Wage Policy during the Transition to a Market Economy:
Poland 1990–91

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Poland 1990–91

edited by
Fabrizio Coricelli
Ana Revenga

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Washington, D.C.
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Foreword

This paper is a product of Development Economics (DEC) and contains contributions by academic experts and economists from the World Bank. The paper discusses the workings of incomes policy, its rationale and its effects on wages and unemployment, in Poland during the initial stages of the transition to a market economy. It analyzes the role of incomes policy within the overall program of economic reforms started in Poland in January 1990. The paper evaluates in detail the design of wage policy and provides recommendations for an effective scheme. The Polish experience can provide important lessons to other countries, in Eastern Europe and in the former Soviet Union, which are carrying out programs of market-oriented reforms.

Lawrence Summers
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Part 1

"Wage Policy during the Transition to a Market Economy: The Case of Poland"
Overview

Junaid Ahmad, Fabrizio Coricelli and Ana Revenga *

* The World Bank
I. **Introduction**

The centralized economies of Eastern Europe have initiated a series of ambitious reforms to rapidly create the foundations of a market economy. Foremost amongst them, and perhaps most radical, is the program adopted by Poland: almost overnight prices were de-controlled and subsidies reduced, barriers to international trade were removed and internal currency convertibility was established. The thrust of these measures was to undo the legacy of command planning and implement a market economy. However, the labor market has remained largely under the purview of state control. In particular, Poland and other Eastern European economies have continued to use some form of incomes policy to control the movement of wages in the economy.

As in stabilization programs of the "heterodox" type, the use of wage policies in Eastern Europe is motivated by macro-economic concerns. The objective of the wage policy is simple: to break any inflationary inertia and prevent a cost-push spiral from emerging. In addition to this macroeconomic concern, wage policies in Reforming Socialist Economies (RSEs) have a key microeconomic rationale, namely to substitute in the bargaining process for the absent player, the owner of capital. With extensive state ownership of enterprises, wage pressure at the firm level is not checked by any counterpart to labor. In this context, the wage policy can function to strengthen the position of management in the bargaining over wages.

This paper is a preliminary assessment of the workings of the incomes policy in Poland during the transition towards a market economy. Section I provides a summary of the role of incomes policies in Western economies and suggests that there maybe a stronger case for implementing similar policies in the reforming socialized economies (RSEs). Section II discusses the main issues relating to the design of an incomes policy. Section III reviews the Polish wage policy in comparison with those adopted in three other reforming socialist countries. Section IV briefly reviews the papers collected in this volume. Section V contains concluding comments and recommendations about a possible wage policy scheme for a Poland-type economy.

II. **Incomes Policy: Rationale**

Since the end of World War II, virtually all Western countries have experimented with some form of incomes policy. While some, mainly European countries, have institutionalized a permanent form of incomes policy, others have used it selectively during various phases of their history. The United States, for example, experimented with different forms of incomes policy during the sixties and seventies.\(^1\) In general, incomes policies, are designed to meet two objectives: (1) prevent the growth of cost-push inflation and (2) reduce the unemployment and output cost of disinflation.

Implicit in these objectives is the assumption that in addition to excess demand, inflation is also caused, and certainly exacerbated by what Tobin has labelled inertia and conflict.\(^2\) Inertial inflation is inherited from the past, very often from past excess-demand inflation or exogenous price shocks, and perpetuated through contracts and commitments with respect to wages between employers

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\(^1\) Notable amongst them were the Kennedy guide-posts during the sixties and the Nixon wage-price controls during 1971-73. In 1978-79 the Carter administration also implemented wage-price controls.

and labor representatives. Conflict inflation, on the other hand, assumes that the different actors in the economy attempt and have the bargaining power to gain larger share of the economy by claiming higher money incomes: a conflict which engenders inflation.\(^3\)

In this context, incomes policies are designed to off-set the "inflationary biases" of existing price- and wage-setting institutions and prevent the rise of inertial inflation and reduce the unemployment cost of disinflation.

1. **Types of Incomes Policies**

Three broad approaches can be discerned in the evolution of incomes policy in market economies: guidelines, social contracts, and tax-incentive policies (TIPs).\(^4\) The guidelines approach provides specific norms for the growth of nominal wages and prices and was designed to reduce inflation through symmetrical reductions in money wages and prices. They ranged from wage and price freeze to norms which required that average wage growth not exceed the average growth of labor productivity. Exceptions were often provided in the guidelines to allow for allocational flexibility, encourage plant level agreements to raise productivity, and achieve distributional goals.

The social contract approach involves the government, employers, and labor in a multi-party agreement to restrain wage growth. Flannagan (1990) suggests that in many western economies the move towards social contracts was inevitable. Guidelines as a means for implementing incomes policy effectively shifted the risk associated with policy failures onto labor and management. Without the government assuming some of the risk of policy failure through some form of institutional compensation for wage restraints, incomes policies implemented through simple guidelines would not be effective.

Austria and Sweden are good examples of countries where incomes policy has been implemented through a social contract. These examples suggest that a social contract may have the best chance of being implemented where the number of parties to the policy negotiations are small and the society is characterized by a high degree of social consensus.

The tax-based incomes policies (TIPs) is designed to provide incentives for firms to follow the wage and price norms by penalizing deviations (Wallich and Weintruab, for example, suggested extra corporate taxes for transgressions) or rewarding compliance (Arthur Okun's famous "carrot approach to incomes policy). TIPs seem more suited for economies where wage determination is decentralized. Table 1 summarizes the different types of TIPs that have been proposed. While most have not been implemented, France and Belgium provide interesting examples of temporary applications of TIPs.

\(^3\) Ibid.

\(^4\) This section draws on Flanagan (1991).
Table 1. Alternative TIP Proposals

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<th>Fiscal Macro Effect</th>
<th>“Price” Controlled</th>
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<tr>
<td>Weighted average of past 3 years</td>
<td>Decreased over 5-year period to 2-3 percent</td>
<td>Firms &gt; $500,000 net sales</td>
<td>Proportional or progressive</td>
<td>Value-added tax or separate excise tax</td>
<td>Value added per unit input</td>
<td>Neutral</td>
<td>1978</td>
</tr>
<tr>
<td>Wage rate of equivalent quarter in previous year</td>
<td>Zero inflation norm</td>
<td>All firms</td>
<td>Proportional</td>
<td>Social Security tax</td>
<td>Wage rate, dividends</td>
<td>Neutral</td>
<td>1982</td>
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<td>Average of past 3 years</td>
<td>5 percent wages, 4 percent prices, decreasing to 2-3 percent wages, 0 percent prices</td>
<td>Hurdle, then proportional</td>
<td>Corporate largest 2,000 corporations</td>
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<td>3 percent subsidy hurdle, 5 percent penalty hurdle</td>
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<td>Wage rate</td>
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2. The Experience of Market Economies

How have incomes policies fared? In summarizing some of the empirical literature of the French experience, Malinvaud (1990) concludes that the impact of incomes policies has "typically been found to be smaller and more temporary than intended." This comment reflects the general opinion of many economists that most incomes policies have collapsed after a period of initial success. What accounts for such dismal results?

First, incomes policies have often been used as a substitute for the necessary correction of the "fundamentals." Various country experiences have shown that incomes policies cannot be used to control inflation caused by excess demand in the economy. Under such conditions, incomes policies have to be a complement to the elimination of fiscal and monetary imbalances. Secondly, incomes policies may become ineffective in presence of large external shocks which require real adjustments in the economy. The OPEC oil shocks, for example, may have played a substantial role in undermining the Nixon price controls. Thirdly, experience has shown that in a decentralized bargaining system unions have all the incentives not to comply with guidelines for wage restraints: by "free-riding" on

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5 Malinvaud (1990), p. 333.

6 Flanagan (1991) summarizes the experience of Western economies experimenting with incomes policies in the sixties by concluding that "although there were some instances of short term restraint of increases in money wages, [they] were often terminated by waves of wildcat strikes wage explosions and severe disruptions of national industrial relations systems. There was even less evidence of short-term price restraint in several countries, so the net effect of incomes policies was a reduction in real wages." Also see Colander (1986).
the compliance of others, individual unions can increase their real and relative wages. Fourthly, as Tobin suggests, incomes policies have often been lifted before they had "tamed inflationary psychology."8

A general assessment of incomes policies, however, must be made relative to other alternatives. The use of monetary and fiscal policy to fight inflation may have severe recessionary consequences in presence of rigidities in the price-wage setting. Tobin (1986, p338) suggests that "[While] we have only unpleasant choices [in fighting inflation] there must be more rational solutions than recession and unemployment."9 Incomes polices may thus help in reducing the costs of disinflation, but as the caveats mentioned above suggest, their effectiveness is predicated on the timing and on the circumstances of their use. In particular, the effectiveness of incomes policy is dependent on the degree of consensus that can be garnered to support its implementation—a point that is of great import Eastern European economies and elaborated in the next section.

The above discussion has been affected mainly by experiences in developed countries. However, also in the stabilization programs of developing countries governments could not resist to the temptation of trying the instrument of incomes policies, hoping to achieve price stabilization at lower costs. "Heterodox" programs gained popularity but have more than often failed. More recently, the role of incomes policies have been seen not as much as a tool for improving directly the inflation-unemployment trade-off, but rather an additional "anchor" which can usefully complement exchange rate and monetary anchors to strengthen the credibility of stabilization programs (Bruno). This consideration is particularly important in the stabilization program of Poland, where a package involving multiple anchors was adopted in January 1990.

The Mexican stabilization program illustrates a successful use of incomes policies in a developing country context. In 1987, Mexico embarked on an ambitious economic reform program that has since been touted as an example for other countries in the region. The key to this success was a "heterodox" stabilization program combining a dramatic (and very orthodox) fiscal retrenchment with extensive price and wage controls. Political support was engineered through a social contract known as the PACTO (renamed the PECE in 1989). In return for a commitment to strict fiscal discipline, labor and business agreed to temporary controls on wages and selected prices. This approach proved extremely successful, as inflation was reduced from close to 200% per year to a projected rate of less than 20% for 1991. At present, only 10% of private production prices remain subject to regulation, while inflation continues to fall.

Overall, the experience of market economies with incomes policies is mixed. Nevertheless, we argue in the next section that the case for incomes policies in reforming socialist economies is compelling. In addition to the arguments put forward in the case of market economies, there are three main specific reasons which call for the adoption of incomes policies in reforming socialist economies.

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7 Flanagan (1991). The author concludes that "when all unions recognize and respond to these incentives non-compliance understandably becomes the norm." In fact this is an argument for using TIP in a decentralized setting. However, this should not be taken to imply that incomes policy is more effectively implemented in a centralized bargaining structure. Centralized structures often lead to wage-drifts that can undermine the effectiveness of incomes policies. (See later discussion).


economies. First, incomes policies are a substitute for an absent player defending the long-term interest of the firm in the bargaining process. Second, incomes policies can work as a barrier against incentives for decapitalization of the firms, which may arise as a result of uncertainty on future ownership and control of firms. Finally, restraints on wage pressures coming from unemployment will only strengthen over time, as most reforming socialist countries start their stabilization-cum-reform programs with practically zero unemployment.

3. Eastern Europe: The Need for an Incomes Policy

Most of the reforming socialist economies in Eastern Europe have liberalized output prices while maintaining some form of control over wage growth. While the objective remains, as in the case of the Western economies, to break the momentum of inflationary expectations and prevent the emergence of cost-push inflation, the justification for an incomes policy in RSEs may indeed be stronger for two main reasons: (1) with pervasive state ownership of enterprises, wage pressure at the firm level is not checked by any counterpart to labor—ie there is no advocate for capital; and (2) coming from a "full employment" regime, there is no intrinsic moderating force on wages, no perception of a Phillips curve.

In economies undergoing rapid transition, as exemplified by the Polish economy, the situation may be further exacerbated through several mechanisms. First, decontrol of prices and subsidy removal may well trigger extremely large pressures for compensatory wage increases thus undermining the process of stabilizing the economy. Relative price changes would therefore eventually lead to general price increases. Second, confronted with the possibility of privatization or even commercialization, workers may face the perverse incentive to "decapitalize" the firms: resources needed to maintain the capital stock, and to carry out new investments, may instead be paid out in higher wages. By substituting for the lack of owners, a wage policy is assumed to act as a deterrent against both decapitalization of firms and inflationary spirals of wage pressures.

In addition, wage policies may be an effective anchor to strengthen the credibility of governments and guarantee the sustainability of exchange rate and/or monetary anchors. The use of multiple anchors, on the other hand, would seem to suggest a contradiction whereby the system is over determined or falls into a disequilibrium if the coordinated choice of nominal targets is not exactly right. This conclusion however rests on the assumption of full certainty—which is clearly not applicable to Poland or the other Eastern European economies. The analogy suggested by Bruno is quite applicable in this case: given the potential benefits of success and high risks of failure of a stabilization program, "tying ones boat to several anchors would seem a prudent policy as would be portfolio diversification of risk in the optimal menu of risky assets." Wage policy may provide this option to economies in transition.

The use of wage policy in Eastern Europe is, however, not new. Poland, for example, during the last decade has experimented with several forms of wage policies. In summarizing this experience for Poland, Gora (1991) suggests that the impact of these polices have been rather limited. Lax financial discipline, provisions of several exemptions and the influence of the politically powerful

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11 p. 25.
workers' council have severely undermined the effectiveness of wage policies. This assessment suggests important lessons for the use of wage policy in the current context of Poland.

Clearly wage policy cannot be sustained if workers and managers of state-owned enterprises perceive that the government will be unable to impose a hard-budget constraint on the firm. If the threat of budget discipline is not credible, wage drift will become the norm. More importantly, wage policy cannot be used as a substitute for resolving the ownership issue. Reforms in corporate governance need to be implemented which strengthen's the role of the manager during the transition. Ultimately, however, the process of privatization needs to be accelerated.

Finally, wage policy cannot be sustained without the emergence of some form of national consensus between labor, employers and government. In the short run, the initial conditions of excess demand and shortages that characterized the socialized economies required an initial downward adjustment of real wages. Bruno and Sachs (1985) may well be correct in arguing that in times of economic uncertainty which require such adjustments, macroeconomic policies stand a greater chance of success if there is national consensus. In addition, forging a greater degree of consensus at this stage may also ease the formation of a bargaining structure for the medium run that facilitates the implementation of macro-economic policies.

The issue of creating a more consensual bargaining structure in the medium run raises the question of whether incomes policies should be a transitory or permanent aspect of economic management in RSEs. Clearly as long as product and labor markets remain non-competitive in these economies, there will be a role for some form of incomes policy. In other words, as these economies become more market-oriented the justification for continuing an incomes policy disappears. The experience of Western economies, however, have led many to argue that even in market economies incomes policy may be needed on a permanent basis. This issue is far from resolved and has often generated much heated debate. Regardless of one's views on this issue, the argument for fostering a more consensual bargaining structure between government, employers and labor to facilitate the implementation of macro-economic policies remains valid. Whether the RSEs will be able to create such a structure in the long run remains to be seen. But, as emphasized before, without such an effort at national consensus incomes policies run the risk of being ineffective.

A centralized wage policy may be needed to restrain inflationary pressures, avoid a depletion of capital stock, and ultimately lower aggregate unemployment. However, maintaining tight wage controls will tend to perpetuate the distorted wage structure and its negative effects on incentives and productivity. The need to balance these two opposing effects places great pressures on the

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12 Papers by Lane and Jackman in this volume describe the conditions under which an incomes policy would no longer be required in RSEs. These include the emergence of efficient capital markets, greater mobility in the labor market induced by reforms in the housing sector, tax reform, greater progress in the privatization process, and changes in corporate governance of existing state owned enterprises.


14 Barrow (1974) commented on a proposal for incomes policy by saying "I honestly have no idea what sort of private market failure or externality is supposed to rationalize this sort of government intervention in the market process." Equally forcefully, Okun (1981) has defended the use of incomes policy instead of simply relying on monetary stringency to combat inflation: "I would be morally outraged by a local ordinance designed to promote fire prevention by prohibiting the fire department from responding to any alarms in a month.... A democratic society must have better cooperative ways to instil such socially desirable efforts than by threat and fear." (Quoted in Tobin (1989)).
appropriate design of wage policies, often leading to what Lane has labelled a "trilemma": attempts to overcome the inherent rigidity of incomes policy by introducing some flexibility increases the risk of weakening controls which in turn re-initiates the use of greater control.

III. The Design of Wage Policies

Governments in RSEs have all adopted some form of wage policies, and this, as argued in the previous section, was the appropriate choice in the context of these economies. However, governments had to design specific forms of wage policies. In this regard, the choices varied across countries, sometimes quite substantially. Before reviewing the various schemes, we survey six different dimensions of wage policy design.

(1) Instrument for controlling wages: wage bill versus average wage. The wage bill penalizes growing firms, implying lower average wages for firms expanding the labor force. Looking at the other side of the coin, the control of the wage bill is an incentive to reduce the labor force and increase the average wage of those who remain employed. The control of the average wage is neutral in terms of growing and contracting firms. In the context of market economies it would be hard to justify the control of the wage bill, as this would correspond to a tax on employment. In the context of RSEs there is a widespread view that the wage bill is the right target. A decline in employment is indeed considered as a welcome outcome, corresponding to a reduction of the over-manning typical of the full employment regime in socialist economies.

This argument presents some problems. In particular, it is not clear that the incentive to firing will result in an efficient reorganization of employment. Given the present misallocation of workers among jobs and strong insider power, taxing the wage bill may simply result in firing the weak segments of the work-force at the advantage of higher wages for those enjoying monopoly power. Moreover, with the elimination of soft-budget constraints there should be sufficient incentives against hoarding of redundant workers. Finally, in presence of an already high unemployment rate, the case for a pro-unemployment bias in the wage policy appears rather weak. Therefore, given that the main objective of the wage policy is controlling inflation, and eventually, avoiding the "decapitalization" of firms, the average wage should be the instrument.

Contrary to the wage bill, the average wage does not penalize expanding firms and, by constraining the wage per worker in the state sector it indirectly constrains wages in the private sector, which are likely set in relation with wages in the state sector. As a result, a lower average wage and higher employment in the whole economy should arise.

(2) Nominal or real anchors: the indexation mechanism. There is ample evidence that backward indexation may seriously jeopardize the rapid decline in inflation. Adopting a rigid real wage anchor, through a high degree of indexation, will determine a price-wage spiral in the presence of mechanical cost-plus pricing rules, which seem to characterize economies like Poland. The elimination of indexation is crucial when exchange rate policy becomes more active. On the other hand, there are real political and social constraints on the downward flexibility of real wages. One solution is to determine a wage path in relation to expected inflation. In this way, there would be no inertia arising from backward indexation, and at the same time a certain level of real wage will be announced. This type of scheme has the problem of being open to large forecast error, which can then trigger workers'
protest. Clauses ensuring that workers will be compensated if ex-post inflation proves to be higher than expected can help in solving this problem.\textsuperscript{15}

Another issue is the length of the interval for wage adjustments. The longer the interval the smaller is the transmission of temporary price-level jumps to sustained inflation. In countries like Poland affected by large price shocks the length of the interval is a particularly relevant issue.

Finally, the literature on indexation has debated the various price indices that should be selected in the indexation scheme. One main point is that price increases due to a deterioration of the terms of trade should not be included in the price index. Indeed, a terms of trade deterioration implies a loss of real income which should, at least in part be absorbed by wages, which account for a large share of GDP.

To summarize, backward indexation should be eliminated. Wages should be linked to expected or announced inflation path. The length of the interval for adjustment should be at least three months. Clauses ensuring compensation in case inflation is higher than anticipated should be included in the wage scheme.

(3) **Linkages to firm-level profitability or other indicators.** Linking wage increases to the performance of enterprises would provide, \textit{prima facie}, a way of reducing the microeconomic inefficiencies of the centralized wage control. Accordingly, linkages between wages and enterprise profitability have been suggested and introduced in some instances (Poland, Hungary). There are three types of objections against these linkages. First, in the chaotic situation of the economies in transition, profitability is hardly an indicator of efficiency. Accounting problems, monopoly positions, financial relations inherited from the past, all contribute to weaken the relation between profitability and efficiency. Second, linking wage increases to enterprise profitability may jeopardize the effectiveness of the wage policy as an \textit{anti-inflationary} tool. Indeed, relative wage considerations may induce imitation processes by low-productivity firms which aim at increasing wages in line with those of higher-productivity firms. Finally, it is uncertain that "productivity bonuses" will induce greater effort. Centrally planned economies had extensive and disappointing experience with productivity-linked wages. Indeed, when the wage structure within the firm is extremely compressed, the allocation of workers among tasks is often irrational with respect to the workers' skills, and there are no credible threats of firing in case of shirking, it is unlikely that linking wages to productivity will extract higher effort.

