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Introduction

A trade-off between the speed of market-oriented reforms and rising unemployment has been pointed out by many observers, with high rates of unemployment indicating the country's progress in its structural adjustment:[1] Fast restructuring, reducing excess employment in state-owned enterprises (SOEs), should bring about high inflows to unemployment. The larger the pool of unemployed, the higher the chance that the labour demand of newly emerging private firms can be matched: „job creation is seen as a stable function of the stock of unemployed workers and open vacancies. Unemployment will be necessary to facilitate the emergence of a new private sector" (Burda, 1992, p. 1).

As with any other transition country, the Czech Republic had from the early 1990's to face the dilemma between restructuring and unemployment. The adverse unemployment consequences of labour shedding were the issue, as was the price to be paid for improving the initial inefficient allocation of labour and its low utilisation.

A higher emphasis on restructuring would produce higher rates of unemployment and *vice versa*. Given the inevitability of restructuring, Boeri (1997, p. 67) points out that a common objective for transition economies cannot be „to prevent the rise in unemployment, but to cushion its social costs and to avoid the

[1] See, *inter alia*, Burda (1992) or Aghion and Blanchard (1993). This is, of course, not to say that the macroeconomic considerations such as exogenous shocks or the impact of stabilisation policies are irrelevant in explaining the emergence of unemployment in transition economies.

spread of long term unemployment“. If so, this would indicate that the Czech Republic differed from other reforming countries for quite a long period of time. There appeared to be more emphasis on keeping unemployment (artificially) low instead of moderating the consequences of a relatively high transitional unemployment. But one could offer a competing hypothesis as well: the Czech Republic had made use of its specific initial conditions and managed to follow its own mode of restructuring, without the necessity of increasing the rate of unemployment drastically.

Leaving aside conceptual considerations, did exceptionally low unemployment in the Czech Republic between 1990-1996 really mean that the country had sacrificed faster changes in the structure of employment in exchange for social stability and delayed restructuring? Does currently increasing unemployment accelerate the conversion of the structure of employment towards the EU-15 patterns?

As centrally planned economies have moved towards a market system, the prediction is that emerging market pressures would lead to a more dispersed wage structure. Measures such as the introduction of mandatory incomes policies, however necessary they might seem from a macroeconomic viewpoint, are likely to complicate the process of market-conform adjustments of relative wages. Contrary to this, allowing wages to move freely should – after imposing hard budget constraint on all economic actors - assist the process of restructuring by rewarding labour productivity achievements as well as encouraging workers to move towards expanding firms.

Could one really observe relative wage inertia during a period when incomes policies were implemented in the Czech Republic? Did the abolition of wage controls bring about the increasing wage differentiation across sectors and industries? How much has the country succeeded in catching-up the wage levels of both the neighbouring countries and the members of EU-15?

Apart from efforts to answer the above questions throughout the text, this paper is organised as follows: the first section is aimed at establishing the direction of changes in the labour market behaviour during the period 1990-1997, with special attention paid to the evolution of the structure of employment. Wage developments in the Czech Republic from 1990 are analysed in detail in the second section. The third section concludes.

1 Employment and Unemployment

1.1 The Czech Unemployment Miracle

The initial downward real wage flexibility reduced the pressures for mass redundancies: real wages had declined more than labour productivity so that labour became, relative to output per employee, even cheaper than before the beginning of the transition period.[2] However, given the scope of the transition recession, employment reductions were frequently an inevitable option, even under suppressed real wages. During 1990-1993, aggregate employment (including self-employment and part-time jobs) dropped by more than 500,000 persons, a net change by -10%.

[2] Real wages declining more rapidly than labour productivity led to income distribution losses for wage earners. The income share of wages deteriorated heavily in 1991 and remained under its pre-transition level until up 1994. See e.g. Coricelli and Lane (1993) or Buchtíková and Flek (1994) for more detail on Czech incomes policies. See Section 2 for more detail concerning wage developments.

Table 1: Employment and Labour Productivity[1)]

	1990	1991	1992	1993	1994	1995	1996	1997	1998[2)]
Czech Republic									
Employment	-0.9	-5.5	-2.6	-1.3	0.8	1.9	1.2	-0.7	-1.2
GDP per employee	-0.2	-9.2	-0.7	1.9	1.9	3.9	2.9	1.7	0.0
EU									
Employment	1.3[3)]			-0.6[4)]			0.2	0.5[5)]	-
GDP per employee	1.9			2.4[4)]			1.5	2.1[5)]	-

Notes: [1)] Annual changes in %. [2)] First half of 1998. [3)] Average 1986-1990. [4)] Average 1991-1995. [5)] Preliminary data.
Sources: Czech Statistical Office; EUROSTAT.

Even such a dramatic reduction in employment was insufficient to prevent labour productivity indicators from deterioration: GDP per employee had been declining permanently between 1990-1992, with annual increase first observed in 1993.[3] At the beginning of the transition period, a stronger responsiveness of employment to the parallel declines in GDP was substituted by drastic real wage declines. In turn, suppressed real wages allowed the tradition of labour hoarding, as established under communism, to continue to a certain extent.

Contractions in aggregate employment took place simultaneously with declining labour force participation. This is another crucial explanation why unemployment figures remained impressively low: Inflows to unemployment were much lower than otherwise because of the abruptly diminishing economic activity of post-working age population and of women.[4]

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[3] Yet in 1996 the level of GDP per capita represented (in terms of PPP) only 58% of the EU-15 average, and of GDP per employee 45%, respectively. GDP per capita in the Czech Republic reached only 53% of the German level, which was by 7 percentage points less than Greece and by 11 percentage points less than Portugal (Czech Statistical Office, 1998). Seen from another perspective, the above figures for the Czech Republic represent, together with Slovenia, the highest labour productivity levels among the entire group of Central and Eastern European EU-accession candidates.

[4] In order to stimulate labour force withdrawals rather than increasing unemployment, working pensioners were exposed to a punitive payroll tax. To document the quantity of declining labour force participation: During 1990-1993, the number of post-working age employees declined by 247,000, about 100,000 further individuals opted for the early retirement schemes, and the participation of women dropped by 268,000. As a result, there was only one unemployed person for each five jobs lost and the participation rate declined by 4.5 percentage points. See e.g. OECD (1995) or Rutkowski (1995) for additional arguments explaining the Czech „unemployment miracle".

Table 2: Unemployment[1)] in the Czech Republic

	1990	1991	1992	1993	1994	1995	1996	1997	1998[8)]
Unemployment									
- rate[2)]	0.73	4.13	2.57	3.52	3.19	2.93	3.52	5.23	5.60
- rate[2) 3)]	-	-	-	2.95	3.30	2.99	3.05	4.29	-
- stock[4)]	39.4	221.7	134.8	185.2	166.5	153.0	186.3	268.9	289.5
- stock[3]4)]	-	-	-	155.2	172.1	155.6	160.7	222.9	-
Unemployment by education									
of which:[5)]									
- primary	-	-	-	-	38.8	40.4	37.8	33.4	32.1
- university	-	-	-	-	2.0	2.1	2.2	2.7	3.0
(school-leavers)	8.9	11.0	12.9	12.9	12.0	13.1	14.6	16.4	13.0
Duration of unemployment[5)6)]									
- 3	-	-	-	-	40.5	39.0	41.6	37.0	36.0
3 – 6	-	-	-	-	22.2	21.4	23.0	25.4	20.5
6 – 9	-	-	-	-	9.9	9.5	9.7	{18.0}	11.4
9 – 12	-	-	-	-	6.6	6.4	5.6		9.3
12 -	-	-	-	-	20.8	23.7	20.1	19.6	22.8
Unemployed per vacancy	0.7	4.6	1.7	3.4	2.2	1.7	2.2	4.3	5.0
of which:									
- primary education	0.4	6.0	3.2	7.9	4.5	3.2	2.3	-	-
- university education	-	1.8	0.7	1.0	0.7	0.7	1.1	-	-
Unemployment by age groups[5)]									
of which:									
- 19	-	-	-	-	13.5	13.3	12.9	12.4	6.8
20 – 24	-	-	-	-	14.8	14.6	14.9	40.7 [7)]	34.7[9)]

Notes: [1)] Unless stated otherwise, the data refer to end-year. [2)] Per cent of the labour force. [3)] Annual average. [4)] Number of job applicants in thousands. [5)] Per cent of the stock of unemployed. [6)] In months. [7)] For age group 20-34; [8)] June 1998. [9)] For age group 20-29.

