Industrial Restructuring and Microeconomic Adjustment in Poland: A Cross-Sectoral Approach*

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This paper analyzes the impact of the Polish stabilization program on the behavior of state-owned firms by summarizing and evaluating three case studies. The authors outline a framework to analyze whether firms have adjusted differently according to differences in their market power, financial status, or exposure to trade and international comparative advantage. They find no evidence for differences in adjustment from any source; in all three industries adjustment has been relatively modest and the governance of firms has hardly changed at all.

1. Introduction

Poland was the first of the former socialist countries to launch a radical program to transform its economy (Lipton and Sachs 1990, Portes 1993). The reform program, launched on 1 January 1990, was intended to achieve macroeconomic stabilization and to facilitate the structural adjustment of industry. An ambitious program of privatization was intended to accompany

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this transformation process, redistributing property rights and reducing the importance of state-owned enterprises. A second aspect was to be the emergence of a new private sector, which would increase supply, employ the redundant work force in the state sector and speed the structural transformation of the economy by enhancing the development of new sectors.

We evaluate enterprise adjustment in the first years of Polish transition on the basis of evidence from three case studies: iron and steel, electronics, and white goods sectors. We provide information about the impact on firms of the Polish "big bang" stabilization program and analyze the extent of restructuring and adjustment in the absence of privatization. In particular, we investigate whether the response of these firms varies according to differences in their monopoly power, financial situation, exposure to world and domestic competition and the collapse of the CMEA market[1] on the one hand and differences in terms of their comparative advantage on the other. We find no evidence for differences in adjustment from either source. In all three sectors microeconomic adjustment has been very similar and the governance of firms has hardly changed at all. The sample is, of course, far too small to claim any generality for the findings, though selection procedures within each sector have sought to isolate "typical" firms. But in striking contrast to the optimistic current picture on the macroeconomic front (Schaffer 1993), our study indicates that progress toward enterprise restructuring may have been very slow, at least within the state sector.

In section 2, we present a general discussion of the issues in the restructuring of transitional economies, both in terms of the structure of production and ownership and of the internal organization of firms. We briefly summarize the relevant aspects of the Polish experience in section 3, and introduce the three case studies. The framework for analysis and our findings are described in section 4. We offer our conclusions in section 5.

2. Restructuring Socialist Industry

Reliance on extensive growth and inadequate guidance toward activities of comparative advantage resulted in industry taking the lion's share of domestic product at the expense of services in centrally planned economies (Ellman 1989). Though no longer planned in the classic way, Polish industry still accounted for 52% of GDP in the late 1980s, whereas in most countries with a similar income, the average is 39%. Moreover only 3.7% of the population was employed in the retail trade sector, as against 11.7% in Ireland, 9.1% in the Netherlands and 7.3% in France (Kharas 1991).[2] The embryonic financial system, centrally administered prices and the

enterprise subsidy policy limited the impact of incentives for more efficient allocation, even in the partially decentralized economies of Hungary and Poland.

Industrial Distortion Under Central Planning

One way to think about the impact of these distortions on comparative advantage is provided by Hare and Hughes (1992), who recalculate input prices and value added based on world market prices. Their study suggests that in Poland one quarter of all industrial enterprises should be closed and 65% of the industrial sector would need to be restructured to attain a level of profitability compatible with the new market environment. Their findings suggest a survival rate of only 11%. Though one can question the approach for being based on fixed coefficient pre-reform input-output tables as well as the relevance of the assumed world price structure, such figures are useful indicators of the likely magnitude of the adjustment problem.

The concentration of property rights and the nature of the corporate governance under the former socialist system also had a negative effect on the industrial structure, with a high degree of vertical integration and concentration. In Poland, nearly half of the workforce was employed in enterprises employing between 500 and 2,500 people and most of the remainder in enterprises employing over 2,500. Moreover, firms participated in activities such as housing, schools, health, and holidays.[3] Directors therefore faced social as well as economic goals.