(4) **Coverage: state versus private firms.** Exempting private enterprises from the wage policy will allow them to attract labor, and therefore, improve the allocation of labor resources through the economy. However, rapid wage growth in the private sector is also likely to put pressure on state enterprises to increase wages in tandem, and might generate social discontent among those who get left behind. Finally, the ownership, state against private, cannot be the only criterion for establishing the coverage of the wage control. Monopolies in the non-trade sector should be subject to the policy even if privately owned.

Therefore, the policy should be limited to state-owned firms and to private firms operating in sectors protected from international competition. Private firms should be let free to set wages.

\textsuperscript{15} Similar clauses should be contemplated in case actual inflation is lower than expected.
according to efficiency considerations, which can hardly affect wage setting in state-owned firms under the control of workers' councils.

(5) **Enforcement: tax-based vs. consensus based.** The experience of Western market economies and of Mexico suggests that consensus-based incomes policies are likely to be more successful. However, in a highly decentralized bargaining setting -- as in the U.S. or Poland -- this approach may prove impossible. Furthermore, in an environment where unions are competing for constituencies -- as in Spain in the mid 1970s or Poland today -- there are strong incentives for unions to deviate from consensus-based agreements. In these cases, some combination of consensus and tax-based may work better. Consensus, however, can hardly be bought for free. As argued by Tarantelli (1986) incomes policies involve an exchange of "political goods." The "carrot" has often taken the form of price controls, improvements in working conditions, protection of employment, safety nets. Most of these instruments are not feasible in countries like Poland, embarking in a full-fledged price liberalization and severely constrained on the fiscal side. However, there is a way in which the wage policy could be sold as a positive mechanism, not a punitive tax. In particular, linking the distribution of shares to workers--which is anyhow contemplated in the privatization schemes of Poland--to compliance with wage guidelines can provide such a positive policy. As argued in Commander, Coricelli and Staher (1991), this can also eliminate the perverse incentives for decapitalization of firms which arise in a period of uncertainty on the future ownership and control of enterprises.

Enforcement of these policies can be quite complex in RSEs, not because of the administrative requirements involved, but because of the difficulty of credibly maintaining hard-budget constraints. Thus, a main point is that incomes policies will be ineffective, and possibly counterproductive, without underlying fiscal restraint. If workers perceive that the government financial conditions rely mainly on tax income from enterprises and that the probability the government will enforce widespread bankruptcies is very low, a situation of de facto soft budget constraints will resurface. The fact that many firms incurred 200% to 500% taxes on excessive wage increases in Poland in the second half of 1990 provides some evidence of such a phenomenon (see Coricelli and Revenga, and Pinto in this volume).

Thus, a consensus-based approach should at least be tried. Tax penalties can be maintained, perhaps as a flat rate slightly above the corporate income tax. A positive element, in the form of free distribution of shares to workers in firms complying with the wage agreement should be introduced. It is unlikely that wage policies can be endured without some form of workers' participation. The latter is also crucial to impede decapitalization of firms.

(6) **When should the incomes policies be abolished.** The criterion seems to be the development of the private sector. With enough consensus, actually, the government can step out early on from the wage setting process. Hungary is indeed planning to free wage setting as early as in 1992.

The wage policy should be seen as a temporary policy. It should be abandoned when the private sector share of the economy reaches a level--say above 50%--which ensures that some efficient form of bargaining can take place. A choice on the type of bargaining arrangements Poland wishes to adopt is till relevant. However, options on centralized versus decentralized setting are not entirely free, as they depend on the number of trade unions and of industrialist federations, and on the degree of consensus among them.
IV. The Wage Policy in Poland (1990-91) and in Other RSEs

The wage policy in 1990-1991 in Poland and in other RSEs

The reforming socialist economies—Bulgaria, Czechoslovakia, Hungary and Poland—have all begun the process of liberalizing their labor markets, although the pace and scope of the reforms varies substantially between the different countries. Hungary has been gradually pursuing labor market reform for a few years. In 1989, for example, Hungary eliminated the mandatory wage scales which had established the allowable increases in base wages for each sector/skill category of workers. Poland initiated its reforms later, but has moved more rapidly. In 1990, Poland introduced sweeping changes in its labor regulations so as to allow free determination of individual wages within the enterprise (subject to an overall wage bill ceiling) and the (relatively) free dismissal of workers. Box 1 illustrates the various wage policy schemes implemented since the start of the reform program in January 1990. Czechoslovakia and Bulgaria have only just begun to make progress in liberalizing their labor markets, but are clearly moving in that direction.

Box 1: Wage Policy in Poland

<table>
<thead>
<tr>
<th>Design</th>
<th>Past 16</th>
<th>Current</th>
<th>Proposed 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ceiling on wage bill</td>
<td>ceiling on average wages</td>
<td>ceiling on average wages</td>
<td></td>
</tr>
<tr>
<td>*partial indexation to inflation on monthly basis</td>
<td>partial indexation to inflation on monthly basis</td>
<td>partial indexation to inflation on monthly basis</td>
<td></td>
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<tr>
<td>*carry forward of unused norm</td>
<td>carry forward of unused norm</td>
<td>carry forward of unused norm</td>
<td></td>
</tr>
<tr>
<td>*tax-based</td>
<td>tax based</td>
<td>tax based</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Past 16</th>
<th>Current</th>
<th>Proposed 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>*all sectors</td>
<td>only SOE</td>
<td>all sectors</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exemptions</th>
<th>Past 16</th>
<th>Current</th>
<th>Proposed 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>*none</td>
<td>none 18</td>
<td>based on firm-level profit indicators.</td>
<td></td>
</tr>
</tbody>
</table>

16 Jan 1990-Dec 1990

17 Proposed by new government.

18 Exemptions based on firm-level profitability was partially introduced in the third quarter of 1991.
While all the countries face a common task, and share to a large extent a common background, institutions and approaches to wage policy and labor market reform do vary significantly from country to country.

Table 2 summarizes the different wage control mechanisms currently in place in the four reforming socialist economies that are the subject of this study. Each of the countries, its choice of wage scheme, and its main institutional features are discussed briefly below. Table 2 emphasizes the continued and widespread use of some form of wage controls in all four countries. These controls share some common features: all are tax-based, most have an explicit link to firm profitability, and most exempt the embryonic private sector. They differ most substantially in what is controlled—the total wage bill vs. the average wage vs. individual wages—and in the frequency of indexation.

Table 2: Wage Policy in Eastern Europe

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>Equal Absolute</td>
<td>6 mos. (adj. Q2)</td>
<td>-39% / -55% Q1 / -50% all 1991 (none / +1%)</td>
<td>no</td>
<td>no</td>
<td>-</td>
<td>exempt</td>
<td>(a)</td>
</tr>
<tr>
<td>CSFR</td>
<td>Ceiling on Wage Bill</td>
<td>Q</td>
<td>-10%/-20% (Q2) / -10% (none / -3%)</td>
<td>yes</td>
<td>yes</td>
<td>200% if &gt; 3%</td>
<td>exempt</td>
<td>(b)</td>
</tr>
<tr>
<td>Hungary</td>
<td>Ceiling on Wage Bill</td>
<td>Y</td>
<td>-10%/-7% (Q2) / -3% (-3%/-3%)</td>
<td>yes</td>
<td>yes</td>
<td>50%</td>
<td>exempt</td>
<td>(c)</td>
</tr>
<tr>
<td>Poland</td>
<td>Indexation of Average Wage in 1991 (wage bill in 1990)</td>
<td>M</td>
<td>+3%/-15% (Q3) / -30% / -30%</td>
<td>yes</td>
<td>yes</td>
<td>100% if &lt; 3%</td>
<td>exempt</td>
<td>(d)</td>
</tr>
</tbody>
</table>

(a) For government employees, wages will be controlled directly. For state enterprises and cooperatives, control will occur via a ceiling on the total wage bill. This ceiling will provide a margin for wage increases above the absolute minimum wage.
(b) The wage bill includes bonuses. A wage-tariff system still applies.
(c) Mandatory wage scale removed in January 1989. Thereafter, most enterprises (except some in services) free to set individual wages subject to an overall wage bill ceiling related to enterprise performance. For 1990, increases of the wage bill above value added were taxed at the corporate tax rate. The corporate profit tax rate. For 1991, no taxes on increases up to 18%. Between 18 and 28% the portion of increase above 18% taxed at the corporate tax rate. Above 28% the whole increase taxed. Further incentive for labor shedding is given by exempting wage increases up to 5% when employment is reduced.
(d) Commercialized firms are entitled to partial exemptions. Mandatory wage scales eliminated in January 1989.

The individual country approaches also differ, more fundamentally, in the varying degrees of consensus that exists among the key actors—government, trade unions and employers—as regards the income policy. In Bulgaria, Czechoslovakia and Hungary the choice of wage policy was a result of a general agreement among the main trade unions, employer associations and the authorities. These countries have clearly opted for a corporatist/centralized approach along the lines of Austria or Sweden. This was possible, primarily, because unions at the local level are weak and enjoy little popularity. In Poland, on the other hand, there is no equivalent tripartite agreement—the wage policy
is commonly perceived as an imposition of the government. It is precisely in Poland where the local trade unions are the strongest, and where the worker councils exert a most direct control over firm decisions. A consensual approach in this setting was viewed by most Polish experts as impossible.

The political credibility and strength of the trade union movement, and the balance of power between local and national unions are likely to be key factors in shaping the macro success of the move to a market economy. These institutional features will certainly constrain the available policy options, shape developments in the labor market, and ultimately determine the competitiveness the economy. It is in this area where the differences between the CEE nations are most marked, calling for different approaches to labor market policy in different settings. Bulgaria, Czechoslovakia and Hungary have, so far, been able to maintain a centralized agreement among unions, employers and the government. It remains to be seen whether the consensus can be maintained as the reforms progress, and the adjustment costs become more burdensome, but certainly, for now, it seems to be contributing to maintaining social peace.

V. A Summary of the Papers

The papers in this collection highlight three dimensions of wage policy: macroeconomic stabilization, institutional setting regarding ownership and control of enterprises, political economy issues concerning the consensus on the wage policy. The focus is on the macroeconomic aspects. Issues relating to social safety nets, although crucial for a complete analysis of incomes policies, are not discussed here.

The papers attempt to provide a framework in which the experience of wage controls in Poland can be assessed. This assessment should also provide insights relevant for other reforming socialist economies.

The papers address various facets of wage policy. Coricelli and Revenga provide an overview of wage, employment and unemployment developments in Poland since the start of the stabilization program. They highlight some of the key features of the wage policy adopted and of its effects on wage, price and employment developments. They also critically review the two wage policy schemes implemented so far and suggest some alternatives.

Olivier Blanchard and Richard Layard discuss the role of wages in the determination of inflation in Poland during 1990. They distinguish two sources of shocks in the inflationary process within a framework characterized by mark-up pricing. The two sources are "price" and "wage" shocks. They conclude that overall the wage policy has been successful in moderating wage growth during 1990. However, they identify two different periods in 1990. In the first half, price shocks, in the form of administrative price changes, initial devaluation of the exchange rate and possibly the increase in interest rates, were the dominant factor behind inflation. In contrast, in the second half, wage shocks, thus wage pressure contributed to inflation. They also argue that higher financial indexation and lower wage indexation could have contained inflation at the beginning of 1990. For the medium run they conclude that a phasing out of the incomes policy is possible only when ownership of firms has been clearly defined allowing for a real bargaining between representative of the interests of labor and representatives of the interest of capital.

Timothy Lane discusses the design, the coverage and the enforcement of wage controls in a reforming socialist economy like Poland. He addresses in more detail some of the themes discussed
in both Coricelli and Revenga and Blanchard and Layard. His main conclusion is that any effective system of wage control is bound to have distortionary effects. Since the case for wage controls in RSEs is much stronger than in market economies, because of the peculiar ownership-control structure and the absence of labor markets, wage controls cannot be abandoned during the first phase of reforms. The real solution, Lane argues, for minimizing the distortions of these policies is to proceed fast on ownership reform and on the creation of a more fluid labor market. These reforms will allow the phasing out of wage controls.

Jackman addresses issues relating to medium-run models for wage bargaining. He argues that the present system of wage controls is unsustainable in the medium to the long run, because (i) it is imposed by the government, rather than consensus-based, and (ii) it obstructs changes in relative wages. However, wage controls cannot be abandoned in the early stages of reform. Even when privatization will have taken hold, Jackman argues, there would be the need for some government intervention in the wage setting process. Indeed, rent-seeking behaviors are very powerful in the labor markets of market economies. There are two basic approaches. One is to set up corporatist institutions for a centralized and consensus based wage bargaining process. The second is to strengthen the forces of competition and reducing the bargaining power of the players involved in wage bargaining. Given the long-term objectives of creating a market economy, the large size of the country and the fragmented political and social structure in Poland, Jackman concludes that for Poland the "competitive" avenue, along the lines of the labor market in the United States is more promising than a corporatist approach.

Pinto, drawing on a sample of Polish state-owned enterprises, provides a microeconomic perspective on the effectiveness of the wage policy in Poland. His analysis confirms the main points derived from macroeconomic data of the other papers in this volume. However, Pinto adds a more solid empirical evidence on the determinants of wage behavior and links this behavior to the ownership-control structure of Polish enterprises.
References


Wages and Unemployment in Poland: Recent Developments and Policy Issues

Fabrizio Coricelli and Ana Revenga *

* The World Bank
I. Introduction

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. As projected, the stabilization program also resulted in a sharp decline in real wages.

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.

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.

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

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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.
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).

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 following year.⁴

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.

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.

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

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"

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.

A. Nominal variables after stabilization

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, 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.

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.

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.
B. Real variables: output and employment

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.  

III. Labor Market Developments in 1990 and early 1991

A. Structural and Institutional Background

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 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.

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.  

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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.

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.
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 fairly 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

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 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. 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)).

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

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.

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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)
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 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—i.e., 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.

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%. 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.

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. 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.

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.

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.

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.
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 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.

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

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)

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

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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.
second half of the year. This association, however, does not imply any causality, as credit expansion might have simply accommodated rather than caused the increase in real wages.\textsuperscript{12} Moreover, evidence presented in Charts 5a and 5b show that in the second half of 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

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).

\textsuperscript{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.
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 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

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.

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 -- i.e. relative to Jan-May 1990 -- employment had fallen by as much as 7.2%.

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

Table 4 presents changes in the main economic variables by sector, for the year as a whole (i.e. 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.

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

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

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.

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.

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.

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.
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.

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: 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 increased import competition in a sector and output decline.

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

Strong import competition may have also acted to limit the ability of import-competing firms to increase prices (moderating their degree of monopoly power), 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

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

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.

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.
increase even beyond 1991. Furthermore, widespread restructuring of the economy (with firms and entire sectors closing down) and substantial privatization could raise the number of unemployed even further, albeit temporarily.

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.

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. 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.

B. Wage Policy in 1991

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. 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.

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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.

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.
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 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).

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.

Point (3) introduces an extremely negative mechanism. The profit ratio selected is defined as:

$\frac{\text{nominal profits} + \text{wages(without bonuses)}}{\text{wages (without bonuses)}}$

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.\(^9\) 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.\(^{20}\)

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 beginning of 1991 in connection with the large

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\(^9\) 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.
planned increases in administrative prices. 21

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.

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.

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 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

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. 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 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

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.

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


Chart 1. Prices, Wages, Exchange Rate
(monthly changes)
Poland: Unemployment Rate, 1990-91

Source: Bulletin Statistyczny

Poland: Unemployment Rate, 1990-91

Chart 2
Chart 3: Poland
Employment and Production in Socialized Sectors, 1989-91

Source: GUS, BS
a) effective working time
b) comparable working time
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
Profit=Sales-Costs-Subs-Ttax
Profit Rate=Profit/Sales
Chart 6a: Wage policy in 1990
(in thousands zlotys)

Actual monthly wage

Monthly norm
Chart 6b: Wage Policy
(in thousands zlotys per worker)
## Table 1:
REGISTERED UNEMPLOYMENT, I-XII 1990

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Source: GUS, Bluletyn Statystyczny
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Source: GUS, Biuletyn Statystyczny
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UNEMPLOYMENT BY REGION

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a) Total employment was 17,558,000 in 1989
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<th>% Change Dec-99 to Dec-00 a</th>
<th>% Change Jan-00 to May-01 c</th>
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SOURCE: INFORMACJA STATYSTYCZNA VARIOUS ISSUES

a) Relative to Dec 1999 levels
b) Deflated by Index of Prices of Production Sold
c) Relative to Jan 1990 levels
### Table 4:
Poland: Sectoral Data, 1990
Jan–Dec 89 = 100

<table>
<thead>
<tr>
<th>Sector</th>
<th>Employment</th>
<th>Productivity</th>
<th>Production</th>
<th>Producer Prices</th>
<th>Real Profit</th>
<th>Product wage</th>
<th>Consumer wage</th>
<th>Nominal wages</th>
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<td>80.00</td>
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1/ Due to unavailability of data on producer prices by sectors for December 1990, the producer wage refers to January–November.
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<td>90.6</td>
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<td>18.87</td>
<td>8.09</td>
<td>19.48</td>
</tr>
<tr>
<td><strong>Coeff. of variation, ln %</strong></td>
<td>8.73</td>
<td>9.04</td>
<td>10.59</td>
<td>15.80</td>
<td>217.03</td>
<td>13.30</td>
<td>7.75</td>
<td>7.75</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Sector</th>
<th>Employment</th>
<th>Real Production</th>
<th>Profits</th>
<th>X Share 90</th>
<th>M Share 91</th>
<th>M Share 90</th>
<th>X Share 91-90</th>
<th>M Share 91-90</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>92.8</td>
<td>90.6</td>
<td>33.8</td>
<td>0.31</td>
<td>0.27</td>
<td>0.16</td>
<td>0.25</td>
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<tr>
<td>MINING</td>
<td>89.5</td>
<td>99.5</td>
<td>23.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MANUFACTURING</td>
<td>93.2</td>
<td>90</td>
<td>35.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COAL</td>
<td>89.20</td>
<td>103.50</td>
<td>674.5</td>
<td>0.18</td>
<td>0.13</td>
<td>0.13</td>
<td>0.23</td>
<td>-5.10</td>
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<tr>
<td>FUEL</td>
<td>98.60</td>
<td>86.40</td>
<td>13.9</td>
<td>0.18</td>
<td>0.13</td>
<td>0.13</td>
<td>0.23</td>
<td>-5.10</td>
</tr>
<tr>
<td>POWER</td>
<td>101.00</td>
<td>96.40</td>
<td>-7.5</td>
<td>0.18</td>
<td>0.13</td>
<td>0.13</td>
<td>0.23</td>
<td>-5.10</td>
</tr>
<tr>
<td>FERROUS METALLURGY</td>
<td>93.20</td>
<td>82.30</td>
<td>19.5</td>
<td>0.25</td>
<td>0.40</td>
<td>0.08</td>
<td>0.12</td>
<td>15.13</td>
</tr>
<tr>
<td>NON-FERROUS METALLURG</td>
<td>91.50</td>
<td>85.10</td>
<td>31.1</td>
<td>0.25</td>
<td>0.40</td>
<td>0.08</td>
<td>0.12</td>
<td>15.13</td>
</tr>
<tr>
<td>METAL PRODUCTS</td>
<td>97.50</td>
<td>95.90</td>
<td>42.2</td>
<td>0.40</td>
<td>0.33</td>
<td>0.25</td>
<td>0.38</td>
<td>-7.59</td>
</tr>
<tr>
<td>ENGINEERING</td>
<td>89.50</td>
<td>79.70</td>
<td>40.4</td>
<td>0.40</td>
<td>0.33</td>
<td>0.25</td>
<td>0.38</td>
<td>-7.59</td>
</tr>
<tr>
<td>PRECISION INSTRUMENTS</td>
<td>85.80</td>
<td>82.90</td>
<td>32.5</td>
<td>0.40</td>
<td>0.33</td>
<td>0.25</td>
<td>0.38</td>
<td>-7.59</td>
</tr>
<tr>
<td>TRANSPORT EQUIPMENT</td>
<td>91.30</td>
<td>68.30</td>
<td>18.8</td>
<td>0.40</td>
<td>0.33</td>
<td>0.25</td>
<td>0.38</td>
<td>-7.59</td>
</tr>
<tr>
<td>EL-TECH ENG. &amp; ELECTRONI</td>
<td>84.50</td>
<td>84.10</td>
<td>30.0</td>
<td>0.40</td>
<td>0.33</td>
<td>0.25</td>
<td>0.38</td>
<td>-7.59</td>
</tr>
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<td>CHEMICAL INDUSTRY</td>
<td>94.50</td>
<td>92.40</td>
<td>47.4</td>
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<td>0.34</td>
<td>0.18</td>
<td>0.30</td>
<td>-6.27</td>
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<td>BUILDING MATERIALS</td>
<td>99.00</td>
<td>96.40</td>
<td>42.7</td>
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<td>0.17</td>
<td>0.07</td>
<td>0.14</td>
<td>2.76</td>
</tr>
<tr>
<td>GLASS &amp; GLASS PRODUCTS</td>
<td>96.50</td>
<td>98.50</td>
<td>46.4</td>
<td>0.14</td>
<td>0.17</td>
<td>0.07</td>
<td>0.14</td>
<td>2.76</td>
</tr>
<tr>
<td>POTTERY &amp; CHINA</td>
<td>93.90</td>
<td>94.70</td>
<td>52.7</td>
<td>0.14</td>
<td>0.17</td>
<td>0.07</td>
<td>0.14</td>
<td>2.76</td>
</tr>
<tr>
<td>WOOD &amp; WOOD PRODUCTS</td>
<td>104.90</td>
<td>105.00</td>
<td>55.5</td>
<td>0.30</td>
<td>0.30</td>
<td>0.07</td>
<td>0.13</td>
<td>-0.17</td>
</tr>
<tr>
<td>PAPER &amp; PAPER PRODUCTS</td>
<td>93.20</td>
<td>104.7</td>
<td>19.0</td>
<td>0.30</td>
<td>0.30</td>
<td>0.07</td>
<td>0.13</td>
<td>-0.17</td>
</tr>
<tr>
<td>TEXTILE PRODUCTS</td>
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<td>88</td>
<td>14.4</td>
<td>0.26</td>
<td>0.24</td>
<td>0.18</td>
<td>0.26</td>
<td>-2.44</td>
</tr>
<tr>
<td>WEARING APPAREL</td>
<td>98.20</td>
<td>99.2</td>
<td>37.0</td>
<td>0.26</td>
<td>0.24</td>
<td>0.18</td>
<td>0.26</td>
<td>-2.44</td>
</tr>
<tr>
<td>LEATHER PRODUCTS</td>
<td>87.40</td>
<td>84.00</td>
<td>8.9</td>
<td>0.26</td>
<td>0.24</td>
<td>0.18</td>
<td>0.26</td>
<td>-2.44</td>
</tr>
<tr>
<td>FOOD INDUSTRY</td>
<td>104.10</td>
<td>104.50</td>
<td>81.1</td>
<td>0.20</td>
<td>0.13</td>
<td>0.08</td>
<td>0.15</td>
<td>-6.17</td>
</tr>
</tbody>
</table>

