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Wages and Unemployment in Poland

Recent Developments and Policy Issues

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and
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Unemployment has increased dramatically with stabilization, mainly because of a generalized contraction in output, rather than a sectoral restructuring or a massive shedding of labor. Real wages fell sharply, and the wage policy has become a delicate political issue. One prescription for reducing the drawbacks in current wage policy is to replace that policy with a generalized agreement on the wage path, with synchronized six-month contracts. Such an agreement might be seen as a consensual agreement — a “social pact” — rather than as a punitive tax.

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This paper — a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department — is part of a larger effort in the Department to analyze macroeconomic developments and policies in transitional economies. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Victoria Barthelmes, room N11-021, extension 39175 (45 pages). January 1992.

Coricelli and Revenga review recent developments in wages, employment, and unemployment in Poland and discuss some of the main risks Poland faces in sustaining its stabilization effort. They find that:

- Unemployment has increased dramatically with stabilization, but this increase cannot be said to reflect widespread economic adjustment and restructuring throughout the Polish economy. Contrary to predictions made prior to the January 1990 program, employment has declined nearly uniformly across all sectors, mainly as a result of a generalized contraction in output, rather than as a result of sectoral restructuring or massive shedding of labor.
- Wages showed a significant degree of downward flexibility — in real terms — at the beginning of the year, when firms faced a severe supply shock coupled with very tight credit. But

from March on, wages increased faster than prices, probably contributing to the persistence of inflation.

The wage policy still in force in Poland at the end of 1991 maintains a few undesirable features. The monthly indexation and the possibility of carrying forward the unused margins are among the policy's main drawbacks; another is the link between wages and profitability.

The current wage policy could be replaced by a generalized agreement on the wage path, with synchronized six-month contracts. The wage path should be related to expected inflation and economywide productivity. This scheme would also have the advantage of being based on a consensual agreement — a “social pact” — instead of being perceived as being imposed as a punitive tax.

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I. Introduction

1. In January 1990, the Polish government implemented an extremely ambitious economic reform program aimed at the rapid creation of a market economy. The program combined a sharp "heterodox" stabilization effort, based on the use of two nominal anchors to break the inflationary momentum, with radical liberalization of domestic and foreign trade. Overall, the program proved itself quite successful in halting hyperinflation, although inflation nevertheless remained higher than expected. However, the reform effort also produced some unanticipated side-effects: most importantly, a sharp contraction in output and a larger-than-anticipated increase in unemployment -- from a practically nonexistent level in 1989 to 1.126 million workers by end-1990.¹ As projected, the stabilization program also resulted in a sharp decline in real wages.²

2. As the above discussion suggests, the first 18 months following the Polish stabilization program offer an extremely interesting opportunity to study the reaction of labor market variables, namely wages and employment, to a "Big-Bang" style reform program. What we may learn from this exercise is of particular relevance not only to Poland, but also to other Eastern European countries implementing market-oriented economic reforms within a broadly unchanged ownership and control structure of enterprises.

¹ This represented 6.1% of the Polish labor force. By June 1991, the unemployment rate had increased to 8.4%.

² For the year as a whole, this drop was in line with the government program. Note that for both unemployment and wages the available information is very partial, as it does not fully capture developments in the private sector. Moreover, issues of interpretation of the figures arise due to the structural change which took place in 1990. For instance, real wages in 1990 are hardly comparable with those in 1989, as in 1990 prices were liberalized and shortages were largely eliminated. As regards unemployment, difficulties arise because of the well known presence of "disguised unemployment" (or overmanning) before 1990.

3. With this in mind, in this note we review developments in the Polish labor market after the stabilization program of January 1990, and discuss some of the main risks Poland faces in sustaining the stabilization effort. We try to highlight some of the main policy issues that are relevant at this juncture and also raise some analytical questions which the Polish experience suggests.

4. Among the main "stylized" facts, the following stand out:

(i) For 1990 as a whole, real wages showed a high degree of downward flexibility, declining by more than 30 percent. This seems prima facie to contradict the view of absence of wage restraints in worker-controlled state-enterprises. Obviously one explanation could be the presence of a tax-based wage policy.

(ii) Despite the figures for the year as a whole, wage policy was apparently not binding, as in the first months of 1990 wages were well below the maximum permitted while in the second half of the year they were above the norm. Moreover, the drop of real wages was entirely due to the decline in the first two months of 1990. Since March wages increased consistently above the rate of inflation. This, in turn, could have contributed to the persistence in inflation during 1990. In the first half of 1991, real wages displayed a new decline, as enterprise conditions deteriorated sharply in response to the demise of the CMEA trade, the real appreciation of the exchange rate and a further tightening of credit policy.

(iii) Employment dropped significantly in the socialized sector, but by substantially less than production, suggesting the persistence of labor-hoarding and contradicting a priori expectations of massive release of redundant labor.³

(iv) As bankruptcies and restructuring did not occur in any significant scale, most of the unemployment created during 1990 seems to be related to an aggregate shock to the economy and not to frictions in the reallocation of resources across sectors. The sluggish adjustment of employment is confirmed in 1991, when the lagged effects of the 1990 output decline have determined a decline in employment in relation to 1991 decline in output larger than the one observed in 1990 (the short-run employment-output elasticity has thus increased in 1991).

5. Our study of the Polish experience raises some concerns relating to future short-term developments in the labor market. Two are worth noting: (a) the potentially undesirable consequences of the existing wage policy; and (b) a costly further increase in unemployment. As regards wage policy, we find that the scheme adopted for 1991 has introduced a degree of inertia in the system, thus proving to be a serious obstacle for the reduction of the rate of inflation. As regards unemployment, we estimate that the mere effects of the 1990 recession could lead to about 2 million unemployed by end-1991. The additional contraction in output now projected for 1991 will raise unemployment even further in the

³ This pattern has changed in 1991, with employment decline matching the further contraction of output.

following year.⁴

6. The Polish experience suggests that in the short-term, until incentives at the enterprise level have been substantially altered, the government has to maintain some control over wage policy. However, such wage controls necessarily impose some distortions, so they should be kept as simple and as temporary as possible. The maintenance of steeply progressive penalty rates on excess wage increases is also proving in 1991 to be potentially damaging for the process of "decapitalization" of enterprises. Indeed, it seems that firms are willing to sell assets in order to pay wages and then sell additional assets to pay the excess wage tax.

7. The note is structured as follows. Section II reviews the "Big-Bang" reform program and its major outcomes. Section III presents some background on the Polish labor market, discusses the main labor market developments in 1990 at both the aggregate and sectoral levels, and presents some trends for 1991. Section IV evaluates the wage policy approved by the Government, and considers the prospects for unemployment and wages in the second half of 1991. Section V contains some concluding remarks and outlines some directions for further analysis of labor market developments during the transition to a market-oriented economy. Annex I contains the statistical information.

⁴ Given the pervasiveness of labor hoarding by Polish firms prior to the 1990 reforms (estimates suggest "disguised unemployment" represented 20% of the labor force prior to 1990), we could expect a regime shift which led to the massive release of redundant labor (such as a change in the ownership and control structure of enterprises), to raise unemployment dramatically.

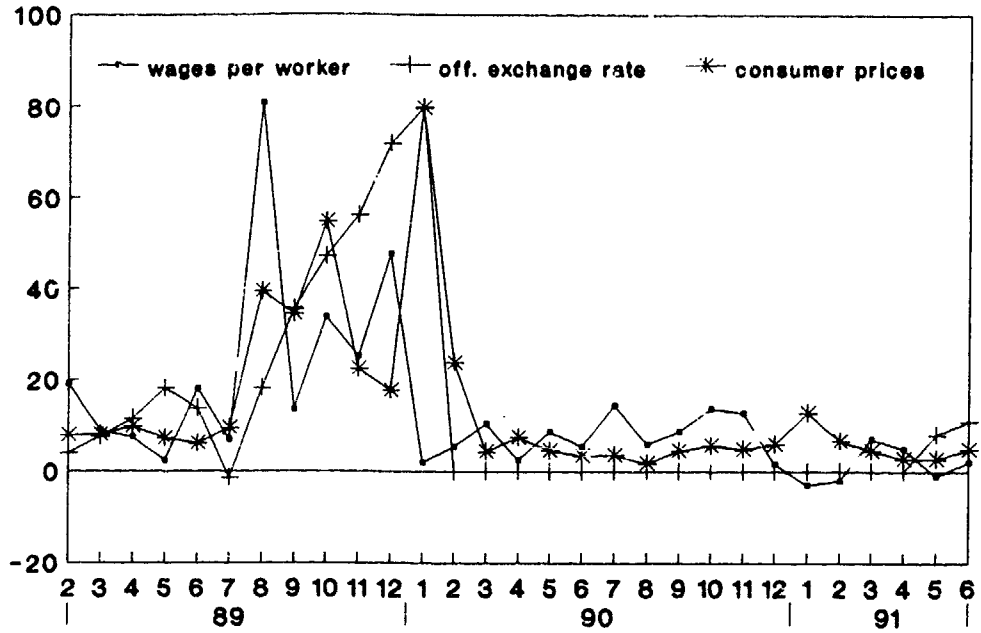
II. Background On Macroeconomic Developments After The "Big-Bang"

8. The stabilization program launched in January 1990 relied on the use of two nominal anchors, namely the exchange rate with respect to the US \$ and the level of nominal wages, to achieve a fast reduction in the rate of inflation with a smaller contraction in output than the one which would have occurred by implementing a pure "orthodox" program of monetary and fiscal tightening. Despite these objectives, inflation proved to be more persistent than anticipated, while the contraction of output and the increase in unemployment turned out to be much larger. Against this background, it is useful to analyze briefly whether wages behaved consistently with their role of nominal anchor, and to explore whether the behavior of employment and unemployment can shed some light on the performance of the stabilization program.

