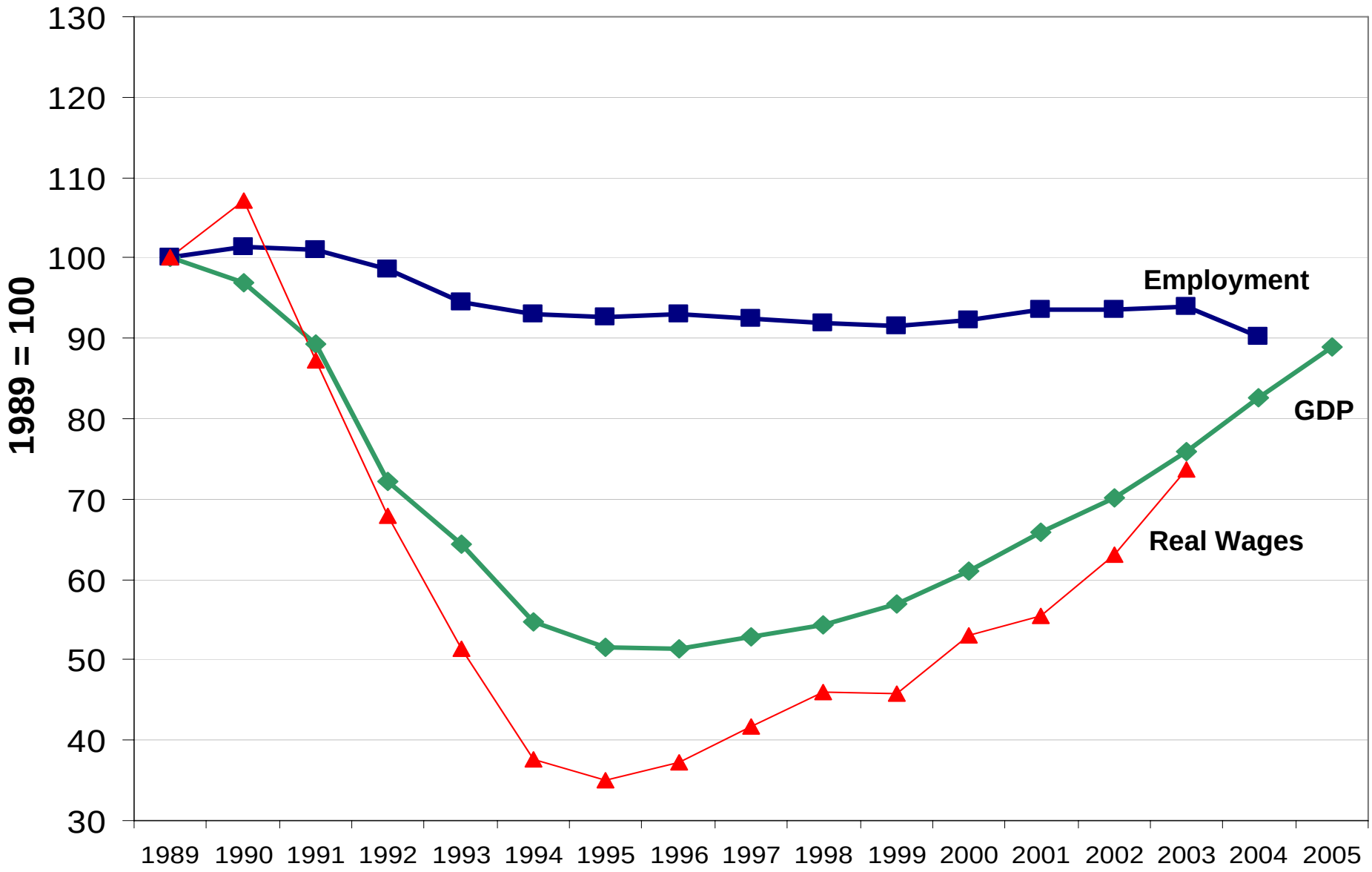
# Price, Quantity & Output Adjustments in Labor Markets in Eurasia

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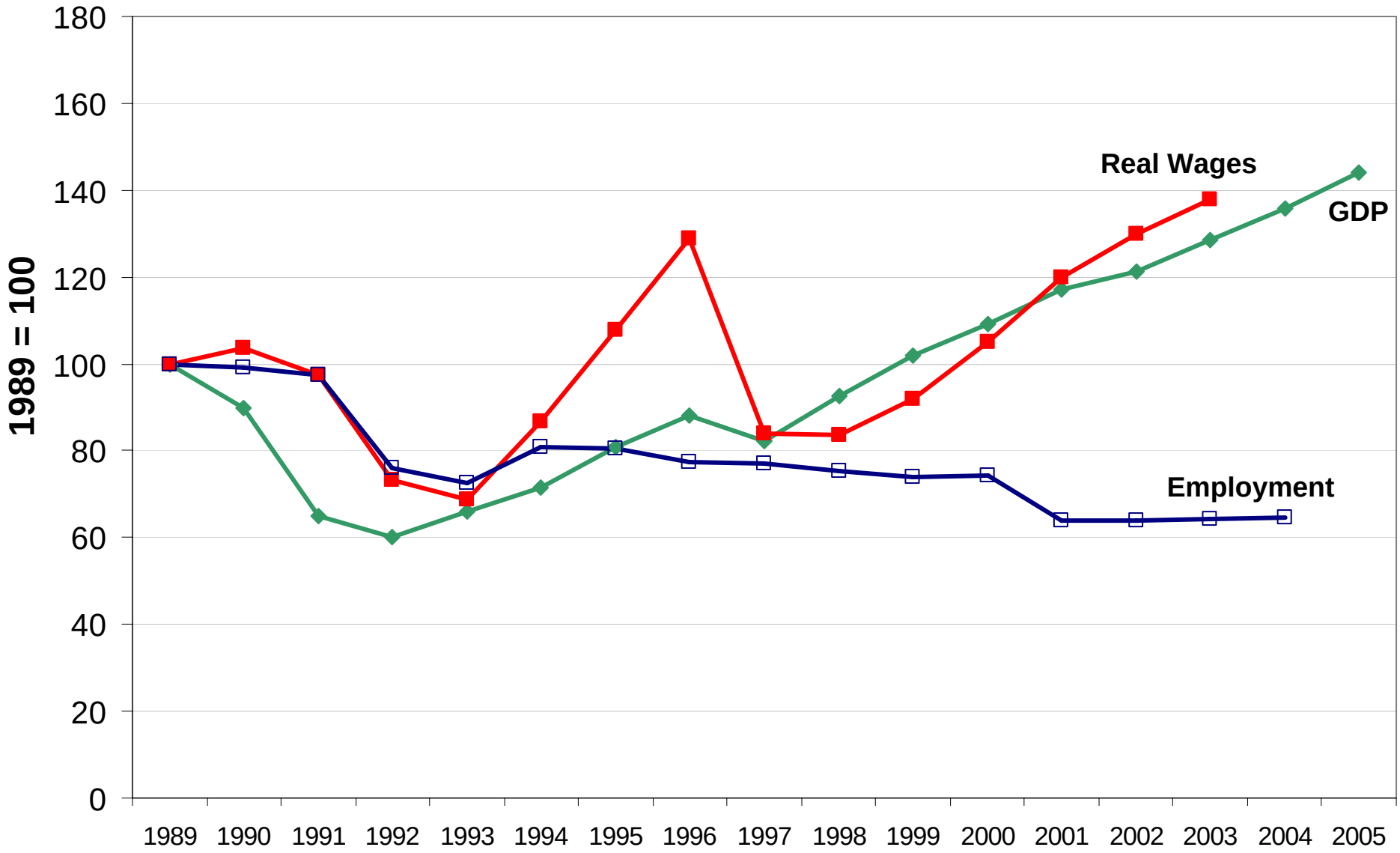
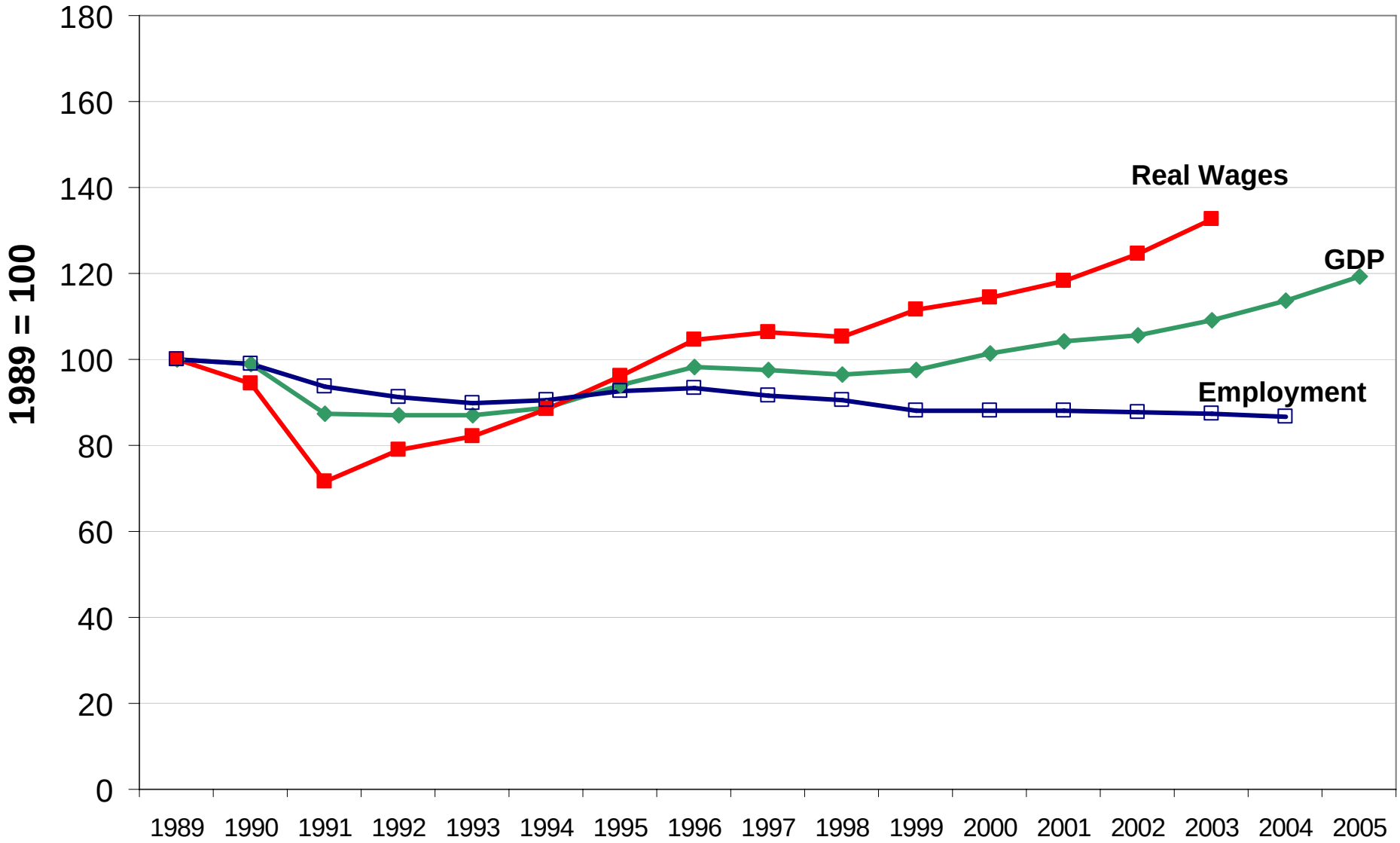
# Price, Quantity & Output Adjustments in Labor Markets in Albania




EBRD, *Transition Report 2005* (November 2005). UNICEF, *TransMONEE Database* (December 2005).