Sources: Statistical Yearbook of the Czech Republic, 1997; Czech Ministry of Labour and Social Affairs; Čihák and Frýdmanová (1997).

A weak link between employment reductions and increasing unemployment became especially remarkable by the end of 1992, when aggregate employment

dropped (on a year-to-year base) by 123,000 persons, whilst the stock of unemployed diminished by more than 80,000. Not only inflows to unemployment (as number of unemployed for each job lost) were comparatively lower than in other reforming countries, but also outflows to jobs (as per cent of registered unemployed) were the highest in the Czech Republic. Not surprisingly, the share of long term unemployed was the lowest across the region: until up 1993, it remained below 20%, whilst in Hungary, Poland and Slovakia it well exceeded 30%, in all cases.[5]

1.2 Labour Flows

In particular, unemployment prospects of male working-age population remained relatively low. But as a consequence, the labour market had become tight from the very beginning of the transition period and newly emerging private firms often could not have recruited labour from the pool of unemployed. As a result, bidding for labour used to be a common practice among the expanding *de novo* private employees. Among other consequences, this suggests that job creations in new private firms were predominantly matched by direct job-to-job movements of employees who left the SOEs voluntarily. A job-to-unemployment-to-job mechanism of labour reallocation was rather complementary. This is characteristic not only for the early stages of the Czech transition, but also for the so far period of market reforms as a whole.

The dominance of job-to-job movements is seen from Table 3: Leaving aside new entrants as well as exits, nearly 40% of the labour force had moved voluntarily to another employer during 1992-1997, and about 13% to self-employment or other forms of private business activity. Only 17% of the working-age population had reported unemployment experience.

Worker flows between firms, however impressively they appear, are not necessarily a main source of structural changes in employment: When comparing the figures in Table 3 with cross-sectoral net employment changes, it is evident that job

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[5] See Večerník (1996) or Boeri (1997) for more detailed comparisons. In the period 1990-1993, long term unemployment in the Czech Republic (as per cent of persons unemployed longer than one year) was much lower than the EU average and was equal to Australia, Japan or Norway. See Glyn and Gregg (1994).

changes within particular sectors of the economy have by far outweighed those between sectors.

Table 3: Job and Occupation Changes 1992 – 1997 (per cent of the labour force)

Type of change	Total	Men	Women
Change of employer	44.8	47.8	41.8
Change of employer[1)]	38.9	41.3	36.5
Change of occupation	29.1	29.1	29.0
Promotion	19.1	21.3	16.9
Demotion	7.2	6.9	7.5
Run of a private business	12.8	16.4	9.2
Unemployment experience	16.8	16.0	17.5

Notes: [1)] Controls for organisational changes (privatisation, split-up of existing SOEs, etc.) included.
*Source*s: Database SIALS, own calculations.

During 1990-1993, the contracting sectors (i.e., those with declining employment levels; see Table 7 for the definition of sectors) reduced aggregate employment by 763,000 persons, whilst the expanding ones contributed to by 260,000. In absolute terms, the highest employment reductions occurred in industry (-314,000) and in agriculture (-300,000). Contrary to this, even the most expanding sectors were unable to absorb more than several tens of thousands of new employees. The trade sector dominated among those with increasing employment. Even so, in terms of a net employment change in this sector, it did not mean more than 85,000 persons.

As a result, out-of-labour-force movements in the contracting sectors contributed more significantly to a structural change than inflows to employment in the expanding sectors. In fact, labour force withdrawals appear to be a key mechanism of changes in the structure of employment.

The labour demand potential of the expanding sectors was probably higher than the figures on net employment changes suggest. But a tight labour market had led to a high wage-premia for accepting a job change by a worker, a factor that clearly diminished the labour demand of many new firms.[6]

[6] The practice of attracting individuals already employed elsewhere rather than recruit labour from the pool of unemployed has been established not only due to the general state of the Czech labour market. Unemployment status functions as a negative signalling device with

Table 4: Labour Flows (in thousands of workers)

	1994	1995	1996
A. Total employment	4959	4996	5044
1. Employment inflows	137	134	117
- from the pool of unemployed	52	45	42
- from out-of-labour-force	85	89	75
2. Employment outflows	-98	-94	-91
- to the pool of unemployed	-34	-26	-28
- to out-of-labour-force	-64	-68	-63
3. Net employment change (1-2)	39	40	26
B. Total unemployment	203	185	181
1. Unemployment inflows	53	44	45
- from employment	34	26	28
- from out-of-labour-force	19	18	17
2. Unemployment outflows	-65	-60	-52
- to employment	-52	-45	-42
- to out-of-labour-force	-13	-15	-10
3. Net unemployment change (1-2)	-12	-16	-7
C. Total out-of-labour-force	3069	3073	3146
1. Inflows	77	83	73
- from employment	64	68	63
- from unemployment	13	15	10
2. Outflows	-104	--107	-92
- to employment	-85	-89	-75
- to unemployment	-19	-18	-17
3. Net out-of-labour force change (1-2)	-27	-24	-19

Notes: Data for fourth quarters of the respective years.
Sources: Kux and Makalous (1997); Labour Force Survey data.

Table 4 illustrates worker flows during 1994-1996. Keeping in mind that Labour Force Survey data differ slightly from the official ones, the main messages are as follows: First, new entrants contributed to employment growth much more than inflows to jobs from unemployment. Second, unemployment outflows exceeded inflows, with net unemployment change being negative each year. Finally,

respect to worker‘s qualification, skill and discipline. This has not allowed unemployed workers to bid wages down in order to become employed in the *de novo* private sector. This appears to be the common motivation behind the private wage and employment policies across transition economies, in spite of very different rates of unemployment. As a result, unemployed workers found a new job in another SOE rather than in a new private firm. See Boeri (1994), Layard and Richter (1996) or Flanagan (1996).

unemployment outflows were directed predominantly to employment, with out-of-labour-force movements playing much less important role.

1.3 The Recent Developments

Aggregate employment grew first in 1994 and unemployment declined during that year. In 1995, the developments of both employment and unemployment were even more favourable. The same situation on the labour market prevailed in principle also in 1996. This is commonly attributed to a demand-driven economic recovery resulting in macroeconomic overheating. In such situations labour demand is increasing and workers' bargaining power enforces shifts in the distribution of income in favour of wage earners.[7]

The combination of increasing employment, of low unemployment and of real wages growing in excess of labour productivity during 1994-1996 was clearly unsustainable over the long term, not least because of wage-push and of the adverse effects on the country's international (price) competitiveness. This was, at least partly, behind a strong policy response to the macroeconomic developments in mid-1997.[8] In effect, a decline in aggregate employment was recorded for 1997, for the first time since 1993. Together with increasing unemployment this created conditions for only a moderate growth of real wages in 1997 and for their year-to-year decline in the first half of 1998.