(i) Nominal variables after stabilization

9. Chart 1 summarizes the behavior of the main nominal variables -- the CPI, the aggregate wage and the exchange rate -- before and after the launching of the stabilization program. As is known, the key goal of stabilization programs with nominal anchors is to achieve a synchronized movement of nominal variables, namely a convergence in the movement of prices, wages and exchange rates. Indeed, asynchronization will determine changes in real variables -- the real wage and the real exchange rate -- which can jeopardize the success of the stabilization program. It is important to stress that the program aimed at a sharp divergence on impact to achieve a sudden reduction in real wages (considered excessive at end-1989) and a sharp devaluation of the exchange rate,

Chart 1. Prices, Wages, Exchange Rate
(monthly changes)



meant to also compensate for the sudden reduction of trade protection. The convergence should have thus occurred immediately after this initial adjustment of the levels of the various nominal variables.

10. Actual developments show that indeed the initial discrepancy was followed by some apparent convergence. However, from March onwards, wages increased faster than prices and despite the maintenance of a fixed exchange rate, prices increased at average monthly rates of about 4-5 percent throughout the year. Thus, inflation remained surprisingly persistent. This raises some questions regarding the stabilization effort: Did the program hit a "floor" for inflation (as has occurred in other stabilization programs)? Was this floor related to the initial adjustment or overadjustment of the exchange rate? Or was it due to inertial factors driven by the behavior of wages and/or the staggering of price changes across firms and sectors? These general issues have been discussed elsewhere (Coricelli, de la Calle and Pinto (1990)). Thus, in this note we concentrate almost exclusively on the role played by wages and the wage policy. Our main conclusion, as argued in more detail in Section III.2, is that wage behavior, and in particular the wage policy adopted in 1990, most likely did contribute to the persistence of inflation.

11. Overall, it seems that although both wage and exchange rate targets were fully met for the year as a whole, within the year the two nominal anchors did not actually operate. The other components of the package, namely monetary and fiscal policy seem to have been much more restrictive than anticipated. Ex post, the program appears to have led to results more similar to those typical of "orthodox" rather than "heterodox" programs.

(ii) Real variables: output and employment

12. Given that the "sharp" stabilization program was implemented along with other important reforms (such as trade reform), it is hard to isolate the factors behind the decline in output and employment. It seems that an aggregate shock (related to monetary and fiscal policy) dominated sectoral shocks. In the aggregate, production fell by about 25 percent in the socialized sector, while employment fell by about 11 percent. All the sectors of the economy registered a drop in output. Obviously the response of the various sectors differed, as to be expected given their different initial conditions. Moreover, the opening of the economy might have affected the various sectors with different intensity. In particular, light industry, which registered the sharpest fall in output (-35 percent), might have been exposed to "effective" foreign competition faster than the other sectors as the time to create effective channels of imports and exports is usually shorter for sectors producing final consumer goods. In addition to trade reform, sectors might have also been affected differently by the tightening of credit.⁵

III. Labor Market Developments in 1990 and early 1991

A. Structural and Institutional Background

13. Prior to the start of the Economic Transformation Program (ETP), the Polish labor market followed the typical centrally planned economy model, in which pervasive state-intervention severely limited the traditional forms of market

⁵ First, not all the sectors are characterized by the same "credit-intensity" for their operations. Vertical integration of production processes and the time span of the production period vary significantly across sectors. Second, on the liquidity side, firms which had significant stocks of both inventories and foreign currency deposits were able to substitute credit with internal funds generated by capital gains on dollar deposits and inventories of goods.

adjustment. Extensive regulations delinked wages from productivity, while a policy of subsidizing full-employment translated into widespread labor hoarding and a persistent shortage of labor. The introduction of the ETP in January 1990, however, greatly altered the rules of the game: no longer committed to maintaining full-employment at all costs, the government introduced a greater degree of financial discipline into the socialized sector via credit restrictions and fiscal austerity measures, and passed legislation allowing for massive layoffs of workers. One consequence was a significant increase in open unemployment.

14. The ETP comprised some important changes in wage and employment legislation. In some areas, however, the old regulations are still applicable. At present, industrial relations and wage setting are both governed by laws drafted during the previous regime. However, amendments to the existing law are under preparation, and a completely new labor code is expected to be in place within two years. As regards mass layoffs, new legislation was passed in 1989 establishing procedures for group redundancies. The law requires 30-90 days advance notice and up to 90 days severance payments for layoffs involving 10% or more of employees. New social safety net mechanisms (unemployment benefits and social assistance) have also been introduced within the last year.⁶

⁶ An individual is entitled to unemployment benefits if he/she has been employed or self-employed for at least 6 months in the previous year. However, there are numerous exceptions under which these conditions do not apply: for example, the eligibility restrictions are waived for individuals who become unemployed through a mass layoff, are school leavers or under 18, or sole breadwinners. Benefit levels are tied to past earnings with a declining replacement rate. The minimum benefit is 95% of the minimum wage (defined as 35% of the projected average wage). At present, duration is not limited, but an amendment under consideration would limit the maximum duration of unemployment compensation to 1 year. In terms of social welfare, assistance is aimed at those who do not qualify for UI.

15. The Structure of Employment: The socialized sector accounts for 70% of total employment in Poland, with most of the remaining 30% heavily concentrated in agriculture. In 1989, non-agricultural private sector employment represented only about 8.8% of total employment. Throughout the 1980s, the distribution of employment between agriculture, industry and services has remained fair stable. This distribution, as well as the breakdown between private and socialized sector employment, should change dramatically in the next few years.

B. Employment Developments in 1990 and early 1991

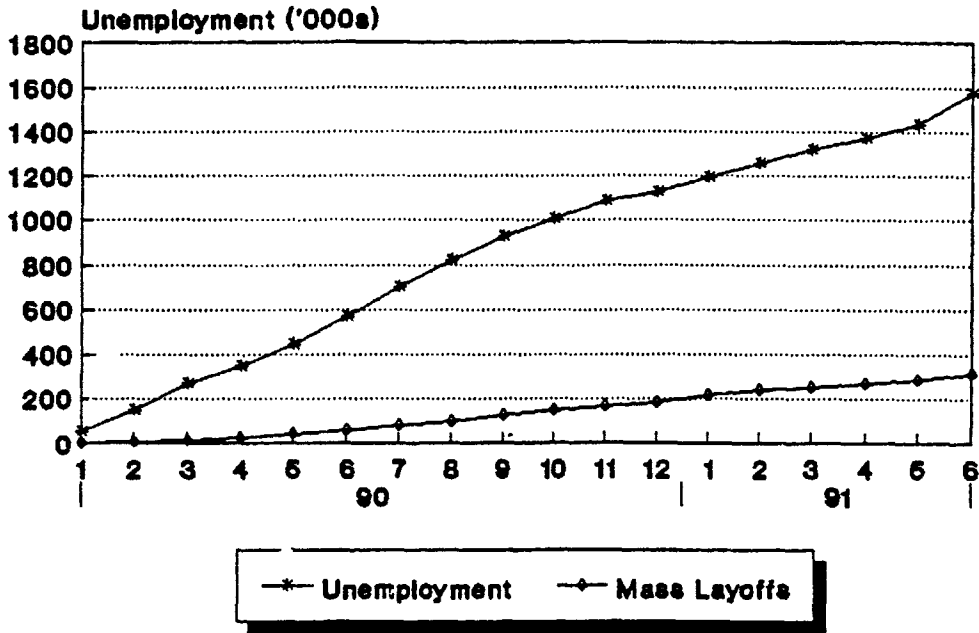
16. Registered unemployment has increased steadily since early 1990, rising from 55,800 workers in January to 1,126,000 workers by December 1990, and increasing to 1,574,000 workers by June 1991 (see Chart 2). At the beginning of 1990, the number of unemployment rate represented a mere 0.3% of the total labor force. By year's end, this proportion had increased to 6.1%, and by June 1991, it reached 8.4%. As Table 1 shows, the largest absolute increases in unemployment occurred in the second and third quarters of 1990, with unemployment rising by approximately 120,000 to 130,000 workers per month during June, July and August.⁷

The rate of growth of unemployment declined slightly in the fourth quarter, then picked up slightly in the first and second quarters of 1991. (An interesting analysis of the dynamics of Polish unemployment in 1990-91 is in Gora and Lehmann (1991)).

17. At a first glance, the sharp rise in unemployment could be taken to reflect widespread employment adjustment and restructuring throughout the socialized

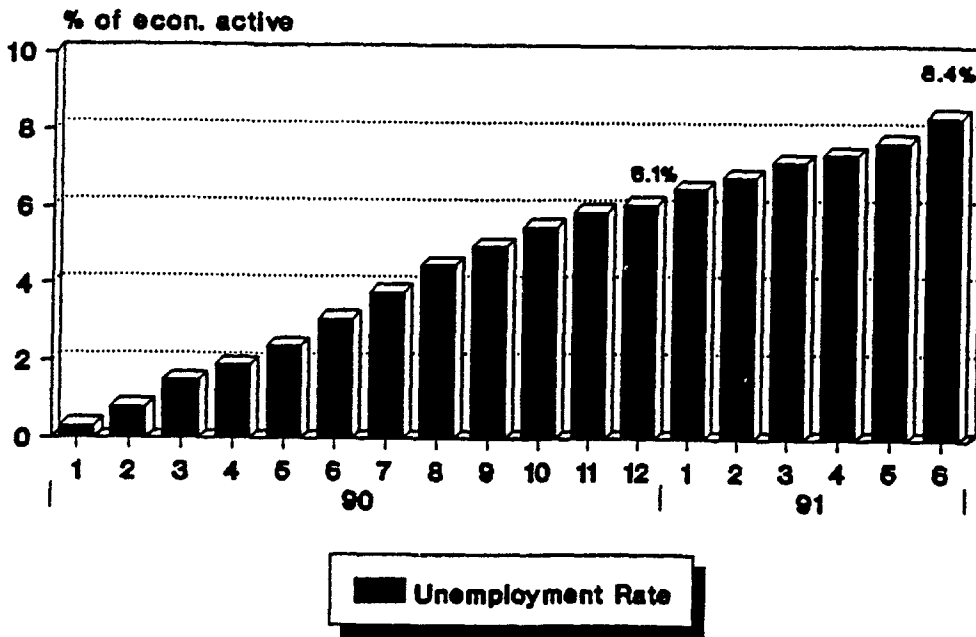
⁷ This could reflect an increase in school leavers entering the labor force during the summer months, however the data for 1990 seem to suggest that this occurs later in the year, mainly during the fall. (See Table 1)