# Price, Quantity & Output Adjustments in Labor Markets in Czech Republic

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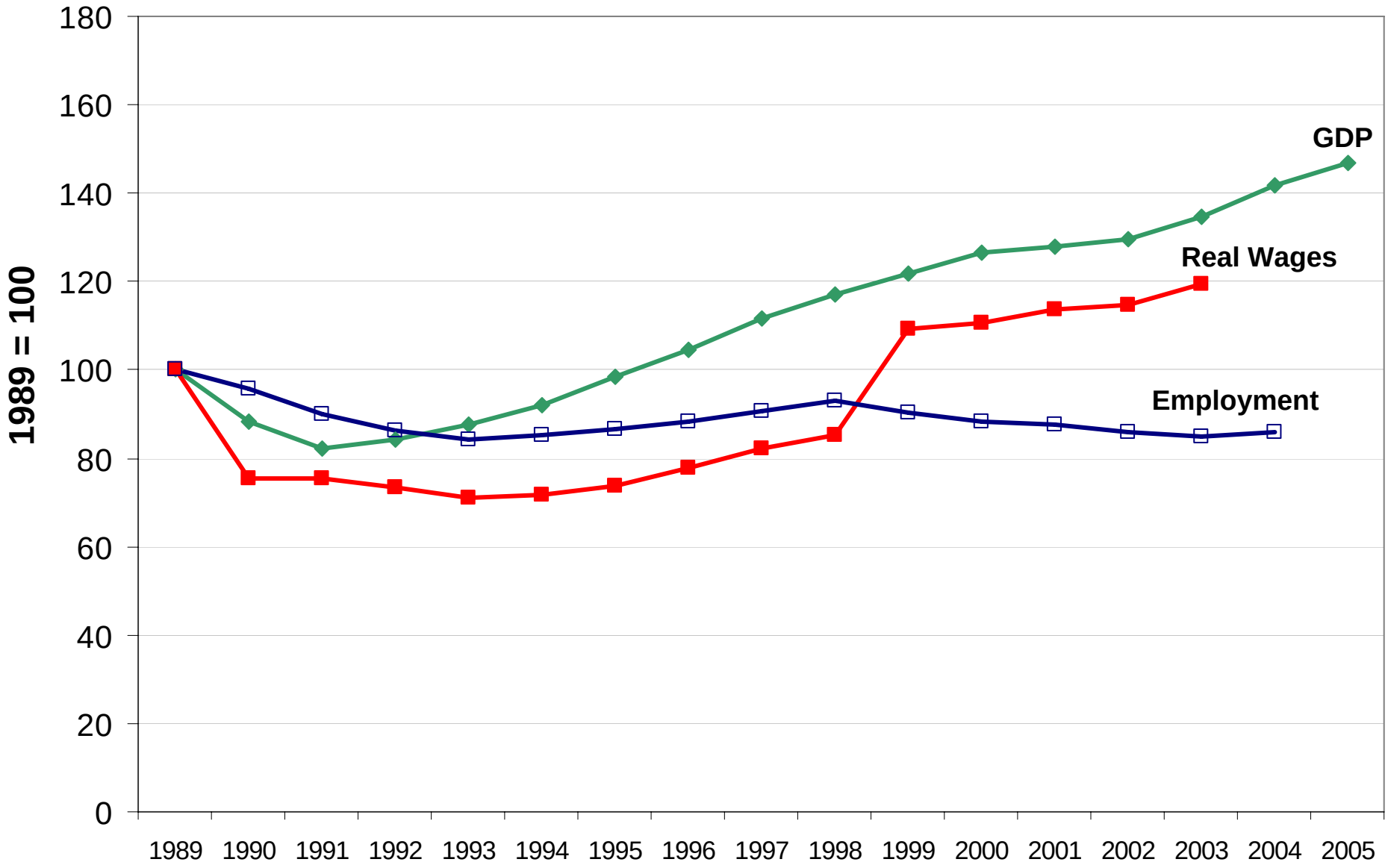


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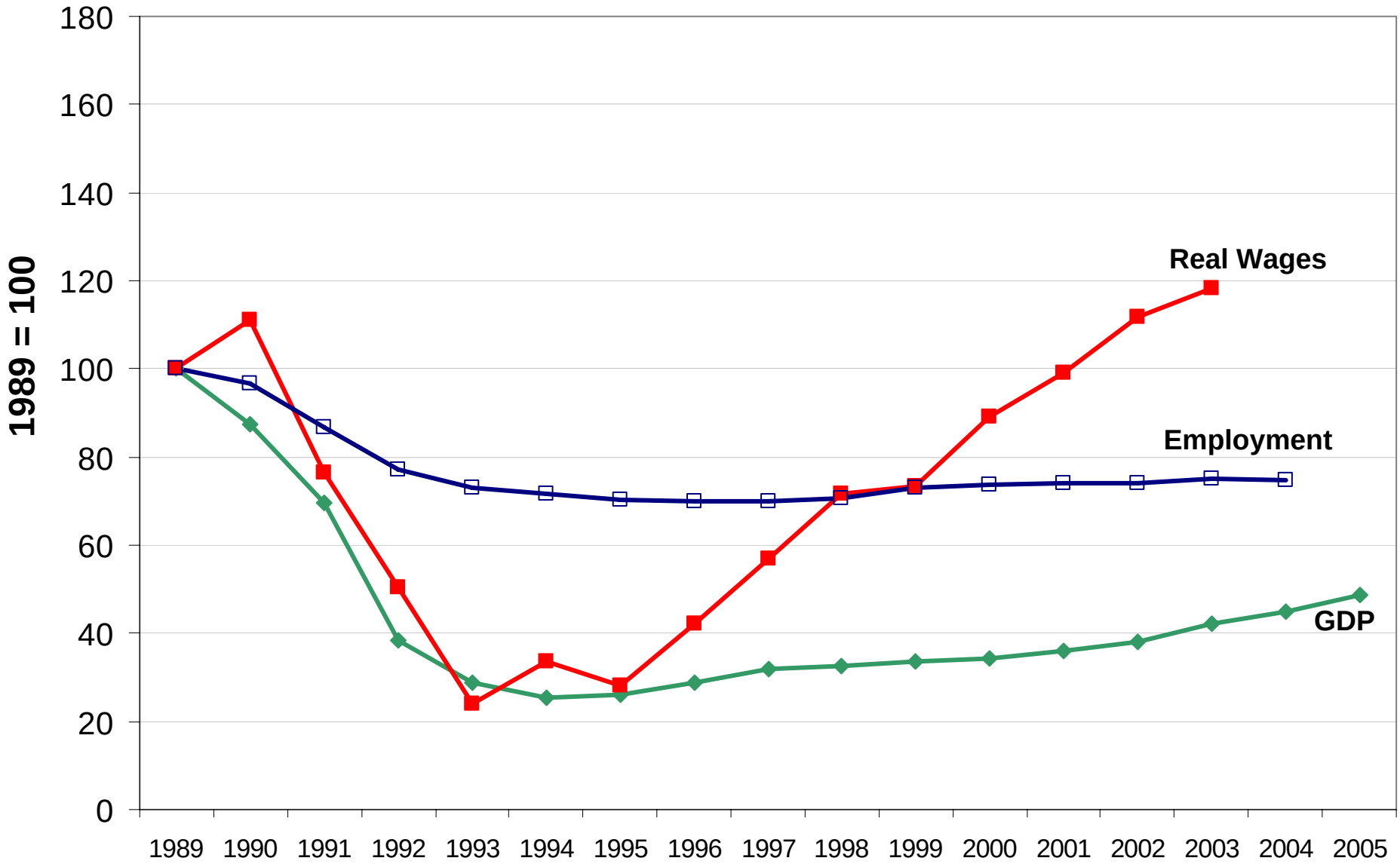
# Price, Quantity & Output Adjustments in Labor Markets in Georgia

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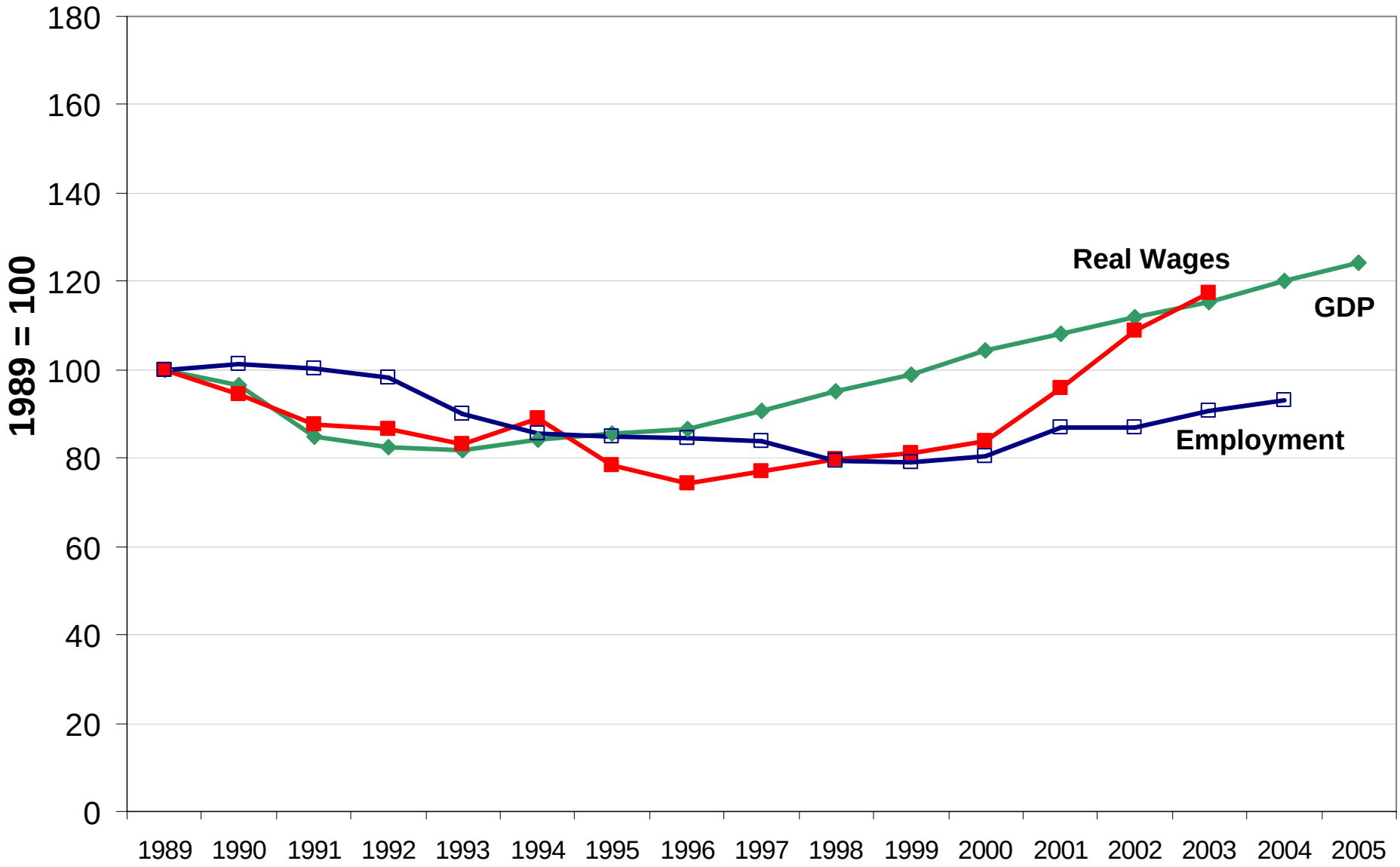
# Price, Quantity & Output Adjustments in Labor Markets in Hungary

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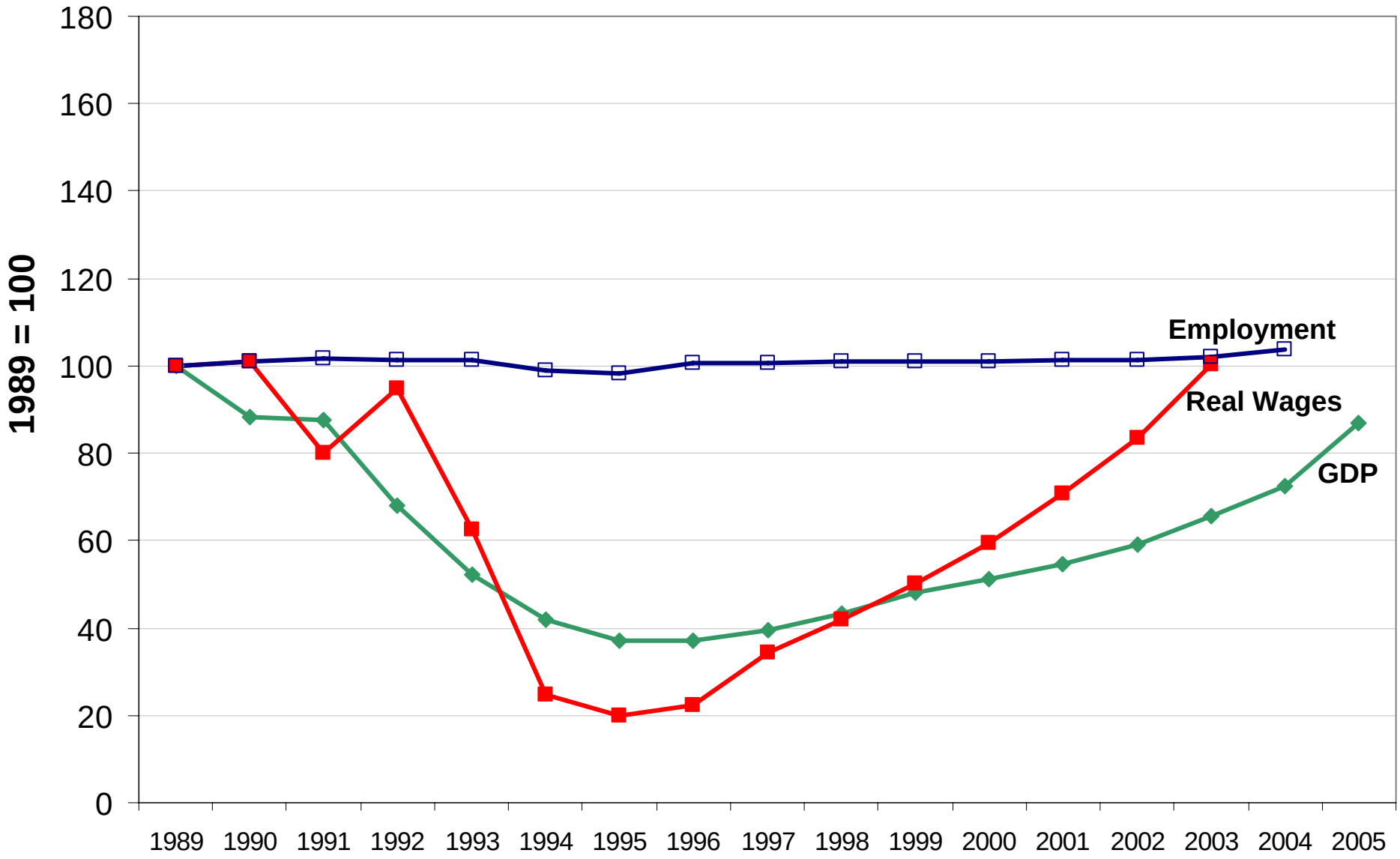
# Price, Quantity & Output Adjustments in Labor Markets in Azerbaijan