The Czech Republic has lost its exceptional position, often labelled as an „unemployment miracle". The internationally comparable rate of unemployment (according to the ILO definition) approached a limit of 6% in the first quarter of 1998.

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[7] But one equally has to note a prevailing low restructuring pressure in (privatised) SOEs**,** as transition-specific, short-term factor keeping unemployment figures artificially low. Little pressure to restructure manifested itself in the absence of large waves of redundancies in (privatised) SOEs and in automatically continuing credit lines towards the pre-transition clients of commercial banks, as well as increasing inter-enterprise arrears and almost absenting bankruptcies of overleveraged firms. See e.g. Klacek and Flek (1995) for detail.

[8] In the first quarter of 1997, i.e., close before the substantial correction of economic policy in the Czech Republic (involving changes in the exchange rate regime, budgetary cuts and a more restrictive monetary policy), the growth in unit labour costs in industry exceeded by far all the remaining „advanced" transition countries (EBRD, 1997). Lemoine (1997) reports an analogous „leading position" of Czech industry for 1993-1996. Havlik (1997) shows that the same trend applied in 1996 to the Czech economy as a whole.

This exceeds some countries of EU-15 (Luxembourg, Austria, Netherlands) or is close to others (e.g. Denmark, United Kingdom and Portugal). What has remained is the still favourable relation to the EU-15 average or to other transition countries.

Table 5: Unemployment in Selected Transition Countries and in the EU

	1995	1996	1997
Czech Republic	2.9	3.5	5.2
Hungary	10.9	10.7	10.4
Poland	14.9	13.2	10.5
Slovenia	14.5	14.4	14.8
Slovakia	13.1	12.8	12.5
EU average	10.8	10.9	10.7

Notes: End-of- year; per cent of the total economically active population.
Sources: CESTAT, 1997/4; EUROSTAT.

The rate of unemployment increased remarkably in 1997. The same trend applies to the duration of unemployment, to the number of unemployed per vacancy, to unemployed school-leavers and even to individuals with university education (see Table 2). The current (mid-1998) regional disparities in unemployment rates vary between less than 1% (Prague-East) and 14% (Most-Northern Bohemia). However, all these developments have quite a low impact on the sectoral composition of employment, which becomes increasingly stagnant.

1.4 The Structure of Employment

In the mid-term period (1990-1996), the highest absolute as well as relative employment declines occurred in agriculture and industry. This could be regarded as a shift in the structure of employment in favour of the service sector, a move that is highly consistent with the conversion towards the EU-15 (OECD) patterns. However, no further growth in the employment share of the tertiary sector has been observed since 1996. At the same time, a relatively high employment share of the secondary sector suggests the prevailing „over-industrialisation".

Further increases of employment in the service sector depend critically on economic growth – the current recession affects adversely household incomes and the demand for services, as a consequence. This has an immediate impact on

employment in the service sector: between January – June 1998, aggregate employment dropped by 1.9%, whilst employment in trade declined by 5.8% and in hotels and restaurants by 10.1%, respectively. Note that employment in manufacturing industry increased by 1.5% during the same period. This could mean that the above "over-industrialisation" would prevail for an extended period, thus reflecting a long term industrial tradition and culture of the Czech lands.

Table 6: Sector Shares of Employment

	EU		OECD	Czech Republic		
	1990	**1996**	**1990**	**1990**	**1996**	**1998[1)]**
Primary	6.7	5.1	7	15.3	7.7	5.5
Secondary	33.1	29.8	30	41.9	39.2	41.2
Tertiary	60.2	65.1	63	42.8	53.1	53.3

Notes: [1)] Second quarter of 1998.
Sources: Statistical Yearbook of the Czech Republic, 1997; Czech Ministry of Labour and Social Affairs; Glyn and Gregg (1994); Leitmanová (1998).

Table 7 provides a closer look at structural changes of employment in twelve sectors of the Czech economy. For 1990-1996, the changes in relative employment weights of the particular sectors vary between -5.9 and 5.6 percentage points. But, for 1994-1996, the range of structural shifts of employment is much narrower: from -1.2 to 1.0. Besides, the employment share of eight of twelve sectors changed during that period only within an interval (0; $\pm$ 0.3). The data for 1997 show again a relatively narrow range of structural shifts in sectoral employment: they have not reached one percentage point, in all cases.

In 1997 the continuing absolute decline of employment in agriculture led to the further diminishing of its relative weight in total employment by 0.5 percentage points, but an analogous process of employment reduction in industry kept its employment share practically unchanged. The data also show a relative downturn in the expansion of banking, government, trade and construction within the employment structure. The structure of employment appears increasingly stagnant also from alternative viewpoints:

a) In comparison with 1990, the 1996 official figures of the Czech Statistical Office reveal a mass decline in inter-regional migration (33-35% declines at the county-district levels). This reflects the existence of an underdeveloped housing market

Table 7: The Structure of Employment (sector shares of employment in per cent)

	1990	1992	1993	1994	1995	1996	1997
1. Agriculture, hunting, forestry and fishing	11.8	8.6	6.8	6.9	6.2	6.0	5.5
2. Industry	37.8	36.5	35.3	33.1	32.5	31.9	31.8
3. Construction	7.5	8.3	9.3	9.1	9.0	9.0	8.7
4. Wholesale and retail trade	9.8	11.0	12.6	14.4	14.9	15.4	16.2
5. Hotels and restaurants	1.7	2.0	2.3	2.8	2.8	3.1	3.6
6. Transport, storage and telecommunications	6.9	7.4	7.9	7.2	7.1	7.2	6.8
..7. Financial intermediation	0.5	1.0	1.3	1.6	1.7	1.8	1.8
8. Real estate, renting and business services	7.1	6.9	6.3	7.0	7.8	7.6	7.5
9. ublic administration	1.8	2.5	2.7	3.0	3.2	3.3	3.4
10. Education	5.9	6.6	6.7	6.6	6.5	6.4	6.1
11. Health and social care	5.2	5.4	5.4	5.3	5.2	5.3	5.3
12. Other community, social and personal services	4.0	3.8	3.4	3.0	3.1	3.0	3.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Statistical Yearbook 1997; Czech Statistical Office.

and thus a limited capability of the population to respond to the labour market situation by changing housing place;

b) Total employment in joint ventures, foreign-owned and international firms, which are the main driving forces increasing labour productivity, declined in 1997 even in absolute terms. Although the decline applies to joint ventures only (-180,000 employees), the increase of employment in foreign-owned and international firms by some 20,000 persons has had no substantial impact on the structure of employment.

Within the industry sector, the deepest declines in relative employment shares occurred in the mining and quarrying industries (-3.4 percentage points during the period 1990-1997), followed by the manufacture of machinery and equipment (-3.1) and the manufacture of transport equipment (-1.7). (See Table 8). On the other hand, the following industrial branches have expanded within the industry structure of employment: the manufacture of food products, beverages and tobacco (2.8), the manufacture of basic metals and fabricated metal products (2.2) and the manufacture of rubber and plastic products (1.4). Relative employment shares of the remaining ten industrial branches nearly stagnated during the period 1990-1997: for this group as a whole, the range of structural change did not exceed, in percentage points, an interval (-1; 1), and in eight cases not even an interval (-0.6; 0.6).