Chart 2
Poland: Unemployment, 1990-91



Source: GUS, B8

Poland: Unemployment Rate, 1990-91



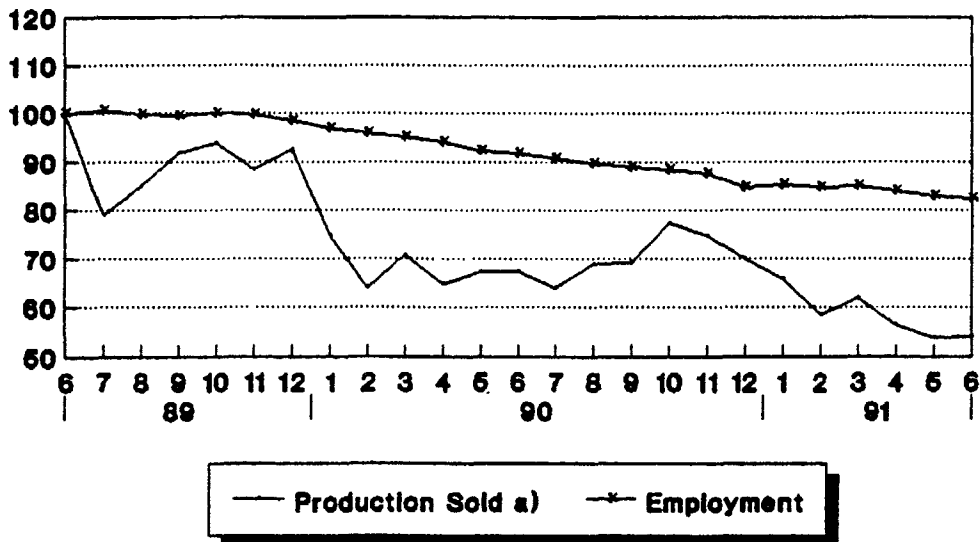
Source: Biuletyn Statystyczny

sector. However, further analysis of the patterns of flows into unemployment suggests that this is not necessarily the case. Despite tightened financial discipline and a sharp drop in production, firms have not cut employment by as much as could have been expected, particularly given widespread perceptions of overmanning in Polish industry. Employment in the total socialized sector fell by 11% between December 1989 and December 1990, while total socialized production fell by 25%. Similarly, employment in socialized industry fell by approximately 14% in response to a 24% decline in socialized industrial production. Output per worker actually declined.

18. This observation runs counter to the expectation that firms would release redundant labor in response to newly-imposed financial discipline. Rather, the evidence suggests that the decline in employment was driven primarily by the sharp fall in production at the beginning of the year, and that, furthermore, employment adjustment is extremely gradual and sluggish. This is presented graphically in Chart 3. Based on the observed behavior for 1990, there is little evidence suggesting a true regime shift as regards employment adjustment and behavior. However, the fact that adjustment is sluggish would imply that much of the employment response to the fall in production in 1990 would take place in 1991. The data for the first half of 1991 indicate a continued fall in employment, but also a parallel decline in output, which in turn is likely to imply further declines in employment in the near future.

19. Table 1 shows that month-to-month declines in employment in the socialized sector were consistently smaller than the monthly increase in unemployment for every month except January, May and December 1990, and April 1991. This would

**Chart 3: Poland
Employment and Production in Socialized
Sectors, 1989-91**



Source: GUS, B8
a) effective working time
b) comparable working time

TABLE 1:
REGISTERED UNEMPLOYMENT, I-XII 1990

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TOTAL UNEMPLOYMENT (000s)	55.8	152.2	266.6	351.1	443.2	568.2	699.3	820.3	926.4	1,008.4	1,089.1	1,126.1
CHANGE ('000s)	46.1	96.4	114.4	84.5	92.1	125.0	131.1	121.0	106.1	82.0	80.7	37.0
UNEMPLOYMENT RATES												
AS % OF LABOR FORCE	0.3	0.8	1.5	1.9	2.4	3.1	3.8	4.5	5.0	5.5	5.9	6.1
AS % OF NON-AGR LF	0.4	1.1	2.0	2.6	3.3	4.2	5.2	6.1	6.9	7.5	8.1	8.3
MASS LAYOFFS												
('000s)	2.4	6.8	15.2	27.4	42.1	58.0	79.0	100.9	126.0	147.2	165.5	183.6
% OF UNEMPLOYMENT	4.3	4.5	5.7	7.8	9.5	10.2	11.3	12.3	13.6	14.6	15.2	16.3
CHANGE (000s)		4.4	8.3	12.2	14.7	15.9	21.1	21.9	25.1	21.2	18.3	18.0
% OF MONTHLY INCREASE IN UNEMPLOYMENT		4.6	7.3	14.4	16.0	12.7	16.1	18.1	23.7	25.9	22.7	48.7
TOTAL EMPLOYMENT SOCIAL	7,226.0	7,176.0	7,107.0	7,063.0	6,949.0	6,888.0	6,800.0	6,711.0	6,643.0	6,584.0	6,515.0	6,348.0
CHANGE (000s)	(78.9)	(50.0)	(69.0)	(44.0)	(114.0)	(61.0)	(88.0)	(89.0)	(68.0)	(59.0)	(69.0)	(167.0)
% OF INCREASE IN UNEMPLOY	171.1	51.9	60.3	52.1	123.8	48.8	67.1	73.6	64.1	72.0	85.5	451.4
EMPLOYMENT INDUSTRY	3,979.0	3,964.0	3,938.0	3,947.0	3,889.0	3,870.0	3,840.0	3,803.0	3,781.0	3,763.0	3,737.0	3,632.0
CHANGE (000s)	(39.0)	(15.0)	(26.0)	9.0	(58.0)	(19.0)	(30.0)	(37.0)	(22.0)	(18.0)	(26.0)	(105.0)
% OF INCREASE IN UNEMPLOY	84.6	15.6	22.7	10.7	63.0	15.2	22.9	30.6	20.7	22.0	32.2	283.8
SCHOOL LEAVERS (000s)								124.2	157.0	164.9	164.8	164.3
VACANCIES IN THOUS.	35.2	20.1	24.1	31.7	37.8	42.5	47.7	57.3	61.0	63.9	56.1	54.1
CHANGE IN THOUS.	(219.4)	(15.1)	4.0	7.6	6.1	4.7	5.2	9.6	3.7	2.9	(7.8)	(2.0)
UNEMPLOYED PE' . VACANCY	2	8	11	11	12	13	15	14	15	16	19	21
- MEN	1	6	8	8	8	9	9	9	10	10	13	14
- WOMEN	3	14	24	23	23	30	36	33	37	37	41	40

REGISTERED UNEMPLOYMENT, I-VI 1991

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
TOTAL UNEMPLOYMENT ('000s)	1,196	1,259	1,322	1,370	1,435	1,574
CHANGE ('000s) a)	69.6	63.2	63.2	48.0	64.4	139.6
UNEMPLOYMENT RATES b) AS % OF LABOR FORCE	6.5	6.8	7.1	7.3	7.7	8.4
MASS LAYOFFS ('000s)	218.8	237.9	249.9	268.5	285.5	314.8
% OF UNEMPLOYMENT	18.3	18.9	18.9	19.6	19.9	20.0
CHANGE ('000s) a)	35.3	19.1	11.9	18.7	16.9	29.4
% OF MONTHLY INCREASE IN UNEMPLOYMENT	50.7	30.3	18.9	38.9	26.3	21.0
TOTAL EMPLOYMENT SOCIAL ('000s)	6,382.0	6,347.0	6,365.0	6,290.0	6,217.0	6,185.0
CHANGE ('000s) a)	34.0	(35.0)	18.0	(75.0)	(73.0)	(32.0)
% OF INCREASE IN UNEMPLOYM	(48.9)	55.4	(28.5)	156.3	113.4	22.9
EMPLOYMENT INDUSTRY ('000s) c)	3665.0	3649.0	3658.0	3617.0	3575.0	3554.0
CHANGE ('000s) a)	33.0	(16.0)	9.0	(41.0)	(42.0)	(21.0)
% OF INCREASE IN UNEMPLOYM	(47.4)	25.3	(14.2)	85.4	65.2	15.0
VACANCIES IN THOUS.	45.3	42.2	45.8	49.9	47.0	47.4
CHANGE IN THOUS.	(8.8)	(3.1)	3.6	4.1	(2.9)	0.4
UNEMPLOYED PER VACANCY	26	30	29	27	31	33
- MEN	18	20	19	18	19	21
- WOMEN	46	46	56	57	66	74

appear to fit with the argument that a substantial part of unemployment is comprised of new entrants. However, the table also shows that unemployment increases one month track employment declines from the previous month fairly accurately --ie. there appears to be a lag in the process of registering as unemployed. The pattern of unemployment flows for the month of December reflects this "lagged" unemployment response most clearly. In December, the drop in employment in the socialized sector far exceeded the increase in unemployment (by about 130,000 jobs). In January 1991, the number of unemployed subsequently increased by 70,000 workers, twice the decline in employment for that month. Thus, much of the sharp rise in unemployment appeared to reflect "true" employment decline, casting some doubt on the popular perception that many of the unemployed are new entrants attracted by generous unemployment benefits.⁸

20. The share of mass layoffs to total unemployment has increased over time: in January 1990, mass layoffs represented 4.3% of total unemployment; by June 1991, this share had increased to 20%.⁹ Nevertheless, the share of mass layoffs in total unemployment remains fairly low, which is consistent with the apparent lack of bankruptcies in the socialized sector.

21. Vacancies dropped sharply during the first quarter of 1990, then rose through the second and third quarters, reaching a high of 64,000 in October.

⁸ This increase in labor supply could be associated with: (a) an income effect -- as real income and employment fall, labor force participation of secondary labor force members would tend to increase; (b) a related income effect associated with the end of the shortage economy -- the increased availability of goods to be purchased with household incomes could also induce secondary labor force members to enter the labor force; and (c) more generous unemployment benefits, which could cause discouraged or non-active workers to re-enter the labor force and register as unemployed.