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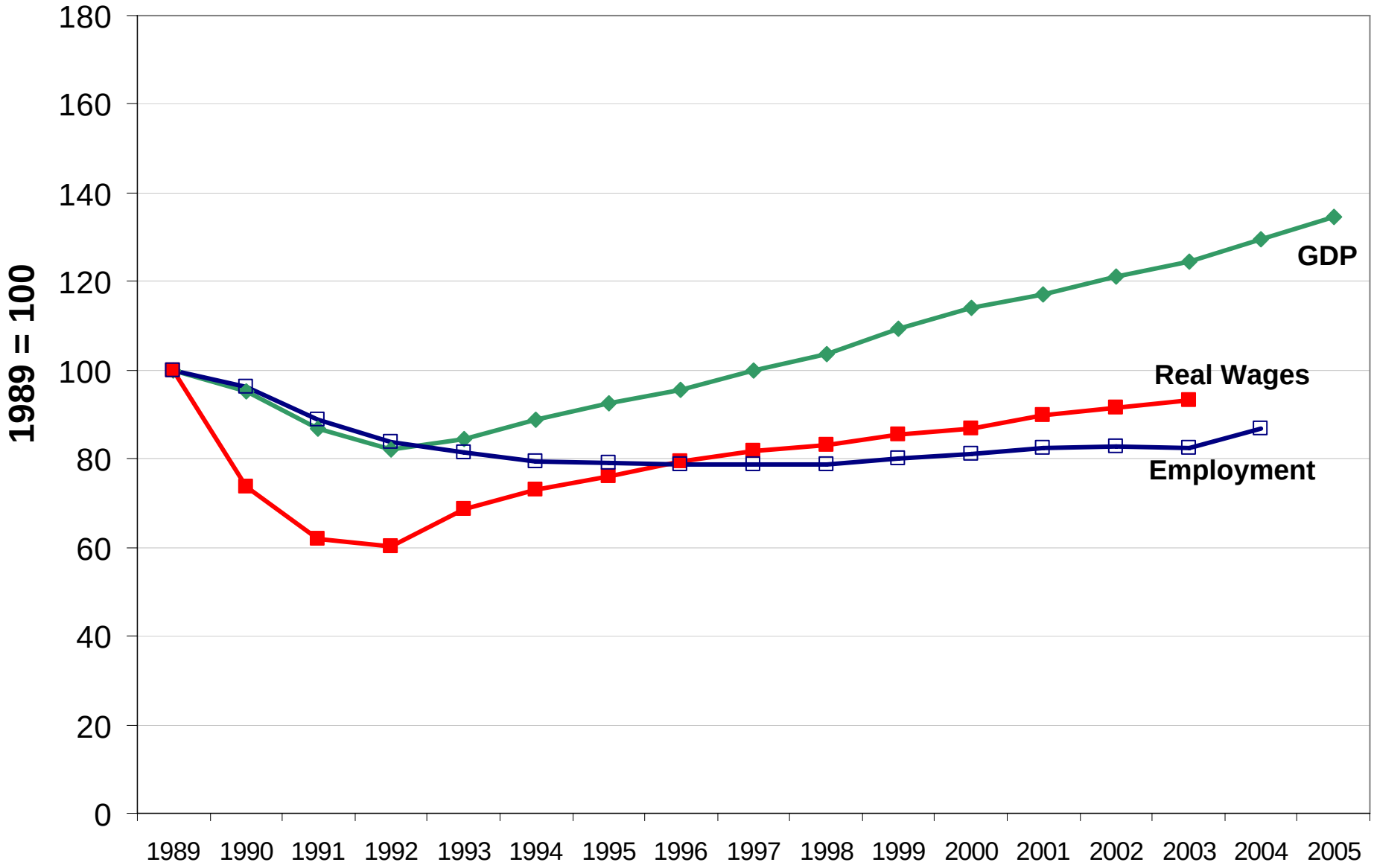


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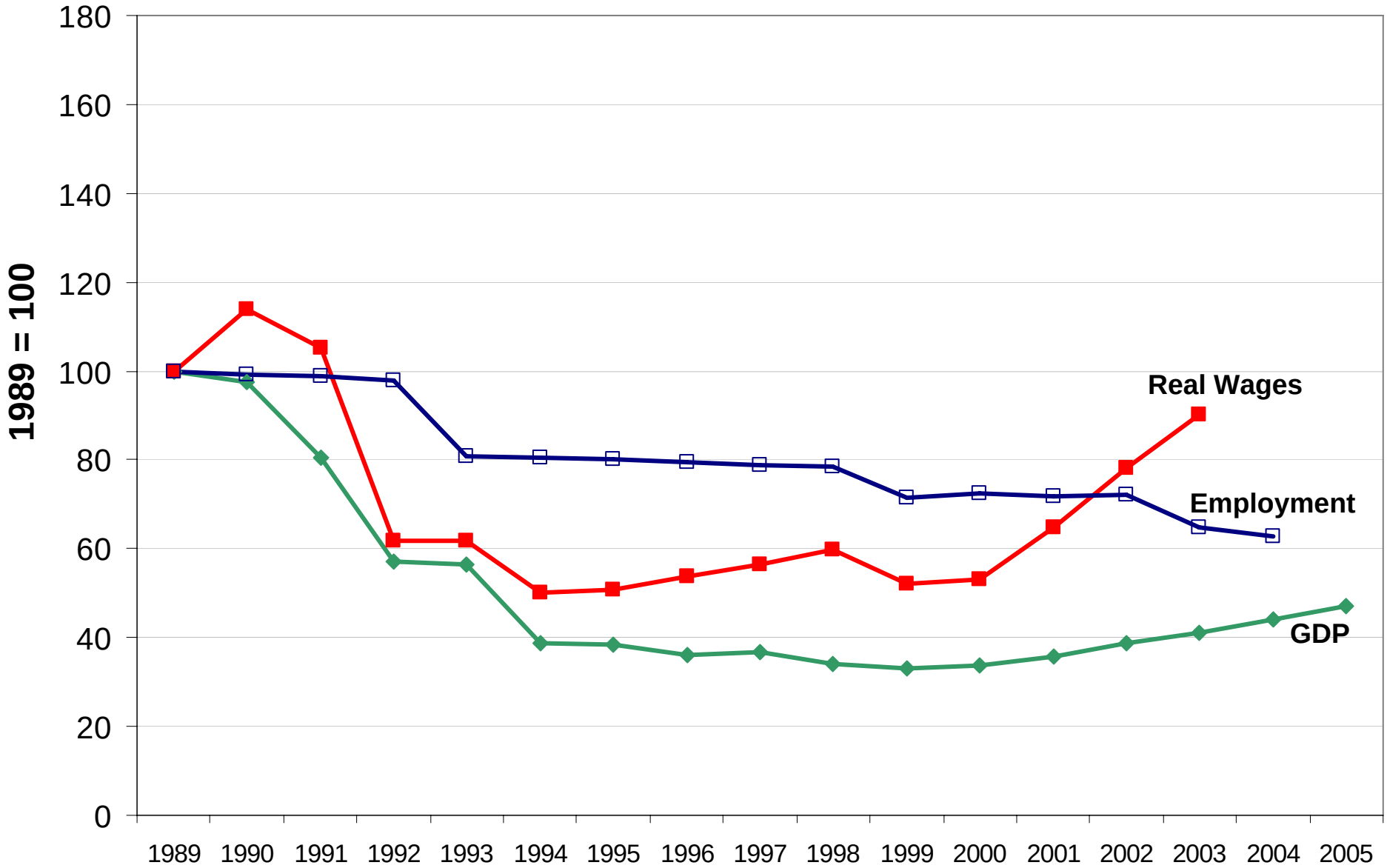
# Price, Quantity & Output Adjustments in Labor Markets in Moldova

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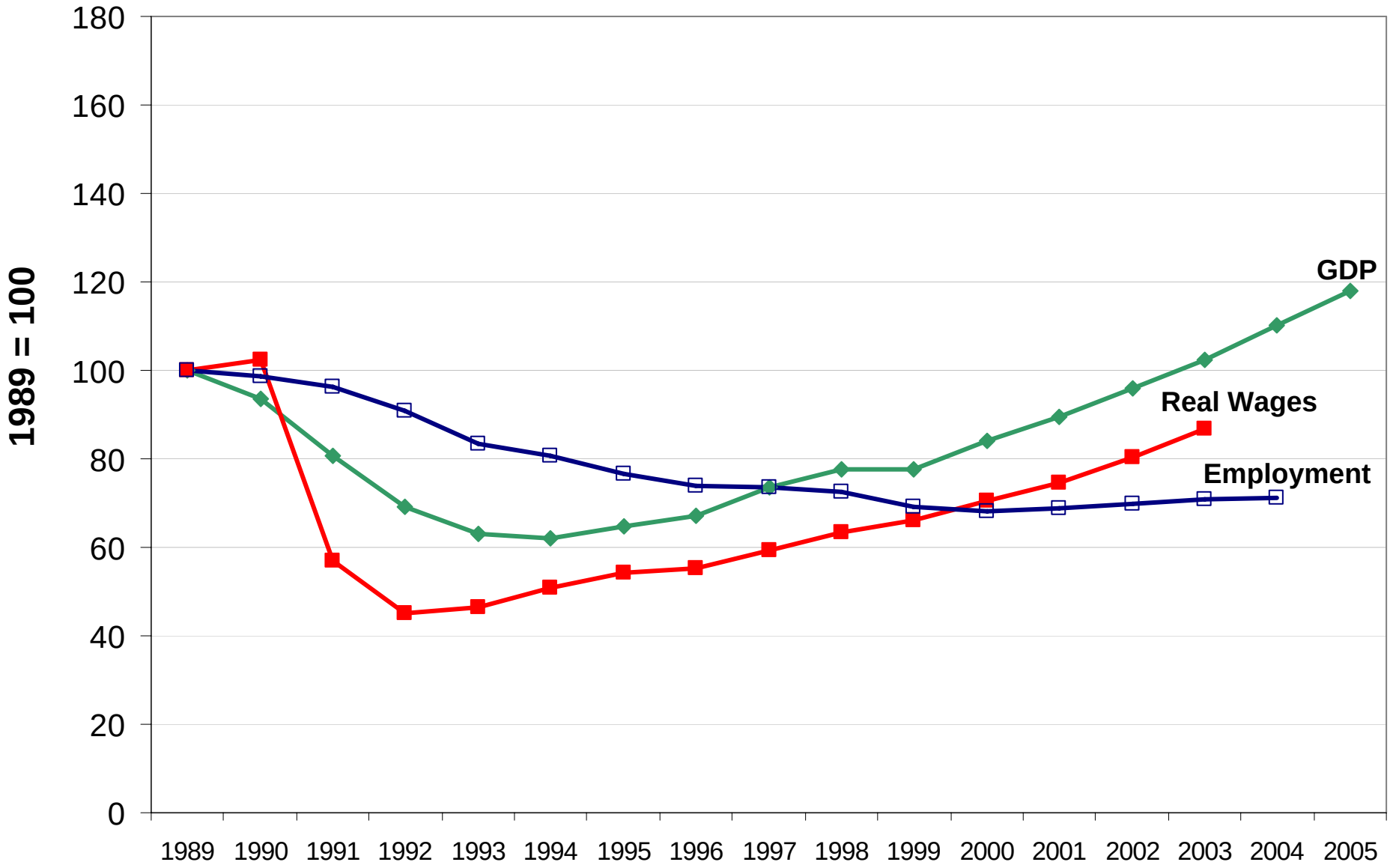
# Price, Quantity & Output Adjustments in Labor Markets in Estonia