With the exception of the mining and quarrying industries, where a declining employment share expresses the reduction of its inherited excess capacity, the remaining significant declines apply to the traditional engineering branches with a high concentration of skilled labour. This reflects a low degree of international competitiveness of the key segments of the Czech manufacturing industry, so that the previous employment shares (as well as levels) of engineering had to decline more rapidly than in other branches. As far as the branches with increasing employment shares are concerned, these developments can be explained by the combination of inflows of foreign investment (food and tobacco) and favourable export conditions after massive devaluations of the domestic currency in 1990 (basic metals).[9]

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[9] See Flek (1995), Lemoine (1997) or Zemplinerová (1998) for more detail on mutual links between export performance, FDI and employment levels in particular branches of Czech manufacturing industry.

From the beginning of the transition period, one could observe certain signs of conversion of the structure of employment in manufacturing industry towards smaller west-European countries (Austria, Denmark, Belgium and Switzerland). This especially concerns increasing the relative employment weight of the food and chemical industries. The same trend applies to the paper, printing and wood processing industries, although these industrial branches still remain with their employment shares deep below the given comparative context. Contrary to this, the declining employment share of Czech engineering branches has, in terms of international comparisons made in Table 9, resulted in that it is no longer extremely high.

Table 8: The Structure of Employment in Industry (in per cent)

	1991	1992	1993	1994	1995	1996	1997	Structural change in per-centage points	
								1991-1997	1996-1997
Food products, beverages and tobacco	7.5	7.9	8.5	9.0	8.9	9.2	10.3	2.8	1.1
Textiles and textile products	9.3	9.1	9.4	9.6	9.2	8.7	8.8	-0.5	0.1
Leather and leather products	2.7	2.9	2.7	2.6	2.3	2.1	2.1	-0.6	0
Wood and wood products	1.8	1.9	2.1	2.1	1.7	1.6	2.4	0.6	0.8
Pulp, paper and paper products, publishing and printing	2.8	2.9	2.8	3.0	3.1	3.3	3.4	0.6	0.1
Coke, refined petroleum, nuclear fuel	0.9	0.9	0.9	1.0	0.4	0.4	0.4	-0.5	0
Chemicals, chemical products	2.8	3.2	3.3	3.4	4.1	4.1	3.8	1.0	-0.3
Rubber and plastic products	1.7	1.8	2.1	2.5	2.6	2.6	3.1	1.4	0.5
Other non-metallic mineral products	5.0	5.1	5.5	5.4	5.2	5.2	5.3	0.3	0.1
Basic metal and fabricated metal	13.5	13.4	14.3	14.3	15.2	15.4	15.7	2.2	0.3
Machinery and equipment	15.3	15.0	14.6	13.8	13.4	13.1	12.2	-3.1	-0.9
Electrical and optical equipment	8.2	7.3	6.9	7.4	7.6	7.9	8.1	-0.1	0.2
Transport equipment	8.7	8.5	7.5	7.4	7.5	7.8	7.0	-1.7	-0.8
Other manufacturing	4.8	4.6	4.7	4.7	4.5	4.4	5.0	0.2	0.6
Electricity, gas and water production and supply	5.5	5.9	6.1	6.4	6.8	6.9	6.3	0.8	-0.6
Mining and quarrying	9.5	9.6	8.6	7.4	7.5	7.3	6.1	-3.4	-1.2
Total industry	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0	0

Sources: Statistical Yearbook of the Czech Republic, 1997; Czech Statistical Office.

Table 9: The Structure of Employment in Manufacturing Industry (in per cent, international comparisons)

	1	2	3	4		5	6
	Austria	**Denmark**	**Belgium**	**Switzerland**	**average 1-4[1)]**	**Czech Republic[2)]**	**Czech Republic[3)]**
Food and tobacco	9.6	18.4	11.7	8.8	12.1	8.8	11.7
Textiles	10.1	6.1	12.5	7.4	9.0	10.9	10.0
Leather	2.1	0.6	0.6	0.96	1.1	3.2	2.4
Wood processing	6.4	6.0	4.0	4.0	5.1	2.1	2.7
Pulp, paper and printing	6.5	8.8	6.8	8.2	7.5	3.3	3.9
Chemicals and rubber	9.3	4.8	12.0	12.5	10.9	6.3	8.3
Glass, china	5.3	4.5	4.4	3.0	4.3	5.9	6.1
Metal and metal products	15.2	7.2	16.5	11.9	12.8	15.8	17.9
Engineering	15.4	23.0	15.0	19.4	19.5	28.2	21.9
Electrical equipment	11.3	6.5	8.7	14.3	9.8	9.6	9.2

Notes: [1)] Data for the group of western countries for 1987. [2)] 1991; [3)] 1997.
Sources: Statistical Yearbook of the Czech Republic; Flašárová and Kamarýt (1991).

2 Wage Developments

2.1 General Wage Trends

The absence of real wage pressure at the beginning of the transition period cannot be attributed primarily to the introduction of an incomes policy. The 1991 decline in consumer real wages was more than two and a half times higher than that stated by the government norms, thus making wage controls rather superfluous.[10]

The point is that neither an excessive aggregate demand, nor unrealistic wage claims – as factors that could necessitate the introduction of an incomes policy – occurred. Price liberalisation followed by sound monetary and fiscal policies had dissolved any monetary overhang and caused the aggregate demand to decline sharply. A dramatic fall in GDP had diminished the total real income available. Because of this, previous real wage levels were unsustainable. Nor was a wage-push really a threat because of the wage self-restraint of trade unions.[11] Thus the only

[10] In 1991 the government introduced a legally binding incomes policy with the aim of securing a 10 per cent annual decline in consumer real wages. Enterprises as well as public sector institutions first had to wait until the past [quarterly] developments of the CPI were known and then adjust individuals' wages in line with the real wage target. Such a backward-looking mechanism thus permitted proportionally lower increases in individuals' wages compared with those in the CPI. A „tax-based" punitive penalty was introduced for exceeding the regulatory limits. Only small private firms with less than 25 employees were free from these wage controls.

[11] The transition recession had produced an overall fear of mass layoffs, the threat that outweighted the trade unions' concerns about wages. With personal benefits connected with

argument, if any, that might justify the introduction of wage controls is that the government could not have perceived the actual developments of wages.

The incomes policy continued to be legally binding between 1992 and the first half of 1995 (with a break in the first half of 1993). A zero growth in consumer real wages was declared by the government as a target for 1992, and a 5 per cent growth for 1993–1995, respectively. In order to compensate for the 1991 real wage deterioration and to preserve social accord, the policy norms were becoming increasingly selective over time and allowed an increasing number of exemptions. That is why real wage growth rates under the 1992–1995 incomes policy exceeded the norm (with the exception of 1993) and were not balanced by the appropriate labour productivity improvements, either at the macro- or at the industry levels.

Table 10: Wage Developments in the Czech Republic (annual growth in per cent)

	1991	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
1. average nominal wage	15.4	22.5	25.3	18.5	18.5	18.4	11.9
2. average real wage[1)]	-24.5	10.0	3.7	7.7	8.6	8.8	3.1
3. labour costs per employee[2)]	-	-	23.9	18.7	19.2	16.1	8.9
4. unit labour costs[3)]	27.1[4)]	23.3[4)]	21.6	16.5	14.2	13.0	7.1
5. real unit labour costs[5)]	-14.1[4)]	2.7[4)]	3.3	4.8	3.4	3.3	0.5

Notes: [1)] Average nominal wage deflated by the CPI. [2)] Includes nominal wages and salaries, compensations for wages, social benefits, statutory social security payments, personnel costs. [3)] Nominal labour costs per employee/ GDP per employee at constant prices. [4)] Average nominal wage used instead of labour costs. [5)] Unit labour costs/GDP deflator.

Sources: Czech Statistical Office; Hájek *et al*. (1995).