Unweighted averages (mfg)        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           |
Coef. of variation, in %        6.73       | 10.59   | 217.03  | 35.62    | 35.55     | 49.13   | 41.39  | -381.30        | 31.68          |
Part 3

Post-Stabilization Inflation In Poland

Olivier Jean Blanchard and Richard Layard *

* Respectively MIT and NBER, and London School of Economics. We thank Andrew Berg, Fabrizio Coricelli, Stanislaw Gomulka and Jeff Sachs for discussions. We thank Jan Rajski for data and help.
In January 1990, as part of its stabilization program, the Polish government fixed the zloty exchange rate and introduced an incomes policy based on partial indexation of wages to the price level. As of April 1991, the parity has held and the incomes policy is still at least nominally in place. But the price level now stands at 4.4 times its level at the inception of the program, and inflation is still running at close to 5% a month. (The behavior of CPI inflation is given in figure 1). How come?

The question is of interest for two reasons. First, the persistence of high inflation after stabilization is a frequent outcome, and the Polish experience provides another case study. Second, the Polish experience is potentially different from those, say of Latin America, in that Poland has embarked on stabilization cum restructuring, putting in place a market environment which was unfamiliar to both firms and workers. Thus, the lessons from Poland are of particular relevance for other Eastern European countries.

Our paper is an exercise in arithmetic. As a matter of arithmetic, one can account for increases in the price level since January 1990 as the results of two sources of shocks, increases in prices over wages, and increases in wages given prices, with wage indexation amplifying the effects of both types of shocks. Our conclusions are that both factors played a role, roughly in equal proportion. Prices have indeed increased faster than wages. Interestingly, the removal of rationing and the exercise of monopoly power appear to have played little role in price increases. Rises in nominal interest payments, in import costs and declines in productivity have been much more important. And wages have increased more than would have been implied just by indexation. This has come from legal loopholes, and in the more recent past, from some relaxation of the rules in response to wage pressure.

What are the lessons from the exercise? With the benefit of hindsight, one can think of ways in which price level increases could have been made smaller, and inflation brought under control sooner. Some lessons are obvious: lower indexation would have been desirable, but was and still is politically difficult to implement. Some lessons are less obvious. As we shall see, the mechanics of the incomes policy allowed the firms to pay wages substantially above the norm for some time, forcing them however to abruptly decrease them at the beginning of 1991. The result was a strong reaction against the incomes policy, endangering the policy, forcing concessions from the government, and adding to inflation in 1991; this mistake could have been avoided. Or, to take another example, financial indexation, which is justified on other grounds as well, would probably have led, given the pricing behavior of firms, to much lower price inflation at least at the beginning of the program.

There may also be lessons for the near future. If incomes policies hold in their current incarnation, inflation should indeed be brought under control soon. This in turn raises the larger issues of whether incomes policies can hold, and of whether they should be modified, relaxed or strengthened. We take it up briefly in the conclusion.

Our paper is organized as follows. In section 1, we develop the basic accounting framework, relating inflation to shocks. In section 2, we look at wage behavior. In section 3, we look at price behavior. Section 4 draws the two together and concludes.  

1 Another recent survey of labor market developments is given in Coricelli and Revenga (1991).
1. Shocks, Incomes Policies, and Inflation

Consider the following simple framework:

Let \( p_0 \) and \( w \) be logarithms of the nominal consumption price and wage levels. Let \( p_0 \) and \( w_0 \) be the values of \( p \) and \( w \) at time zero, the month preceding stabilization. Let price behavior be characterized by

\[
P_t - p_0 = w - w_0 + \epsilon_p
\]  

(1.1)

This equation simply defines \( \epsilon_p \) as the change in the markup of prices over wages, for whatever reason, from time 0 to time \( t \). Changes in \( \epsilon_p \) have many sources, which we shall look at later. Let the behavior of the wage be characterized by:

\[
w - w_0 = \alpha(P_t - p_0) + \epsilon_w
\]  

(1.2)

If, as a result of incomes policy in Poland, nominal wages had simply been adjusted for the increase in prices with constant indexation coefficient \( \alpha \), the equation would hold with \( \epsilon_w = 0 \). Again, we shall take the equation as definitional, with \( \epsilon_w \) capturing all changes in nominal wages not explained by indexation, and leave an explanation of \( \epsilon_w \) to later. \(^2\)

Combining the two equations gives a reduced form equation for the price level:

\[
P_t - p_0 = \frac{\epsilon_w + \epsilon_p}{(1 - \alpha)}
\]  

(1.3)

Thus, the cumulative change in prices from the time of stabilization to any time \( t \) is equal to the sum of the two epsilons, times a multiplier which depends positively on the degree of indexation.\(^3\) The decrease in the real wage is independent of the degree of indexation and is just given by \( \epsilon_p \).

What we shall do in the next two sections is to measure and decompose \( \epsilon_w \) and \( \epsilon_p \), thus providing an accounting breakdown of inflation over the last 15 months.

---

\(^2\) Among the complexities of reality is the fact that the indexation coefficient itself has changed. We ignore this complication for the time being.

\(^3\) Note that the cumulative change in price is defined as a log difference. Thus, the fact that the price level at the end of March 1991 stood at 4.4 times its pre-stabilization level corresponded to a cumulative change of 150%. The fact that the wage level stood at 2.5 times its initial level corresponded to a cumulative change of 93%. These are the numbers that we explain and decompose in the tables below.
2. The Behavior of Wages

The wages policy followed since January 1991 has been based on two components, the determination of a wage norm based on partial indexation to the consumption price index, and the use of an excess wage tax. The incomes policy only applies to state firms, not to the private sector. The wage figures we refer to are however overwhelmingly for state firms; information about the private sector wages is still sketchy.

2.1. The Mechanics of Incomes Policy

The evolution of the wage norm has been given by:

\[ w_t^* - w_{t-1}^* = \alpha_t(p_{c,t} - p_{c,t-1}) - \beta_t(n_t - n_{t-1}) + \eta_t \]  

(2.1)

where \( w_t^* \) is the logarithm of the wage norm, \( p_{c,t} \) is the logarithm of the consumer price index and \( n_t \) is the logarithm of employment.

The first term gives the effect of indexation. The degree of indexation, \( \alpha_t \), has varied through time, from 0.2-0.3 at the beginning of the stabilization plan to 0.6 since August 1990, with a brief increase in July 1990 at 1.0. Monthly values of the degree of indexation are given in the first column of table 1 below. The second term reflects the fact that, during 1990, firms were free to choose either the wage bill or the average wage as the base for the norm. Thus, as most firms were decreasing employment, they chose the wage bill as the base, allowing the norm wage itself to increase further in proportion to employment. This option was eliminated in 1991. Thus \( \beta_t \) was equal to one in 1990, and to zero in 1991. \( \eta_t \) captures all other changes in the norm, making equation (2.1) definitional. Those other changes were unimportant until the end of 1990; they have been at the core of the story since then, and we shall return to them later.

During 1990, the computation of the excess wage tax was as follows. During each month of 1990, each firm would compute the accumulation of differences between the wage and the wage norm since the beginning of the year. As long as its accumulated credit was positive, a firm did not have to pay the excess wage tax. If and when however the accumulated credit was negative, the firm had to pay an excess wage tax on wages in excess of the norm, at the rate of 100% for excesses below 2%, 200% for excesses between 2 and 5%, and 500% for excesses above 5%, and to keep doing so as long as wages remained above the norm. At the end of the year, all credits/debits were to be cancelled, and a new process of accumulation started. As we shall see, this last set of provisions was modified in January 1991.

* The excess wage tax, which has acronym PPWW is known as Popiwek in Poland. By an extraordinary coincidence, the word means tip, while in English such a tax is known as TIP (for tax-based incomes policy).
2.2 The Evolution of Wages: An Informal Account

The evolution of the average wage and the average wage norm is given in Figure 2. Table 1 gives the degree of indexation, the evolution of the average wage, the evolution of the wage norm, bonus payments from profits, the cumulated credit, and the percentage of the wage bill subject to the excess wage tax. The measurement and decomposition of $\varepsilon_n$, the excess of the nominal wage above what was implied by indexation, will be given in the next subsection.

For the first six months of the stabilization, wages were substantially below the norm wage. In January, wage inflation was far below that allowed by the norm. From January to July, wage inflation was in excess of norm inflation, but the wage was still below the norm. The explanation is almost surely to be found in the uncertainty as to what post-stabilization would bring, and the initial attitude of firms and workers was one of restraint. Bonus payments from profits, which always follow a strongly seasonal pattern were high in March and April and lower.

By July, the average wage had caught up to the norm. But --and the implications of this had not been fully understood before it actually happened-- firms had accumulated substantial credit from paying wages below the norm in the first half the year, which they could use to pay higher wages than the norm, at least until the credit had been exhausted. This was indeed what firms did in the second half of 1990. Actual wage inflation was 45% from July to December, compared to 24% for norm wage inflation. As is shown in column 5 of table 1, aggregate cumulated credit which had peaked in June, became negative in December. Because some firms were above the norm even when the average was below it, some excess wage tax payments were made all through the year. But the percentage of the wage bill subject to the excess wage tax which was very low until October, stood at 3.6% in November, and 7.2% in December (generating considerable revenues for the state in the process).

Thus, as a result of the internal dynamics of the computation of the norm and the excess wage tax, in December the average firm found itself faced with a wage 24% above the norm, and, having exhausted its credit, having to pay taxes on the excess of wages above the norm. Compliance with the norm implied a large decrease in nominal wages, a decrease which was just not politically viable. Thus, a number of adjustments were made to the wage norm in January. First, firms with low average wages were allowed an increase in their norm. Second, the principle that accumulation of credit started anew in 1991 was abandoned. For firms with negative credit, credit accumulation was indeed started anew in January 1991. In addition, firms with negative credit were allowed an increase in their monthly norm wage of 1/24 of their negative credit. Thus, a firm which had consistently for example paid wages of 10% above the norm in 1990 would have seen its norm wage increased by 5% in 1991. In contrast, those firms which had unused positive credit from 1990 were allowed to

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5 Our understanding is the limits on bonus payments effectively prevent firms from increasing compensation through bonus payments, avoiding the excess wage tax along the way.

6 The fixing of the initial wage norm for January 1990 at the September 1989 level with some adjustment for inflation from September to December had led, as is usual, to inequities. At the beginning of stabilization, the average wage was roughly equal to the norm. But some industries, which had had a major wage adjustment in October, November or December 1989, were left with a lower relative wage under the wages policy. The intent of the adjustment was in part to adjust those relative wages.

7 This is our understanding of this change.
keep it for 1991, in the form of an increase in their monthly norm wage of 1/12 of their unused credit. As a result of these adjustments, the wage norm was increased by 7.7% above what it would have been, given the indexation adjustment for inflation.

Apart from their direct inflation effects, the time consistency dangers of such forgiveness measures are evident. But the government probably had little choice, and these adjustments appeared to have been sufficient for the time being to maintain the incomes policy. In January and February, nominal wages decreased, and wages have stayed roughly within the norm since.

2.3 Accounting for $\epsilon_w$

Given our discussion, we can write the evolution of the wage from December 1989 to any time $t$ as:

$$w_t - w_0 = \sum_{s=0}^{t} \alpha_s (p_{s+1} - p_{s+1}) + \sum_{s=1}^{t} \beta_s (n_{s-1} - n_s) + \sum_{s=1}^{t} \gamma_s + \sum_{s=1}^{t} \eta_s$$

(2.2)

The first three terms give the evolution of the wage norm. The first is the mechanical effect of indexation. The second is the effect of the use of the wage bill rather than the wage in 1990. The third captures the changes in the norm due neither to price inflation or employment changes, we have discussed them above. The last and fourth term gives the accumulated difference between actual wage changes and wage norm changes since the beginning of the stabilization. For the purpose of our decomposition of inflation later, we shall define $\epsilon_w$ as the sum of the last three terms, that part of the change in the nominal wage not due to indexation. The value of each of the four components, and the value of $\epsilon_w$ is given in table 2. At the end of March 1991, the cumulated change in the wage was 92.7%. Indexation was responsible for 59.5%, and the cumulated increase in wages over what was implied by indexation was 33.2%. Of that, 18% was due to the decrease in employment up to December 1990, 14% was due to relaxations of the norm, half of it during January 1991, and practically none of it was, by then, due to an excess of the wage above the norm.

3. The Behavior of Prices

The consumer price index, $P_c$, depends on the price of final goods produced by domestic enterprises, $P$, as well as the price of other components of the consumption basket, such as rents, electricity, and imported final goods. We focus first on $P$, for which we have detailed information on costs.

Until January 1990, the standard practice for Polish firms— for firms in Eastern Europe in general—was to price according to a markup over total unit cost, adjusted for subsidies and the
turnover tax. Thus, a reasonable approach to describing price behavior is to ask what happened to the markup so defined and to the various components of total unit cost after December 1989.

Thus, write P as:

$$P = \frac{(WN + iB + P_m M + Dep - S)}{1 + t (1 + \mu)}$$

(3.1)

The term in brackets gives total unit cost. WN stand for the wage bill (including a 43% social security tax, a 20% wage tax and a 2% employment fund tax, all rates which have remained unchanged during the stabilization). iB denote nominal interest costs, which for most of the period have represented interest costs on working capital, as much of the longer term debt was wiped out by high inflation in 1989. In Poland as in most other countries, there is no evidence to suggest that firms made a distinction between nominal and real interest rates in computing costs. Dep stands for accounting depreciation and $S$ stands for subsidies. Y stands for final sales of domestically produced goods. t is the rate of turnover tax. Turnover tax rates have remained unchanged during the stabilization. $\mu$ is the markup of price over total unit cost, adjusted for subsidies and the turnover tax. As for our wage equation, our price equation is definitional in that we shall compute the markup as the ratio of the price to the adjusted total unit cost. Our purpose will be to identify the contribution of each of the components to the increase in the price.

3.1 Accounting for $\epsilon_p$

Rewrite (3.1) as:

$$\frac{P}{W} = \frac{(N/Y)(1 + (iB + P_m M + Dep - S)/WN)(1 + t)(1 + \mu)}{1 + \mu_0}$$

(3.2)

Define the terms in brackets as $X$, equal to one plus the ratio of non-wage costs to wage costs. Taking logarithms and rearranging:

$$p - p_0 = (w - w_0) + \epsilon_p$$

(3.3)

where

$$\epsilon_p = (\ln(N/Y) - \ln(N_0/Y_0)) + (\ln X - \ln X_0) + (\ln(1 + \mu) - \ln(1 + \mu_0))$$

The increase in prices of domestic final goods above wages is the sum of three terms, the decrease in labor productivity, the increase in the ratio of non-wage to wage costs and the increase in the markup.

---

Columns 1 to 3 of table 3 give the evolution of those three components. Column 4 gives their sum, the cumulative increase in the ratio of the price of goods produced by domestic firms to the wage. Column 5 gives the cumulative difference between the consumer price level and the price of domestically produced goods: this difference reflects changes in the relative price of such goods as electricity, rents, or imported goods. And column 6, which is the sum of columns 4 and 5, thus gives the value of $e_p$.

Table 4 gives the value of each of the components of $X$, the ratio of each of the non-wage costs to wage costs. (Sources and details of construction of the series in both tables are given in appendix A). Because of data availability constraints, January and February 1990 are lumped together, and we have no data yet for the cost components for 1991. The reporting practices of firms as well as the assumptions required in the construction of those tables are such that month-to-month movements should be assessed with some suspicion. There appears in particular a curious December effect for the various components of costs. For the time being, the tables use the average for 1989 as the starting point, rather than the more appropriate December values of the various components. We hope to get the December values and appropriately modify the computation.

Together, those tables tell the following story for 1990:

(1) The increase in $e_p$ (equivalently the decrease in the measured consumption wage) was largest at the beginning of the stabilization program, and steadily decreased thereafter. In December, it stood at 35%, nearly half its value in January 1990.

(2) The increase in $e_p$ came two-thirds from the increase in $P/W$, and one-third from the increase in the relative price $P_c/P$.

(3) The increase in $P/W$ came mostly from the increase in non-wage costs relative to wage costs. This effect was strongest at the beginning, and table 4 tells here a surprising story: Much of the increase in $P$ in January 1990 was due to two factors one might not have thought of before the fact, the increase in nominal interest costs, and the increase in imputed depreciation. Monthly nominal interest rates were as high as 35% at the beginning of stabilization. While most of the longer term debt had been wiped out by the high inflation of 1989, firms' debt corresponding mostly to working capital was still equal to about 1.5 times their monthly wage bill. Thus, the effect of higher nominal rates was to increase unit cost by close to 10% over the first two months of stabilization. To take into account the effects of hyperinflation in 1989, the book value of capital was multiplied in January 1990 by a factor of 11 (another reevaluation was made in January 1991). This was responsible for a further increase in total unit cost of close to 20%. The importance of these two factors was steadily reduced throughout the year, as nominal interest rates decreased, and

---

9 Much of "food" appears in the final sales of enterprises. And the relative price of food has not been an important component of the overall price story. At the end of March 1991, the food price component of the CPI stood at 3.8 its December 1989 level, compared to 4.4 for the overall CPI.

10 The implications of the general practice of firms to treat nominal rather than real interest rates as costs were pointed out by Domingo Cavallo (1977).