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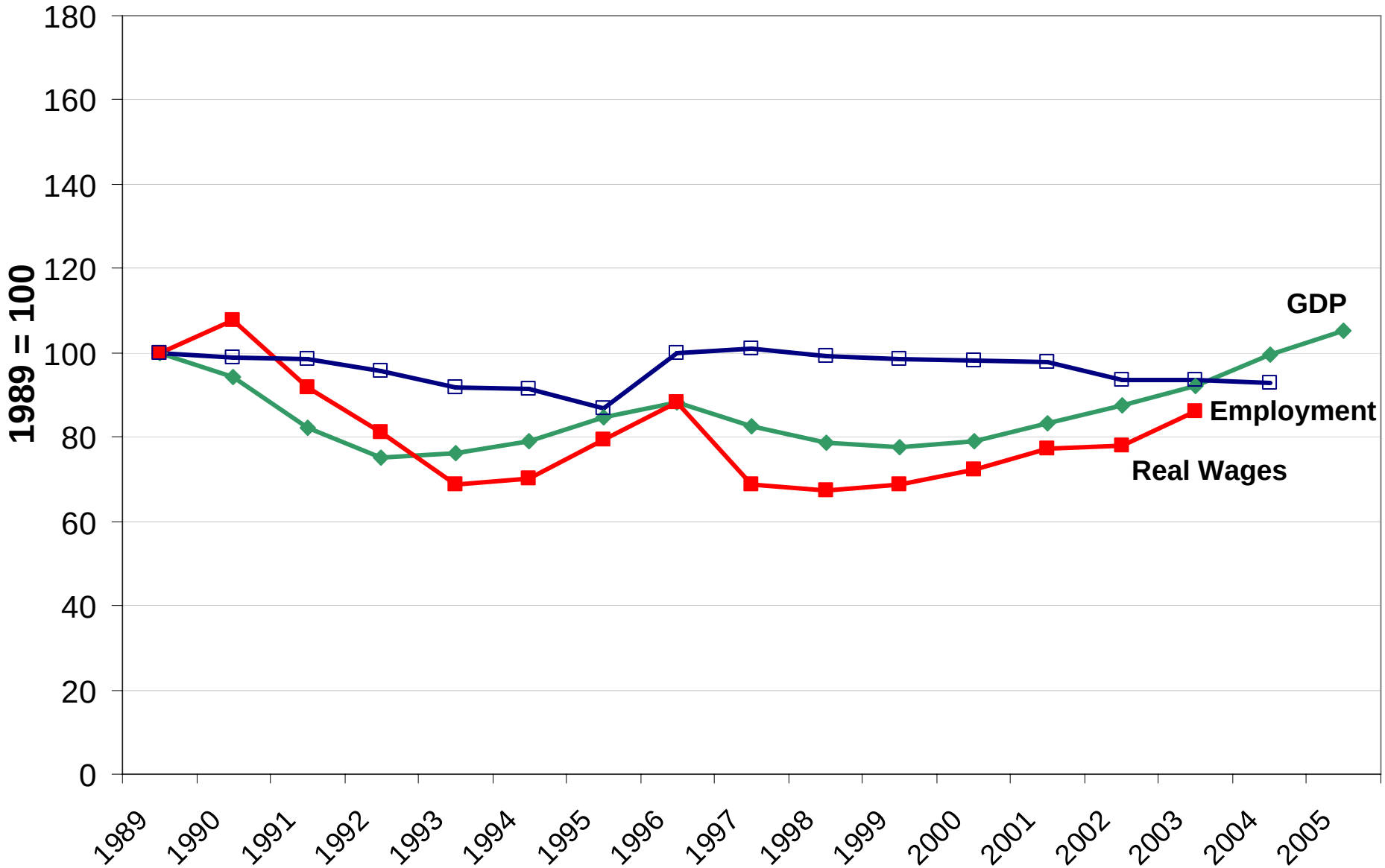


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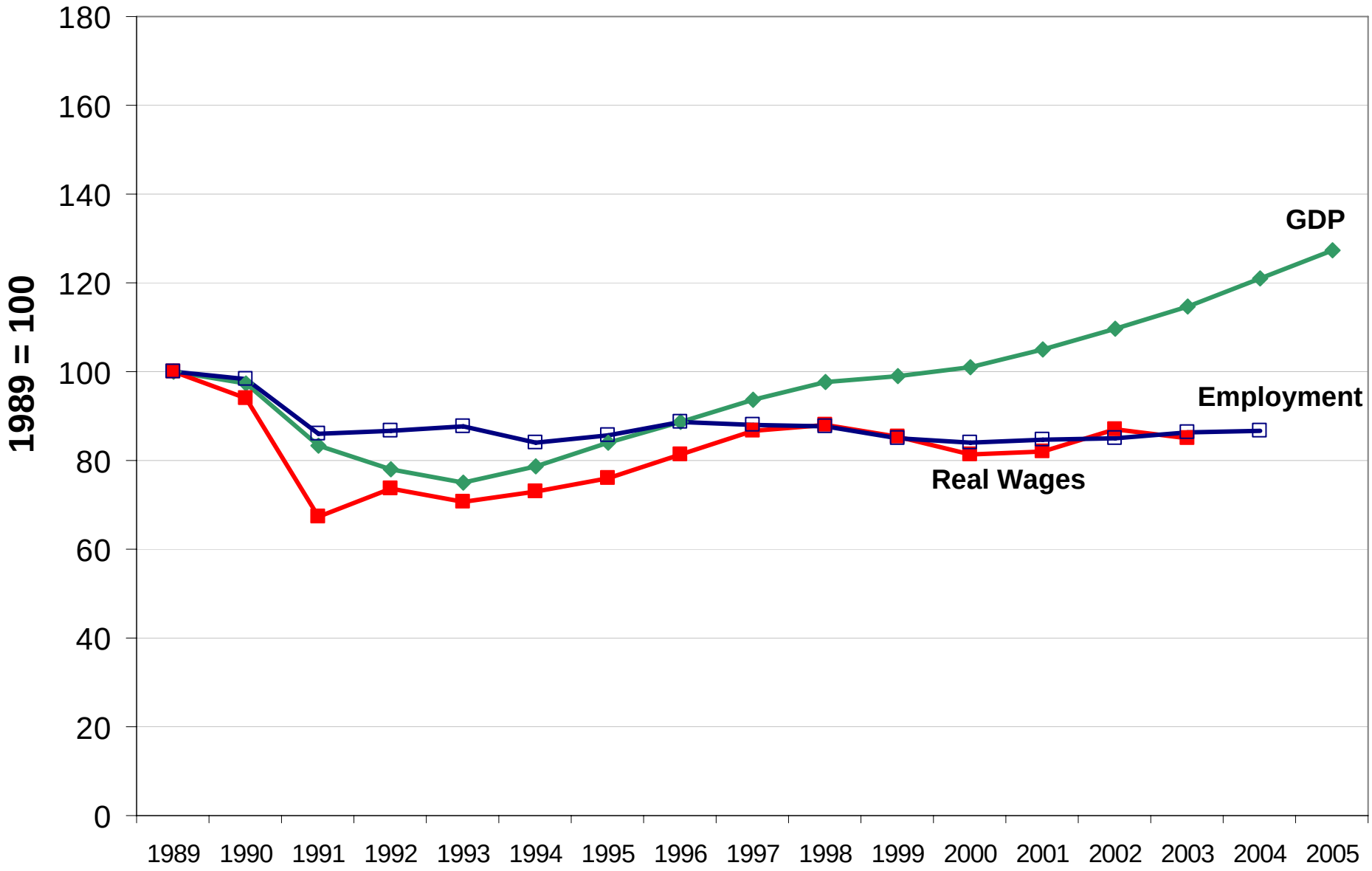
# Price, Quantity & Output Adjustments in Labor Markets in Slovakia

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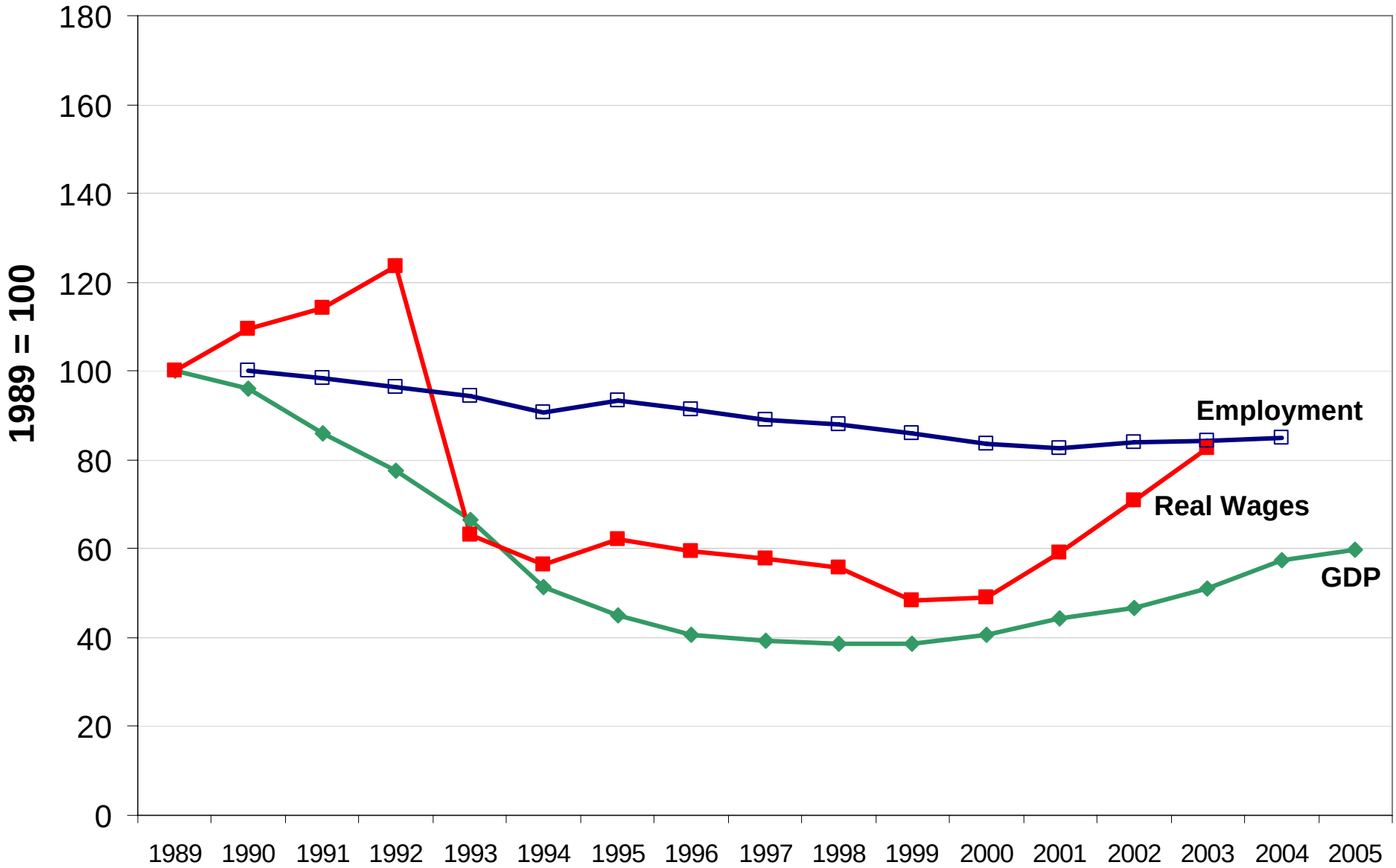
# Price, Quantity & Output Adjustments in Labor Markets in Ukraine

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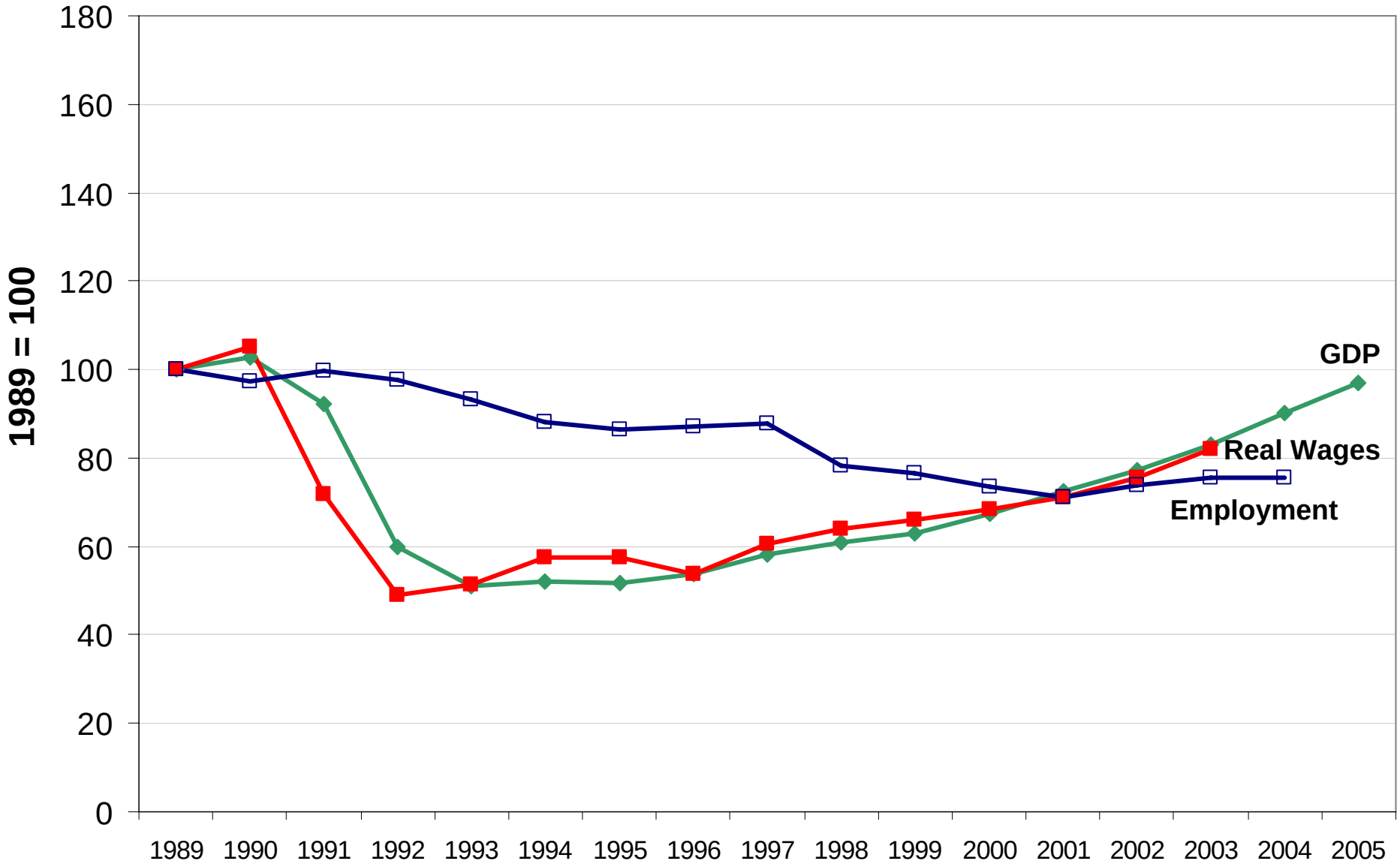
# Price, Quantity & Output Adjustments in Labor Markets in Latvia