⁹ Of course, without individual data it is impossible to know who flows in and out of unemployment, and therefore it is impossible to know how the composition of the stock of unemployed changes over time. However, to the extent that mass layoffs seem to be accounting for a larger share of the flow into unemployment, it seems reasonable to assume that they will end up constituting a larger share of the stock of the unemployed.

November and December, the number of vacancies fell moderately, ending the year at 53,400. Throughout the first half of 1991, the number of vacancies remained fairly stable, hovering between 45,000 and 50,000 openings. The fact that vacancies have not decreased as unemployment has gone up suggests some degree of mismatch between the demand and supply of labor. Or alternatively it may reflect the existence of rigidities in the labor market that prevent workers from being fully mobile.

22. The existence of such rigidities may help explain the apparent dispersion in unemployment rates across regions. Regional unemployment rates range from a low of 2.1% in Warsaw to a high of 11.5% in Suwalskie (see Table 2). There is even larger variation in vacancy rates, with some rural areas showing a very low number of vacancies per person unemployed, and other areas -- such as Warsaw -- showing a large number of vacancies. This observation indicates that inter-regional labor mobility is quite low, and that mismatch between supply and demand for labor across regions is likely to be important. However, there appears to be a strong negative correlation across regions between the regional unemployment rate and the regional ratio of vacancies to unemployed, suggesting that within regions demand and supply are better matched.

23. The Private Sector: The above picture is necessarily partial in that it excludes developments in the private sector. Unfortunately, "hard" statistical data on wage and employment developments in the private sector are not available. The existing information suggests that, in contrast to what was observed in the socialized sector, employment growth in the non-agricultural private sector was strong throughout 1990. The authorities estimate the increase in private sector

TABLE 2
UNEMPLOYMENT BY REGION

WOJEWODZTWO	SHARE OF TOTAL EMP-1989	PRIV_SECTOR % OF TOTAL 89	UNEMPLOYMENT Dec-90	UE_RATE Dec-90	VACANCIES Dec-90	UNEMPLOYED PER VACANCY
Poland a)	100.0	29.6	1126.1	6.1	53400	21
Warszawskie	6.6	26.3	26.9	2.1	12141	2
Białkopodlaskie	0.9	53.1	9.3	6.0	54	172
Białostockie	1.9	42.5	29.2	8.5	1044	28
Białskie	2.4	34.6	17.5	4.1	1147	17
Bydgoskie	2.7	26.8	39.5	7.8	1577	25
Chelmskie	0.7	46.4	7.9	6.4	296	27
Ciechanowskie	1.1	51.7	19.5	9.8	301	65
Częstochowskie	2.0	39.1	21.5	5.0	540	40
Elbłaskie	1.1	26.7	17.3	7.0	981	18
Gdańskie	3.3	23.8	31.6	5.0	1248	25
Gorzowskie	1.2	27.4	21.2	9.2	804	26
Jeleniogorskie	1.3	24.0	24.4	9.9	424	58
Kaliskie	1.9	38.2	25.7	7.5	823	31
Katowickie	10.1	15.3	63.4	3.4	7800	8
Kieleckie	3.3	42.0	39.4	6.7	768	51
Koninskie	1.2	44.1	20.6	9.2	463	44
Kozaliniskie	1.3	25.5	23.0	9.5	494	47
Krakowskie	3.3	30.7	21.1	3.4	3715	6
Krośnieniskie	1.4	41.2	18.9	7.3	139	136
Legnickie	1.3	21.8	19.2	8.0	196	98
Leszczyńskie	1.0	35.4	9.4	5.5	397	24
Lubelskie	2.8	39.7	32.4	6.4	442	73
Łomżyńskie	1.0	60.9	16.4	9.4	144	114
Łódzkie	3.0	24.3	47.6	8.5	2957	16
Nowosądeckie	2.0	50.7	20.8	5.8	344	60
Oleśztyńskie	1.8	25.7	34.9	10.2	483	72
Opolskie	2.6	26.2	19.2	3.9	880	22
Ostoleckie	1.1	53.9	15.5	8.3	139	112
Piłskie	1.2	29.1	16.2	7.7	313	52
Piotrkowskie	1.8	41.1	27.3	8.5	830	33
Płockie	1.4	43.5	22.9	8.9	228	100
Poznańskie	3.4	28.2	21.2	3.5	1324	16
Przemyskie	1.1	46.2	17.4	8.5	136	128
Radomskie	2.1	48.9	23.1	6.1	2593	9
Rzeszowskie	2.0	39.1	25.7	6.9	248	104
Siedleckie	1.8	58.5	15.6	5.0	255	61
Sieradzkie	1.2	50.5	14	6.7	111	126
Ślęskie	1.1	50.5	13.4	6.8	396	34
Skierniewckie	1.0	27.7	16.8	9.0	847	20
Suwańskie	1.2	37.6	25.1	11.5	272	92
Szczeczyńskie	2.4	20.2	20.9	4.6	1256	17
Tarnobrzeskie	1.8	48.7	19.7	6.1	747	26
Tarnowskie	1.8	47.6	18.1	5.4	196	92
Toruńskie	1.6	31.5	28.1	9.3	354	79
Wałbrzyskie	1.8	20.6	28.0	8.2	414	68
Wrocławskie	1.1	44.2	15.8	7.9	304	52
Wrocławskie	2.8	22.8	23.5	4.4	1855	13
Zamojskie	1.5	58.3	15.2	5.8	75	203
Zielonogorskie	1.6	25.9	24.3	8.0	648	38

a) Total employment was 17,558,000 in 1989

employment for 1990 at 400,000 jobs. In the first half of 1991 employment in the private sector declined by about 200,000 units, and it is estimated that at end-June 1991 3,963,000 people (or 33.2 percent of total non-agricultural employment) are employed in the private sector outside agriculture. The decline in employment in the private sector, however, is mainly due to the inclusion in 1991 of cooperatives and foundations, many of which are in the process of being dissolved, in the private sector. In the material sphere, which excludes cooperatives and foundations, private sector employment grew by 1.1 percent in the first half of 1991, compared with a decline of 7.7 percent in the public sector. However, it is worth noting, that in industry, private sector employment declined by 5.3 percent, a percentage similar to the decline in the public sector (-6.7 percent). This points to the fact that the recession in the industrial sector is affecting also the private sector, which is not absorbing workers from the public sector in industry.

24. Although growth in this sector has been buoyant, at present it's impact on aggregate employment developments is necessarily small. However, its importance is likely to grow. Given the sharp decline in socialized sector employment, and given prospects for further declines in the future, it appears that a buoyant private sector, capable of absorbing at least a fraction of the laid-off workforce, will be key to dampening future increases in unemployment.

C. Wage Developments in 1990 and early 1991

25. During 1990 average real wages per worker --wages deflated by the consumer price index-- declined by 31 percent, which was exactly the figure targeted by the Government program sponsored by the Stand-By agreement with the IMF. The

drop in real wages was much larger than the drop in productivity, thus resulting in a significant redistribution of income away from labor. However, given the sharp increase in non-labor input costs, part of the wage adjustment worked to cushion the increased costs of material inputs and the higher interest rates. On the demand side, the drop in the "statistical" real wage may not reflect an true economic decline in real wages, as 1989 was characterized by the presence of widespread shortages. For instance, if we measure wages in US dollars, and use the free market exchange rate as rough proxy of shortages in the goods markets, wages increased significantly during 1990.¹⁰ (Chart 4)

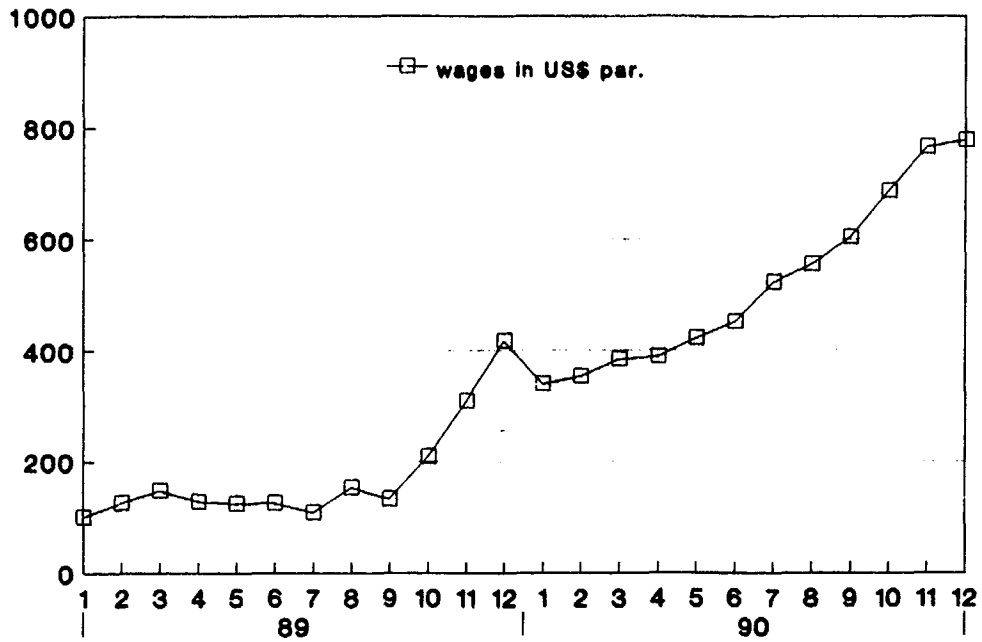
26. Developments within the year point to the presence of two distinct subperiods in wage behavior. Real wages, after the sharp fall in January-February, began to recover slowly in the second quarter and increased significantly in the third and the fourth quarter. While reflecting the typical seasonal pattern of wage changes in Poland,¹¹ this sharp distinction between the behavior in the first half and in the second half of the year arose in the context of a loosening of credit policy in the second half of the year. This association, however, does not implies any causality, as credit expansion might have simply accommodated rather than caused the increase in real wages.¹² Moreover, evidence presented in Charts 5a and 5b show that in the second half of

¹⁰ This is obviously an inadequate indicator; however, in a context characterized by currency convertibility and even by the presence of shops selling goods in foreign currency, and by a stock of household deposits in foreign currency of more than five billion US \$, such an indicator has some value.

¹¹ This seasonality is due to the concentration in the last months of the year of extraordinary payments, particularly to extraction and energy sectors.