11 This again assumes that firms treated accounting depreciation as part of cost, and ignored the distinction between marginal and average cost. There is no evidence to the contrary.
inflation reduced the real value of depreciation deductions. The other two non-wage components of costs, the relative costs of imports of raw and intermediate products, and the subsidies to firms, played an increasing role through the year, as subsidies were steadily decreased and, later in the year, the prices of CMEA imports of raw materials were sharply increased.

(4) Another factor in the increase of prices over wages was the decrease in labor productivity due to the sharp decline in sales at the beginning of the stabilization, which was only partially matched by the decrease in employment. The effect on unit costs of this factor by itself was 27% in January. As employment was progressively reduced throughout the year, the effect decreased, but was still accounting for an increase in unit costs of 13% by the end of the year.

(5) Finally, and contrary to widespread expectations before stabilization (including those of the authors), one of the factors which appears to have played no role in the increase in prices was the markup. That the markup would increase as rationing in markets with excess demand disappeared, and as firms were able to exert monopoly power was a plausible forecast. But the markup which had averaged 45% in December, declined to 38% in January, and kept declining through the year, reaching 24% in November and 13% in December. This decrease should however be kept in perspective, as the markup was unusually high in 1989. Figure 3 gives the conventionally defined markup, the ratio of the value of gross sales by enterprises to gross costs minus one, for the years 1989 and 1990. The decline in 1990 is evident, but against a background of an increase in the markup in 1989. Why the markup has steadily decreased is an important question for the future. Increased foreign competition throughout last year is a plausible answer. Only a study across firms according to their degree of exposure to foreign competition will allow us to test this theory.

To summarize, the price shock, \( \varepsilon_p \), was equal to 64% in January, decreasing to 35% at the end of 1990. The two main factors responsible for the increase remaining by the end of the year were the increase in relative non-labor costs, and the decrease in productivity.

3.2 Putting things together

Table 5 puts our two sets of results together, providing the decomposition implied by equation (1.3), which we repeat for convenience:

\[
P_{ct} - P_{co} = \frac{\varepsilon_{we} + \varepsilon_{pt}}{1 - \alpha_p}
\]

(3.4)

---

12 The behavior of the markup has also been noted by Schaffer (1991). Our number for the markup for December 1989 is lower than in a number of other papers; we have corrected for what we think is a mistake in the "gross cost of own sales" data for that month.
The only complication comes from the fact that indexation has actually not been constant. Thus, for the relation to hold $\bar{\alpha}_t$ has to be defined as average indexation from time 0 to t, that is as

$$\bar{\alpha}_t = \frac{1}{t} \sum_{s=1}^{t} \alpha_s (p_{s} - p_{s-1}) \sum_{s=1}^{t} (p_{s} - p_{s-1}).$$

Column 1 gives the value of $\bar{\alpha}$. Columns 2 and 3 give $\epsilon_w$ and $\epsilon_p$, and column 4 gives their sum.

Column 5 gives the sum multiplied by $1/(1 - \bar{\alpha})$, that is cumulated CPI inflation since the beginning of stabilization. The basic conclusions from the table have already been stated. The beginning of 1990 was dominated by $\epsilon_p$, the contribution of price shocks. The end of 1990 was dominated instead by $\epsilon_w$, the contribution of wage shocks. Since the beginning of 1991, a new set of price shocks has again led to higher inflation.

In retrospect, a number of modifications to incomes policy would probably have allowed for lower cumulative inflation and thus less real appreciation of the zloty. Indexation of debt, for which there are strong arguments in a period of uncertain inflation such as that which follows a stabilization program, could also have reduced the initial shock to $\epsilon_p$ by leading firms to include real rather than nominal interest payments.\[^{13}\]

The idea of having a wage rule which determined the level of allowable wages independent of the past path of actual wages --except clearly through their effect on prices--, and allowing credit accumulation for good behavior, appeared to be a good idea. In retrospect, it led firms to put themselves in a position of suddenly having to decrease nominal wages, a situation which put great stress on incomes policy. The same wage rule, but without credit accumulation, would have avoided such stress. Clearly lower indexation, and a longer time between adjustments for inflation would also have led to less inflation: in the absence of indexation altogether, table 5 implies that --ceteris paribus-- the price level would stand at 2.5 rather than the actual 4.4 times its December 1989 value. But it is not clear that support for the policy would have been maintained with much lower rates of indexation.

Are there lessons for the future? Our analysis suggests that, in the near future, the prognosis for inflation control is good if incomes policy is maintained. After the tension of early 1991, incomes policy seems to have survived without drastic relaxation. And after the large additional price shocks of the beginning of the year, no major price shocks are predicted. Thus, given that wages are now constrained by the evolution of the norm, the assumption that inflation will decrease is a reasonable one.

This however assumes that incomes policies remain in place, and raises the much larger issue of the role of income policies both in the past and in the near future in Eastern Europe. We discuss this issue, and what we think are the relevant models of wage and price setting for an economy such as Poland in a companion paper (Blanchard and Layard, 1991; see also Layard), 1991, and

\[^{13}\] The alternative, which is to have firms use inflation accounting, seems much harder. And there are many other reasons to favor financial indexation of basic borrowing and lending instruments.
Commander et al. (1991). In short, we believe that (1) absent incomes policy, there would be an increase in inflation at the current unemployment rate— which stands at roughly 8% (2) whether the incomes policy can be maintained in the near future depends on the unemployment and profit rates, and that it would not survive much more expansionary monetary and fiscal policies (3) the incomes policy can be maintained in the near future given current unemployment and profit rates. For the medium run, we believe that (1) the incomes policy can only be phased out when ownership of firms has been clearly defined and collective bargaining is bargaining between two strong sides but (2) the incomes policy, at least in its current form, needs to be phased out to allow for adjustment of the relative wage structure within state firms.
Appendix : Data Sources and Data Construction.

The data listed as IF (for Institute of Finance) were given to us by Jan Rajski. They come from tabulations of monthly ("F01") reports by enterprises. Some of the data are published in Polish, some are not.

The other major source of data we have used is "Biuletin Statisystyczny" (BS), April 1991. This monthly bulletin is now available with English translations of headings.

(1) Components of cost (Table 4).

iB : i : Refinance rate (p 10, Table 1. BS) ; B : credit to non financial public sector, (from Central Bank)

Depreciation : Amortyzacja, (IF)

p_m : 0.6 times value of imports (table 51, BS). 0.6 is an adjustment to exclude capital imports. Quarterly values for capital imports suggest that they have accounted for a stable 40% of imports during 1990.

Subsidies: sum of "Dotacje" and "Saldo innych doplat i obciazen wyrownawczych", (IF).

Wage bill: wage payments (IF), multiplied by 1.65 to cover social security, wage and enterprise taxes.

(2) Decomposition of price change (Table 3)

Productivity: labor productivity in industry (table 1, BS). The appropriate measure using final sales rather than gross sales, and covering all enterprises rather than industry is not available.

Non wage cost: sum of costs listed above minus subsidies, divided by wage costs.

Markup: constructed as \((1+\mu) = \frac{PY}{(WN + iB + p_m M + Dep- S)}\)/(1+t), where:

PY : Final sales, constructed as "Income from sales of own production services" (IF) minus "Costs of materials excluding depreciation" (IF) plus p_m M, from above.

t : turnover tax rate, taken to be .2
References


Scaffer, M., 1990, "How Polish Enterprises are Subsidized," mimeo, University of Sussex.

Figure 1

Monthly rate, 1990-1 to 1991-3

CPI inflation in Poland
Table 1. Evolution of the wage and the wage norm

<table>
<thead>
<tr>
<th>Date</th>
<th>Index coeff</th>
<th>Wage</th>
<th>Wage Norm</th>
<th>(Bonus)</th>
<th>Cumulated Credit</th>
<th>% of wage bill subject to tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan</td>
<td>0.3</td>
<td>613</td>
<td>734</td>
<td>4</td>
<td>125</td>
<td>0.0</td>
</tr>
<tr>
<td>Feb</td>
<td>0.2</td>
<td>646</td>
<td>778</td>
<td>56</td>
<td>261</td>
<td>0.1</td>
</tr>
<tr>
<td>Mar</td>
<td>0.2</td>
<td>714</td>
<td>797</td>
<td>249</td>
<td>347</td>
<td>0.3</td>
</tr>
<tr>
<td>Apr</td>
<td>0.2</td>
<td>732</td>
<td>821</td>
<td>184</td>
<td>439</td>
<td>0.3</td>
</tr>
<tr>
<td>May</td>
<td>0.6</td>
<td>795</td>
<td>862</td>
<td>84</td>
<td>509</td>
<td>0.5</td>
</tr>
<tr>
<td>Jun</td>
<td>0.6</td>
<td>839</td>
<td>890</td>
<td>52</td>
<td>563</td>
<td>0.7</td>
</tr>
<tr>
<td>Jul</td>
<td>1.0</td>
<td>960</td>
<td>945</td>
<td>26</td>
<td>553</td>
<td>1.2</td>
</tr>
<tr>
<td>Aug</td>
<td>0.6</td>
<td>1017</td>
<td>972</td>
<td>16</td>
<td>513</td>
<td>1.2</td>
</tr>
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<td>Sep</td>
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<td>1106</td>
<td>1012</td>
<td>9</td>
<td>426</td>
<td>1.5</td>
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<td>Oct</td>
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<td>1258</td>
<td>1068</td>
<td>9</td>
<td>246</td>
<td>2.5</td>
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<td>Nov</td>
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<td>1418</td>
<td>1187</td>
<td>4</td>
<td>24</td>
<td>3.6</td>
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<tr>
<td>Dec</td>
<td>0.6</td>
<td>1507</td>
<td>1212</td>
<td>63</td>
<td>-234</td>
<td>7.2</td>
</tr>
<tr>
<td>1991</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan</td>
<td>0.6</td>
<td>1438</td>
<td>1394</td>
<td>65</td>
<td>-45</td>
<td>5.5</td>
</tr>
<tr>
<td>Feb</td>
<td>0.6</td>
<td>1423</td>
<td>1459</td>
<td>243</td>
<td>-8</td>
<td>0.8</td>
</tr>
<tr>
<td>Mar</td>
<td>0.6</td>
<td>1521</td>
<td>1507</td>
<td>210</td>
<td>-23</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Monthly, in zl 1000. The exchange rate is zl 9500 per US dollar. Source: Institute of Finance, Warsaw. Data provided by Jan Rajski.
Wage and norm wage in Poland

Monthly, 1990–1 to 1991–3, in zl1000
Table 2. Decomposition of cumulative wage change since December 1989

<table>
<thead>
<tr>
<th>Date</th>
<th>$w - w_0$</th>
<th>Indexation effect</th>
<th>Employment effect</th>
<th>Residual norm</th>
<th>Residual wage</th>
<th>$\epsilon_w$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan</td>
<td>0.018</td>
<td>0.176</td>
<td>0.011</td>
<td>0.012</td>
<td>-0.180</td>
<td>-0.157</td>
</tr>
<tr>
<td>Feb</td>
<td>0.071</td>
<td>0.218</td>
<td>0.022</td>
<td>0.016</td>
<td>-0.186</td>
<td>-0.148</td>
</tr>
<tr>
<td>Mar</td>
<td>0.171</td>
<td>0.227</td>
<td>0.035</td>
<td>0.019</td>
<td>-0.110</td>
<td>-0.056</td>
</tr>
<tr>
<td>Apr</td>
<td>0.196</td>
<td>0.241</td>
<td>0.048</td>
<td>0.021</td>
<td>-0.115</td>
<td>-0.046</td>
</tr>
<tr>
<td>May</td>
<td>0.278</td>
<td>0.268</td>
<td>0.067</td>
<td>0.024</td>
<td>-0.081</td>
<td>0.010</td>
</tr>
<tr>
<td>Jun</td>
<td>0.332</td>
<td>0.288</td>
<td>0.079</td>
<td>0.024</td>
<td>-0.059</td>
<td>0.044</td>
</tr>
<tr>
<td>Jul</td>
<td>0.467</td>
<td>0.324</td>
<td>0.095</td>
<td>0.033</td>
<td>0.016</td>
<td>0.144</td>
</tr>
<tr>
<td>Aug</td>
<td>0.525</td>
<td>0.334</td>
<td>0.111</td>
<td>0.034</td>
<td>0.045</td>
<td>0.200</td>
</tr>
<tr>
<td>Sep</td>
<td>0.610</td>
<td>0.361</td>
<td>0.125</td>
<td>0.033</td>
<td>0.089</td>
<td>0.247</td>
</tr>
<tr>
<td>Oct</td>
<td>0.737</td>
<td>0.395</td>
<td>0.138</td>
<td>0.041</td>
<td>0.164</td>
<td>0.343</td>
</tr>
<tr>
<td>Nov</td>
<td>0.857</td>
<td>0.423</td>
<td>0.152</td>
<td>0.104</td>
<td>0.178</td>
<td>0.434</td>
</tr>
<tr>
<td>Dec</td>
<td>0.918</td>
<td>0.458</td>
<td>0.183</td>
<td>0.060</td>
<td>0.218</td>
<td>0.461</td>
</tr>
<tr>
<td>1991</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan</td>
<td>0.871</td>
<td>0.529</td>
<td>0.183</td>
<td>0.128</td>
<td>0.031</td>
<td>0.342</td>
</tr>
<tr>
<td>Feb</td>
<td>0.861</td>
<td>0.568</td>
<td>0.183</td>
<td>0.135</td>
<td>-0.025</td>
<td>0.293</td>
</tr>
<tr>
<td>Mar</td>
<td>0.927</td>
<td>0.595</td>
<td>0.183</td>
<td>0.140</td>
<td>0.001</td>
<td>0.332</td>
</tr>
</tbody>
</table>

(1) : cumulative wage change since December 1989: ln $w - \ln w_0$; (2) : indexation effect: $\sum_{s=1}^t \alpha_s(p_{cs} - p_{cs-1})$, with $\alpha_s$ from table 1; (3) $\sum_{s=1}^t \beta_s(n_{cs} - n_{cs-1})$, with $\beta_s$ equal to 1 for 1990, 0 thereafter; (4) cumulative norm inflation not due to inflation or employment; (5) cumulative wage inflation in excess of norm inflation; (6) cumulative wage inflation in excess of indexation.

Source: Institute of Finance, Warsaw.
Table 3. Decomposition of cumulative price change since December 1989

<table>
<thead>
<tr>
<th>Date</th>
<th>Productivity</th>
<th>Non wage cost</th>
<th>Markup</th>
<th>Sum</th>
<th>Rel price effect</th>
<th>εp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan/Feb</td>
<td>0.27</td>
<td>0.32</td>
<td>-0.05</td>
<td>0.55</td>
<td>0.09</td>
<td>0.64</td>
</tr>
<tr>
<td>Mar</td>
<td>0.24</td>
<td>0.38</td>
<td>-0.10</td>
<td>0.52</td>
<td>0.14</td>
<td>0.66</td>
</tr>
<tr>
<td>Apr</td>
<td>0.32</td>
<td>0.25</td>
<td>-0.11</td>
<td>0.46</td>
<td>0.24</td>
<td>0.70</td>
</tr>
<tr>
<td>May</td>
<td>0.26</td>
<td>0.28</td>
<td>-0.06</td>
<td>0.49</td>
<td>0.18</td>
<td>0.67</td>
</tr>
<tr>
<td>Jun</td>
<td>0.26</td>
<td>0.28</td>
<td>-0.10</td>
<td>0.43</td>
<td>0.22</td>
<td>0.65</td>
</tr>
<tr>
<td>Jul</td>
<td>0.30</td>
<td>0.11</td>
<td>-0.14</td>
<td>0.27</td>
<td>0.29</td>
<td>0.56</td>
</tr>
<tr>
<td>Aug</td>
<td>0.21</td>
<td>0.18</td>
<td>-0.12</td>
<td>0.28</td>
<td>0.24</td>
<td>0.52</td>
</tr>
<tr>
<td>Sep</td>
<td>0.20</td>
<td>0.16</td>
<td>-0.05</td>
<td>0.31</td>
<td>0.17</td>
<td>0.48</td>
</tr>
<tr>
<td>Oct</td>
<td>0.08</td>
<td>0.12</td>
<td>-0.18</td>
<td>0.03</td>
<td>0.38</td>
<td>0.41</td>
</tr>
<tr>
<td>Nov</td>
<td>0.11</td>
<td>0.06</td>
<td>-0.15</td>
<td>0.01</td>
<td>0.33</td>
<td>0.34</td>
</tr>
<tr>
<td>Dec</td>
<td>0.13</td>
<td>0.36</td>
<td>-0.25</td>
<td>0.24</td>
<td>0.11</td>
<td>0.35</td>
</tr>
<tr>
<td>1991</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.51</td>
</tr>
<tr>
<td>Feb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.58</td>
</tr>
<tr>
<td>Mar</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.57</td>
</tr>
</tbody>
</table>

(1) cumulative rate of labor productivity change: ln(N/Y) − ln(N₀/Y₀); (2) cumulative rate of change in the ratio of costs to wage costs: ln X − ln X₀; (3) cumulative rate of change in the markup: ln(1 + μ) − ln(1 + μ₀); (4) cumulative rate of change of the price of goods produced by domestic firms: sum of (1) to (3); (5) cumulative rate of change of the consumer price index relative to the price of domestically produced goods; (6) cumulative rate of change of the CPI relative to the wage: sum of (4) and (5). See appendix for data construction and sources.
Table 4. Evolution of non wage costs in relation to wage costs

<table>
<thead>
<tr>
<th>Date</th>
<th>Interest</th>
<th>Depreciation</th>
<th>Imports</th>
<th>Subsidies</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>0.23</td>
<td>0.60</td>
<td>0.27</td>
<td>0.29</td>
<td>0.85</td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan/Feb</td>
<td>0.43</td>
<td>1.06</td>
<td>0.39</td>
<td>0.32</td>
<td>1.56</td>
</tr>
<tr>
<td>Mar</td>
<td>0.26</td>
<td>1.16</td>
<td>0.40</td>
<td>0.12</td>
<td>1.70</td>
</tr>
<tr>
<td>Apr</td>
<td>0.26</td>
<td>1.10</td>
<td>0.31</td>
<td>0.31</td>
<td>1.38</td>
</tr>
<tr>
<td>May</td>
<td>0.23</td>
<td>1.06</td>
<td>0.37</td>
<td>0.21</td>
<td>1.46</td>
</tr>
<tr>
<td>Jun</td>
<td>0.18</td>
<td>1.01</td>
<td>0.34</td>
<td>0.17</td>
<td>1.44</td>
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<tr>
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<td>0.87</td>
<td>0.32</td>
<td>0.14</td>
<td>1.07</td>
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<td>0.86</td>
<td>0.32</td>
<td>0.16</td>
<td>1.23</td>
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<tr>
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<td>0.88</td>
<td>0.35</td>
<td>0.14</td>
<td>1.17</td>
</tr>
<tr>
<td>Oct</td>
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<td>0.88</td>
<td>0.40</td>
<td>0.17</td>
<td>1.10</td>
</tr>
<tr>
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<td>0.89</td>
<td>0.33</td>
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<td>0.96</td>
</tr>
<tr>
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<td>1.25</td>
<td>0.62</td>
<td>0.16</td>
<td>1.64</td>
</tr>
</tbody>
</table>

(1): interest payments as a ratio to wage costs, \((iB/WN)\); (2) depreciation as a ratio to wage costs, \((Dep/WN)\); (3) imports of raw and intermediate products as a ratio to wage costs, \((PmM/WN)\); (4) subsidies and quasi-subsidies as a ratio to wage costs, \((S/WN)\); (5) sum of (1) to (3) minus (4), plus other minor costs not included in those columns. See appendix for construction.
Poland, 1989-1 to 1990-12

Mark up over costs net of subsidies
Table 5. The proximate sources of inflation

<table>
<thead>
<tr>
<th>Date</th>
<th>$w$</th>
<th>$\varepsilon_w$</th>
<th>$\varepsilon_p$</th>
<th>$\varepsilon_w + \varepsilon_p$</th>
<th>$p_t - p_0$</th>
</tr>
</thead>
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<tr>
<td>1990</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Jan/Feb</td>
<td>0.29</td>
<td>-0.15</td>
<td>0.64</td>
<td>0.49</td>
<td>0.67</td>
</tr>
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Part 4

Wage Controls in Reforming Socialist Economies: Design, Coverage, and Enforcement

Timothy D. Lane *

* Research Department, International Monetary Fund. The author thanks Tessa van der Willigen for helpful comments; she is not responsible for any remaining errors. Views expressed are those of the author and do not necessarily represent those of the Fund.
1. Introduction

Wage controls have been an important element in the programs of stabilization and reform recently adopted in the socialist economies of Central and Eastern Europe. The main rationale for these controls has been the weakness in the governance of state enterprises. In several of these countries, there has already been a retreat from central planning—the state having largely or completely abandoned its previous role of setting output targets, allocating inputs, and setting all prices and wages—but no effective market mechanism has been installed to replace it. Pending privatization of the state enterprises, the workers have an important influence on enterprise management: in Poland, Hungary, and Yugoslavia, for instance, management is appointed by workers’ councils, and is thus at least as much beholden to the workers as to the enterprises’ nominal owner, the state. Another aspect of this problem is the "soft budget constraint" (Kornai, 1980): if enterprises are aware that their losses will be underwritten by the Treasury through subsidies, and by the central bank through easy credit at negative real interest rates, this removes the link between profitability and survival which acts to discipline management and workers in market economies. It seems unlikely that, under these circumstances, managers would act as an effective agent of the state; their interest lies rather in acceding to workers’ wage demands, while also paying themselves generously (Lipton and Sachs, 1990a, Blanchard and Layard, 1990).