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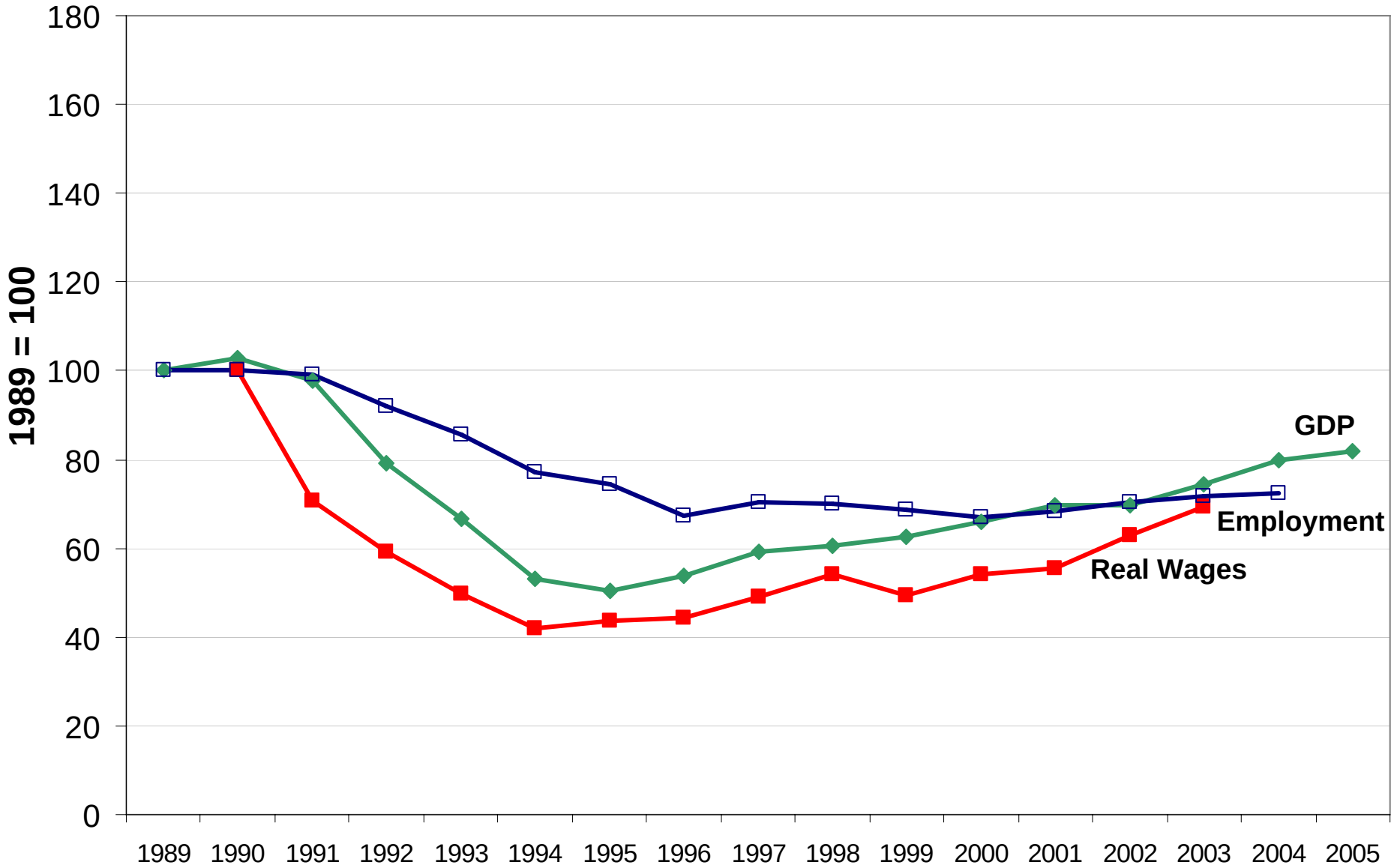
# Price, Quantity & Output Adjustments in Labor Markets in Kyrgyz Republic

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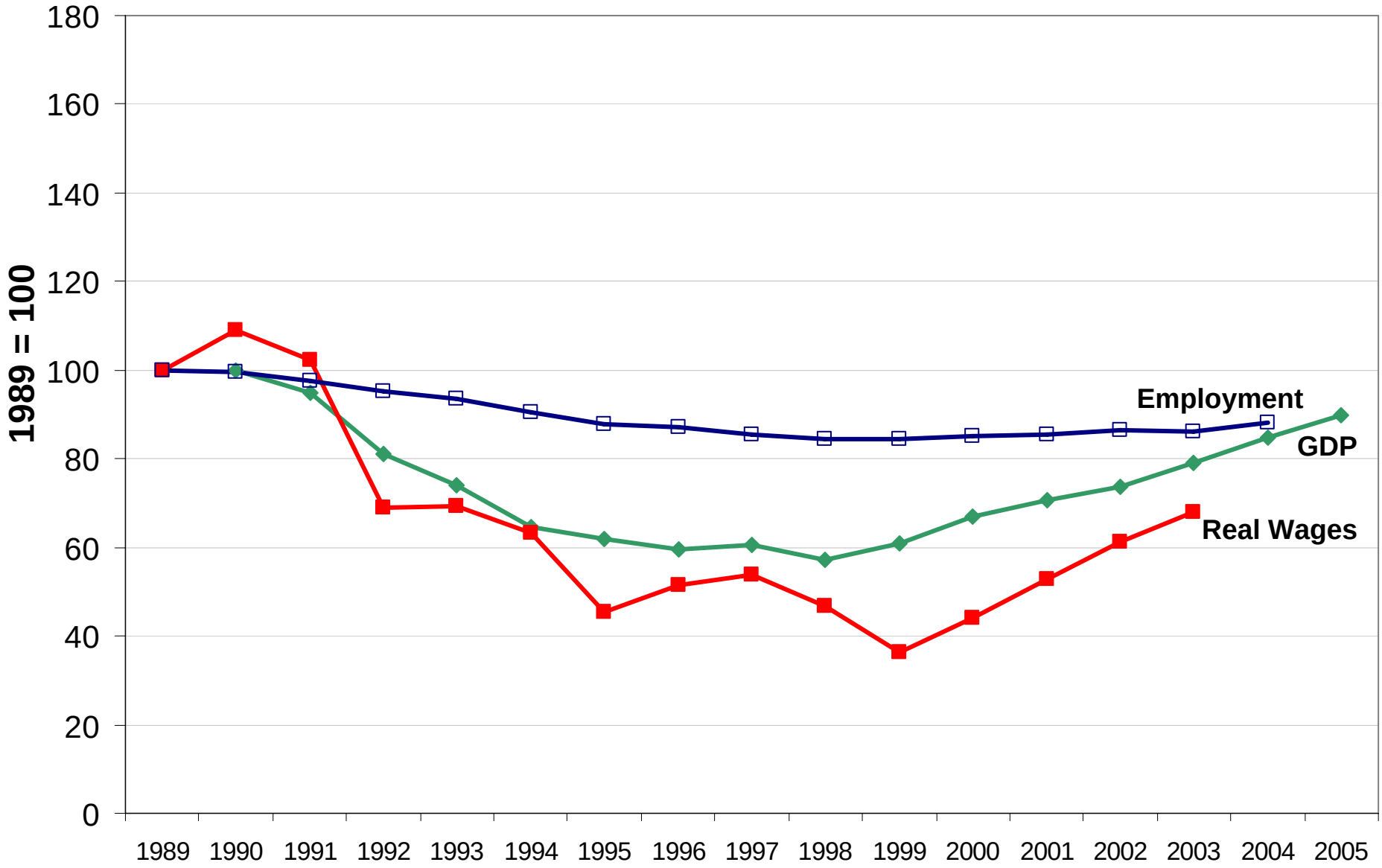


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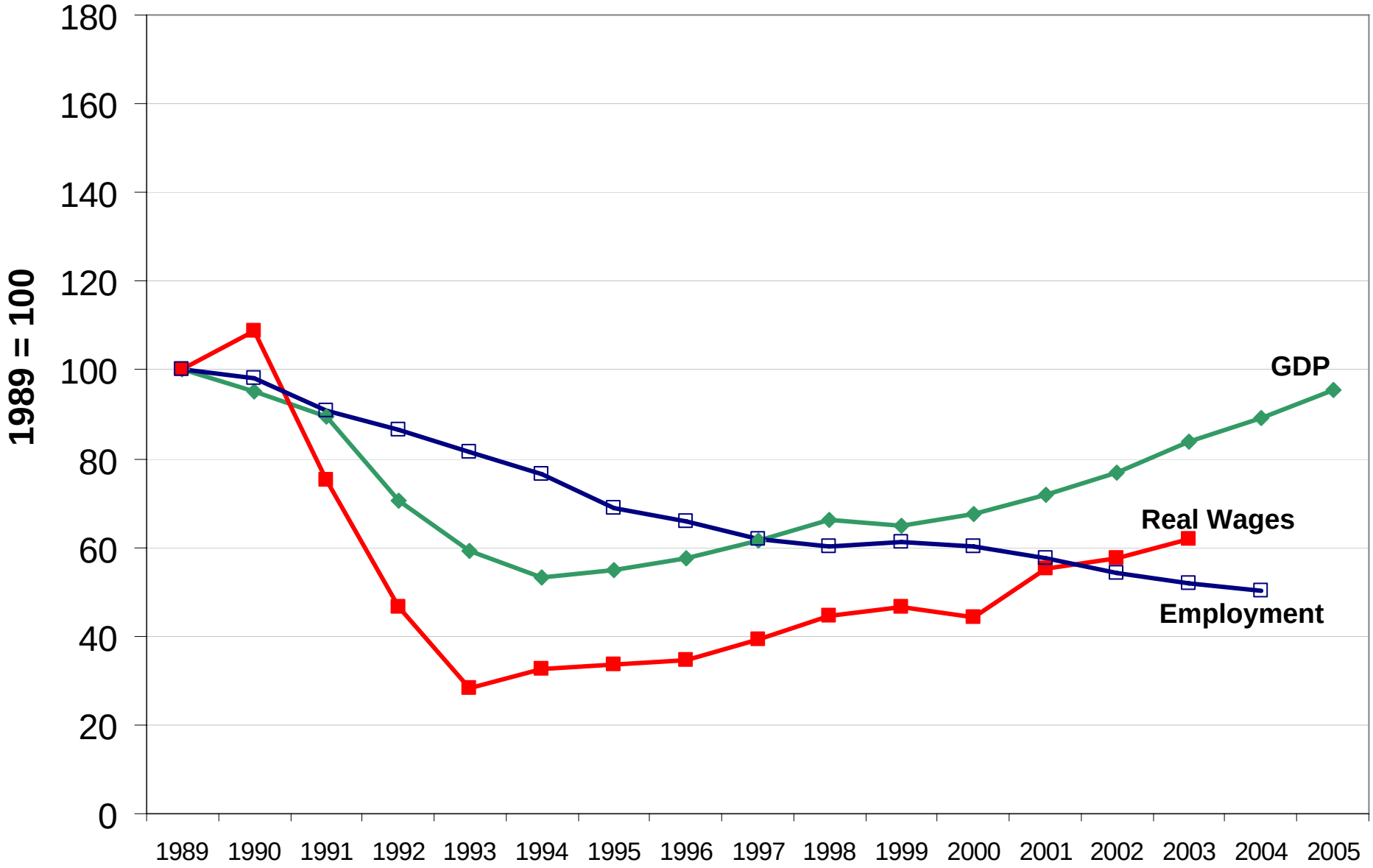


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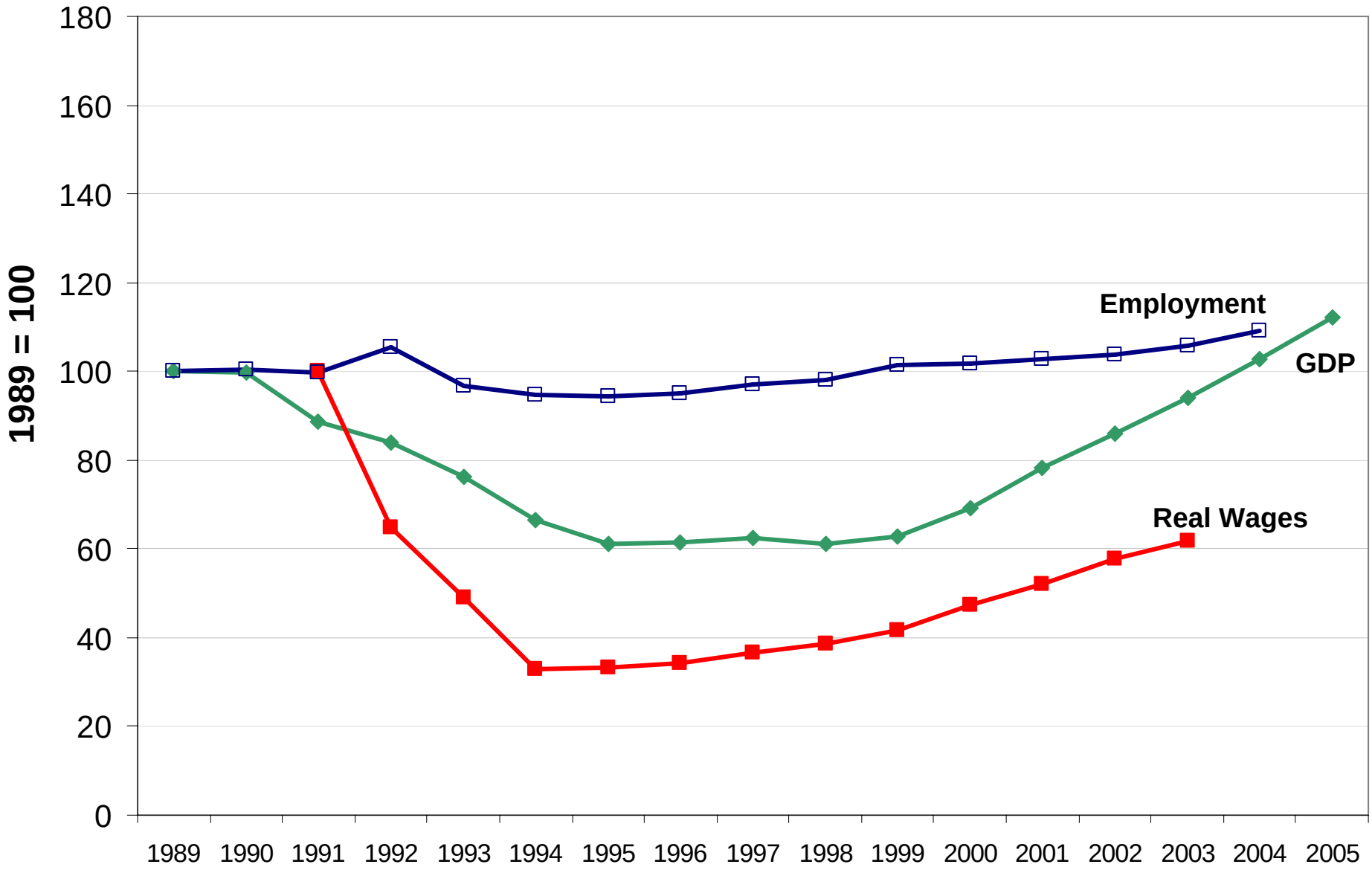