Because of this, the "wage cushion" (caused by a steeper decline in real wages than in labour productivity), that since 1990 had moderated wage inflation and supported international (price) competition, was removed in 1994. [12] Real wages continued to grow faster than labour productivity even after 1994. In effect, producers accepted declining real profit margins for an extended period. This, in turn, has impeded the SOEs' chances to finance restructuring from their internal resources.

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the ongoing privatisation at stake, managers of SOEs were keen to avoid industrial conflicts stemming from layoffs, since those appeared to be a more probable source of labour unrest than declining real wages. See Flek (1996) for a more detailed explanation of the socio-economic context that had made the real wage declines acceptable for the short term.

[12] See Hájek *et al*. (1995) or Flek (1996) for more detail.

GDP at constant prices increased during 1992-1997 by 13%, whilst total labour costs (in nominal terms) by 122%. This caused unit labour costs to grow by 96% (in real terms by 16%). For reasons discussed in the first section, real wage pressure weakened and unemployment started to rise significantly during 1997.

With 362 USD a month, Czech dollar wages exceeded in 1996 all the remaining EU-accession candidates from the region, except Slovenia (977 USD).[13] Note that in 1991, dollar wages in the Czech Republic were 71% lower than in Hungary and 17% lower than in Poland. Contrary to this, Czech dollar wages were in 1996 12% higher than in Hungary and 11.5% higher than in Poland.[14]

However, the Czech Republic falls behind EU wage levels in a range of areas: total labour costs per employee (average nominal wage) in the Czech Republic reached in 1996 only 18% (17%) of the EU-15 average (on an exchange rate base). In the same year, unit labour costs (defined as total labour costs per employee on an exchange rate base / GDP per employee in PPP) in the Czech Republic represented 40% of the EU average (Czech Statistical Office 1998).

2.2 Wage Differentiation

The impact of overall real wage increases on wage structures manifests itself in the gradually diminishing inter-sectoral as well as inter-industry wage differentiation. The coefficients of variation in Table 11 (unweighted by employment) document the rapidly increasing differences in average wages across sectors between 1991 and 1992, i.e., during the period when mandatory incomes policies were implemented. From then to 1997, the coefficients remained below the 1992 level (except 19960. This means that the wage growth rates of particular sectors of the economy have gradually tended to equalise, despite the abolition of wage controls in the mid-1995.

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[13] See V. Koen and P. De Masi: "Prices in the Transition: Ten Stylised facts." IMF Staff Studies for the World Economic Outlook. December 1997. Quoted according to Czech Statistical Office (1998).

[14] Whilst approaching or even exceeding the wage levels of other EU-accession candidates, the Czech Republic is gradually loosing its labour productivity surplus over the countries in question. During 1993-1997, labour productivity grew in the Czech Republic on average by 2.5% a year, but in the remaining countries by some 4%.

Table 11: Inter - Sectoral Wage Differentiation
(in per cent of economy average wage)

	1990	1991	1992	1995	1996	1997
Industry	103.8	103.6	103.5	99.7	99.1	100.5
Construction	109.9	106.6	108.2	108.1	105.1	104.9
Agriculture	109.6	99.7	91.8	84.2	80.7	79.5
Transport	104.6	103.2	99.1	100.8	101.8	105.8
Trade	85.0	86.2	90.1	88.4	87.8	98.1
Health care	92.6	96.6	94.5	92.1	93.7	90.0
Education	88.1	90.3	90.6	90.9	92.9	88.1
Financial intermediation	102.0	136.9	169.6	171.5	169.6	174.5
Public administration	100.4	105.3	114.6	117.6	118.3	110.2
Economy average wage	100.0	100.0	100.0	100.0	100.0	100.0
Coefficient of variation	0.102	0.148	0.234	0.220	0.246	0.224

Sources: Statistical YearBook of the Czech Republic; Czech Ministry of Labour and Social Affairs; own calculations.

This is of course not to say that the transition has not brought about many new forms of wage differentials. This especially concerns increasing returns to education, wage leadership of foreign-owned firms, more apparent wage differences between regions or between the top- and bottom-wage sectors (industries). See especially Flanagan (1993), (1995) or Večerník (1996). Even so, there are two general arguments explaining the trend of diminishing inter-sectoral wage differentiation:

a) the initial wage differences caused by wage developments in small private firms (which were free of wage regulation), in banking (which did not comply) and in foreign-owned firms (which were free of wage regulation from 1992), were signalling substantial damage to the relative wage status of government employees. The government was forced to take notice of this in order to prevent resignations;
b) low unemployment led to an increasing importance of wage issues in trade union objectives. The trade union confederation withdrew its support for incomes policy from 1992. Nor did the employers and managers of privatised SOEs continue to support incomes policy, since compliance prevented them from attracting and/or retaining qualified workers. That is why the income policy had to be relaxed (or rather symbolic) to avoid an open conflict with both trade unions and employers. As a result, the effect of the initial deterioration in relative wages provoked the

subsequent response of disadvantaged sectors and wage-spillover effects across the economy.

A certain decline in the widening of wage differentiation in mid-1990's is also seen in the increasing number of employees enjoying a greater than 5 per cent growth in real wages: in 1995 it concerned only 24.1% of employees, whilst in 1996 it included 62.7% (Surveys of the Czech Ministry of Labour and Social Affairs - Trexima).

At the beginning of the transition period, wage structures were characterised by a wage advantage of new private firms over the SOEs. As Flanagan (1993) reports, a worker's wage in the new private sector exceeded by more than one-and-a-half times that which a worker of the same education and age range earned in the SOEs. However, according to Večerník (1996), also this kind of a wage differential tends to diminish over time. The same trend applies to the wage growth rates of the privatised SOEs as compared with foreign-owned firms.

Regarding the relative importance of factors explaining wage variation among individuals, the explanatory power of independent variables such as age or sex declined remarkably between 1988 and 1996. This suggests that the demographic variables that used to be crucial for wage determination in the communist past, are, at least partly, being replaced by other factors. Namely, an increasing part of the total variance of a dependent variable (log wage) can be explained by differences between nonmanual and manual labour or by regions. The relative importance of education for explaining wage inequality increased between 1988 and 1996, but a closer look reveals that this applies to men only. On the other hand, despite all changes summarised in Table 12, sex still remains the most robust explanatory variable.

It is worth noting that the sectoral affiliation of a worker (see Table 7 for the definition of sectors) explains a greater part of the total wage variance than regions or non-manual labour. However, this finding applies to 1996 only, because the sectoral distribution of workers was not available in the less recent samples. Unexplained wage variance (the residual in Table 12) is to be attributed to factors unrelated to individual labour characteristics, sector and region.

Table 12: Wage Variance
(in per cent of total variance, dependent variable: log wage)

Factor		Total employment [1]		Men		Women	
		1988	**1996**	**1988**	**1996**	**1988**	**1996**
Main effects		45.38	43.81	23.34	29.68	26.10	38.11
Sex	(2)[2]	26.51	13.70	-	-	-	-
Age	(7)	7.42	0.66	12.38	0.49	8.79	1.62
Non-manual	(2)	0.03	1.16	0.04	1.76	0.00	2.13
Education	(4)	5.85	6.15	6.09	7.43	12.89	7.75
Sector	(11)	-	2.51	-	2.83	-	3.40
Region	(8)	0.65	1.47	1.19	1.54	1.49	2.00
2nd order interactions		2.43	2.75	2.82	3.29	0.00	4.00
Explained variance		47.81	46.56	26.15	32.97	26.10	42.11
Residual		52.19	53.44	73.85	67.03	73.90	57.89
Total variance		100.00	100.00	100.00	100.00	100.00	100.00

Notes: [1] Economically active population between 25 – 59, agriculture not included.
[2] Number of categories. See Appendix for more technical detail.
Sources: Microcensus 1989, 1996; own calculations.