In a reforming socialist economy, excessive wage increases undermine the stabilization and reform effort in three ways. First, in a socialist economy, there is a particularly strong link between wages, the state budget, and the money supply. In most socialist economies, the vast majority of tax revenues are derived from taxation of the state enterprises (Tanzi, 1991); a rise in wages reduces enterprise profits, reduces tax revenues, and thus, given the absence of a domestic bond market, necessitates a higher rate of money creation to finance a given level of government spending. Wage restraint is therefore ultimately essential in controlling money supply growth, and thus in controlling inflation (Lane, 1991a). Second, wages may affect prices directly through mark-up pricing (Blanchard and Layard, 1990, Commander and Coricelli, 1991). In the absence of a strong profit motive, following mechanical mark-up rules may be viewed by many managers as the safest course, given the widespread perception—sometimes backed up by law—that deviations from markup pricing in either direction displays pernicious monopoly power (either price gouging or predatory pricing). Third, wage increases can come at the expense not only of lower profits and tax revenues, and higher prices, but also of decapitalization: resources needed to maintain the capital stock, and to carry out the new investment needed to adapt to a changing economic environment, may instead be paid out in higher wages. This is a way for workers and managers to "eat up the capital stock" before privatization occurs. The result of such decapitalization would be to reduce the revenues that could be obtained through privatization, or to undermine share values if privatization is implemented through some form of give-away.

For these reasons, wage controls play a different—and in many ways more fundamental—role in reforming socialist economies than in heterodox stabilization programs, where their role is largely to break the momentum of inflationary expectations and to provide a nominal anchor (Bruno et al. (ed.), 1989, Dornbusch and Simonsen, 1987). They also pose different problems: for one thing, since the problem is one of enterprise governance, and not just of inflationary expectations,

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1 This argument must be qualified to the extent that in some reforming socialist economies wages are heavily taxed. In Czechoslovakia, for example, payrolls are taxed at a rate of 50 percent, and the individual’s wages at 20 percent, in comparison to a 55 percent profit tax. The argument must also be qualified where, as recently in Hungary and Czechoslovakia, there is access to international capital markets.

2 A discussion of the alternative methods of privatization is contained in Borensztein and Kumar, 1991. See also Lipton and Sachs, 1990b, and Blanchard and Layard, 1990.
the need for wage controls does not vanish as soon as inflationary expectations are brought down. Some mechanism of restraining wages is needed until a more effective means of enterprise governance is found. A second problem is that, unlike a market economy, where management may welcome the aid of an incomes policy in reducing their wage costs, the management of socialist enterprises may display great ingenuity and persistence in seeking methods of evading the controls, as well as in lobbying to have exceptions made in their own case. A third problem is that the reforming socialist economies begin with such enormous distortions that ossifying the existing structure of wages and labor allocation would be a serious impediment to structural reform in general; if some way could be found of introducing some flexibility into an incomes policy, this would be desirable. A fourth problem is that labor markets in socialist economies are often characterized by exceptionally severe barriers to mobility, which prevent the effective use of wages by managers either as a labor attraction or a labor discipline device. Even in countries in which reforms have advanced apace, unemployment has typically been relatively low—even by Southern European, let alone developing-country standards. Housing markets are typically very rigid, with rents generally much below market-clearing levels and stocks rationed by long waiting lists. This has limited the extent to which a "reserve army of the unemployed" disciplines wages, and also limits enterprises’ ability to use wages to attract workers with needed skills.

Given these problems with wage restraint in socialist economies, various attempts have been made to find a system of wage controls that avoids some of the attendant rigidities. A simple wage freeze may be appropriate as part of a heterodox program, in an economy where initial distortions are not that large, and where the freeze is only needed for a few months to break the cycle of self-fulfilling inflationary expectations, but maintaining a freeze for years is neither politically feasible nor economically desirable.

Accordingly, there has been a search for some method of wage controls that combines some effective overall wage restraint with some flexibility in the adjustment of relative wages, allowing some incentive to be provided for efficiency. The theme of this essay is that this search is necessarily a fruitless one—that rigidity is needed for wage controls to work at all, and that the way out of wage controls is not through some more elaborate system of wage controls, but through other measures designed to address the more fundamental problems of enterprise governance and financial discipline, labor mobility, and the tax system.

The rest of the paper is structured as follows. Section 2 discusses the design of incomes policy, in particular the specification of the wage norm. Section 3 deals with the incomes policy’s coverage. Section 4 discusses the enforcement of the controls. Section 5 concludes the paper.

2. The Design of Wage Controls

How might one adapt the design of wage controls to reduce the potential distortionary consequences? Most schemes under consideration allow partial indexation of wages to inflation.\(^3\) Within this general category of rules, however, there are several different forms of wage constraints, each of which creates a different set of incentives for firms subject to these constraints.

(a) A Specific Wage Constraint

In principle, one possibility is a constraint on each specific wage, of the form

\(^3\)Indexation needs to be partial, since price level indeterminacy could result from full indexation if enterprises also engage in markup pricing and deficits are financed through money creation.
\[ W_{i1} \leq W_{i0}(1 + \mu \pi_1) \]  

(1)

where \( W_{i1} \) and \( W_{i0} \) are the nominal wages paid to each category of workers in a particular firm in this period and in the base period, respectively; \( \mu \) is the indexation coefficient, \( 0 \leq \mu \leq 1 \), and \( \pi_1 \) is the change in the retail price index from period 0 to period 1. This form of incomes policy was adopted in many developed countries in the 1970s, but has several drawbacks. To begin with, if effective, it completely ossifies the structure of wages, allowing no variations in relative wages. If exceptions are allowed on the basis of equity (e.g. adjustments to allow disadvantaged groups to catch up) or of efficiency (e.g. raising wages for worker groups whose skills are scarce), the floodgates are open: enterprises would seek to lobby for more exceptions. Moreover, a job-specific wage constraint could be avoided by reclassifying workers, while a worker-specific constraint would destroy any wage incentive for a worker to move to a different job. Such a detailed system of wage controls would also require keeping and auditing records on wages paid to each category of worker in each enterprise; this would be no problem in a classic centrally planned economy, but might be a drawback in an economy in which the state is trying to reduce its involvement in the detailed monitoring of enterprise behavior.

(b) A Ceiling on the Enterprise Wage Bill

An alternative which leaves the enterprise with some flexibility in determining relative wages is a ceiling on each enterprise's total wage bill. This form of wage control was, for example, frequently used in Poland in the 1980s through 1990. The form of the constraint for each firm is

\[ \sum W_{i1} L_{i1} \leq (1 + \mu \pi_1) \sum W_{i0} L_{i0} \]  

(2)

where \( L_{i1} \) and \( L_{i0} \) denote the number of workers (in man-hours) of each category \( i \) employed in the enterprise in this period and in the base period, respectively, and \( \Sigma_i \) denotes the sum over all categories of workers.

This scheme has the advantage of giving the enterprise some flexibility in determining relative wages within an overall wage constraint. It is also easier to monitor than a specific wage constraint, since the enterprise's total wage costs must anyway be reported to the tax authorities in calculating its profit tax liability.

This kind of wage constraint also has some potential disadvantages, however. It creates a disincentive to expand the firm's labor force, even if the firm is productive and efficient and can \textit{profitably} expand its operations, since any expansion of the labor force reduces the wage that can be paid to existing workers. In principle, it also creates an incentive for layoffs, as these will enable the wage of the remaining workers to be increased. This would appear to be a particular problem where there are also generous, state-financed unemployment insurance benefits, so that, with a wage bill constraint, an enterprise's workers as a group can substantially increase their total income by reducing their employment. In practice, this has not generally occurred in Central and Eastern European countries; on the contrary, declines in employment have been small in relation to the concomitant declines in output, and employment has been reduced largely through attrition rather than layoffs (Blanchard et al., 1991). An explanation is in terms of the risk aversion of the workers, especially given the lack of an effective financial market in which workers could diversify their employment-related risks: in a socialist economy, a portion of a worker's wealth is in the form of a share of the profits of the enterprise where he is employed, and this form of wealth cannot be sold and is lost when employment is terminated. Under these conditions, perhaps workers would prefer the certainty of continuing their employment, even though this means a lower
expected income. In that case, a ceiling on the wage bill has the effect of introducing stagnation in employment: little new hiring, but not many layoffs either (Lane, 1991b).

It should be emphasized that, in a reforming socialist economy, layoffs and/or hours reductions may not be undesirable, given the prevalence of "labor hoarding". In socialist economies, state enterprises facing soft budget constraints often have greatly excessive workforces; increasing incentives to lay off workers might therefore be a step in the right direction for many enterprises. The main trouble is that the incentives for layoffs provided by a wage bill ceiling would only by coincidence result in an efficient distribution of employment across firms.

(c) A Ceiling on the Average Wage

An alternative to the total wage bill ceiling is a limit on the average wage within a firm; this limit would be of the form

\[ \sum_{i} W_{i} L_{it} / L_{t} \leq (1 + \mu \pi_0) \sum_{i} W_{i} L_{0} / L_{0} \]  

where \( L_{t} \) and \( L_{0} \) are the firm's total labor employed in this period and the base period. This scheme is equivalent to allowing the firm's wage bill to be increased in proportion to its work force. This feature was, for example, incorporated in the 1991 wage law in Poland.\(^5\)

An average wage control has the apparent advantage of permitting an enterprise to hire more labor, if it has opportunities for profitable expansion, provided that it pays the new workers no more than the average wage paid to the existing workers. It also eliminates the incentive for layoffs which a total wage ceiling provides--although, again, this may be an advantage or a disadvantage from an efficiency standpoint.

The average wage policy does, however, present another loophole: it allows a firm to raise the wages of its existing workers by "padding" its workforce--i.e. by hiring more workers whose wage is below the average for the existing workers. This loophole creates a distortion in enterprises' hiring decisions in favor of otherwise-uneconomical hiring of unskilled workers.

(d) A Wage-Bill Ceiling with Adjustment for Output

A possible alternative would be to allow the firm's wage bill to be increased in proportion to its output, rather than to its work force. This would imply a rule of the form

\[ \sum_{i} W_{i} L_{it} / L_{t} \leq (1 + \mu \pi_0)(1 + \gamma g_t) \sum_{i} W_{i} L_{0} / L_{0} \]  

where \( g_{it} \) is the proportional change of the firm's total real output from period 0 to 1, and \( \gamma \) is a parameter where \( 0 \leq \gamma \leq 1 \). In the case in which \( \gamma = 1 \), this means that the firm can raise its wage bill in proportion to its output. The idea is that the scheme would allow the firm to hire more labor if this enabled it to expand its production.

Such a rule would avoid some problems with a ceiling on the wage bill: it implies that the firm is no longer constrained from hiring when this would enable the firm to take advantage of

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*This explanation is consistent, for instance, with the recent emergence of "job-sharing" arrangements at some Polish enterprises.

\(^5\) More precisely, the 1991 wage law in Poland introduced an asymmetric rule: an enterprise whose employment declined was subject to a total wage bill constraint, while one whose employment increased was subject to an average wage constraint.
productive opportunities. It also avoids a loophole associated with average wages: it implies that hiring new workers is only allowed to add to the wage bill to the extent that it enables the firm to increase its production, so firms can no longer raise the wages of their incumbent workers by padding their workforces with workers in lower skill categories.

The other idea of such a scheme is that it could potentially provide a reward for productivity increases, which could both encourage greater effort on the part of workers and also help win their acquiescence to changes in organization and management that may also raise productivity.

This scheme has other drawbacks, however. First, it seems to be a return to the old practice of setting production targets, rewarding a firm for its production regardless of this output’s quality or suitability for the market. Production targets have notorious drawbacks, which have been fundamental to the failure of central planning: they give firms the incentive to emphasize quantity at the expense of quality, often resulting in a substantial proportion of output that is unusable; they provide no incentive to produce the appropriate product mix; and they lead to misuse of other resources, such as capital, raw materials and energy (Kornai, 1980). If wage controls were designed to reward production with higher allowed wages, this would entail similar disadvantages. Management would be under pressure—this time from the workers—to emphasize quantity over quality or product mix. Moreover, in an economy in transition, output-based wage controls would weaken the incentive for chronic loss-making firms to cut back on their production and close down unprofitable lines. Firms would also be under pressure to misuse resources other than labor, since if more use of these other inputs increased output per worker, this would enable the enterprise to raise the workers’ wages, even if the marginal cost of these inputs exceeded their marginal product. Output-based wage controls would also entail considerable administrative costs, reversing the movement toward greater enterprise autonomy by putting the authorities back in the business of monitoring the physical side of the enterprises’ activities.

A modification of an output-adjusted ceiling for the wage bill would be to define output as including only sold production. This would have the apparent advantage of preventing firms from easing their wage constraint by producing goods that—either because of poor quality or unsuitable specification—could not be sold. However, enterprises could circumvent this by agreeing to purchase goods from one another, without having to meet a market test. Even if this did not occur, a wage ceiling based on sold production would have most of the same drawbacks mentioned in the previous paragraph, including administrative costs and the misuse of other resources, at least to some degree. Moreover, having workers’ wages depend directly on sales would seem to give up some of the risk-sharing role that firms play in market economies.

(c) A Wage Bill Ceiling with Adjustment for Value Added

In response to these problems with a wage bill ceiling adjusted for physical production, an alternative would be to allow firms to increase their wage bill by some proportion of the change in value added. The resulting constraint might be of the form

$$\sum W_{it} \leq \{1 + \mu[(\Sigma P_j Q_{ji} - \Sigma R_{k1} Z_{k1})/(\Sigma P_j Q_{ji} - \Sigma R_{k0} Z_{k0}) - 1]\} \sum W_{it}$$

Here, $Q_{ji}$ and $Q_{j0}$ are the quantities of output $j$ produced in this period and the base period, $P_{ji}$ and $P_{j0}$ the prices at which these outputs are sold; $Z_{k1}$ and $Z_{k0}$ are the quantities of input $k$ used in the two periods, and $R_{k1}$ and $R_{k0}$ are their respective costs; thus, the expression in parentheses ($\Sigma P_j Q_{ji} - \Sigma R_{k0} F_{k0}$) is this period’s total sales revenue minus total costs of other factors of production, that is total value added in the firm. The rule therefore implies that the firm can increase its wage bill by a fraction $\mu$ of the increase in its value added.
This formulation would have several apparent advantages. First, to some extent it would avoid the problem with quality and variety associated with an output-adjusted wage ceiling: the firm would not have the incentive to raise output if the additional output is of poor quality and/or unsuitable specification, so that it cannot be sold or commands a low price. The incentive for misuse of raw materials which an output-adjusted wage ceiling provides is also eliminated with a value-added-adjusted one. Value added provides an obvious and efficient method of weighting different outputs.

A system of value-added-adjusted wage ceilings also has some serious limitations, however. First, there would have to be a consistent system of accounting for both revenues and the costs of other productive factors; this would have to include an appropriate imputation of the amount of capital used in production in each period; failing this, the scheme could distort the use of capital and other inputs. Here, a particularly important danger is that it could provide an incentive for decapitalization of the state enterprises. On the other hand, if capital is undervalued it could lead to overinvestment. A uniform and consistent accounting system has been a goal rather than an achievement in many formerly centrally planned economies; having wage controls based on an accounting definition of value added might put more weight on the existing systems than they can bear.

Another, perhaps more fundamental drawback of wage controls based on value added is that a firm can increase value added by raising its prices. Such a system is equivalent, in fact, to the requirement that the firm be able to pass along any excessive wage increase in higher prices—or more precisely, that a multiple $1/\mu$ of any wage increase in excess of productivity increase must be passed into higher revenues, and that these revenues be attainable through higher prices. This is particularly important given the apparent prevalence of firms with monopoly power in formerly centrally planned economies—and the possibility that some of this monopoly power may be unused, due to non-profit-maximizing behavior on the part of many firms (due, for example, to a concern over maintaining employment).

In a reforming socialist economy, such an incomes policy would still serve some, albeit a limited role: it could, in effect, help harden the enterprises' budget constraints, by ensuring that they cannot offer higher wages at a loss and make up the difference through borrowing or bailouts. Any wage increase would have to be associated with an increase in prices of $1/\mu$ times the increase in wages: for instance, if the indexation coefficient were $\mu = .6$, and output and employment remained constant, each one-percent increase in nominal wages would be associated with a 1.7 percent increase in all prices, and thus a .7 percent drop in real wages. This policy—if it held firm—could therefore in principle help reinforce other measures to restrain inflation. There is an associated danger, however: because of the fact just mentioned, any wage increase would potentially be more inflationary than in the absence of any incomes policy, because it requires a wage passthrough of more than 100 percent.

Another aspect that should be considered for any system of wage controls is credibility: would the workers, the enterprise, and the government be likely to abide by the result of the wage control rule? This is particularly likely to be a problem with a value-added-adjusted system of wage ceilings: this system implies that workers' allowed wages depend on the enterprise's actual sales performance, so that a drop in sales would reduce wages. The adjustment could be either contemporaneous or retroactive: if contemporaneous, then wages would initially have to be based on projected sales, and if these projections were too high, the excessive wages paid would have to be clawed back; if retroactive, the adjustment after the fact would be for the total change in value added, rather than the departure from projections. The basic issue, regardless of the temporal ordering of the adjustment, is the following: would the government be able to tell workers whose
firm had experienced a drop in sales that their wages had to fall—to say, in effect, "C'est dommage, mais c'est la loi?" If not, the danger is that a value-added adjustment would become a one-sided one, with an increase for workers in enterprises whose value added had risen and no decrease for those whose value added had fallen.

(f) Adjustments for Profits

Adjustments of wages for enterprise profits are a common feature of labor remuneration in socialist countries. The most common form of adjustment is the payment of premia or bonuses out of enterprise profits. Wage controls might then be of the form

$$\sum_i L_{it} W_{it} \leq (1 + \mu \tau_i)(\sum_i L_{it} W_{it} - \alpha_i \Pi) + \alpha_i \Pi$$

where \(W_{it}\) is the wage including premium for a worker in category \(i\) in period \(t\), \(\Pi\) total profits, and \(\alpha\) a fraction of profits that may be paid out in premia (0 \(\leq \alpha \leq 1 - \tau\) where \(\tau\) is the average tax rate on profits).

Premiums out of profits may have favorable incentive effects, as they provide one channel through which workers can benefit from increases in productivity. This may make workers somewhat more willing to supply effort and to monitor other workers' effort, as well as to consent to changes in organization and management. Premia may also, however, provide some perverse incentives; for example, they may encourage inertia in employment, since if new workers are hired the portion of profits available for bonuses must be shared with them, while if workers are laid off they lose not only their wages but also their share of profits (Lane, 1991b). Where there are plans eventually to privatize many state enterprises, premia may also encourage decapitalization: firms that expect to be privatized would try to increase their short-term profits payable in bonuses, at the expense of their longer-term profitability. Premia out of profits are also subject to the other problems associated with a value added system—as is obvious, since (disregarding interest and rent) value added equals wages plus profits.

Taken as a whole, the foregoing discussion illustrates the following basic "trilemma":

1. Pure and simple wage controls entail rigidity in wages;

2. More flexibility gives scope for enterprises to circumvent the controls, both weakening control of inflation and creating distortions;

3. Trying to avoid these distortions by adapting wages controls to the details of an enterprise's circumstances could amount to re-introducing central planning through the wage control system; by eliminating the scheme's claim to uniformity, it could also increase the strength of lobbying for further exceptions to the rules; and it could result in a wage control scheme of amazing complexity.