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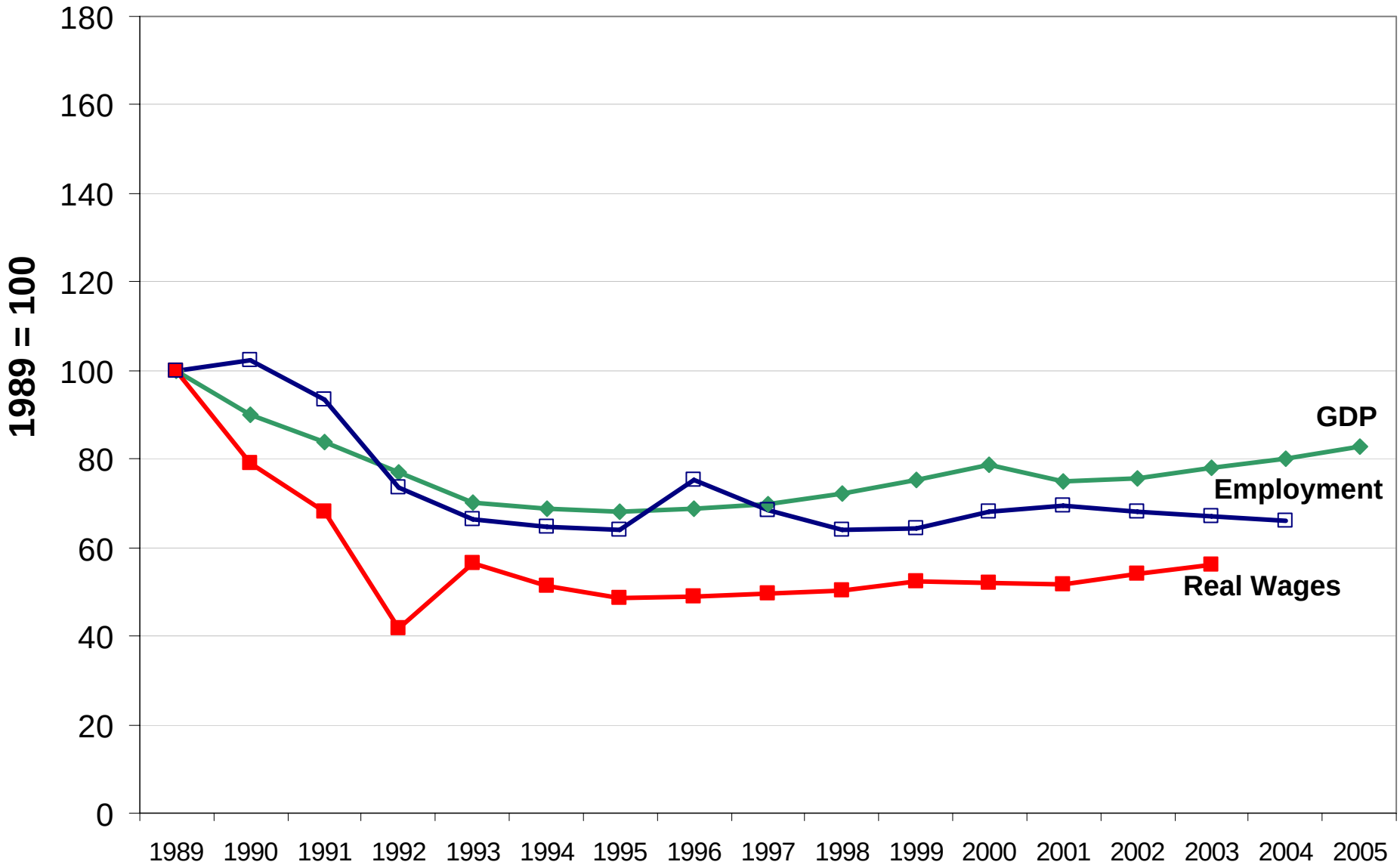


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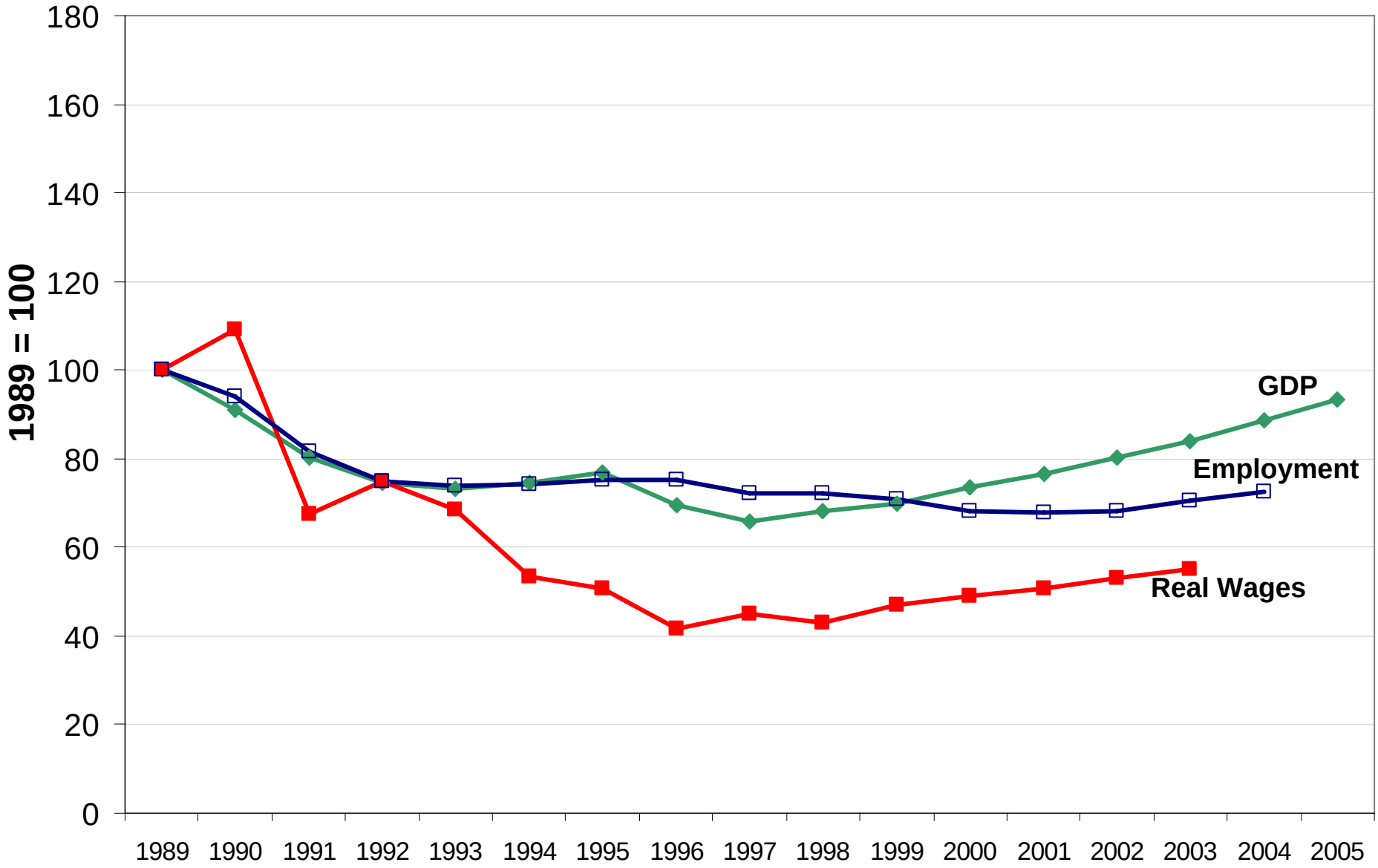


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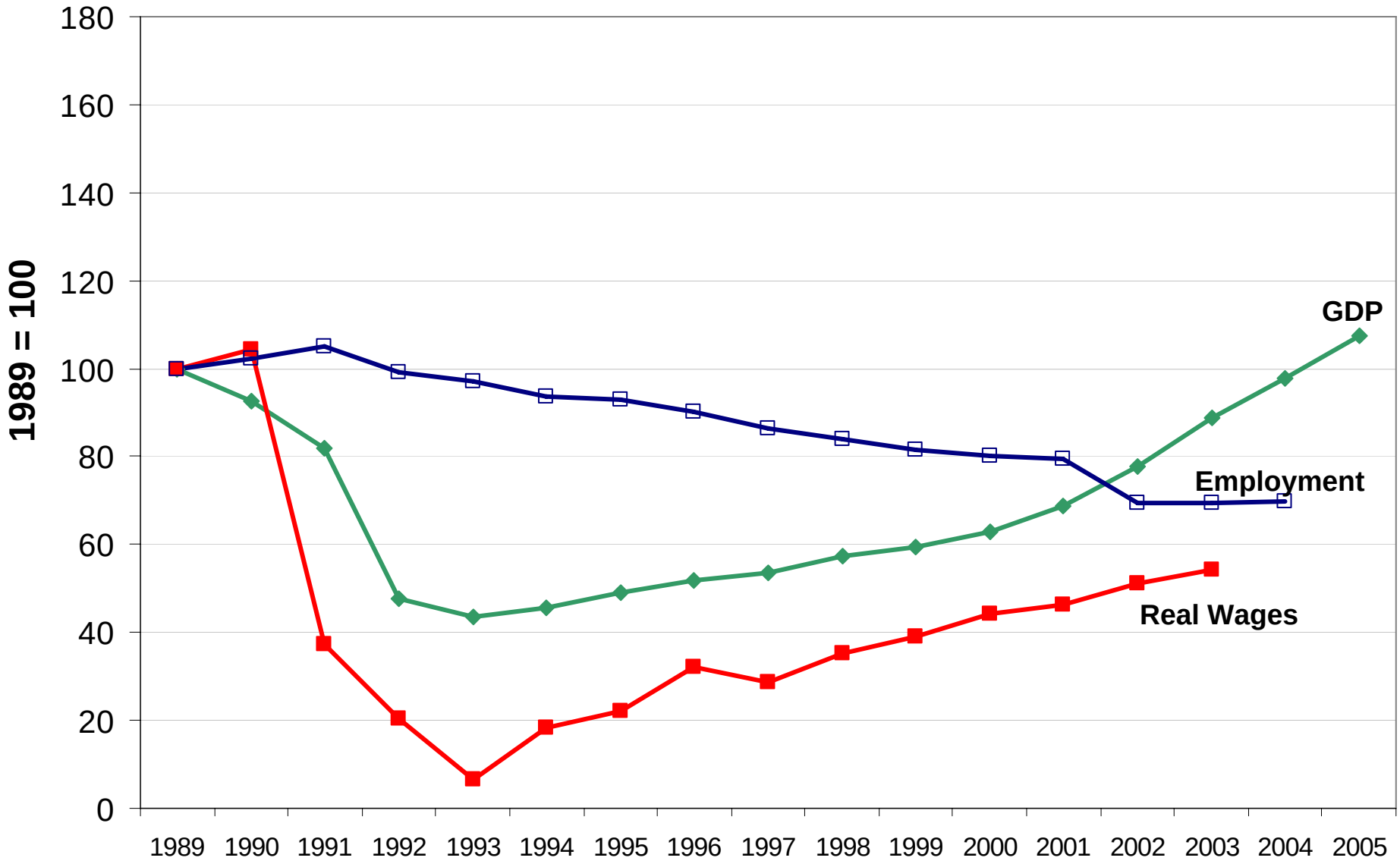
# Price, Quantity & Output Adjustments in Labor Markets in Armenia