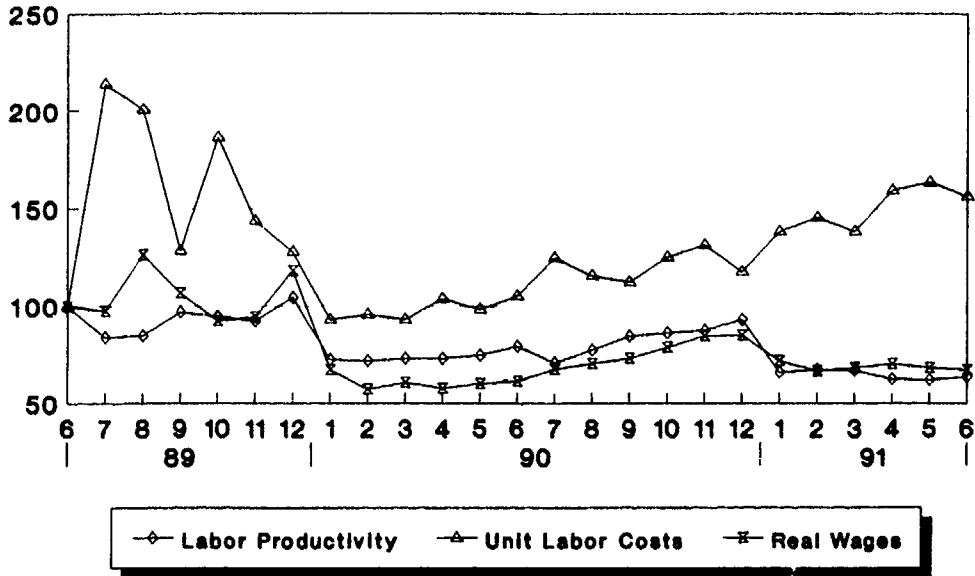
¹² In addition, the observation of overall bank credit --without distinction between government and non-government sector, and within the non-government sector between socialized and non-socialized sectors-- may be an inadequate indicator of the available finance for socialized enterprises, especially given the presence of a stock of inter-enterprise credit larger than bank credit.

Chart 4: Wages in US\$ (*)
(January 1989=100)



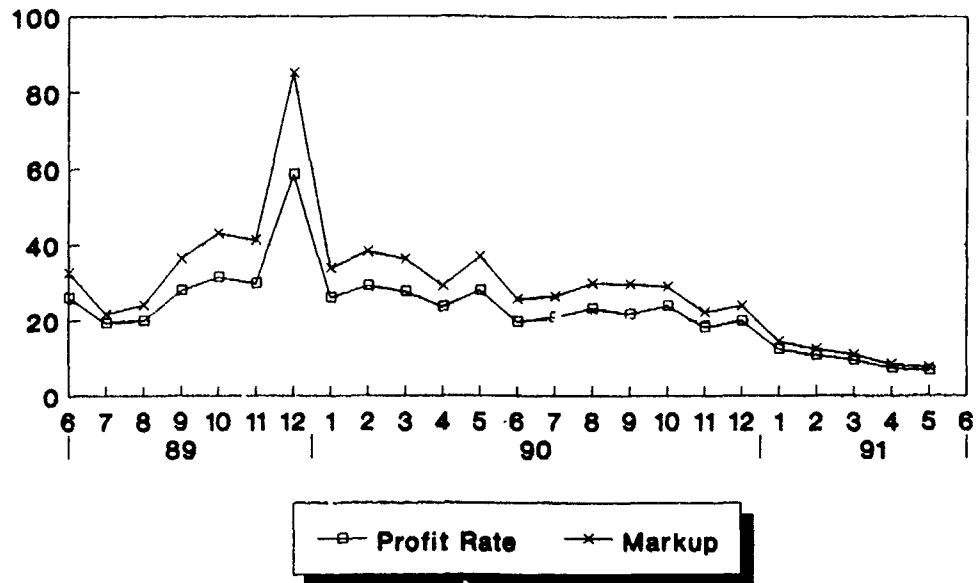
(*) Measured at the parallel rate

**Chart 5a: Poland
Unit Labor Costs and Real Wages
1989-91**



Source: GUS, BS

**Chart 5b: Poland
Profitability, 1989-91**



Source: GUS, BS
 $\text{Profit} = \text{Sales} - \text{Costs} + \text{Subs} - \text{Tax}$
 $\text{Profit Rate} = \text{Profit} / \text{Sales}$

1990 firms increased wages by reducing profits. Given the large supply shock which hit the enterprise sector at the beginning of the year and the consequent need to reconstitute their liquidity position, such wage behavior might have had detrimental effects on output in the second half of 1990, effectively constraining the recovery.

The behavior of wages during the year does not seem to resemble the behavior predicted by the literature on labor-managed firms, whereby workers maximize the wage rate and do not care about employment. The sharp decline in statistical real wages at the beginning of the program, and, more importantly, the fact the wages increased in the first half of 1990 well below the ceilings, point to the presence of downward flexibility of real wages. In addition, the sluggish adjustment of employment points to a large weight attributed by workers to the maintenance of employment. This seems rational since when fired workers do not lose simply their wage but also their claim on the quasi-rents of the firm and their de facto control of the enterprise assets. When faced with some probability of bankruptcy of the enterprise, and the attendant loss of control over the firm, workers seem to be willing to accept large wage cuts. In a sense the firm borrows from its workers (see Calvo and Coricelli (1991)). When the situation of enterprises improved in the second half of 1990, firms paid back the "loans" received in the first half. The wage policy, based on a cumulative ceiling, permitted firms to carry out the operation without incurring in tax penalties. Overall, the wage-employment behavior observed in Poland after January 1990 seems to accord with the maximization of expected utility of representative workers, combined with a "sharing rule" based on the full appropriation by the workers of the quasi-rents of the firms (see Commander, Coricelli and Staehr (1991) for a model along these lines). This type of model

illustrates both the concern of workers with employment and the institutional setting allowing workers to appropriate all the profits of the enterprises.

The wage policy, by centering on the control of the wage bill, might have allowed the increase in the wage rate through a decline in employment.

D. The role of the wage policy

27. The role played by the wage policy is not easy to interpret. Indeed, in the first six months of the year wage policy was not binding, with actual wage increases consistently below the wage ceilings. During the rest of the year, wage increases were consistently above the monthly norm, as firms gradually depleted the accumulated unused norm. Although for the year as a whole wage behavior was roughly consistent with the wage policy, and although the decline of real wages of 31 percent was exactly the one assumed in the government program, wage increases in the second half of 1990 likely contributed to the persistence of inflation. In particular, it appears that in the second half of 1990, wage policy served as a "floor" rather than a ceiling for wage increases, with undesirable effects on inflationary inertia. This is partly confirmed by the fact that wage increases in the second half of the year took place in the context of significant decline of profitability in the socialized sector. (Blanchard and Layard (1991) point to the presence of wage pressure in the second half of 1990)

28. Charts 6a and 6b illustrate the existence of a clear distinction between the first and the second half of 1990 as regards wage behavior, and show that wages did not function as a "nominal anchor" for most of 1990 (except during November and December 1990, when the norm was surpassed in the aggregate and thus a relevant amount of excessive wage taxes were paid to the Treasury). The fact

Chart 6a: Wage policy in 1990
(in thousands zlotys)

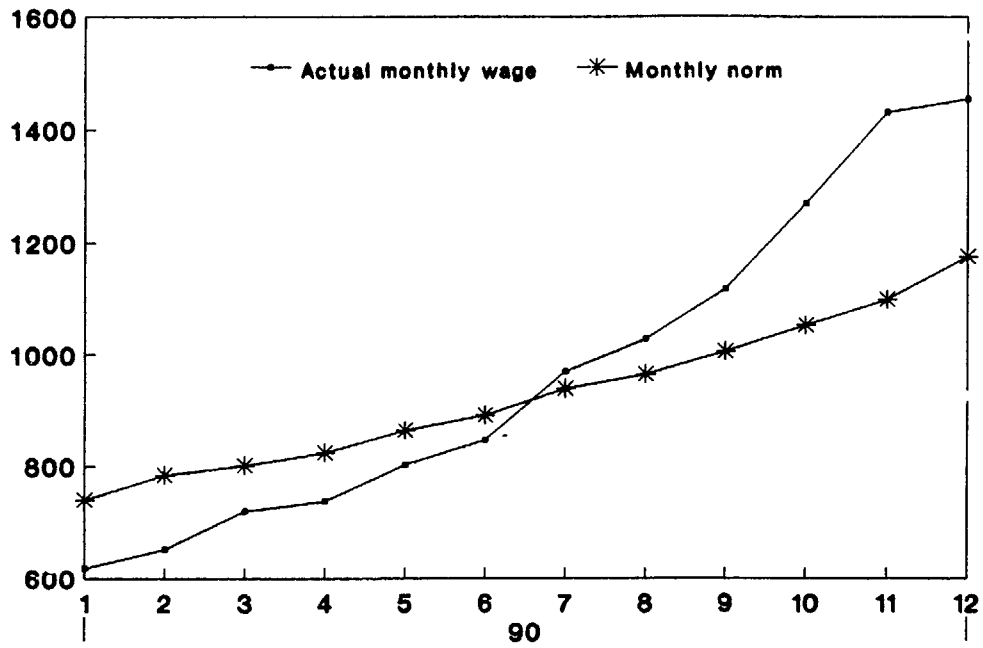
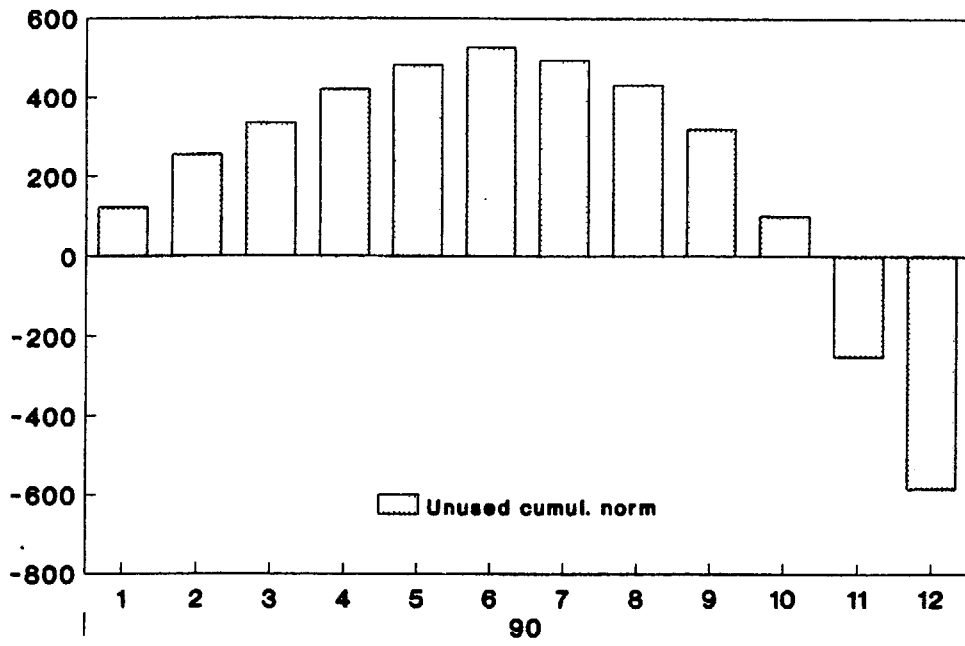