2.3 Industry Wages

Table 13 documents the relative wage status of particular industries in the Czech Republic from 1993. The mining, quarrying, petroleum refining and coke industries, together with the production of electricity, gas and water are identified as wage leaders. Not only are average wages of these industries the highest within the industrial sector, but as a rule their distance from the all-industry average wage exceeds the standard deviation of the whole sample. Analogously, the most apparent wage losers[15] for 1993 are the textiles, clothing and leather industries, followed by the wood processing industry.

The 1993 wage leaders managed to preserve their top position also in 1997, but they moved closer to the all-industry average wage. The opposite direction was characteristic for the group of wage losers. However, the „catching-up" hypothesis for inter-sectoral wage developments formulated earlier in the text seems to be valid for inter-industry ones as well: Inter-industry differences in average nominal wages (measured by the coefficient of variation unweighted by employment) declined in

[15] We do not deal here with „other manufacturing" because of the apparent heterogeneity of this industrial branch.

1995, to below their 1994 level. Also for 1996-1997, the dispersion of average wages of particular industrial branches remained lower than in 1994.

Table 13: Wage Differentiation in Industry

	1993	1994	1995	1996	1997
Mining and quarrying	193.7	230.2	153.8	137.5	131.0
Food products, beverages and tobacco	-27.1	-19.7	-30.7	-15.2	-23.1
Textiles and textile products	-183.1	-118.4	-241.3	-185.8	-183.2
Leather and leather products	-144.0	-125.0	-161.6	-175.5	-189.0
Wood and wood products	-101.2	-6.5	-100.0	-108.2	-110.3
Pulp, paper and paper products, publishing and printing	4.9	65.7	15.3	50.0	57.8
Coke, refined petroleum, nuclear fuel	133.7	157.8	157.6	139.9	141.9
Chemicals, chemical products	59.5	138.1	61.5	90.9	82.6
Rubber and plastic products	18.8	13.1	0	0	-0.6
Other non-metallic mineral products	1.0	59.2	0	4.2	11.5
Basic metal and fabricated metal	68.7	85.5	53.8	46.5	25.7
Machinery and equipment	-29.5	0	23.2	-25.2	-10.2
Electrical and optical equipment	-54.6	-13.0	46.1	35.4	24.7
Transport equipment	8.0	26.3	23.0	46.8	59.6
Other manufacturing	-106.7	-85.5	-107.6	-101.9	-109.7
Production and supply of electricity, gas and water	165.9	92.1	124.0	131.5	116.2
Coefficient of variation	**0,144**	**0,193**	**0,160**	**0,159**	**0,169**

Notes: All industry average = 0; standard deviation = ±100; see text for further explanation.
Sources: Czech Statistical Office; own calculations.

Rank correlation results (see Table 17 in Appendix for detail) enable to argue that, for 1993, there is the statistically significant (positive) link between *profit-per-employee-rankings* and the *relative wage status* of particular industrial branches. Contrary to this, the 1997 rank correlation coefficient is below the critical level, so that the independence hypothesis (H_0) applied to both variables cannot be rejected. Such a result is somewhat surprising, since one would rather expect the rank correlation coefficient to increase over time, thus making industry wages increasingly display the industry-specific profitability (ability to pay).

The following two paragraphs analyse in more detail the link between average wages and profits per employee for three wage-leading- and three bottom-wage industries (according to the definition made in Table 13). For these six industries the corresponding rank correlation coefficient is increasing over time (from 0,60 in 1993

to 0,94 in 1997) and statistically significant for 1997. The link between average wages and the industry-specific profitability thus appears increasingly relevant at least for those industries at the top and bottom of the cross-industry relative wage scale.

2.4 Wage-Leading Industries

There is growing evidence concerning the increasing advantage of monopolies after 1989. The monopoly power on domestic markets, a low import substitution and favourable export prices after massive devaluations have enabled the monopolised giants in heavy industries producing less sophisticated goods to expand. [16]

Therefore, the first issue to be discussed in the case of wage leadership in Czech industry is one of monopoly. In imperfectly competitive markets, supernormal rents are the result of monopoly power, whilst the participation of workers in sharing these rents depends on their bargaining power. This usually leads to a wage advantage for monopolised industries.[17] In less concentrated industries (that is, in low-rent ones), the comparable wages are unsustainable, since they would lead to enormous unit labour costs.

A lack of systemic anti-trust measures after price- and foreign trade liberalisation, and the traditional strength of trade unions in heavy industries provide strong *prima facie* reasons for expecting the monopoly patterns of wage leadership in Czech industries.[18] Indeed, this is supported by research results obtained for the period 1991-1992. There were found sales-per-worker-based wage differentials among industrial enterprises, as well as those based on profit per worker and

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16 See, e.g., Zemplinerová (1994) or Flek (1995).

17 See, e.g., Dickens and Katz (1987), Krueger and Summers (1987) or Blanchflower, Oswald and Sanfey (1993) for the study of rent-sharing patterns of wage behaviour in market economies.

18 As also Rutkowski (1995, p. 20) argues: „Where competition is lacking, unions will attempt to capture economic rents and ally themselves with employers and politicians who promise to perpetuate these rents."

enterprise market share.[19] These had been inherited from the previously command regime, and applied mainly to strongly concentrated heavy industries. Price deregulation and foreign trade liberalisation in 1990-1991 had further favoured domestic monopolies. That is why the relative wage gains linked with the firm-specific ability to pay are again to be attributed to the most concentrated heavy industries. How has the situation changed since 1993?

Table 14: Wage-Leading Industries: The Share of Labour Costs per Employee (L/VAE) and of Profits per Employee (PE/VAE) in Value Added per Employee (VAE)
(in per cent of value added)

	L/VAE		PE/VAE	
	1993	**1997**	**1993**	**1997**
Mining industries	47.17	62.01	13.37	9.91
Coke, petroleum refining	28.86	17.57	30.65	53.37
Production of electricity, gas and water	16.70	27.91	52.53	25.70
All – industry average	44.97	51.64	13.51	11.11

Note: *L*, *PE* and *VAE* in nominal terms. Using the appropriate deflators of value added would give the same results in terms of percentage shares.
Sources: Czech Statistical Office; own calculations.

According to conventional measurements, the economic conditions in the petroleum industry and in the industries producing electricity, gas and water can be regarded as generating monopoly rents (Flek, 1995). In addition, data in Table 14 show that favourable wages (high labour costs) are easily affordable in these industries because of the exceptional profitability (profit/value added) and of the continuing low share of labour costs in value added (see also Figure 1 in Appendix). To document the dominance of the petrochemical and energy industries: in 1993 (1997) they generated 22% (17%) of the all-industry value added and 83% (44%) of the all-industry profit, whilst their share in all-industry total labour costs represented 8% (9%) and in industry employment 7% (6.5%), respectively.

The presence of monopoly rents, as a factor enabling wage leadership, appears less relevant for the remaining wage leader: the mining and quarrying industry. This industry recorded a much higher share of labour costs in value added

[19] See Buchtíková and Flek (1995). For the same period, Basu, Estrin and Svejnar (1997, p. 285) also note the presence of a sales-per-worker-based wage differential in Czech industry, which „is found to be positive and increasing over time".

per employee (and much lower profit share) compared with other wage-leading industries for both 1993 and 1997. Simultaneously with preserving the leading wage status for their workers, the producers in the mining and quarrying industry had to face, on average, a 25 per cent deterioration in profit shares over 1993–1997. Energy, gas and water producers (suppliers) sacrificed an even higher part of their profit shares, but, contrary to the mining and quarrying industry, their profitability still remains exceptional.