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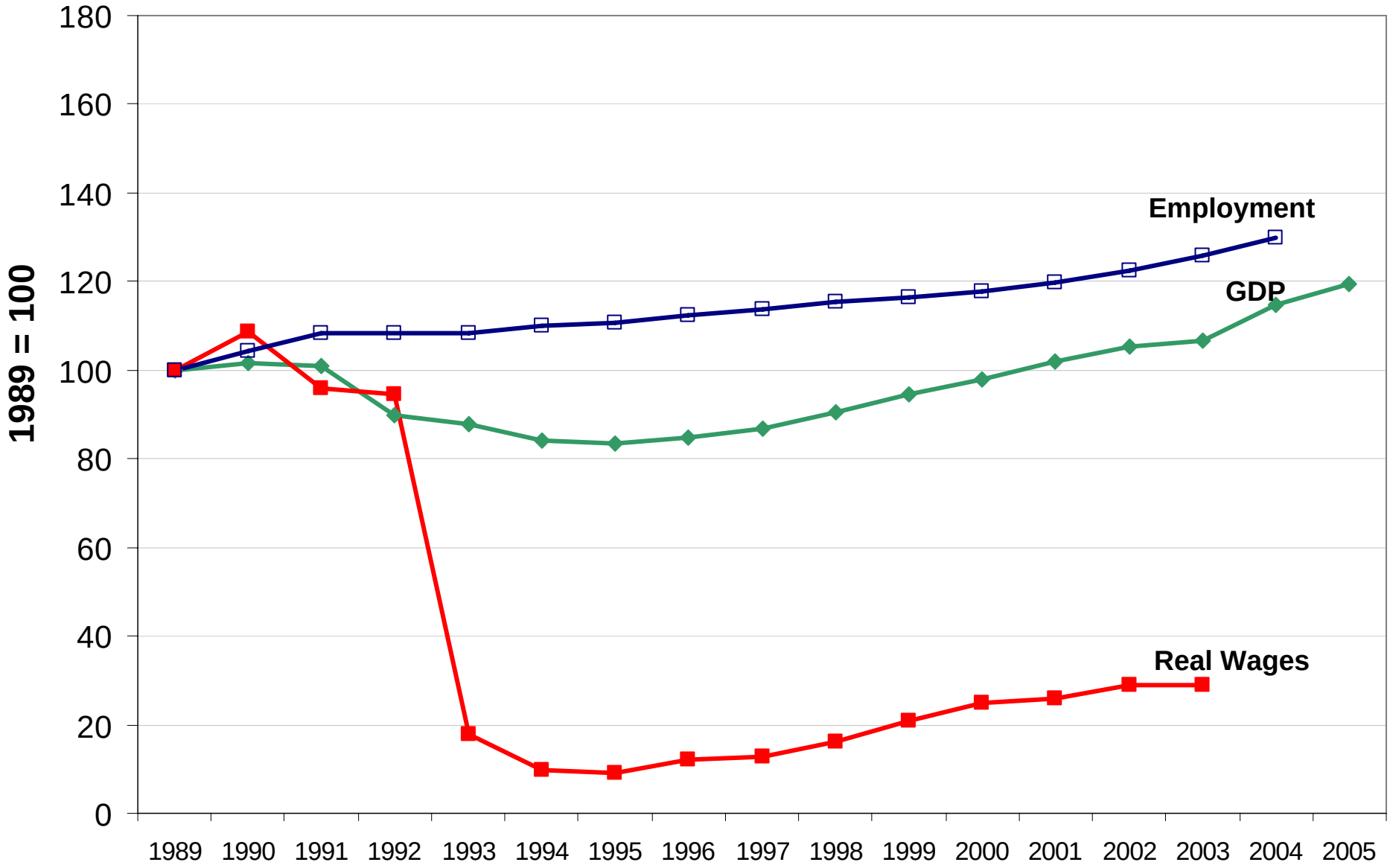


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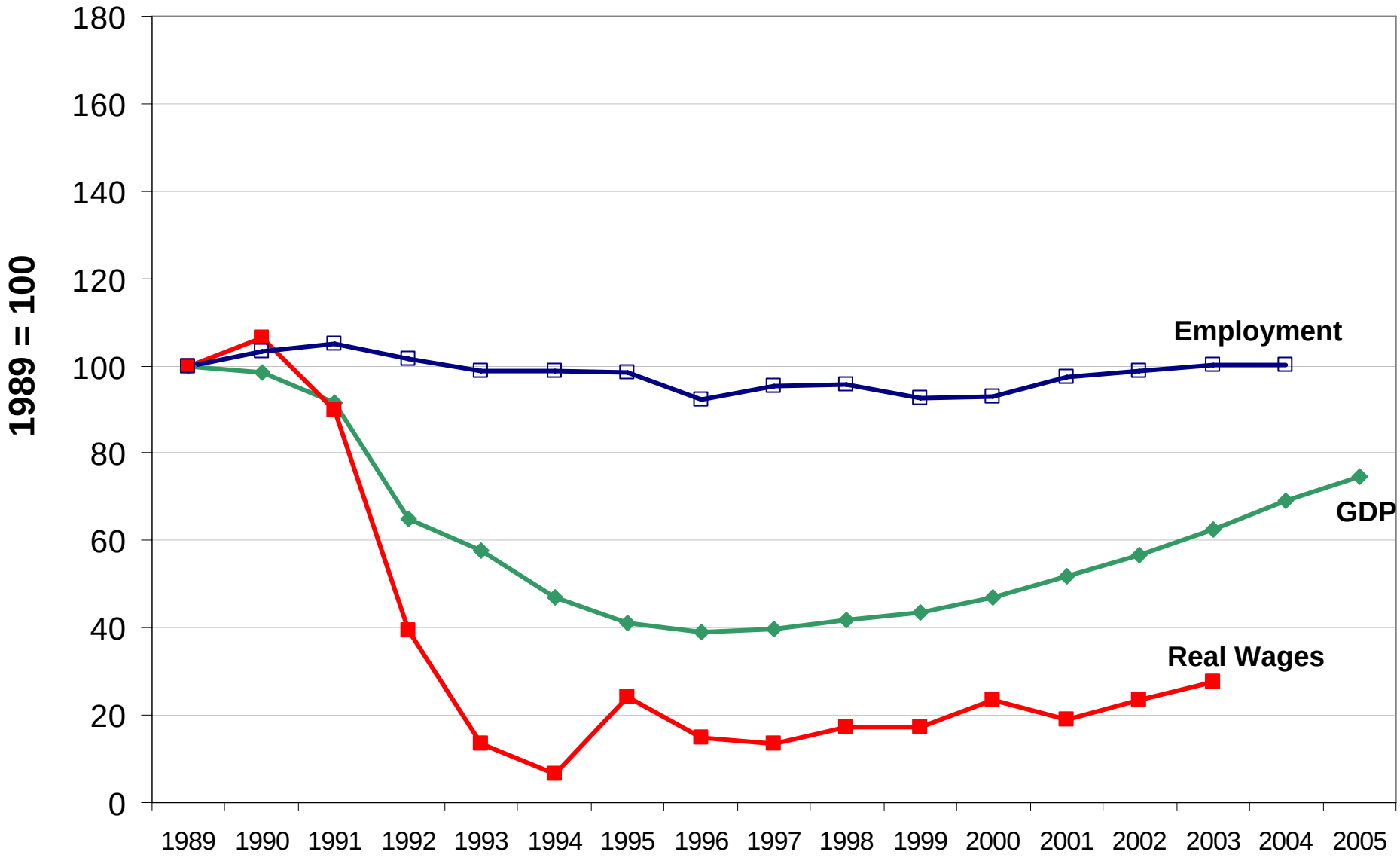
# Price, Quantity & Output Adjustments in Labor Markets in Tajikistan

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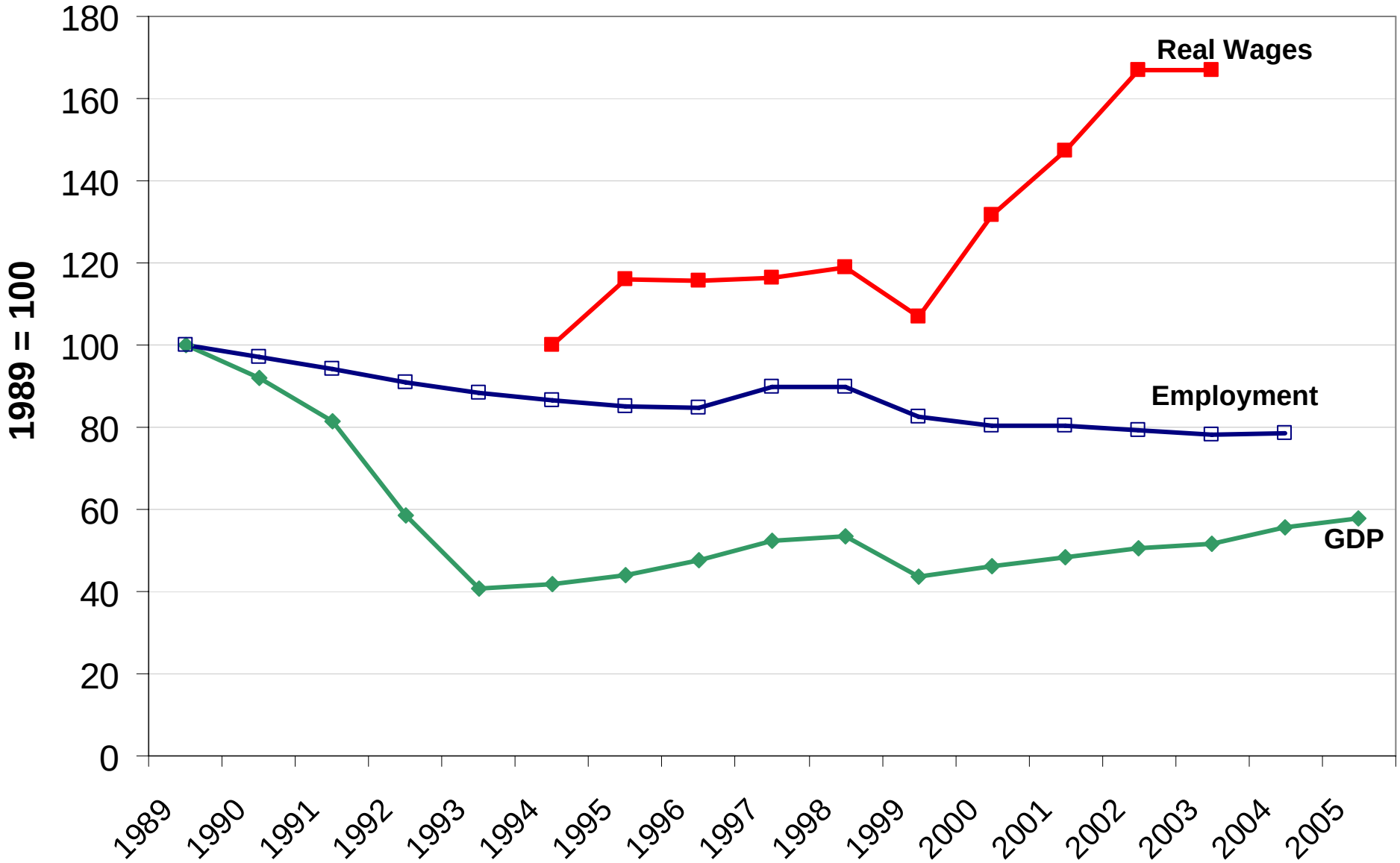
# Price, Quantity & Output Adjustments in Labor Markets in Serbia & Montenegro