Chart 6b: Wage Policy
(in thousands zlotys per worker)



that firms were willing to pay high taxes (at rates well above 100 percent) on excess wage increases is not easy to rationalize. One possible explanation is that monopolistic sectors were able to pass both the increase in wages and the taxes paid to the Treasury through to higher prices. Another explanation is that firms were "testing" the government, in particular its commitment to enforce "hard budget constraints."

E. Sectoral behavior of wages and employment

29. Total employment in the socialized sector fell by approximately 8% between December, 1989 and December, 1990. The employment decline in the socialized industrial sector was substantially larger, about 14% (13% between January and December, 1990), representing a loss of approximately 550,000 industrial jobs. As Table 3 reveals, employment fell in all industrial sectors, reflecting an equally widespread drop in production. However, there was substantial heterogeneity as regards the magnitudes and patterns of employment and output decline.

30. Employment in socialized industry continued to fall in the first half of 1991. As of May 1991, employment had dropped by -1.6% relative to December 1990 levels. Compared to the level for the same period of the previous year -- ie. relative to Jan-May 1990 -- employment had fallen by as much as 7.2%.¹³

31. Table 3 shows that the largest drops in employment occurred in light industry, where employment fell by -19% between December 1989 and December 1990,

¹³ The difference between the two figures reflects the difference between using end-of-period figures as the relevant comparators versus using period averages. Using the latter tends to smooth out the changes.

TABLE 3
SECTORAL DISTRIBUTION OF EMPLOYMENT AND PRODUCTION IN SOCIALIZED INDUSTRY

	SHARE OF SECTOR IN TOTAL (as of Jan-90)		% CHANGE DEC-89 TO DEC-90 a)		% CHANGE DEC-90 TO MAY-91 c)	
	EMPLOYMENT	PRODUCTION	EMPLOYMENT	PRODUCTION b)	EMPLOYMENT	PRODUCTION b)
TOTAL	100.0	100.0	-14.1	-24.0	-1.6	-23.2
EXTRACTION	14.3	7.9	-13.4	-24.3	-4.1	-10.3
MANUFACTURING	85.7	92.1	-14.2	-23.9	-1.2	-24.0
FUELS & ENERGY	16.8	19.4	-11.4	-25.8	-2.7	-19.2
METALLURGY	5.2	19.3	-7.6	-16.3	-2.7	-13.2
ELECTROMACHINERY	31.7	20.5	-16.2	-29.6	-1.4	-38.4
CHEMICAL	6.7	10.0	-10.8	-25.6	-0.4	-27.9
MINERAL	5.1	3.8	-10.5	-20.1	1.0	-8.7
WOOD & PAPER	5.0	4.6	-15.2	-17.4	5.3	-19.6
LIGHT	15.7	7.8	-19.2	-35.2	-3.1	-27.1
TEXTILES	8.1	4.9	-20.9	-36.7	-5.4	-25.2
FOOD PROCESSING	10.4	14.0	-5.1	-9.0	-2.9	-13.3

SOURCE: INFORMACJA STATYSTYCZNA VARIOUS ISSUES

a) Relative to Dec 1989 levels

b) Deflated by Index of Prices of Production Sold

c) Relative to Dec 1990 levels

and in electromachinery, where employment fell by -16% during the same period. In both of these industries, the declines seem to reflect substantial labor shedding in response to sharp drops in production (of -35% and -30% respectively). These two sectors have also been hard hit in 1991: as of May 1991, production in electromachinery was down by an astounding -38% relative to December 1990 levels, whereas in light industry it was down by -27%. The corresponding declines in employment have been relatively moderate: of -1.4% for electromachinery and of -5.4% for light industry.

32. Table 4 presents changes in the main economic variables by sector, for the year as a whole (ie. average Jan-Dec 1990 relative to Jan-Dec 1989). The year-to-year comparison yields the same pattern of changes as did the December to December comparison of Table 3. The table shows that employment and production declined in all sectors, with employment falling significantly less than production, so that output per worker dropped across the board. The hardest-hit sectors were textiles, wearing apparel and leather goods (light industry), with output falling by 30-40% and employment falling by 10-12%. Some of the engineering sectors -- namely metal products and transport equipment -- also experienced large drops in employment and output.

33. Declining sectoral employment is only part of the labor market response to declining production, the other part being the adjustment in wages. As Table 4 shows, the heterogeneity in output performance across sectors was also clearly reflected in the very disparate patterns of sectoral wage behavior. Indeed, while some sectors (extraction, energy and metallurgy) paid wages consistently above the norm, the manufacturing sectors hardest hit by the contraction of

Table 4:
Poland: Sectoral Data, 1990
Jan-Dec 89 = 100

	Employment	Productivity	Production	Producer Prices	Real Profits	Product wage	Consumer wage	Nominal wages
COAL	91.80	78.00	71.80	1,078.3	42.1	46.8	63.4	441.3
FUEL	99.70	78.74	78.50	1,190.8	168.1	52.0	75.8	527.9
POWER	101.80	88.41	90.00	1,272.1	313.8	44.9	68.7	478.1
FERROUS METALLURGY	94.40	88.03	83.10	1,088.1	117.9	55.2	74.7	519.6
NON-FERROUS METALLURGY	97.20	78.50	76.30	1,090.6	113.7	51.3	72.9	507.6
METAL PRODUCTS	90.60	79.25	71.80	836.5	75.6	64.3	67.5	470.0
ENGINEERING	89.20	90.36	80.60	781.8	74.2	69.4	68.5	476.7
PRECISION INSTRUMENTS	89.70	92.75	83.20	650.1	60.6	80.9	65.7	457.1
TRANSPORT EQUIPMENT	91.50	80.77	73.90	885.0	70.4	63.8	68.7	477.9
EL-TECH ENG. & ELECTRONI	92.00	85.54	78.70	734.0	57.4	70.9	65.5	456.0
CHEMICAL INDUSTRY	93.90	80.19	75.30	938.9	80.6	59.1	68.2	474.7
BUILDING MATERIALS	93.20	82.40	76.80	892.1	91.9	60.6	67.6	470.8
GLASS & GLASS PRODUCTS	94.60	78.53	72.40	873.0	58.3	62.5	67.0	466.2
POTTERY & CHINA	97.00	78.39	74.10	734.1	51.7	72.4	66.8	465.0
WOOD & WOOD PRODUCTS	89.80	84.19	75.60	730.7	35.4	73.9	66.0	459.6
PAPER & PAPER PRODUCTS	92.30	83.75	77.30	949.8	70.5	58.8	67.7	471.1
TEXTILE PRODUCTS	88.90	66.93	59.50	638.1	21.3	78.0	61.8	429.8
WEARING APPAREL	89.20	77.80	69.40	496.8	27.4	97.7	62.1	431.9
LEATHER PRODUCTS	90.10	73.58	66.30	565.3	17.6	84.6	60.3	419.8
FOOD INDUSTRY	98.20	75.66	74.30	727.6	52.0	82.2	66.0	459.2
Unweighted averages	93.26	80.89	75.44	858.2	80.0	66.5	67.2	468.0
Std. deviation	3.70	6.03	6.33	204.62	63.98	13.44	3.85	26.82
Coeff. of variation, in %	3.96	7.45	8.39	23.84	79.94	20.21	5.73	5.73

1/ Due to unavailability of data on producer prices by sectors for December 1990, the product wage refers to January-November.

output, namely light industry and electromachinery, stayed within the norm throughout the year.

34. The data indicate that wage growth was strongly correlated with profitability across sectors. The evidence also shows that capital intensive sectors increased wages more than labor intensive sectors, a phenomenon consistent with theories of wage bargaining in imperfectly competitive labor markets. These stylized facts suggest that wage growth was clearly linked to the ability to pay out of profits: sectors with lower profitability --due to more intense import competition, lower ability to raise prices, or inherently lower capital/labor ratios-- increased their wages less.

35. Despite the sectoral heterogeneity, Table 4 suggests some convergence in the nominal wage level across manufacturing sectors by the end of 1990. Moreover, it is apparent that the variability across sectors in the increase in nominal wages was much smaller than the variability of other sectoral variables, such as prices, output and profits (Table 4). Thus, despite experiencing lower absolute wage growth, light industry and electromachinery may have actually improved their relative wage position. This apparent convergence in wage levels, which occurred despite widely varying output and financial performances, raises some questions regarding wage "leadership" and relative wage dynamics. Sectors with better financial conditions --and not necessarily higher efficiency-- may have served as wage "leaders," with imitation effects in less profitable sectors. These wage-wage dynamics could have adverse inflationary consequences. Furthermore, the inflationary implications of this transmission mechanism would be strengthened by the fact that wages in the budgetary sphere are indexed to

wages in the socialized sector.