3. The Coverage of Incomes Policies

Another issue that must be addressed in designing an incomes policy is what portion of the economy the program should cover. Two aspects of coverage are important: first, should only state enterprises, or also private enterprises be included? Second, is there any merit to exempting smaller enterprises, whether state or private?
(a) Private Enterprises

To the extent that the reason for incomes policy is the weakness in the governance and financial discipline of state enterprises, which makes these enterprises more likely to pay excessive wage increases, private enterprises are arguably not subject to the same weakness. The management of a private enterprise is responsible to the shareholders, and must therefore be concerned with profit; in closely-held companies, shareholders' interests are registered directly, while for widely-held joint-stock companies it is registered via the market for corporate control, through the threat of a hostile takeover. Moreover, private enterprises may well face harder budget constraints than do state enterprises, since the government is not under the same responsibility to underwrite their losses, and since they generally lack the same established link to the state-owned banking system.

Wages in private enterprises may incorporate an element of "efficiency wage", whereby firms extract more effort from workers by paying them higher wages while threatening them with dismissal if they shirk. Such a mechanism could function in the private sector because of the absence of job security there, which makes dismissal for shirking possible. This would appear to be a much less relevant aspect of wages in the socialized sector, where labor's influence on management limits the ability of the latter to fire workers; this is reflected in widespread anecdotal evidence on absenteeism and shirking in state enterprises. Imposing wage controls in private enterprises may impede these enterprises' ability to use efficiency wages to extract an optimal amount of effort from their workers.

There are some counter-arguments, however, for the case of newly privatized enterprises, particularly in the case of mass privatization. The management of these enterprises, whose shares are widely held, and whose mechanism of corporate governance is often fragile, may have difficulty in resisting wage demands. In some cases privatization might also be accompanied by explicit or implicit agreements limiting the enterprise's freedom of action in bargaining with the existing workforce. The government may also feel in a special obligation to these enterprises, since they may be regarded as showcases of the new market economy, and if their shares are owned by millions, their failure might be considered inadmissible on political grounds, and the likelihood of bailout would vitiate market discipline of their wage policy. Therefore, it is possible that the newly privatized companies might face soft budget constraints, too. There could therefore be a case for maintaining some form of wage control in recently privatized enterprises, to aid the new management in getting a viable private enterprise off the ground.

A final consideration is also political: the perception that wage discipline in state enterprises might be more difficult to maintain if workers in private enterprises are being paid noticeably higher wages, and consequent goal of maintaining parity between public and private sectors. A final consideration is also political: the perception that wage discipline in state enterprises might be more difficult to maintain if workers in private enterprises are being paid noticeably higher wages, and consequent goal of maintaining parity between public and private sectors. This should not govern wage policy: to begin with, workers in the private sector in reforming socialist economies are typically paid more, but are also expected to work harder, and typically have less job security.

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* A model of a socialist economy with an efficiency-wage mechanism in the non-socialized sector is presented in Dinopoulos and Lane, 1991.

* Some of the issues involved in ensuring adequate governance mechanisms for privatized enterprises are discussed in Borensztein and Kumar, 1991, Lipton and Sachs, 1990b, Frydman and Rapaczynski, 1990, and Blanchard and Layard, 1990. The various privatization proposals are designed to address these governance problems, but all leave significant doubt over how successfully they can be solved.
Moreover, workers in the state sector have other benefits, including preferential access to their enterprises' shares in the event that they are privatized. Also—and especially as privatization proceeds—workers in the state sector have the option of switching to the private sector if the mix of wages, working conditions and other benefits there is more to their liking. Wage differentials between state and private sectors should not, therefore, be viewed as a reason for easing wage policy on the state sector.

(b) Small Enterprises

One could also make a case that small enterprises, regardless of their ownership, should be exempted from the wage controls. First, large enterprises may be subject to softer budget constraints than small enterprises: employees of large firms may justifiably believe that they will be viewed as "too big to fail", so that ultimately they will be bailed out—through subsidies, credit, or other means—even if excessive wage payments lead them close to bankruptcy. The fear of bankruptcy and accompanying job loss probably restrains wages more effectively for smaller enterprises, making it less likely that they would need additional wage restraint through wage controls.

A second point is that large enterprises frequently have monopoly power, which makes it easier for them to pass higher wages through into higher prices; smaller enterprises’ more limited ability to do this tends to restrain their wages.

A third point relates to the cost of administering a wage control program: this cost is reduced by reducing its coverage, and exempting smaller firms reduces administrative costs more than in proportion to the reduction in coverage.

Another issue to be considered here is how a wage control program that discriminates on the basis of firm size would affect the size distribution of firms in the economy. Wage controls may affect the profitability of firms in either direction: being subject to wage controls may make a firm more profitable to the extent that it strengthens the management’s hand in bargaining with the workers, and thereby reduces its wage costs. However, it may well also constitute a competitive disadvantage—to the extent, for example, that it limits the firm’s ability to attract suitably qualified workers; the latter consideration suggests that being subject to wage controls may impede a firm’s growth, even if it does not impair its profitability. If the size distribution of firms were optimal in the absence of wage controls, wage controls that discriminated on the basis of size would be distortionary. The playing field is not level to begin with, though: large state firms in reforming socialist economies may have other advantages, such as monopoly power in their product markets, existing subsidies and arrangements with government, and connections with supply and distribution networks. If this is so, providing small enterprises with an advantage in attracting workers may encourage a desirable shift of productive activity into the small-enterprise and the private sector.

The main counter-argument pertains to the general undesirability of making exceptions to the wage controls. Any exceptions tend to erode the controls, as they encourage behavior designed to circumvent the controls, as well as lobbying behavior to win more exceptions. These may also lead to a general perception of unfairness, which may erode political support for the program. The case for exempting both small and private enterprises from wage controls appears strong; whether it is strong enough to warrant the departure from uniformity must be evaluated in the context of a particular country.

\* An exception to this argument is that if large state enterprises have monopoly power, this leads their output to be less than the socially efficient level; this distortion is exacerbated if wage controls put these firms at a disadvantage in hiring.
4. The Enforcement of the Incomes Policy

Once the wage norm has been established, and once it has been determined which workers are to be included, a third question arises: how is the wage norm to be enforced? One alternative would be to impose the wage norm as a legal requirement, and, in any cases of non-compliance, to impose legal sanctions—such as fines, or even jail sentences—on the offenders. The alternative, which has been followed in many Central and Eastern European countries, is a tax-based system: firms are required to pay a tax, at very high rates, on any excess of the wage bill over the legally permitted amount. 9

The tax-based approach has some advantages. First, it cuts administrative costs, since the enforcement of wage controls is through the existing tax administration, rather than through a separately constituted agency. Second, it adds a small element of flexibility to the system: enterprises that have a strong propensity to grant larger wage increases are allowed to do so, only provided that they pay the tax. Third, it offsets (generally more than offsets) the impact of excessive wage payments on the state budget: the additional revenue from the excess wage tax counters any associated loss of profit tax revenues.

These benefits must be qualified, however. In particular, the system works only if the enterprise actually pays the excess wage tax, without incurring arrears in its other tax obligations and without incurring additional debts that it will never service, or at least will not service until after it is privatized. This points to three elements all of which are needed for the excess wage tax to constitute an effective incentive for the enterprise: all taxes must be collected in full; insolvent enterprises must not be able to get credit; and enterprises that will eventually be privatized must not be able to borrow now to pay the excess wages and excess wage tax, at the expense of the value of the enterprise when privatized. The latter point is another illustration of the difficulty of establishing incentives when privatization is in the offing: any reduction in the enterprise’s value is borne not by the workers and managers, but by the government or the future shareholders (in the case of privatization by sale or give-away, respectively). If the enterprise faces a soft budget constraint for any of these reasons, its wage decisions will not be influenced by the tax.

It is not clear that the alternative is satisfactory. Fines or penalties imposed on the firm for violation of the wage law would have much the same weakness as the tax-based incomes policy. The alternative that could be contemplated would be to impose penalties on the managers directly. However, for this approach to have any different effect than the tax, one would have to ensure that the enterprise could not just compensate the manager for the penalties. Also, penalties on the managers might be cumbersome to enforce, as they would have to go through the legal system; the courts might also be reluctant to enforce provisions making managers personally responsible for the wages paid in their enterprises. Yet another alternative would be to have a tax-based policy enforced at the level of the individual worker; this would seem impossible to administer, however, particularly in countries, including most of post-Communist Central and Eastern Europe, in which no effective system of personal income taxation yet exists. 10 Thus, an enterprise-level tax-based incomes policy, or its equivalent, might be the only viable approach.

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9 For the system to be workable, the rate of excess wage tax must exceed the rate of profit tax, since otherwise the firm’s total tax obligation falls when wages are increased above the norm. In Poland in 1990 and 1991, for instance, rates of excess wage tax were on a progressive scale, applied to wages in excess of the cumulative norm (i.e. the norm for total wages up to and including the current month); beginning in mid-1990, the rates were 100 percent for exceeding the cumulative norm by up to 3 percent, 200 percent for exceeding it by 3 to 5 percent, and 500 percent for exceeding it by over 5 percent.

10 Hungary introduced a broad-based personal income tax system in 1988 (Boote and Somogyi, 1991); Poland plans to introduce such a personal income tax at the beginning of 1992; other reforming socialist economies are planning similar reforms. See also Tanzi, 1991.
This discussion suggests some measures that could be taken to reinforce a tax-based incomes policy. One is to prohibit any wage increases above the norm for enterprises that are in arrears on any of their taxes, as well as for enterprises receiving any budgetary subsidies. A second is to make compliance with the incomes policy a condition for approval of loans from commercial banks—a condition which could be enforce through banking regulations. This, however, might penalize enterprises that are so profitable that they can pay their workers more—often precisely the firms that could make the most productive use of credit. A third is to impose tighter administrative controls on enterprises that are to be privatized; this could perhaps be achieved in connection with the "commercialization" of these enterprises, that is their constitution as joint-stock companies overseen independent boards of directors although the effectiveness of this form of corporate organization in this setting has yet to be determined.

5. Conclusion

This paper has reviewed some of the issues related to the design, coverage and enforcement of incomes policies in reforming socialist economies.

The main conclusion is that there is no magic: any effective scheme of wage controls is bound to be distortionary. One cannot design a scheme that combines the fundamentally conflicting goals of keeping a lid on wages, permitting flexibility in labor allocation, and providing incentives for efficiency. The argument turns on the underlying problems discussed in the introduction: the weakness in the governance of state enterprises, the softness of budget constraints, and the absence of a broadly competitive labor market to allocate labor and subject wages to market discipline. These are the essential reasons that wage controls are necessary—not merely as an initial expectations-breaking device but as a measure to prevent the resurgence of inflation over a longer period—but they also make any system of wage controls very difficult to implement.

The way out is not to devise some ideal wage control system, but to attack the fundamental problems: by privatizing and commercializing the state enterprises, by devising management compensation arrangements that give managers a more important stake in long-term enterprise profitability, by modernizing the financial system with a view to rationalizing the system of credit allocation, by standing firm in refusing to bail out loss-making enterprises, by privatizing the housing stock and freeing the rental market, and so on. In addition, tax system reform is essential, to broaden the tax base, ending the heavy reliance on enterprise profits as a revenue source; this is needed to reduce the extent to which the state budget acts as a transmission mechanism from wages to inflation. Until these reforms have proceeded far enough, an effective—and if need be, rigid—system of wage controls is needed to prevent hyperinflation from undermining the entire reform effort.
References


Part 5

Wage Policy In The Transition To A Market Economy: The Polish Experience

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1. **Introduction**

The Polish reform program has achieved a very rapid transformation of the economy towards a market system. In particular, most price controls and subsidies have been abolished and many of those that remain are being phased out (administered prices are being adjusted towards market-clearing levels, and subsidies are being reduced). While prices of goods and services are now determined almost entirely by market forces, however, wages remain subject to strict control. Each month the maximum permitted wage increase is determined by government (in the form of an indexation provision - some percentage of the percentage of the previous month's inflation rate), and firms paying above the permitted level are subject to a punitive tax, known as the "popiwek".

This situation is quite unlike that in any Western market economy. In the long run, the severity of the present system of wage controls in Poland is inconsistent with the efficient workings of a free market economy. It obstructs changes in relative wages that may be required for restructuring, and it discourages effort and productivity growth.

Further, any wage policy which makes it appear that it is the government, rather than employers, which is preventing wage increases is bound to lead to political strains. A wage control system of the present degree of rigidity is unsustainable in the long run, and a key question is therefore what type of policy initiatives are needed to accompany a loosening of wage controls.

It is clear that the abandonment of wage controls at the present stage of the transitional process could be disastrous. Workers are likely to press for higher wage increases, and managers, at least in the state sector, have little incentive to resist these demands. This is particularly the case when lack of competition in product markets allows firms to pass on wage increases into higher prices. If the government maintains its tight monetary policies (and a fixed exchange rate) higher wages will create unemployment and unemployment will rise until the labor market becomes so depressed as to deter further wage claims. If the government accommodates higher wages by relaxing monetary policy and devaluing the zloty, the outcome will be accelerating inflation. Given the influential role of workers' councils in the present management structure of enterprises in Poland, the closest parallel is Yugoslavia, where high rates of unemployment did not prevent the emergence of rapidly accelerating inflation in the 1980s.

The privatization program will, however, ultimately remove this particular aspect of the current situation (providing of course that privatization does not itself give a controlling interest in a firm to its own workforce). Thus it may be thought that privatization removes the need for wage controls, and this idea has been built into policy with the recent decision to exempt private firms from the popiwek. However, the experience of Western European countries should make clear that private ownership of firms is not of itself an adequate defence against inflationary wage pressure. It is generally recognized that the forces of competition work less effectively in the labor market than in the market for goods and services.

Rather, workers seek to exploit their bargaining power to drive their wages above market-clearing levels. Higher wages lead to higher prices, and hence to lower production and lower employment. The attempt at individual enrichment leads in the outcome to aggregate impoverishment, or in other words in the labor market private self-interested "rent-seeking" behavior on the part of groups of workers or unions representing them imposes external costs to the rest of the economy exceeding the private gains to the workers involved.
There are two types of strategy governments can adopt to deal with this problem. The first is to change the institutional structure of the wage bargaining system. If wages are determined in a centralized bargain affecting workers throughout the nation, opportunities for individual rent-seeking behavior, and the associated conflict between private and social interest, will be greatly reduced. This "corporatist" approach has been attempted in a number of countries, most successfully in Scandinavia. It is discussed in more detail in section 2 of this paper.

The second strategy, which is not wholly inconsistent with the first, is to attack the problem at root, that is to tackle the underlying sources of bargaining power. This has been done in the United States, and has been the objective of the present Conservative government in Britain. This approach has been followed to a greater or lesser extent in a number of other countries in recent years. The third section of the paper outlines some of the institutional and policy requirements for effective competition to operate in the labor market.

The present thrust of the reform program in Poland is one of encouraging competition, rather than building up a structure or corporatist institutions. It may therefore be that the objective of greater competition in the labor market will fit better with other elements for the reform package than would an attempt to create the centralized institutions necessary for a corporatist system. If this is the case, the main problem is that there is a long way to go to achieve effective competition in the Polish labor market. This in turn implies a need to retain some form of wage policy for a significant period of time.

2. The Corporatist Approach

From the standpoint of wages policy, the key element of corporatism is the institution of centralized wage determination. In the Scandinavian countries and also in Austria there are formal negotiations between nationwide organizations representing employers and union federations to determine a national wage increase which is then payable in all firms. The idea is that if wages are set at the national level, union and employer representatives will concern themselves with the economic welfare of the nation as a whole rather than with the private interest of particular sectors. With centralized wage-setting, bargainers will be aware that higher wage increases must lead either to increased unemployment or to higher inflation. When wage setting is at a level of individual enterprise, wage bargainers will have no reason to concern themselves with the effects of their actions on other sectors of the economy. Few would deny that there exists a cogent argument for corporatism along these lines, the problem is rather to make it work in practice.

The institutional pre-requisites for corporatism are thus a union movement within which individual unions are prepared to surrender bargaining powers to a national union federation. A similar arrangement is required on the employers' side. Since individual bargains at the level of the industry or firm are not prohibited, it is clear that corporatism can only have an effect if union bargaining powers at the local level are restricted. In Sweden and Norway, for example, strikes in support of a national wage claim are legal but it is illegal to strike in support of a local level wage demand.

Why might individual unions or employers be prepared to surrender powers, which it is in their individual interests to exercise, to the union of employers' federation? The benefits of corporatism take the form of "public goods", such as lower unemployment, so that it will appear to
individual unions that they can enjoy those benefits without having to pay the costs in terms of 
bargaining restraint at the local level. An immediate point is that in a small, closely-knit economy, 
such as those of the Scandinavian countries, if one union were to break ranks it could expect others to 
follow so that the whole system would break down. Thus in a small, relatively homogeneous 
economy, social sanction may hold the system together. By contrast in longer, more heterogeneous 
economies, individual unions at the local level may pursue their individual interest without regard to 
the social good. In Britain, for example, attempts to involve unions in economic decision-making in 
the corporatist manner have founndered because the union movement has been unable to control its 
individual members. For example, attempts to implement voluntary incomes policies have typically 
failed because individual unions have not seen it to be in their self-interest to adhere to them.

In Sweden and Norway, as already noted, the social sanction against exercise of union power 
at the local level is reinforced by government legislation outlawing strikes in support of wage 
demands at the local level. If one assumes that this anti-strike legislation was enacted with the 
consent of the union movement at the national level, and yet it clearly weakens unions at the local 
level, one may ask why individual unions are prepared to remain members of a movement which 
appears to have given away their bargaining power. Of course, individual unions and workers may 
be sufficiently perceptive to recognize that they are better off in the outcome without the right-to-
strike, but if this were the case of the government could simply outlaw strikes without troubling itself 
with tripartite negotiations with unions and employers' federations.

In practice, in a number of the corporatist countries and in particular in Sweden, union 
leaders at the national level have negotiated with the government for various union economic and 
social policy objectives. Thus individual unions and their members have been able to exert a 
disproportionate influence on the formation of government policy through the corporatist institutions 
and the price they have had to pay for this is the centralization of bargaining and an emasculation of 
power at the local level. Clearly for this "deal" to be feasible there must be a high degree of 
consensus with regard to economic and social policy objectives amongst different groups of workers. 
It assumes also that it is electorally acceptable for a government to negotiate key issues of economic 
policy with the representatives of sectional interests.

While the Scandinavian countries are generally taken as the most successful examples of 
corporatism, a more detailed examination of their recent histories (which are very usefully 
summarized in Calmfors (ed.), 1990) shows that the centralized system has become subject to 
increasingly frequent breakdown. Whilst, during the 1980's, centralized bargaining was reasonably 
quickly restored following each breakdown, in 1990 and 1991 there appears to have been a more 
fundamental collapse. In both Norway and Sweden the centralized system has failed to deliver wage 
restraint, and the governments are allowing unemployment to rise sharply in response. In these 
countries the political perception is now that the corporatist system has become too cumbersome and 
too inflexible.

Indeed, there is a strong case for returning to the original argument of Bruno and Sachs (1985 
ch. 11) that the essential strength of corporatism lies in its capacity to enable an economy to respond 
to economic shocks. In times of economic uncertainty, firms and workers do not know what to 
expect and can welcome informed and unbiased guidance. The centralized wage bargain provides a 
forum in which the macroeconomic implications of a shock can be thrashed out, and the rate of wage 
growth consistent with maintaining full employment can be established. But corporatism is not the 
only possibility: the German system of independent councils of economic experts, for example, may
achieve the same result. Against all this it can be argued that it is often possible to achieve social co-operation in times of economic emergency even in the absence of corporatist institutions, witness for example the success of the British incomes policy of 1975 which was introduced in response to the rapidly accelerating inflation following the first oil shock and which achieved a rapid reduction in inflation with virtually no cost in terms of unemployment.

One may therefore conclude that corporatism is only likely to be sustainable in small economies characterized by a high degree of social consensus. The important thing is not the setting up of centralized wage bargaining arrangements, but rather the reduction of union bargaining powers at the local level. The question to be addressed in the Polish context is whether the unions at the national level would be prepared to co-operate in a reduction in their powers at the local level, whether their co-operation would make a difference, and what they would need to be offered in exchange for such co-operation.

These considerations suggest the Polish government may well not be attracted by the corporatist approach. The second strategy, the competitive approach, is, however, also beset by difficulties.