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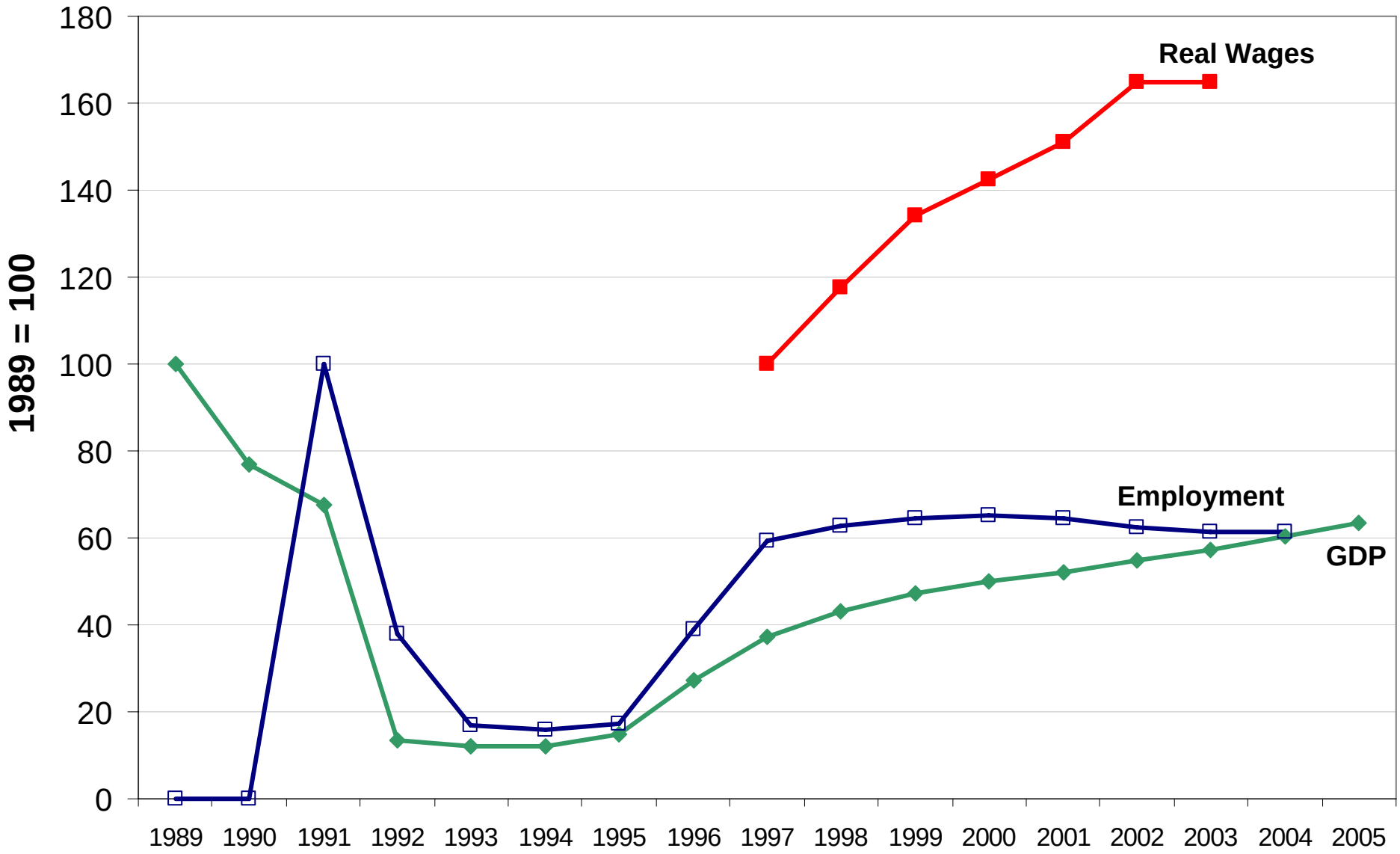
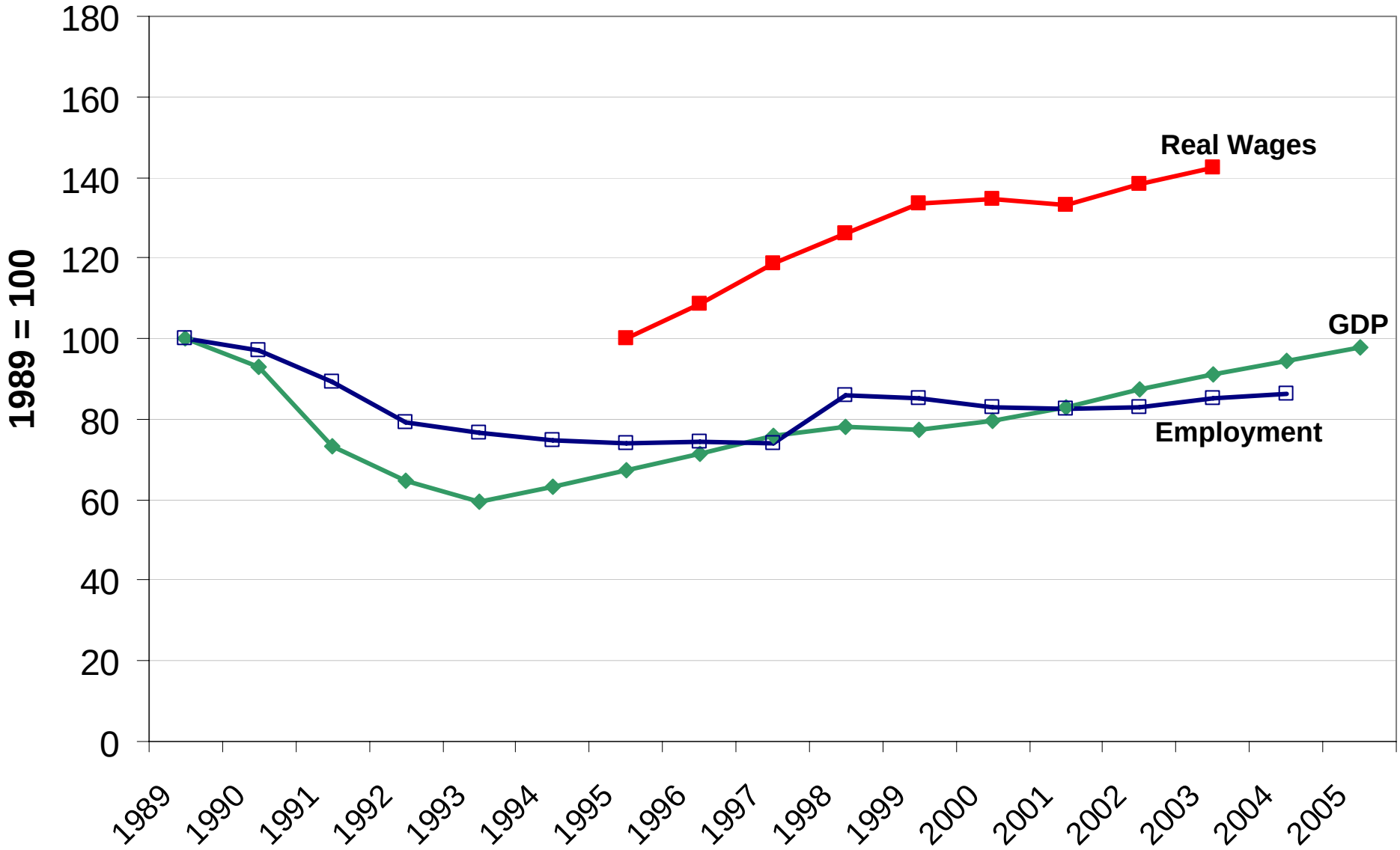
# Price, Quantity & Output Adjustments in Labor Markets in Bosnia & Herzegovina




EBRD, *Transition Report 2005* (November 2005). UNICEF, *TransMONEE Database* (December 2005).

# Price, Quantity & Output Adjustments in Labor Markets in Croatia

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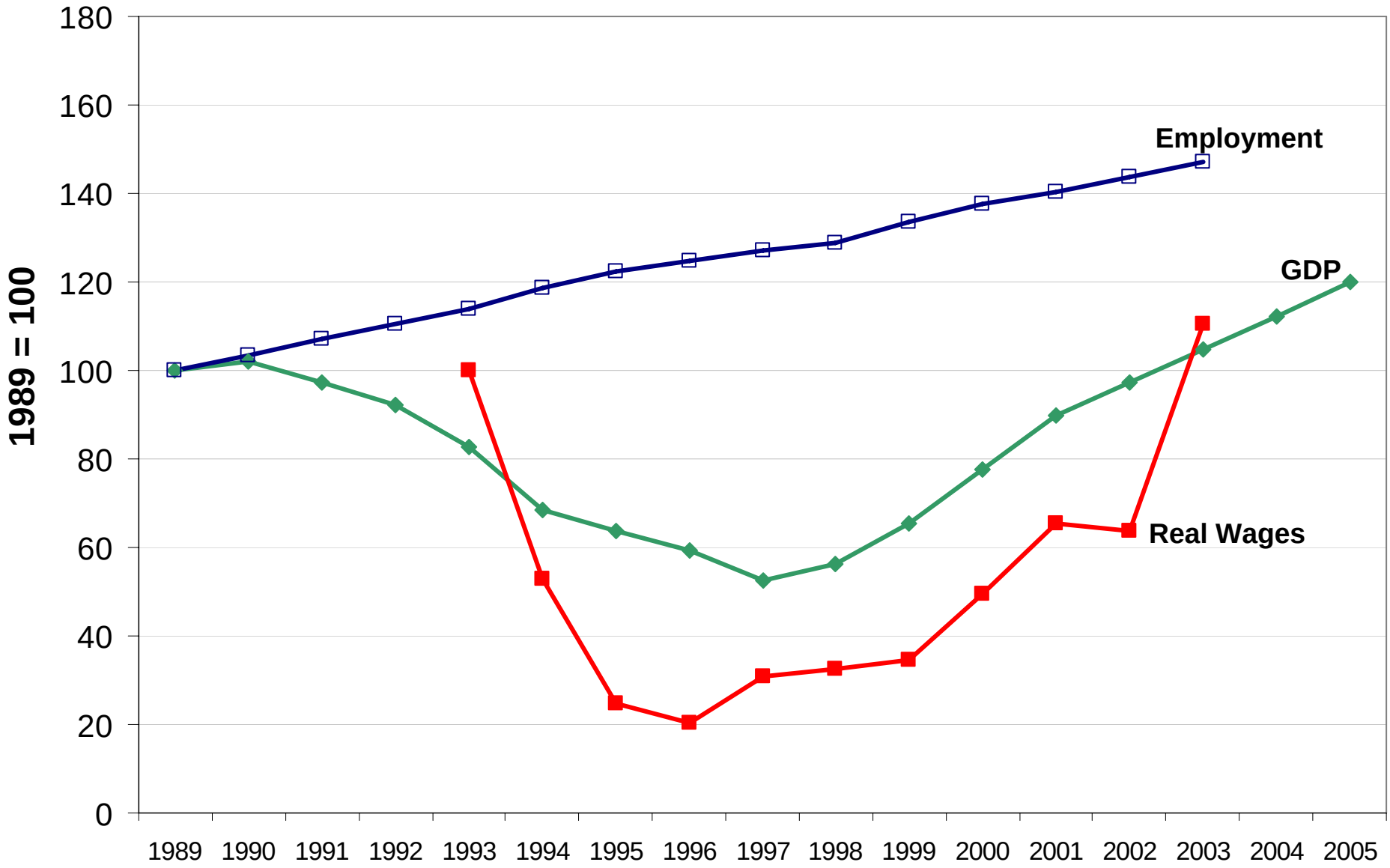
# Price, Quantity & Output Adjustments in Labor Markets in Turkmenistan

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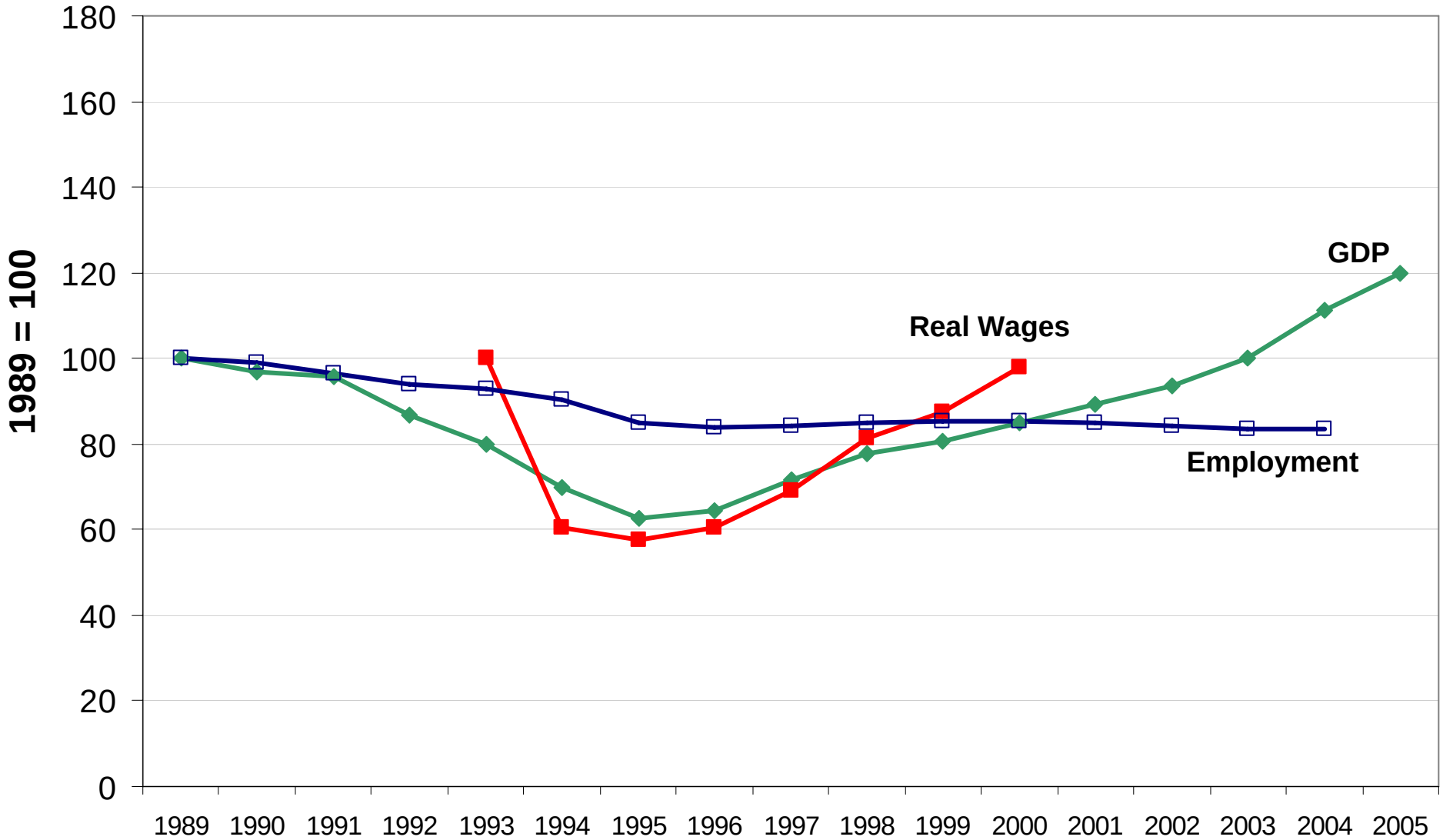
# Price, Quantity & Output Adjustments in Labor Markets in Belarus




EBRD, *Transition Report 2005* (November 2005). UNICEF, *TransMONEE Database* (December 2005).