Private activity did emerge where scarcities were high and entry difficult to prevent: in services and construction, for example. These activities stimulated the entrepreneurial spirit of some, representing some 14.7% of GDP in Poland in 1990 and figures concerning employment were even higher (see Table 1). But a two-tier structure developed, with the growth of private activities hardly influencing the behavior of state-owned firms, who held a monopolistic position in their own markets.

Enterprise Adjustment in Transition

The Polish privatization program had two components: first, to transform and to redistribute property rights to different categories of economic agents (employees, managers, municipalities, private and institutional investors, foreign companies, banks (Richet 1993) and, second, to restructure state-owned enterprises. Whether privatization alone is enough to ensure restructuring or whether it is necessary to undertake restructuring and

TABLE 1

Total Employment in Poland by Ownership, 1989–1992
(Share in % at the end-year)

	1989	1990	1991	1992
Total	100	100	100	100
State sector	53	50	44	41
Agricultural private sector	23	25	26	26
Non-agricultural private sector				
Including cooperatives	24	25	30	33
Excluding cooperatives	10	14	19	26
Total employment (millions)	17.6	16.5	15.9	15.9

Source: M. Schaffer (1993)

revamping state-owned firms before putting them up for sale has yet to be resolved (Richet 1992, Pinto *et al.* 1993).

Shifting to a market system involves numerous changes within firms (Singh 1992, Richet 1993). We summarize five.

Changing the ownership and control structure. Firms were previously owned and indirectly controlled by the state, and privatization will typically bring separation of management from ownership. Strengthening of the control structure is also needed to break down the so-called "Bermuda Triangle" (Carlin and Mayer 1992). Often in state-owned firms which have not yet been transformed, the weakness of the corporate governance structure meant firms were under the triple influence of government, managers and unions. The latter two were able to oppose any restructuring that could threaten their present situation inside the firm. After transition, management must be supervised by owners and constrained more effectively by financial markets (Frydman *et al.* 1993).

Changing internal governance and organization of enterprises. State firms were characterized by organizational weaknesses in the areas of finance, accounting, marketing and personnel. Incentives to work were also weak despite the well-trained workforce and perhaps especially so for management. High levels of internalization and vertical integration may have increased firms' monopolistic position and, consequently, their inefficiency.

Enhancing technological change. Despite many efforts to adapt technology, many state-owned plants are technically obsolete. Moreover, plants were used to produce goods for the CMEA market, where quality and design standards were generally lower than Western ones. Most fixed assets will need replacement, or adaptation, though in a few cases state firms are already up to Western standards, for example: Polish plastics, Hungarian rubber, and the Czech aviation industry. Companies created jointly with Western firms would facilitate the transfer of technological know-how and managerial skill.

Changes in the financial system. Many state enterprises have particularly high debts. Often the balance sheets will need to be pruned by writing off part of the accumulated debts in order to improve financial conditions. But the weak financial and banking system is typically not yet ready to assume its required role (Estrin, Hare and Suranyi 1992).

Changes in managerial attitudes. The socialist manager can be characterized as not market-oriented and with a low enterpreneurial spirit. He or she knew how to coordinate production operations, but had few links with the sales or accounting departments, or banks. Management skills are weak and will need time to be improved (Eliason 1992).

Industries also need restructuring with regard to size to generate more competition within the industry. There is considerable disparity in the size distribution of firms. Firms with 5,000 employees or more, often displaying diseconomies of scale due to the high degree of internalization and the difficulty of managing complex organizations, are common. Medium-sized firms and subcontracting organizations are rare or only just being created. Considerable disparity also exists across industries in the number of firms relative to the size of the market. In Poland, for example, there are 11 industrial groups assembling lorries, whereas in Western Europe, lorry production is handled by three groups. Several reforming countries including Poland have obtained a certain degree of competition, however, either by disbanding the monopolies or by liberalizing imports (Estrin and Cave 1993).

Reforming governments usually have no clear vision of what will become of their industrial sector in the transition process. The market has been entrusted to reorient the industrial structure. While privatization remains the main objective, it might be insufficient to build up a competitive market economy; the ongoing process could usefully also be analyzed to help isolate specific appropriate measures. But, governments lack bureaucratic skill (*l,Etat entrepreneur à la française*), expertise and financial resources to implement such industrial policies (Gomulka 1992).