36. Table 4 shows that the variance of wages across sectors --as measured by the coefficient of variation-- was much greater than that of employment, suggesting that employment was more "rigid" than wages during 1990. However, the patterns for the year as a whole are somewhat deceptive. During the first part of the year, wages were in fact fairly flexible, and fell substantially in response to the initial drop in production. However, during the second half of the year, the adjustment patterns reversed: real wages grew substantially even though employment continued to decline. At the same time, production stabilized. In some sense, during the latter part of the year, wages were quite "rigid" in their unresponsiveness to rising unemployment. This latter pattern seems to reflect the combined effects of sluggishness in the employment response with the inertial force of the wage policy.

37. Table 5 presents changes in the main economic variables by sector for Jan-Jun 1991 relative to Jan-Jun 1990. The table brings out a few interesting facts: (a) production has fallen in the first half of 1991, even relative to the first half of 1990, which was itself characterized by a sharp drop in production; (b) employment has fallen during the first half of 1991, at approximately the same rate as production; (c) the decline in productivity has slowed down, and in some sectors, productivity (in terms of output per worker) has increased; (c) the variance in the performance of real variables -- employment and output -- across sectors has increased, while the variance in prices and wages has decreased; (d) product wages in all sectors --even in those doing particularly poorly-- are up significantly relative to 1990, and real profits are down.

Table 5:
Poland: Sectoral Data, 1991
Jan-Jun 90 = 100

	Employment	Productivity	Real Production	Producer Prices	Real Profits / i	Product wage	Consumer wage	Nominal wages
TOTAL	92.8	97.6	90.6	152.2	33.8	123.7	105.7	188.2
MINING	89.5	111.2	99.5	185.3	23.2	109.2	113.6	202.4
MANUFACTURING	93.2	96.6	90	149.7	35.0	124.0	104.2	185.6
COAL	89.20	116.00	103.50	208.8	674.5	99.9	117.1	208.5
FUEL	96.60	87.60	86.40	175.8	13.9	127.7	126.1	224.6
POWER	101.00	95.40	96.40	181.6	-7.5	107.0	109.2	194.4
FERROUS METALLURGY	93.20	88.30	82.30	118.5	19.5	158.3	105.3	187.6
NON-FERROUS METALLURGY	91.50	93.00	85.10	123.8	31.1	127.5	88.7	157.9
METAL PRODUCTS	97.50	98.40	95.90	134.1	42.2	134.5	101.2	180.3
ENGINEERING	89.50	89.10	79.70	144.0	40.4	121.0	97.9	174.3
PRECISION INSTRUMENTS	85.80	96.60	82.90	123.2	32.5	144.9	100.2	178.5
TRANSPORT EQUIPMENT	91.30	74.80	68.30	176.9	18.8	99.4	98.8	175.9
EL-TECH ENG. & ELECTRONI	84.60	99.50	84.10	132.3	30.0	137.7	102.3	182.2
CHEMICAL INDUSTRY	94.50	97.80	92.40	145.7	47.4	125.5	102.7	182.9
BUILDING MATERIALS	99.00	97.40	96.40	136.3	42.7	142.6	109.1	194.3
GLASS & GLASS PRODUCTS	96.50	102.10	98.50	139.2	46.4	125.5	98.1	174.7
POTTERY & CHINA	93.90	100.90	94.70	164.2	52.7	108.3	93.8	167.0
WOOD & WOOD PRODUCTS	104.90	100.10	105.00	162.6	55.5	112.5	102.8	183.0
PAPER & PAPER PRODUCTS	93.20	112.30	104.7	116.7	19.0	164.7	107.9	192.2
TEXTILE PRODUCTS	80.40	109.50	88	134.3	14.4	130.7	98.5	175.5
WEARING APPAREL	98.20	101.00	99.2	158.5	37.0	122.3	108.9	193.9
LEATHER PRODUCTS	87.40	96.10	84.00	154.3	8.9	125.0	108.3	192.9
FOOD INDUSTRY	104.10	100.40	104.50	161.5	81.1	122.0	110.6	197.0
Unweighted averages (mfg)	93.71	97.82	91.60	149.12	65.03	126.86	104.37	185.88
Std. deviation	6.30	8.84	9.70	23.35	141.14	16.87	8.09	14.40
Coeff. of variation, in %	6.73	9.04	10.59	15.66	217.03	13.30	7.75	7.75

38. If 1990 was characterized by a generalized contraction in output, 1991 appears to reflect more of the same. Among the main factors behind the output decline in 1991 are the demise of the CMEA trade--which implied a large terms of trade shock as Poland is now importing key raw materials from the Soviet Union at world prices, and a large drop in demand especially from the Soviet Union--and the increased import competition associated with the appreciation of the exchange rate. The latter not only impacts output directly by reducing demand for the domestic good, but also acts to constrain price increases in the import-competing sectors, which in turn may have an indirect effect on output through a cost-price squeeze. Table 6 presents some very preliminary evidence on this point.

39. As noted above, light industry and electromachinery were the two sectors that were hit the hardest by the contraction in output in both 1990 and 1991. These two sectors were also the most open to import competition -- in 1990, the import penetration ratio for electromachinery was the highest for all of manufacturing, at 25%, while that for light industry was the second highest, at 18%. Furthermore, these two sectors experienced remarkably large increases in their import penetration ratios between 1990 and 1991:¹⁴ the import penetration ratio for electromachinery increased from 25% in 1990 to 37.6% in 1991, while the comparable ratio for light industry increased from 18% to 26%. While far from providing conclusive evidence, these patterns suggest a likely link between

¹⁴ Note that light industry may have been exposed to "effective" foreign competition faster than the other sectors because the time to create effective channels of imports and exports is usually shorter for sectors producing final consumer goods

Table 6:
Poland: Sectoral Data, 1991
Jan-Jun 90 = 100

	Employment	Real Production	Real Profits /1	X Share 90	X Share 91	M Share 90	M Share 91	X Share 91-90	M Share 91-90
TOTAL	92.8	90.6	33.8	0.31	0.27	0.16	0.25	-3.96	9.68
MINING	89.5	99.5	23.2						
MANUFACTURING	93.2	90	35.0						
COAL	89.20	103.50	674.5	0.18	0.13	0.13	0.23	-5.10	9.92
FUEL	98.60	86.40	13.9	0.18	0.13	0.13	0.23	-5.10	9.92
POWER	101.00	96.40	-7.5	0.18	0.13	0.13	0.23	-5.10	9.92
FERROUS METALLURGY	93.20	82.30	19.5	0.25	0.40	0.08	0.12	15.13	4.22
NON-FERROUS METALLURG	91.50	85.10	31.1	0.25	0.40	0.08	0.12	15.13	4.22
METAL PRODUCTS	97.50	95.90	42.2	0.40	0.33	0.25	0.38	-7.59	12.52
ENGINEERING	89.50	79.70	40.4	0.40	0.33	0.25	0.38	-7.59	12.52
PRECISION INSTRUMENTS	85.80	82.90	32.5	0.40	0.33	0.25	0.38	-7.59	12.52
TRANSPORT EQUIPMENT	91.30	68.30	18.8	0.40	0.33	0.25	0.38	-7.59	12.52
EL-TECH ENG. & ELECTRONI	84.50	84.10	30.0	0.40	0.33	0.25	0.38	-7.59	12.52
CHEMICAL INDUSTRY	94.50	92.40	47.4	0.41	0.34	0.18	0.30	-6.27	12.12
BUILDING MATERIALS	99.00	96.40	42.7	0.14	0.17	0.07	0.14	2.76	7.17
GLASS & GLASS PRODUCTS	96.50	98.50	46.4	0.14	0.17	0.07	0.14	2.76	7.17
POTTERY & CHINA	93.90	94.70	52.7	0.14	0.17	0.07	0.14	2.76	7.17
WOOD & WOOD PRODUCTS	104.90	105.00	55.5	0.30	0.30	0.07	0.13	-0.17	5.75
PAPER & PAPER PRODUCTS	93.20	104.7	19.0	0.30	0.30	0.07	0.13	-0.17	5.75
TEXTILE PRODUCTS	80.40	88	14.4	0.26	0.24	0.18	0.26	-2.44	7.91
WEARING APPAREL	98.20	99.2	37.0	0.26	0.24	0.18	0.26	-2.44	7.91
LEATHER PRODUCTS	87.40	84.00	8.9	0.26	0.24	0.18	0.26	-2.44	7.91
FOOD INDUSTRY	104.10	104.50	81.1	0.20	0.13	0.08	0.15	-6.17	7.29
Unweighted averages (m/g)	93.71	91.60	65.03	0.27	0.26	0.15	0.24	-1.74	8.85
Std. deviation	6.30	9.70	141.14	0.10	0.09	0.07	0.10	6.64	2.80
Coeff. of variation, in %	6.73	10.59	217.03	35.62	35.55	49.13	41.39	-381.30	31.68

increased import competition in a sector and output decline.¹⁵

Interestingly, the relatively good performance of food-processing industries came together with an increase in tariffs on imports of food products.

40. Strong import competition may have also acted to limit the ability of import-competing firms to increase prices (moderating their degree of monopoly power)¹⁶, reducing profitability and forcing firms to lay off workers.

Tables 4 and 5 appear to support this view by presenting a strong correlation between profitability, price increases and employment across sectors.

IV. Prospects and Policies for 1991

A. Unemployment

41. The key issue for unemployment developments in 1991 is that they are likely to be driven by the need to adjust to past drops in production. As noted above, the data suggest that employment adjustment is extremely sluggish (see Chart 3, Tables 3 and 4), so that much of the employment response to the dramatic 1990 fall in output was expected to happen in 1991, or even 1992. The additional contraction in output now projected for 1991 suggests that unemployment will continue to increase even beyond 1991. Furthermore, widespread restructuring of the economy (with firms and entire sectors closing down) and substantial

¹⁵ A simple cross-sector regression of Change in Log(Output) on Change in Log(Product Wage), Change in Log(Productivity), Change in the Export Share and Change in the Import Share yields a coefficient on the import share of -2.5 (S.E. = 1.00). This implies that a 1 percentage point increase in the import share decreases output by 2.5%.

¹⁶ State-owned firms in these sectors might have also experienced more intense competition from domestic producers in the private sector than firms in sectors with higher barriers to entry.

privatization could raise the number of unemployed even further, albeit temporarily.