3. The Competitive Approach

The second strategy is to attempt to reduce union bargaining power. In capitalist economies the most immediate form of countervailing power comes from the employer. If firms wish to maximize profit, they will be very conscious that any increase in the wage bill will, other things equal, lead to a fall in profits of equal magnitude. Thus the first requirements in the Polish context is to instill the objective of profit-maximization into the management of Polish enterprises; privatization is of fundamental importance in this context but it is by no means sufficient.

But capitalist systems remain prone to unemployment to the extent that workers can exploit their bargaining power to raise wages. The extent of such rent-seeking behavior can be limited by increasing the extent of competition both in the product market and in the labor market and by legal or other constraints on the exercise of union bargaining power. In this section there is space to do little more than summarize the preconditions for what might be described as "effective competition" in the labor market, i.e. a sufficient degree of competition to avoid the persistently high unemployment rates that have plagued many Western European economies in recent years.

First, the managers of enterprises must be motivated by the objective of profit-maximization. If they are judged by other objectives (e.g. output) they will have insufficient incentive to resist wage demands. Managers of a firm must therefore be responsible to directors who represent the interest of shareholders, who themselves are distinct from the workforce and concerned only with profits. The ultimate sanction in such a system is the threat of take-over whereby a management earning a low return on a company's assets can be replaced by one which can earn a higher return. Alternatively, if the finance for companies is provided through banks rather than through this issue of shares, what is required is that the bank judges firms by the profits they make and is prepared to replace bad managers by those who can be expected to earn a higher return. In summary, what is required is an efficient capital market to ensure that managers maximize profits. Privatization does not of itself ensure an efficient capital market.

Even if capital markets are efficient, and firms maximize profits, unions can retain
considerable power in the wage bargain. This power derives from their capacity to go on strike or take other forms of action which inflict considerable cost on an employer. The exercise of this power clearly depends on the legal framework (e.g. right-to-strike legislation relating to legal immunities unions might enjoy against claims for damages), or the rights employers may have to hire or fire workers in relation to union activity, or rights unions might have in hiring or dismissal procedures, on financial provisions such as whether or not the government pays unemployment benefits to workers on strike, or the extent of support for workers laid off.

A further dimension of the wage bargain concerns the ease with which firms can hire new workers. In the short run, of course, this is one of the mechanisms through which unemployment reduces the bargaining power of employed workers. But at a more structural level, policies to encourage labor mobility, for example by ensuring that workers do not lose social provision or pension rights if they change jobs, or to encourage regional and occupational mobility, will assist in weakening the bargaining power of particular groups.

Finally, competition in the product market weakens the bargaining power of workers in the wage bargain because in highly competitive conditions even a small increase in wages risks driving the employer out of business. Whilst at first sight it might seem that the highly concentrated structure of industry in Poland would make the attainment of competitive conditions in the product market difficult, in practice the virtual elimination of barriers to international trade on the one hand and the speed at which new enterprises are being set up on the other has meant that there is already a high degree of competition in many sectors.

The preconditions for effective competition set out in the above paragraphs come closest to being realized in the United States economy. There remain pockets of union power, but they are localized and their effects on the overall labor market negligible. In the United States, unemployment has been relatively (though not exceptionally) low, and unlike in Europe neither unemployment nor inflation has shown a tendency to increase in the post-war period. Recessions, though sometimes sharp, have been short-lived. As noted earlier, Britain and a number of other countries have been following this path, but it may be too soon to judge whether the American system can be transplanted successfully onto European soil.

If Poland were to pursue this approach, and clearly many of its requirements fit in with the government’s reform program, problems are likely to arise in two areas. First, with the best will in the world, the attainment of efficient capital markets and of flexible labor markets is bound to take time, however quickly privatization and other reforms proceed. Second, Poland may share the political problems experienced by other European countries in curbing the power of the unions, because such actions may be seen as restraining the fundamental rights and/or holding down the standard of living of working people.

4. Conclusions

While privatization is an essential prerequisite for introducing effective competition into labor market it is by no means sufficient. As in many Western economies, union power is an important problem and it is exacerbated in Poland by the absence of an efficient capital market and by inflexibilities in the labor market. Thus wages in private firms in Poland are likely to be set above market-clearing levels.
Exempting private firms from the wage control policy thus creates inequities in the short run (because wages in the private sector will exceed those in the state firms) and higher than otherwise unemployment in the medium term. The present wage control policy, and in particular the level of the popiwek, may well be too severe, but privatization will not eliminate inflationary wage claims in the medium term, and there is a case for retaining some form of incomes policy rather than to rely exclusively on high unemployment rates to restrain inflationary pressures.
References


Incomes Policy And Wage Setting Behavior: Evidence From Polish SOEs During The Economic Transformation Program*

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* The views herein are those of the author and are not necessarily shared by the World Bank or affiliated institutions. This paper is based partly on joint work with Marek Belka and Stefan Krajewski, and on ongoing work with Stan Wellisz. Robert Sierhej’s excellent assistance is gratefully acknowledged.

** The World Bank Resident Mission, Poland
I. Introduction

The stereotypical image of Polish SOEs is that they are myopic, intent on increasing wages to the point of decapitalization yet quintessential survivors, reducing output, raising prices when possible, cutting wages when faced with bankruptcy and postponing investment. This short sighted, predatory image is based on behavior and the economic environment preceding the ETP and on perceptions of firm behavior during the ETP. However, there have been two major changes since the start of the ETP:

- prices can no longer be set on a cost plus constant mark up basis, with free trade and import competition constraining such "closed economy" rules - which, incidentally, mark the typical paradigm of socialist firms;
- the emphasis in firms has changed from production, which was the key in the shortage dominated pre-ETP economy, to marketing and profits.

Thus, although Polish SOEs continue to be self-governing and worker-controlled, they operate in a fundamentally different milieu. Nevertheless, managers are legally subordinate to the Workers Council, which clears all decisions, strategic and operational, and which wields the power to hire and fire managers.

Wage policy in the form of partial indexation of wages to inflation enforced by a punitive excess wages tax (PPWW) has been an important component of the ETP. The objectives of wage policy may be summarized as follows:

(i) inflation control;
(ii) real wage reduction and control;
(iii) efficiency, preventing decapitalization and being a counterweight to wage pressures.

This note looks at the interaction between wage policy and wage setting behavior over the period Jan. 1990 - March 1991 in a sample of 75 large SOEs drawn from 5 manufacturing sectors: metallurgy, electromachinery, chemicals, light manufacturing and food processing.

II. Wage Setting and Employment

A. Wage setting

Based on aggregate data, real wages fell precipitously in Jan. 1990, the first month of the ETP. Nominal wages barely moved despite 80% inflation for the month. Two competing explanations have been offered:

(i) indexation: the wage norm under indexation was binding;
(ii) liquidity squeeze: nominal wages were compressed to accommodate the nominal interest rate shock as well as rises in the prices of energy and raw materials following huge administered price increases in electricity, gas and transportation.

Subsequently, real wages continued to be low, exceeding the cumulative wage norm only in the fourth quarter of 1990, when a wage explosion ensued and made the PPWW a significant source
of tax revenue. This development is often attributed to the loosening of credit policy and lower interest rates in the second half of 1990.

In 1991, real wages fell initially because most firms were in excess of the norm wage for December 1990, which formed the basis for the Jan. 1991 wage norm. Further, wages were restrained by severe compression of margins following the CMEA market collapse and dollarization of trade, which led to a large and abrupt decline in sales and a sharp rise in costs.

The evolution of firm-level wages conforms to the general pattern observed in aggregate data. Moreover, the existence of firm level data affords a chance to test the above hypotheses on the determinants of wage behavior.

To examine Jan. 1990 wage developments, a cross sectional regression based on the following model was run:

\[
\text{Jan. wage bill} = f(\text{Jan. forecast norm, non-labor costs/net sales, Jan.})
\]


or, in shorthand:

\[
w = f(nw, nlc),
\]

The model says that the increase of Jan. over Dec. wages would be influenced by a pull towards the forecast norm, and be inhibited to the extent that nonlabor costs rose. The forecast norm was known in advance, being based on the Sept. 1989 wage bill adjusted by a factor of 0.8 for October, November and December 1989 inflation and with a factor of 0.3 applied to forecast Jan. inflation of 45\%.\(^1\) Firms reported their actual wage norms, based on ex post inflation which was 80\% for Jan.\(^2\) The forecast norm was accordingly obtained by multiplying the reported norm by a factor of \((1+0.3\times45\%)/(1+0.3\times80\%).\) For all other months, the difference between forecast and actual inflation was small. The model assumes firms knew what was going to happen to non-labor costs, which is reasonable because the nominal interest rate and all administered price increases were announced at the beginning of the month. The reason for taking the ratio of these costs to net sales is that firms that could more easily mark up their costs and pass them through would be less willing to cut wages; and vice versa. Hence, the negative sign on this variable.

The regression yielded the following equation based on evidence from 66 firms for which a complete data set was available (t-statistics in parentheses):

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\(^1\) The reason for using Sept. 1989 as the base was that there was a wage explosion in the last three months of 1989 in anticipation of the new system. Had Dec. 1989 been used, the disparities would have been very great.

\(^2\) It is worth noting that the Jan. wage norm cannot be simply obtained by starting with the Sept. 1989 wage bill and adjusting for inflation in the last three months of 1989, as described above. As discovered from the data, there were several firm-level exceptions made in defining the Jan. wage norm.
\[
\begin{align*}
    w &= -0.0819 + 1.0086 \text{nw} + 0.0090 \text{nlc} \\
    &\quad (-1.28) \quad (+18.66) \quad (+0.01) \\
    \text{Adj. R-sqd.} &= 0.84, \ 
    \text{SE of regression} = 0.1180, \ 
    \text{F-stat} = 174.05.
\end{align*}
\]

Since the \text{nlc} regression coefficient is small in size and statistically insignificant, the pull towards the forecast norm was the main determinant of the Jan. wage bill, with a constant term close to zero and a slope coefficient close to 1.0. This is visually confirmed by the plot of the Jan. wage bill against the forecast norm wage bill in Fig. 1. However, the regression should be interpreted carefully. Dec. 1989 wage levels were already close to the forecast norm. This coincidence could result in a nominal wage freeze in Jan. motivated by a rise in nonlabor costs being interpreted as a pull towards the forecast norm. Indeed, the sample information shows that wages did not change much in Jan. (reduction of 2.2\% for sample) and were 95\% of the forecast norm. With the exception of metallurgy, the other sectors were all below the forecast norm. Light manufacturing recorded a 12\% wage increase, yet was 5\% below the norm; chemicals had an 11\% wage cut bringing it 7\% below the forecast norm.

Managers attributed Jan. 1990 wage restraint to the interest rate increase, which led to a rush to repay zloty credits, reducing liquidity. In fact, interest burden (share in costs) more than doubled in Jan. 1990 over Dec. across the board (with the exception of metallurgy), while wage cost share more than halved. Moreover:

- firms were fearful of bankruptcy and workers were willing to "pay the price" for reform in support of "their own" (Solidarity) government.
- it took time for workers to feel the pinch of the real wage decline - somewhat surprising given 80\% inflation for the month;
- wage indexation was binding;
- Jan. wages exhibit a seasonal decline, being sandwiched between high increases in Dec. and bonus payments in February.

What about wages in subsequent months? Figs. 2-6 plot the graphs, by sector, of the cumulative norm and wage payments for 1990. Metallurgy was always close to the norm and exceeded it early, in March 1990. The gap between actual and norm wages then progressively widened. Food processing exceeded the norm around June and the gap then widened. Electromachinery and chemicals conformed to the pattern showing up in aggregate data, namely, the norm was exceeded only close to the last quarter. In contrast, light manufacturing was never close to the norm except at the beginning of 1990 and always below it thereafter, with the shortfall widening over time.

The contrast between metallurgy (high) and light (low), which were at the two ends of the profitability spectrum, brings out the positive relation between profitability and exceeding the norm; while the different time points at which the cumulative norm was exceeded (Figs. 2-6) suggest that both profitability and the relaxation of credit and interest rate policy in the second half of 1990 played a role.\footnote{For a discussion of costs and profitability in the sample, see Pinto, Belka and Krajewski (1991).}

The role of profits and credits is captured by the specification:
wages = f(wage norm, gross value added, increase in credits), or:

\[ W = f(WN, GVA, DCR), \]

where \( W \) and \( WN \) refer to cumulative actual and norm wage payments respectively; \( GVA \) is (profit II + depreciation + labor costs), profit II being operating profit, or profit before corporate income tax; and \( DCR \) is the change in credits from banks. Profit II includes all "paper" profits made by firms in 1990; it is reasonable to assume that workers would not be too concerned about the niceties of inflation accounting while setting wages. The preceding specification also fits in well with the changed milieu facing the worker controlled firms, namely, cost plus pricing no longer feasible, even for so-called monopolies, and the growing importance of marketing and profits with the elimination of subsidies and the gradual hardening of the budget constraint. Firms could be regarded as facing a two-step maximization problem: in the first step, \( GVA \) is maximized; in the second, the distribution of \( GVA \) among wages, taxes (income, dividends, PPWW), investments, retained earnings and bonuses is made.

Owing to the cumulative nature of the wage norm, "nested" regressions based on the above model were run to examine wage evolution over the successive quarters (cumulatively) of 1990; and for the first quarter of 1991, based on a complete sample of 65 firms. Table 1 summarizes the regression results, while Table 2 contains elasticities of the wage bill with respect to the explanatory variables.

The following conclusions may be drawn:

(i) the importance of the wage norm steadily diminishes through the year, while that of value added ("disposable surplus") steadily increases. This fits the story that firms were initially uncertain about what the ETP would bring, and were therefore guided by the norm; but by the end of the fourth quarter of 1990, were anxious to consume the surplus available, as indicated by a rise in the value added elasticity from 0.19 in the first quarter to 0.58 for the year as a whole.

(ii) there was a definite and statistically significant credit-wage link in the second half of 1990, albeit weak, the elasticity for the year as a whole being only 0.07. Thus, the relaxation of credit and lowering of interest rates may have contributed to the consumption of the unutilized norm during the second half of 1990; but given the small size of the elasticity, this would have probably taken place anyway.

(iii) first quarter 1991 displays a similar pattern to that in 1990.

---

4 The following claims exist on profit II: income tax; dividends; PPWW; retained earnings; wage bonuses.
Table 1. Regression Results Dependent variable: wage bill

<table>
<thead>
<tr>
<th>Period</th>
<th>Constant</th>
<th>Wage Norm</th>
<th>Value Added</th>
<th>Credits</th>
<th>Adj. R²</th>
<th>F-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990:I</td>
<td>506</td>
<td>0.67@</td>
<td>0.02@</td>
<td>0.00</td>
<td>0.96</td>
<td>510.45</td>
</tr>
<tr>
<td>1990:I-II</td>
<td>4391@</td>
<td>0.41@</td>
<td>0.04@</td>
<td>0.00</td>
<td>0.91</td>
<td>221.27</td>
</tr>
<tr>
<td>1990:I-III</td>
<td>8545@</td>
<td>0.16@</td>
<td>0.07@</td>
<td>0.09@</td>
<td>0.92</td>
<td>248.36</td>
</tr>
<tr>
<td>1990:I-IV</td>
<td>13978@</td>
<td>0.09*</td>
<td>0.09@</td>
<td>0.07*</td>
<td>0.91</td>
<td>207.29</td>
</tr>
<tr>
<td>1991:I</td>
<td>1339</td>
<td>0.71@</td>
<td>0.05@</td>
<td>0.00</td>
<td>0.95</td>
<td>389.17</td>
</tr>
</tbody>
</table>

Notes: @ denotes significance at 1% level
* denotes significance at 5% level
Rest are statistically insignificant

Table 2. Wage bill elasticities
(calculated at mean values)

<table>
<thead>
<tr>
<th>Period</th>
<th>Wage Norm</th>
<th>Value Added</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990:I</td>
<td>0.77</td>
<td>0.19</td>
<td>0.00</td>
</tr>
<tr>
<td>1990:I-II</td>
<td>0.46</td>
<td>0.34</td>
<td>0.00</td>
</tr>
<tr>
<td>1990:I-III</td>
<td>0.17</td>
<td>0.48</td>
<td>0.09</td>
</tr>
<tr>
<td>1990:I-IV</td>
<td>0.10</td>
<td>0.58</td>
<td>0.07</td>
</tr>
<tr>
<td>1991:I</td>
<td>0.69</td>
<td>0.23</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Essentially:

- worker controlled firms are anxious to dip into the available surplus, willing to wait initially but expecting compensation by year-end when the dimensions of the surplus become clear;
- with 1991 surpluses likely to be much smaller (with the evaporation of the temporary favorable factors of 1990 - see Pinto, Belka and Krajewski (1991)), chances are that the credit-wage link will strengthen.

B. Employment

In aggregate data, employment reduction has considerably lagged output decline, resulting in falling productivity and in some sectors, rising unit labor costs.

Sample evidence conforms to this aggregate pattern. Despite the drop of 14% in sold output in the sample in Jan. 1990, employment fell by a mere 0.9%.
The big drop in output in 1990 was accompanied by visible reduction in employment, though on a smaller scale, reducing productivity. Employment reduction in 1990 ranged from a high of 17% in light manufacturing to 7-9% in metallurgy, chemicals and electromachinery, with food processing showing little reduction. These variations can be linked to the financial performance of sectors (good in food processing, poor in light at the other extreme), labor intensity (high in light) and technology (many processes in metallurgy and chemicals have labor requirements behaving as a step function).

Despite further output drop in 1991, the decrease in employment was modest, with electromachinery leading this time, showing a decrease of about 5% in 1991:1 as a result of losing the Soviet market.

After an initial decline in unit labor costs stemming from the big real wage in January 1990, the trend was upwards. Light in particular was plagued by rising unit labor costs despite shedding labor the most rapidly and having the lowest wages, indicating the depth of the recession hitting this sector. In 1991:1, unit labor costs increased dramatically for light and electromachinery.

Managers indicated that employment reduction has been mainly passively achieved through individual departures and not replacing retirees, i.e., through normal attrition. Group layoffs took place in 16 firms in the sample in 1990 and 16 firms in 1991 as well. The first to go have been part-time workers, recalled retirees, those close to retirement and undisciplined workers. As a result, group layoffs have met little resistance so far; but as the recession deepens and further cuts are necessitated, resistance might grow. As expected of worker controlled firms, labor sharing schemes have arisen. In 14 firms, the work week was cut to 3-4 days at least once and in 32 firms, workers were obliged to use up their vacation time during which they receive reduced wages. The highest incidence of this has been in the beleaguered light sector. Table 3 summarizes manager responses to question about longer term (2-3 years) prospects for output and employment, which show that there is awareness of the need for further employment reduction.

Table 3. Prospects for Output and Employment

<table>
<thead>
<tr>
<th></th>
<th>Growth</th>
<th>No Change</th>
<th>Drop</th>
<th>Hard to Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>7</td>
<td>6</td>
<td>--</td>
<td>2</td>
</tr>
<tr>
<td>ELM</td>
<td>9</td>
<td>4</td>
<td>--</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>L</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>--</td>
</tr>
<tr>
<td>FP</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>TS</td>
<td>39</td>
<td>24</td>
<td>8</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Growth</th>
<th>No Change</th>
<th>Drop</th>
<th>Hard to Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>--</td>
<td>5</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>ELM</td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>--</td>
<td>4</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>L</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>FP</td>
<td>--</td>
<td>5</td>
<td>10</td>
<td>--</td>
</tr>
<tr>
<td>TS</td>
<td>3</td>
<td>20</td>
<td>44</td>
<td>9</td>
</tr>
</tbody>
</table>
III. Effectiveness of Wage Policy

A. Real Wages

Wage policy, with its fractional indexation to inflation, was designed to engineer a substantial real wage reduction. The scale of reduction is shown graphically by looking at the indexation norm real wage. Thus, the September 1989 wage bill with an adjustment coefficient of 0.8 for October, November and December 1989 inflation itself implied a starting real wage norm for the ETP of about 86% of the Sept. 1989 real wage. Combined with forecast inflation of 45% for Jan. 1990 and a coefficient of 0.3, the norm real wage for Jan. 1990 was to be only 68% of the Sept. 1989 level.