In the case of monopolies, there are normally two elements of rent sharing, namely the presence of above-average levels of profit per employee and of a strong bargaining power exercised by workers. For the case of the mining and quarrying industry, the latter element appears to be sufficient for wage leadership in the short term. The impact of foreign competition (especially from the neighbouring transition economies), gradually deteriorating export performance and declining domestic demand caused the previous rents to become unsustainable. In a strong sense, the wage advantage of the mining and quarrying industry cannot be associated with rent-sharing. However, one could predict the persistence of a compensating wage differential in this industrial branch for an extended period, a tendency which is consistent with developments in highly industrialised European countries.

2.5 Low-Wage Industries

The economic conditions of industries at the bottom of the cross-industry relative wage scale (the textiles and clothing, leather and wood processing industries) differ significantly from wage leaders. In industries with the lowest relative wages the concentration of production is much lower and the number of producers much higher than in monopolised industries with the highest relative wages. This, coupled with relatively low qualification requirements and with a high participation of women can generally explain low levels of relative wages in these industries.

Table 15 indicates those industries which had lost most in their relative wage status by 1993. However, there is one point that makes the relative wage comparisons less straightforward: Low-wage industries listed in Table 15 are all characterised by a higher share of labour costs in value added per employee than

the all-industry average. Thus, relative to value added, labour costs in low-wage industries belong to the highest, and, on the contrary, those in wage-leading industries are (with the exception of the mining and quarrying industry) clearly the lowest. The most critical developments occurred in the leather industry where the 1997 volume of labour cost exceeds the value added as a whole (see also Figure 1 in Appendix).

Table 15: Bottom – Wage Industries: The Share of Labour Costs per Employee (L/VAE) and of Profits (PE/VAE) in Value Added per Employee (VAE)
(in per cent of value added)

	L/VAE		PE/VAE	
	1993	**1997**	**1993**	**1997**
Textiles and clothing	61.49	68.38	5.81	-1.37
Leather industry	70.66	109.12	0.66	-11.74
Wood processing	61.62	59.10	-5.28	10.55
All – industry average	44.97	51.64	13.51	11.11

Notes and Sources: See Table 14.

In 1993, the share of low-wage industries in total industry-sector employment represented 14.1%. In 1997 it meant 13.3%, respectively. The lowest relative wages (according to the definition in Table 13) thus affect more than one eight of the industry-sector labour force. But this group of low-wage industrial branches created in 1993 (1997) only 7.7% (6%) of the all-industry value added. Whilst in 1993 these industries as a whole managed to generate about 1.5% of all-industry profit, in 1997 their total contribution was negative. This would, with the exception of the wood processing industry, suggest that over-employment and an inefficient allocation of labour prevail here for an extended period.

It is evident that average wages of particular industrial branches can deliver only a limited account on wage variation among industrial workers. Data in Table 16 demonstrate how much of the total wage variance can be explained by branch affiliation of a worker (after controlling for other factors). In fact, it accounts for a greater part of explained wage variance than region, age or differences between manual and non-manual labour. A relatively high value of the residual is to be attributed to the fact that characteristics of enterprises (such as labour productivity or

profitability) where the industrial workers concerned are employed are unavailable for the analysis of variance.

Table 16: Wages of Industrial Workers in 1996 – Analysis of Variance
(in per cent of total variance, dependent variable log wage)

Factor		Industrial workers[1)]	Men	Women
Main effects		46.31	30.82	29.40
Sex	(2)[2)]	14.14	-	-
Age	(7)	0.53	0.51	1.58
Non-manual	(2)	1.03	1.33	1.65
Education	(4)	5.02	7.72	5.16
Industrial branch	(16)	3.41	4.98	3.89
Region	(8)	0.84	1.22	1.02
2nd order interactions		4.60	8.27	-
Explained variance		50.91	39.10	29.40
Residual		49.09	60.90	70.60
Total variance		100.00	100.00	100.00

Notes: [1)] Economically active between 25-59. [2)] Number of categories. See Table 13 for the definition of industrial branches. See Appendix for more technical detail.
Source: Microcensus, 1996; own calculations.

Conclusions

Unemployment increasing remarkably from 1997 is not to be attributed solely to the fact that the process of reducing excess employment in (privatised) Czech SOEs has accelerated. Also the adverse impact of tightening monetary and fiscal stances on labour demand cannot explain the story in full. The point is that redundancies cannot any more be compensated by declining labour force participation. Such a method of reducing labour supply had been exhausted in the mid-1990´s. As a result, working-age population is becoming increasingly affected by involuntary redundancies and, after being dismissed, it remains dependent on the labour market. This suggests that the Czech „unemployment miracle" has disappeared as soon as the participation rate had become stable, labour shedding accelerated and the economic policies responded to macroeconomic overheating.

The key changes in the sectoral composition of employment took place during 1990-1994, when the rate of unemployment was very low. The main sources of structural changes were massive labour force withdrawals in agriculture and industry, coupled with job-to-job movements of labour. Inflows to employment from unemployment were rather complementary, with no substantial impact on the structure of employment. Since 1995-1996, the process of a further conversion of the structure of employment towards the EU patterns has nearly been stopped. Even the recent rise in unemployment has had no visible consequences for further structural

changes of employment across sectors. Instead of being a driving force of a structural change, current unemployment bears predominantly cyclical features.

The Czech incomes policies have not really restrained the wage behaviour of the microeconomic actors. Moreover, between 1992-1997, rapid overall increases in real wages were combined with proportionally lower increases in labour productivity and with insufficient employment response on the part of many privatised SOEs. Generally increasing wage levels appear to be a result of wage-spillover effects that were prompted by the early wage advantage of foreign-owned firms, of the financial institutions and of the *de novo* private sector.

Monopolies in heavy industries were first able to respond with higher wage demands, to preserve their relative wage status. Wages in the remaining sectors (industries) responded with a certain time lag to changing wage structures as well, albeit at the costs of diminishing profit shares and increasing the shares of labour costs in value added. As a result, the process of inter-sectoral as well as inter-industry wage differentiation has been slowed down, if not stopped entirely.

A substantial falling of the Czech dollar wages behind the remaining EU-accession candidates was removed (with the exception of Slovenia). With regard to changing the international wage status of the Czech Republic, there are two competing conclusions. First, this was a result of generous wage policies and a weak restructuring pressure during 1992-1996, which - under low unemployment – led to a wage-push and threatened to undermine the country‘s international (price) competitiveness. Secondly, one can argue that the current wage level of the Czech Republic expresses more appropriately its labour productivity status among the countries in question, so that a catching-up in wages is justified.

Even after becoming a member of the EU, the Czech Republic cannot hope to enjoy all the benefits of integration without having converted its current wage level (as well as structures) more closely to - at least - less developed EU members. However, the recent domestic developments do not indicate a further progress in that direction, not speaking about progressing in structural changes in employment or lowering the labour productivity gap. In such circumstances, any effort aimed at a faster conversion of Czech wages would accelerate domestic inflation or, should this be prevented by the means of restrictive macroeconomic policies, cause the abrupt shifts in income distribution and/or mass unemployment.