42. The Relationship Between Employment and Output: Our expectations for further increases in unemployment in 1991 were predicated on the assumption of sluggish employment adjustment, an assumption supported by informal analysis of the raw data. To gain some insight as to the relation between employment and output in Polish industry, we ran a simple regression of year-to-year changes in aggregate employment on current and lagged year-to-year changes in aggregate production using monthly data for the 1987-90 period. This yielded an aggregate elasticity of employment with respect to output significantly smaller than 1: the sum of the coefficients on current and lagged changes in output was .50 (SE=.072), suggesting very slow employment adjustment.

43. Based on these estimates, and assuming no major structural breaks in the relation between output and employment in the socialized sector, we infer a lower bound for unemployment in 1991.¹⁷ On the assumption of "zero" growth of the socialized sector during 1991, we estimated that unemployment would increase to an average of 1.5 million throughout 1991, reaching a level of about 2.0 million by December. This would reflect primarily a 10% drop in socialized sector employment, representing lagged employment adjustment to last year's drop in production. In fact, as revealed by Table 5, projections of zero growth for the year turned out to be too optimistic.

¹⁷ While relying on historical patterns may be somewhat risky given the magnitude of the changes underway in the Polish economy, we believe that some basic patterns can be inferred from the most recent period. In fact, the experience of 1990 suggests that in the absence of widespread privatization, the behavior of economic agents in the socialized sector is unlikely to depart dramatically from that observed in the last two years.

B. Wage Policy in 1991

44. The new wage policy for 1991 --to be reviewed in July-- modifies in several respects the wage policy in force in 1990. Overall, it is still a monthly indexation scheme, to be enforced through tax penalties. Every month the Council of Ministers will decide on the monthly indexation coefficient: for January the coefficient was 0.6. In addition to the indexation component, average wages can be increased without incurring in tax penalties under several cases.¹⁸ This makes the policy very complex and easily circumvented. The main differences with respect to 1990 are:

(1) the average wage rather than the wage bill is subject to ceilings;

(2) so-called "commercialized" firms (firms which become joint-stock companies and will be privatized) are entitled to exemptions from the tax penalties --to varying degrees depending on the proportion of shares retained by the Treasury;

(3) permitted wage increases are linked to firm-level performance.

45. Point (1) is a welcome change as it eliminates the "pro-unemployment" bias of the wage-bill control of 1990. In terms of efficiency, the control of average wage could in principle have the undesired effect of stimulating the firing of better paid workers (supposedly better skilled). On the other hand, it has the

¹⁸ First, firms which increased wages above the ceiling during 1990 have a proportionally higher ceiling in 1991; second, firms which increased wages below the norm in 1990, can pay the unused norm in 1991; finally, as noted below, firms can increase wages as long as their ratio of profits to wages does not decline with respect to 1990.

advantage of not limiting a firm's ability to expand and hire more workers if it is profitable (which was a problem with the control of the wage bill).

46. Point (2) is controversial. Indeed, this measure accords with the view that wage controls are necessary in the context of state-owned enterprises in which there is no "advocate for capital" (see Hinds (1990)), but not in private enterprises. However, even accepting this argument, in the short-run this different treatment may yield undesirable effects. One should keep in mind that wage policy serves as an anti-inflationary tool. It has inevitably distortionary effects. Exempting, even partially commercialized firms would permit higher wage increases in these firms with a direct inflationary effect. Moreover, it is likely to generate wage pressures in the socialized sector as "imitation" or "relative wage" considerations drive wage demands in those sectors. Finally, in the very short-run, it is not clear that the incentives of commercialized firms will differ from those of state enterprises and thus higher wages can simply result in the "decapitalization" of enterprises. The extremely long list of application for "commercialization" by many enterprises controlled by "workers councils" suggest that this measure may serve in the short-run as a mere instrument for wage increases.

47. Point (3) introduces an extremely negative mechanism. The profit ratio selected is defined as: $(\text{nominal profits} + \text{wages}(\text{without bonuses}))/\text{wages}(\text{without bonuses})$. This ratio can increase for two reasons: first in the case of an increase in productivity, second in the case of an increase in prices. Firms with monopoly power can thus transfer to prices the increase in wages. In addition, capital-intensive firms can share with the workers the "quasi-rents"

due to higher capital-labor ratio with smaller effects on profit ratios.¹⁹ This rule, therefore, seems particularly undesirable. The fact that the wage law excludes monopolies from this rule is unlikely to be effective in the present Polish context. Even abstracting from the above effects, these firm-level linkages between wages and profits may lead to the same drawbacks discussed with respect to point (2). Namely, if the objective of the wage policy is to contribute to the anti-inflation policy, firms with higher productivity should increase their profits and their competitiveness and not transfer it to the workers. The aggregate effect would be lower inflation and thus higher real wages. ²⁰

48. For 1991, on the basis of the indexation scheme and an expected price path, the government expected an increase in real wages of 3 percent (average 1991 over average 1990). This target implies a reduction of about 10 percent of real wages during the year, under the assumption of inflation rates around 1 percent per month starting in March 1991. With inflation rates higher than anticipated, the implied decline of real wages would be even larger. The realism of this assumption is highly questionable. In particular, the inflation path assumed by the government assumes that the wage scheme has no impact on that inflation path, whereas the monthly indexation may greatly complicate the fast reduction of inflation rates. Indeed, the monthly adjustment --despite indexation coefficients smaller than one-- is likely to contribute to inflation persistence, particularly following the significant acceleration of inflation occurring at the

¹⁹ While empirical evidence suggests that this "rent-sharing" is, in fact, quite prevalent in market economies, it seems undesirable to explicitly "institutionalize" or legislate such "rent-sharing" in the absence of well-defined ownership rights.

²⁰ More precisely, the reference is an "effectiveness" index given by the ratio of profits to wages(excluding bonuses) plus profits.

beginning of 1991 in connection with the large planned increases in administrative prices.²¹

49. In the context of increasing rates of inflation in January-February, wage pressures could build and become untenable. Given the absence of market restraints on wage behavior, wage policy remains an important component of macroeconomic policy. Indeed, in the absence of a wage policy contributing to reduce inflationary inertia, serious problems in managing macroeconomic policies are likely to surface in the next months. In particular, without a "wage anchor", the "exchange rate anchor" may be unsustainable, even with tight monetary policies.

50. This suggests the necessity of maintaining some form of wage policy, despite its clear distortionary effects. However, the new policy introduced in 1991 seems to suffer from some of the main limitations of the 1990 policy. We already noted that the monthly indexation introduces undesirable rigidities. In addition doubts can be raised on the implications of some of the modifications introduced.

51. Improvements could perhaps be achieved by: (i) lengthening the interval of wage indexation; (ii) simplifying the wage rules, avoiding clauses relating to firm-level performance. Some consideration could be given to a wage policy, perhaps based on an agreement among relevant parties (trade unions, representative of workers councils, managers, farmers and the government), which

²¹ The announced continuation of tight macroeconomic policies will certainly rule out an explosive wage-price spiral but, especially in the context of still widespread cost-plus pricing behavior, will be unlikely effective in bringing down rapidly inflation. If effective, may imply large costs in terms of real economic activity.

states a simple rule of wage increase for the whole economy, linked to expected inflation and expected real growth (in the economy as a whole). The rule could be translated into wage changes at intervals of six or three months, with the additional clause that in case of substantial deviations between actual and expected inflation, adjustments will be made.

V. Concluding remarks

52. This note has reviewed recent labor market developments in Poland and discussed some of the main problems that Poland faces in sustaining the stabilization effort. The main findings are the following:

(i) The large increase in unemployment during 1990 cannot be taken to reflect widespread economic adjustment and restructuring throughout the Polish economy. Contrary to predictions made prior to the January 1990 stabilization program, employment has declined nearly uniformly across all sectors, and mainly as a consequence of a generalized contraction in output rather than as a result of sectoral restructuring or massive labor shedding. In fact, we find no evidence of substantial restructuring within the socialized sector-- no bankruptcies, no sectors closing down-- and find little evidence of a dramatic shift in employment and wage behavior with respect to the past.²² This pattern poses some serious problems for the immediate future. Clearly, there is a need for widespread restructuring of the economy, yet such restructuring may not occur in the absence large-scale privatization. Furthermore, if it does occur in the

²² This most likely reflects the absence of significant change in the ownership and control structures of socialized enterprises.

short term, without significant changes in the ownership structure the supply response may be limited. In this context, restructuring would tend to boost the already high levels of unemployment (by Eastern European standards), increasing them even further, and raising questions regarding the political sustainability of the reform program.

(ii) As regards wages, they showed a significant degree of downward flexibility --in real terms-- at the beginning of the year when firms faced a severe supply shock coupled with very tight credit conditions. However, from March on, wages began to increase faster than prices, most likely contributing to the persistence of inflation. In addition, the existing wage policy scheme proved itself to be quite ineffective, if not actually damaging. The data show that the wage policy was never binding, except in November and December 1990. In the first half of the year wages were well below the ceilings, while in the second they were consistently above. In fact, one could argue that in the second half of the year wage policy served more as a "floor" for wage increases than as a constraint. As regards the future, the wage policy mechanism was only marginally modified for 1991 and since it is still based on a monthly indexation scheme, is likely to impede a rapid decline in inflation in 1991.

References

- Blanchard O.J. and R. Layard (1991), "Post-stabilization inflation in Poland," mimeo.
- Calvo G. and F. Coricelli (1991), "Stabilizing a previously centrally planned economy: Poland 1990," Economic Policy, forthcoming 1992.
- Commander S., F. Coricelli and K. Staher (1991), "Wages and employment in the transition to a market economy," PRE Working Paper Series, WPS 736, The World Bank.
- Coricelli F., L. de la Calle and B. Pinto (1990), "Macroeconomic policies in the second phase of the reform program," The World bank, mimeo.
- Gora M. and H. Lehmann (1991), "Flow and stock analysis of Polish unemployment: January 1990-May 1991," Centre for Economic Performance, London School of Economics, Working Paper No. 129
- Hinds M. (1990), "Issues in the introduction of market forces in Eastern European socialist economies," in Commander S. (ed), Managing inflation in socialist economies in transition, The World Bank.

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