Table 4. Actual and Norm Real Wages

<table>
<thead>
<tr>
<th></th>
<th>December 1990</th>
<th>March 1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metallurgy</td>
<td>68.0</td>
<td>55.8</td>
</tr>
<tr>
<td>Electromachinery</td>
<td>65.3</td>
<td>49.7</td>
</tr>
<tr>
<td>Chemical</td>
<td>68.8</td>
<td>50.6</td>
</tr>
<tr>
<td>Light</td>
<td>48.5</td>
<td>41.3</td>
</tr>
<tr>
<td>Food</td>
<td>78.9</td>
<td>64.3</td>
</tr>
<tr>
<td>Total Sample</td>
<td>65.9</td>
<td>51.9</td>
</tr>
</tbody>
</table>

Table 4 shows the norm real wage by sector based on the sample for two months: Dec. 1990 and March 1991 (Sept. 1989 = 100). The following conclusions emerge:

- on average, by Dec. 1990, the norm real wage fell by 50%.
- with the exception of light manufacturing, the actual real wage was significantly above norm wages in Dec. 1990, on average by 32%, but indicating nevertheless a substantial decline relative to Sep. 1989, 34% on average. This excess was partly due to the consumption of the unutilized margin under wage indexation from the first half of 1990, which could be done without tax penalty (PPWW); and partly because of exceeding the cumulative norm, resulting in payment of PPWW.
- by March 1991, actual and norm real wages were on average closer to each other, with the Dec. 1990 gap significantly reduced. This could be attributed to two factors:
  (i) indexation norm for Jan. 1991 based on norm for December, with the unutilized margin fully consumed;
  (ii) sharp reduction in sales and profitability ("GVA") in 1991.

Three issues arise:

(a) scale of real wage reduction;
(b) economic rationale for such reduction
(c) problems created by multiple anchors.
(a) Real Wage Reduction

A remarkable result emerges from Table 4: so long as inflation persists, with fractional indexation, the norm real wage will continue to fall. Thus, if inflation averages 5% a month, an adjustment coefficient of 0.6 will result in a norm real wage reduction of 20% in one year. It is tempting to believe that the extent of real wage reduction portrayed in Table 4 was unanticipated by the designers of the ETP. The scenario probably assumed was one where the fixed exchange rate would quickly lead to a convergence of the price level, hence of real wages.

(b) Economic Rationale

The wage policy did not (and does not) make a distinction between price increases that should be fully compensated, e.g., controlled prices for rent and utilities that are being liberalized, where the controlled price was part of the compensation package in the earlier regime; and those that should not be, e.g., the rise in prices following the dollarization of CMEA trade, where the Soviet Union was the source of the subsidy. Further, at a time of price liberalization during a move from planned to market economies, which is bound to involve some price level adjustment as well as relative price realignment, some wage level adjustment may also be justified. Lastly, assuming real wages should bear some relationship to productivity, it is difficult to believe that a 50% decline in productivity was anticipated between Sept. 1989 and Dec. 1990. However, a self-fulfilling prophecy could result if the reduction in real wages leads to a decline in aggregate demand, hence low capacity utilization and declining productivity, as happened in Poland in 1990.

(c) Exchange Rate as an Anchor

When a fixed exchange rate is used as a nominal anchor, a perverse situation could result where the real wage declines, yet increases in terms of imported goods, automatically deflecting shrinking domestic demand towards imports. This resulted in a sharp increase in imports towards the last quarter of 1990, which has persisted in 1991, as dollar wages monotonically increased owing to the fixed exchange rate. Two issues arise:

- it appears contradictory having a fixed exchange rate as a nominal anchor during price liberalization, which could involve some "corrective inflation" and relative price adjustment, as was witnessed in Poland during 1990 (see Pinto, Coricelli and de la Calle (1990)).
- wage controls during such a period automatically lead to a preference for imported consumption on relative price grounds alone. The exchange rate may have to be adjusted to preserve some neutrality in domestic-foreign relative prices.

PPWW, Decapitalization and Dividends

Table 5 gives PPWW paid per worker by sector and overall for the first nine months of 1990 and then monthly upto March 1991. The results are striking, with the dispersion and average level both high - in fact, the average PPWW payment was close to the average wage for the last 3 months of 1990, exceeding it in December for metallurgy and food processing.
Table 5. PPWW paid per worker 1990-1991 (zloty thousands).

<table>
<thead>
<tr>
<th></th>
<th>Jan-Sep</th>
<th>Oct-90</th>
<th>Nov-90</th>
<th>Dec-90</th>
<th>Jan-91</th>
<th>Feb-91</th>
<th>Mar-91</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>242.9</td>
<td>1556.5</td>
<td>1137.3</td>
<td>2198.1</td>
<td>238.9</td>
<td>505.6</td>
<td>706.7</td>
</tr>
<tr>
<td>ELM</td>
<td>40.8</td>
<td>134.5</td>
<td>158.7</td>
<td>383.3</td>
<td>157.1</td>
<td>95.0</td>
<td>322.7</td>
</tr>
<tr>
<td>C</td>
<td>88.1</td>
<td>349.7</td>
<td>987.8</td>
<td>1217.8</td>
<td>411.2</td>
<td>264.6</td>
<td>550.9</td>
</tr>
<tr>
<td>L</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>465.0</td>
<td>0.0</td>
<td>0.0</td>
<td>550.9</td>
</tr>
<tr>
<td>FP</td>
<td>114.5</td>
<td>877.9</td>
<td>1075.3</td>
<td>2041.6</td>
<td>564.8</td>
<td>610.4</td>
<td>814.2</td>
</tr>
<tr>
<td>TS</td>
<td>105.3</td>
<td>609.1</td>
<td>678.6</td>
<td>1235.2</td>
<td>260.7</td>
<td>283.5</td>
<td>559.1</td>
</tr>
</tbody>
</table>

The number of firms not paying PPWW rose from 20 in 1990 to 27 in 1991 Q1. In 1991, PPWW payments subsided initially largely because December wage levels far exceeded the December norm - and the Jan. 1991 norm was based on the Dec. 1990 norm with all the unused margin having been utilized - so that nominal wages barely rose in 1991 Q1. Moreover, profitability levels declined significantly in electromachinery and chemicals, although these rose for metallurgy and food processing and were roughly the same, but low, for light manufacturing.

Decapitalization may take three forms: first, existing machinery may not be maintained properly to lower maintenance costs and swell the surplus immediately available; second, replacement investments may be less than depreciation; third, "reckless" wage setting behavior may raise payments to workers at the expense of the long-term health of the company. The information collected enables comment only on the second and third forms of decapitalization. Table 6 contains a few indicators of decapitalization as well as the dividend tax, which, like the PPWW, is paid out of net income.

Table 6. Some Indicators of Decapitalization

<table>
<thead>
<tr>
<th></th>
<th>PPWW/Disposable cash %</th>
<th>Dividend/Net Income %</th>
<th>1990</th>
<th>1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: (1) Disposable cash is Profit II-Income Tax-Dividend+Depreciation.
(2) Net Income is Profit II-Income Tax.
The burden of PPWW on enterprise disposable cash (profit after income tax and dividend plus depreciation) was only 10.46% of disposable cash for the whole sample in 1990, apparently small despite the punitive marginal rates of the tax, reaching 500% of the excess wage payment. This observation casts doubt on the view that widespread decapitalization may have occurred, and fits in with the econometric results above that the credit-wage link was weak: an enterprise using only a small portion of its retained cash does not need to borrow to pay wages and the PPWW. This is supported by aggregate data. Working capital credits were more or less constant in nominal terms in the last quarter of 1990, coinciding with a rise in interest rates, when most of the PPWW was incurred.

Sectoral dispersion in the PPWW/disposable cash burden grew in 1991:1. The increases were particularly sharp for electromachinery and chemicals, both of which were deeply affected by the loss of the Soviet export market (electromachinery especially) and dollarization of CMEA prices. The range increased from 0%-38% in 1990 to 0%-73% in 1991 with two firms, both in chemicals, exceeding disposable cash.

Investments in 1990 comfortably exceeded depreciation for the two sectors, metallurgy and food processing, which had the highest PPWW payments. The only exception was light, also the least profitable. However, this sector had the highest burden of dividends, the tax levied on founder’s capital, as Table 6 shows. The light sector is remarkable, exhibiting cautious wage behavior, yet not fully replacing depreciation with new investments. Rather than use retained earnings for restructuring, most of these went for dividend payments, reflecting the inefficient (and inequitable) nature of this tax, which bears no relation to profitability.5

Some evidence that enterprises are myopic is provided by the high level of average PPWW payments in dollars, especially significant for metallurgy and chemicals, both of which will need considerable investment for restructuring to lower energy consumption, improve technology and control pollution. It is unlikely that in a private, market economy such payments would be tolerated.

The last two columns of Table 6 contain a "catch-all" measure of decapitalization based on the claims on profit II or income before tax. These claims are income tax, dividend and PPWW. If the sum of these claims exceeds profit II, then the payment must cut into the depreciation allowance and reduce the resources available for investment and maintenance of existing plant and equipment. For the overall sample, there was a modest increase in these claims in 1991:I; for chemicals and light, the increase is remarkable and suggest potential decapitalization.

IV. Predatory Wage Setting?

In a small open economy such as Poland since Jan. 1990, worker controlled firms can exercise only limited control over gross value added (being price takers and not "cost plus" price setters), but can fully control how it is disposed of. In particular, by raising wages sufficiently and paying the PPWW, they could ensure that the retained after tax earnings of the firm are nil. Did they in fact behave in this predatory manner in 1990, as has often been claimed in popular economic discussion? Table 7 contains two indicators based on the sample: retained earnings as a percentage of profit II (profits before tax) and the effective after tax labor cost as a percentage of the wage bill.

5 The dividend rate was 32% in 1990 and lowered to 22% in 1991 to compensate for the asset revaluation.
Retained earnings are defined as follows:

\[ \text{Retained Earnings} = \text{Profit II} - (\text{income tax} + \text{dividends} + \text{PPWW}) - (\text{bonus} + \text{Social and Housing Fund contributions}) \]

Effective wage costs (after tax) are defined as follows:

\[ \text{Wage costs} = 1.65 \ w_L \ (1-t) + \text{Social and Housing Fund contributions} + \text{bonuses} \]

where:

- \( w_L \) is the wage bill, to which 65% is added to reflect payroll taxes and social insurance.
- \( t \) is the corporate income tax rate, roughly 40%.

Table 7. Retained Earnings and Effective Labor Costs in 1990.

<table>
<thead>
<tr>
<th></th>
<th>Retained Earnings/ Profit II (%)</th>
<th>Wage Costs/ Wage Bill (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metallurgy</td>
<td>42</td>
<td>136</td>
</tr>
<tr>
<td>Electromachinery</td>
<td>41</td>
<td>121</td>
</tr>
<tr>
<td>Chemicals</td>
<td>39</td>
<td>130</td>
</tr>
<tr>
<td>Light</td>
<td>26</td>
<td>103</td>
</tr>
<tr>
<td>Food</td>
<td>46</td>
<td>137</td>
</tr>
<tr>
<td>Total Sample</td>
<td>41</td>
<td>130</td>
</tr>
</tbody>
</table>

After tax retained earnings are on average 41% of pre-tax profits, which is high considering that income tax alone is 40%. This suggests that SOEs could have raised wages much more than they did in 1990, despite the wage explosion in the fourth quarter, and fits in with the earlier observation on the small fraction of disposable cash going for PPWW payments. Ironically, the lowest share of retained income was recorded by light industry, which never really incurred the PPWW, but was burdened by dividends bearing no relation whatsoever to profitability, as remarked earlier. Effective after tax wage costs were on average 30% above the pre-tax wage bill.

Although the evidence does not support the idea that workers are determined to raise wages at all costs, this could change as profitability declines. Given the continuous decline of the norm real wage so long as inflation persists, workers may feel justified in raising real wages above the norm and paying the PPWW (or incurring arrears) even if it means severely diminishing retained earnings. Out-of-sample behavior partly supports this view, with real wages rising strongly from July 1991 onwards despite the sharp fall in profitability and perhaps facilitated by the devaluation of May 1991, when the exchange rate anchor was relaxed for the first time since the start of the ETP.

Table 8 contains the trend in the share of labor costs (wage bill x 1.65) in gross value added over time. The shares are shown cumulatively for the successive quarters of 1990 and for the first quarter of 1991. Shares are also shown for the last six months of 1989 for comparison. The trend is obviously upwards, about doubling by the first quarter of 1991. The following factors explain this:
• wages plunged in the first quarter of 1990, subsequently recovering;
• gross value added fell as the temporary favorable factors of 1990 evaporated, and dropped abruptly and sizably in first quarter 1991 following the CMEA shock, particularly apparent in the electromachinery sector;
• there was no particular incentive for SOEs to maximize gross value added through cost minimization, product mix change or restructuring;
• capacity utilization fell as the real exchange rate appreciated, which with sluggish labor adjustment, raised the share of labor costs in GVA and unit labor costs.

Table 8. Labor Costs as a Percentage of Gross Value Added

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Met</td>
<td>20.4</td>
<td>11.0</td>
<td>13.4</td>
<td>16.8</td>
<td>20.8</td>
<td>26.8</td>
</tr>
<tr>
<td>Elec</td>
<td>23.9</td>
<td>25.9</td>
<td>28.2</td>
<td>29.7</td>
<td>33.8</td>
<td>52.2</td>
</tr>
<tr>
<td>Chem</td>
<td>21.3</td>
<td>17.5</td>
<td>20.6</td>
<td>23.8</td>
<td>23.7</td>
<td>31.9</td>
</tr>
<tr>
<td>Lt</td>
<td>29.4</td>
<td>41.5</td>
<td>49.6</td>
<td>55.4</td>
<td>61.9</td>
<td>70.9</td>
</tr>
<tr>
<td>Food</td>
<td>28.1</td>
<td>25.4</td>
<td>23.5</td>
<td>25.7</td>
<td>27.5</td>
<td>27.0</td>
</tr>
<tr>
<td>Total</td>
<td>22.9</td>
<td>17.7</td>
<td>20.3</td>
<td>23.7</td>
<td>26.8</td>
<td>34.8</td>
</tr>
</tbody>
</table>

V. Concluding Comments: A Transitional Share Economy?

Four main conclusion may be drawn:

(a) SOEs are myopic, as indicated:

• by the willingness to pay large sums as PPWW, which could be used for restructuring and new product development;
• scramble to use up surplus intensifying at year end, symptomatic of a tendency to accept low initial wages but expecting compensation as the size of the surplus becomes clearer.

(b) there is a small, but definite wage-credit link which could easily strengthen in 1991, owing to the large reduction in enterprise surpluses.

(c) there is a reluctance to fire workers. Managerial perceptions are that employment reduction has been inadequate and could speed up as the ETP proceeds and commercialization and privatization take place.

(d) wage indexation and the PPWW have been overshadowed by a given firm’s disposable surplus, PPWW being treated as just another cost.

This negative assessment must be balanced by recognizing that by design, norm real wages will continuously decline so long as inflation persists, reaching politically (and even economically)
unsustainable levels. This might partly explain willingness to pay the PPWW when it can be afforded.

1. Has wage policy been effective?

(a) inflation control: its effectiveness here is suspect. Although the ETP is commonly characterized as having two nominal anchors, the exchange rate and nominal wages, in fact, the nominal wage path is completely endogenous, being a function of the price path and inflation. Strictly, only the exchange rate is an anchor, the expectation probably having been that domestic prices would quickly converge to international prices, thereby leading to convergence of nominal wages. The possibility of accumulating the unused norm under wage indexation upset such calculations in the second half of 1990, with wage inflation considerably exceeding wage norm growth.

Moreover, fiscal imbalance was not an issue in 1990, unlike 1991 and the gloomy prognosis for 1992. Under this circumstance, wage indexation (together with that of social money benefits) could create strong inflation inertia.

(b) real wages: Real wages have remained low and by March 1991, gravitated towards the norm. However, wages are also heavily influenced by value added and to a smaller extent, by credits, though as remarked above, the credit-wage link could easily strengthen as profitability declines. Some real wage restraint can also be traced to reluctance of worker controlled firms to discharge workers, and to a preference for taking wage cuts instead. It is interesting that such labor sharing schemes have been most widespread in the sample in light manufacturing, where the wage norm has been irrelevant. Firms view the PPWW as just another cost, to be borne if affordable.

(c) efficiency: It is interesting once again that decapitalization has become most probable for a sector that has never exceeded the wage norm or incurred PPWW in a serious way: light manufacturing, because of dividends. In other cases, PPWW was small as a fraction of disposable cash, although the range and variance grew significantly in 1991.

In examining indexation from an efficiency point-of-view, it is worth pointing out that the scheme was not derived from an optimal investment program. It certainly does not address firm myopia either. In fairness, wage indexation and the PPWW were never viewed by GOP as anything but a stopgap measure, pending privatization and financial sector reform. As the latter are proceeding more slowly than expected, the issue may have to be revisited. The following have been relatively neglected so far during the ETP, which has had a strong macroeconomic focus and has concentrated on allocative efficiency in the goods market alone ("getting the prices right"):

- principal-agent type problems, including lack of clear accountability and responsibility at the firm level;
- X-efficiency issues stemming from poor motivation and absence of incentives to capitalize on emerging opportunities, in particular low job security for managers and absence of performance-linked compensation;
- allocative issues in the factor market, notably for credit and labor;
- inefficiencies stemming from poor exit policy for SOEs and softening of the budget constraint;
limited technical assistance to firms in the transition to a market economy in terms of
financial management, organization and marketing.

All the above are aspects of SOE behavior, in a sense more important than wage setting, which has
been the only aspect of SOE behavior focused on so far.

VI. Looking to the Future

The focus must shift from wage controls to positive incentives at the firm level such as
empowering managers and management contracts in the transition to eventual privatization. Since the
sustained real wage reduction in the present system is politically and economically unviable, changes
in wage policy are needed. Some of them, mainly focusing on elimination of inflation inertia, such as
de-indexing wages, limiting carryover of unused margin under wage adjustment and lowering the
frequency of such adjustment to once every quarter, have already been proposed (Coricelli and Pinto
(1990)). Over a longer period, given the determinants of wages as value added and credits, a
different form of wage policy could be adopted based on:

(i) rules for disposition of value added based on standards encountered in economies with
structures Poland is expected to approach over the medium term. These standards will have to be
industry specific and will require proper accounting and auditing of firms. Such rules would be more
equitable and also signal more clearly wage differentials among different industries, rather than
among individual firms as is the present case.
(ii) banks exercising greater control and monitoring of how credits are used, and making
stipulations on wage increases.

The choice of "comparator" countries and the dynamic path from initial condition to the desired share
will have to be worked out, incorporating restructuring requirements. Focusing on value added will
immediately create incentives for maximizing it through efficient use of resources and for streamlining
labor requirements. Needless to say, creation of a labor market and addressing the issue of worker
housing will have to proceed in parallel. Lastly, the suggested approach must be viewed as only one
element in the SOE enterprise governance package, including empowerment of managers and
management contracts in the transition to eventual privatization.
Appendix: Brief Description of Wage Indexation During the ETP

The scheme may be defined by two equations. The first gives the evolution of the wage norm:

(i) \( w_n^t = w_{n-1}^t (1 + \alpha_t \pi_t) \),

where \( w_n^t \) is the wage norm in month \( t \), \( w_{n-1}^t \) is the norm in the previous month, \( \alpha_t \) is the indexation coefficient (usually less than 1, on average about 0.6) and \( \pi_t \) is the inflation rate in month \( t \).

The second equation specifies that the sum of actual monthly wages should not exceed the sum of norm wages up to that month. If the sum of norm wages ("cumulative norm") is exceeded, a tax penalty with highly progressive rates (PPWW) is levied. In 1990, the total wage bill was used as the criterion while defining norm wages. In 1991, norm definition was based on average wages (see Blanchard and Layard (1991) for more details).

Given an initial condition and by successive substitution into equation (i) above, the norm real wage in month \( t \) is given by:

\[
\frac{w_n^t}{P_t} = \frac{w_0^n}{P_0} \prod_{i=1}^{t} \frac{1 + \alpha_i \pi_i}{1 + \pi_i},
\]

where the identity \( P_t = P_0 \prod_{i=1}^{t} (1 + \pi_i) \) has been used. It is obvious from this equation that so long as the indexation coefficient is strictly less than 1 and inflation persists, the norm real wage will continuously decline.
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Forecast Norm and Wage Bill
January 1990

Figure 1
Wage and Wage Norm
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Figure 2
Wage and Wage Norm
Electromachinery

Figure 3
Wage and Wage Norm
Chemical

Figure 4
Wage and Wage Norm
Food

Figure 6
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