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Appendix

Table 17: Industry Rankings

Average wage		Profit per employee	
1993	**1997**	**1993**	**1997**
1. mining	petroleum	energy	petroleum
2. energy	mining	petroleum	energy
3. petroleum	energy	chemicals	glass and china
4. metal	chemicals	food and tobacco	food and tobacco
5. chemicals	transport equipment	rubber and plastic	chemicals
6. rubber and plastic	pulp and paper	mining	rubber and plastic
7. transport equipment	metal	other manufacturing	other manufacturing
8. pulp and paper	electrotechnics	pulp and paper	mining
9. glass and china	glass and china	glass and china	wood processing
10. food and tobacco	rubber and plastic	metal	electrotechnics
11. machines and devices	machines and devices	textiles and clothing	metal
12. electrotechnics	food and tobacco	electrotechnics	transport equipment
13. wood processing	other manufacture	leather	machines and devices
14. other manufacture	wood processing	wood processing	textiles and clothing
15. leather	textiles and clothing	machines and devices	pulp and paper
16. textiles and clothing	leather	transport equipment	leather

Rank correlation results

Critical value $r_s(\alpha) = 0.5$

Rank correlation coefficients r_s:

1993: $r_s = 0.58824$ $|r_s| > r_s(\alpha)$ H_o rejected
1997: $r_s = 0.45588$ $|r_s| < r_s(\alpha)$ H_o not rejected

Significance level: 0.05

Table 18: Analysis of Variance:
Log Wage in 1988 (Whole Economy)

Experimental sums of squares
Covariates entered First

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	467.253	18	25.958	474.756	.000
Sex	272.949	1	72.949	4 991.973	.000
Age	76.609	6	12.768	233.519	.000
Nonman	.322	1	.322	5.896	.015
Edu	60.246	3	20.082	367.279	.000
Region	6.660	7	.951	17.400	.000
2-Way Interactions	24.973	114	.219	4.006	.000
Explained	492.226	132	3.729	68.200	.000
Residual	537.316	9827	.055		
Total	1029.542	9959	.103		

10996 cases were processed.
1036 cases (9.4 pct) were missing

Table 19: Analysis of Variance:
Log Wage in 1996 (Whole Economy)

Experimental sums of squares
Covairates entered First

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	3394.281	28	121.224	992.097	.000
Sex	1048.942	1	1048.942	8584.519	.000
Age	49.617	6	8.270	67.678	.000
Nonman	127.784	1	127.784	1045.780	.000
Edu	467.167	3	155.722	1274.429	.000
Sect	209.093	10	20.909	171.121	.000
Region	108.357	7	15.480	126.685	.000
2-Way Interactions	223.262	294	.759	6.215	.000
Explained	3617.543	322	11.235	91.944	.000
Residual	4204.784	34412	.122		
Total	7822.326	34734	.225		

47404 cases were processed.
12669 cases (26.7 pct) were missing.

Table 20: Multiple Classification Analysis:
Log Wage in 1988 (Whole Economy)

Grand Mean = 7.93

Variable + Category	N	Unadjusted		Adjusted for Independents	
		Dev'n	Eta	Dev'n	Beta
Sex					
1	5880	.14		.15	
2	4080	-.21		-.22	
			.54		.56
Age					
2	1661	-.11		-.18	
3	1344	-.02		-.04	
4	1725	.00		.02	
5	1819	.04		.06	
6	1401	.04		.07	
7	1173	.05		.08	
8	837	.03		.01	
			.17		.28
Nonman					
1	5198	.01		-.01	
2	4762	-.01		.01	
			.04		.02
Edu					
1	1952	-.14		-.10	
2	4190	-.01		-.04	
3	2758	.02		.05	
4	1060	.27		.24	
			.34		.30
Region					
31	1305	.08		.04	
32	1000	.00		.01	
33	663	-.02		-.01	
34	816	.02		.02	
35	1180	-.01		.02	
36	1165	-.03		-.03	
37	1916	-.04		-.04	
38	1915	.00		.01	
			.11		.08
Multiple R Squared					.454
Multiple R					.674

Table 21: Multiple Classification Analysis:
Log Wage in 1996 (Whole Economy)

Grand Mean = 4.54

Variable + Category	N	Unadjusted		Adjusted for Independents	
		Dev'n	Eta	Dev'n	Beta
Sex					
1	18157	.18		.19	
2	16578	-.19		-.21	
			.39		.41
Age					
2	4292	-.03		-.08	
3	4871	-.01		-.03	
4	4934	.00		.01	
5	6164	.01		.03	
6	6802	.00		.03	
7	5460	.01		.02	
8	2212	.02		-.06	
			.03		.08
Nonman					
1	14870	.18		.10	
2	18965	-.14		-.08	
			.34		.19
Edu					
1	4296	-.34		-.21	
2	15871	-.10		-.08	
3	10444	.10		.07	
4	4124	.48		.36	
			.47		.33
Sect					
1	2260	-.16		-.09	
2	12245	.00		.05	
3	2961	.09		.02	
4	4160	-.15		-.03	
6	2818	.04		.02	
7	670	.52		.35	
8	892	.10		-.08	
9	2373	.19		.05	
10	2643	-.04		-.12	
11	2121	-.05		-.04	
12	1592	-.06		-.14	
			.24		.17
Region					
31	4259	.25		.15	
32	3643	.00		.00	
33	2417	-.04		-.03	
34	2891	.00		.01	
35	3929	-.03		.00	
36	4127	-.05		-.05	
37	6920	-.04		-.03	
38	6548	-.05		-.03	
			.20		.12
Multiple R Squared					.434
Multiple R					.659

Table 22: Analysis of Variance:
Log Wage in 1996 (Industry)

Experimental sums of squares
Covariates entered First

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	1167.726	33	35.386	338.095	.000
Sex	356.663	1	356.663	3407.764	.000
Age	13.306	6	2.218	21.189	.000
Nonman	26.079	1	26.079	249.176	.000
Edu	126.497	3	42.166	402.875	.000
Industry	86.073	15	5.738	54.826	.000
Region	21.143	7	3.020	28.859	.000
					.000
2-Way Interactions	115.997	384	.302	2.886	.000
Explained	1283.723	417	3.078	29.414	.000
Residual	1237.840	11827	.105		
Total	2521.564	12244	.206		

15610 cases were processed.
3365 cases (9.4 pct) were missing

Table 23: Multiple Classification Analysis:
Log Wage in 1996 (Industry)

Grand Mean = 4.54

Variable + Category	N	Unadjusted		Adjusted for Independents	
		Dev´n	Eta	Dev´n	Beta
Sex					
1	7275	.18		.16	
2	4970	-.27		-.23	
			.49		.42
Age					
2	1471	-.01		-.05	
3	1652	.02		-.02	
4	1703	.00		.02	
5	2220	.00		.05	
6	2421	-.01		.01	
7	1930	-.02		.00	
8	847	.04		-.06	
			.03		.07
Nonman					
1	3676	.22		.10	
2	8569	-.09		-.04	
			.31		.14
Edu					
1	1964	-.30		-.15	
2	6639	-.04		-.04	
3	2878	.14		.09	
4	764	.63		.42	
			.47		.29
Industry					
1	782	-.24		.17	
2	1054	-.07		-.01	
3	1123	-.35		-.13	
4	280	-.29		-.10	
5	432	-.14		-.12	
6	390	.07		.04	
7	74	.22		.07	
8	552	.11		.03	
9	449	.01		.05	
10	660	.02		.05	
11	1878	.07		.03	
12	1740	.02		-.07	
13	944	.02		.02	
14	586	.12		.09	
15	527	-.21		-.16	
16	774	.22		.12	
			.35		.19
Region					
31	697	.29		.15	
32	1238	.02		-.01	
33	793	-.06		-.01	
34	977	.03		.05	
35	1634	.01		.01	
36	1562	-.09		-.05	
37	2627	-.06		-.01	
38	2718	.02		-.01	
			.18		.09

Multiple R Squared	.463
Multiple R	.681