3. The Polish Experience: A Cross-Sectoral Analysis

The new democratically elected Polish government was the first to implement a radical economic policy. The shock therapy that was introduced on 1 January 1990 aimed at two main objectives: to reduce macroeconomic disequilibrium through the implementation of a stabilization program on the one hand, and to contribute to microeconomic restructuring in changing the economic environment on the other (Calvo and Coricelli 1992, Gomulka 1992). Table 2 summarizes the macroeconomic situation and reveals that the transformation process initially was associated with very high rates of inflation, and then between 1990 and 1992 with unexpectedly severe recession. Industrial production fell drastically (more than 30% in 1990 and 1991) but growth has recently resumed and continues in 1993. By the end of 1992, industrial production stood at approximately 70% of its 1989 level. Unemployment increased sharply, reaching 13.8% of the workforce in 1992, with forecasts for 1993 ranging between 15% and 16%.

On the microeconomic side, the launching of the mass privatization program has been delayed and the pace of transformation of state-owned enterprises has been slow (Gomulka 1993). Liquidation, worker or management buy-outs and/or establishing joint ventures have resulted in the privatization of about one-third of the state-owned enterprises. The development of private firms in transport, printing, and services supplanted state-owned enterprises in the share of production by 1993. Rapid growth in the *de novo* private sector, together with privatization, generated private sector employment in excess of 50% of the labor force by 1993.

The Stabilization Policy Program

The Polish transformation program was focused both on stabilization and liberalization. Under the auspices of stabilization, the Polish government adopted a tight fiscal policy (largely by cutting subsidies), restricted growth in the money supply and increased interest rates, and devalued the zloty, at the same time trying to control increases in enterprises' wage bills by imposing tax penalties of 200–500% on any wage bill increase above the ceiling.

Liberalization policies concentrated on the price system: only 3–5% of retail prices continued to be administered as compared with 50% previously, and the elimination of restrictions on most current trade transactions. Quantitative restrictions on imports from convertible currencies countries were also eliminated, and low and unified custom tariff, around 4%, for commercial and personal imports was introduced.

TABLE 2

Polish Macroeconomic Performance 1989–92

	1989	1990	1991	1992
Annual inflation (cpi), %	639.6	249.3	60.4	44.3
GDP growth, %	0.2	−11.2	−7.6	1.0
Government surplus (+)/deficit (−) as % of GDP	−7.4	3.5	−5.6	−6.2
Industrial growth, %				
Total	0.5	−24.2	−11.9	4.2
of which private sector	22.0	8.9	48.6	40–50
Real wage in industry growth, %	9.1	−32.1	−1.9	−2.4
Profitability* in the enterprise sector	34.1	23.4	6.9	3.1
Unemployment rate, %	nil	6.3	11.8	13.6
Individual business number (thousands)	813.5	1135.5	1420.0	1630.6
Zloty/dollar exchange rate	5235	9500	11,072	15,449
Total export growth, %	0.2	13.7	−2.4	−3.5
Total import growth, %	1.5	−17.9	37.8	12.6
Trade balance ($m)	240	2214	51	512

*Profit as percentage of sales.
Source: M. Schaffer (1993)

As seen in Table 2, implementation of this program had immediate economic consequences. While all industrial sectors were adversely affected by the recession, private activities, stimulated by liberalization, developed rather quickly in those sectors requiring little founding capital: services, trade, construction and transport.

Polish reformers expected rapid adjustment, but initially rigidities and frictions due to the sector specificity of capital and labor tended to keep resources in their old occupations despite signals to move elsewhere (Brada and King 1991). For instance, even by 1993 few firms had gone bankrupt, and employment declined much less than volume of output in most sectors. The case studies also indicate that adaptation at the microeconomic level has taken longer than stabilization.

Microeconomic Adjustment: A Cross-Sector Analysis

Our original study spans fifteen sectors, ranging from food processing and light industry to heavy engineering (Estrin, Gelb and Singh 1993). Here, we focus in detail on restructuring in three sectors, chosen as "representative" of old Polish industry—industries that are relatively capital and energy intensive. However, the sectors differ in terms of their domestic market structure, their foreign trade pattern within CMEA and their prospects for future growth via trade in world markets. We might expect *a priori* that prospects in Polish steel would be significantly worse than in electronics or white goods, for example. However, developments in the latter two sectors would depend on firm-specific characteristics, the ability of the firms to reorient themselves to Western markets and perhaps the involvement of Western partners. These three sectors were also chosen because there has been considerable Western experience in restructuring them in both Britain and France, which could have been relevant in addressing the Polish situation.

The selection of firms within each sector was made by our Polish colleagues, subject to the criteria that the firms should be about average in terms of size for the industry, and not "special" in terms of history, experience or performance. Extreme cases, either successes or failures, were avoided. Although case studies are not representative of some generalized experience, they do illustrate in some detail how firms respond to specific conditions and thus allow analysts to develop hypotheses and construct theories of enterprise operation and performance in transition economies.

Iron and Steel Industry. The iron and steel industry would appear to be difficult to restructure. Benefitting from long-term large subsidies, it is highly concentrated—a few plants produce total output—and is characterized by overutilization of capital, skilled labor and energy. The iron and steel industry is associated with strong labor unions and high wages. Firms typically dominate the town in which they are located and generate significant negative externalities (air pollution). The level of competition on the world market, the decline of CMEA markets and the collapse of domestic demand should make restructuring difficult and privatization only a long-term prospect even if recent research suggests that heavy industry in 1992 has advanced its restructuring (Pinto *et al.* 1992). Price effects, with a low exchange rate of the zloty had temporarily boosted exports but quotas raised by the U.S. government and the EEC might have a rapid counter effect on the performance of this sector.

The difficulty of restructuring the iron and steel industry is highlighted by Western experience. Restructuring the steel industry in the West has

been very costly both financially and socially, without significant results (France) or fragile ones (UK, Germany). Today, Western Europe and North America impose quotas on imports from external markets. In the United States, the development of small mill plants threaten big steel enterprises by reducing capital and labor and increasing productivity. They face tough competition from Japan and South Korea. During the last decade, the steel industry in Western Europe has dramatically reduced its level of output but still faces difficulties because of the low level of diversification of production in comparison, for example, to Japan. The decline of ex-CMEA trade has affected the main markets of the Polish industry and the EEC quotas provide only a small share of the Western European markets for the export of Polish steel. These markets are not only highly price sensitive but concerned with quality: most steel plants in the West have specialized in the production of better quality steels allowing them to charge higher prices.

Concerning corporate governance, the example of the West in this sector seems unambiguous. Privatization in the UK has had a positive effect on the financial results of British Steel. The state-owned French company, Usinor-Sacilor, has been a huge loss-maker formed by the amalgamation of two formerly independent (quasi-bankrupt) companies before the nationalization of the industry in the first half of the 1980s. The company is still in the red despite restructuring and downsizing of its workforce.

The White Goods Industry. The white goods industry (refrigerators, washing machines and dryers) is dominated by medium-sized firms with reasonable prospects for domestic and foreign sales. In Eastern Europe, this industry has generally relied on the acquisition of foreign licenses or has been associated with Western companies to produce licensed products. A significant share of the output has been produced for CMEA markets. It is a more labor-intensive industry than the iron and steel industry and engages a workforce with lower skills. A low concentration ratio and domestic competition cause these firms to be responsive to economic signals, and thus more likely to upgrade quality or to reorient toward exporting their products. It also should also be easier to strengthen corporate control and to privatize these firms because they have been profitable. On the other hand, as a final goods producer, enterprises in this sector may be more strongly affected by the drop in the domestic demand. On Western markets, the industry is not constrained by EEC regulations and other quotas but Western firms do appear to be more concentrated. They also put more emphasis on non-price competition, for example, by spending more on R&D and by introducing new products in order to be present at the beginning of the product life cycle.

The Electronics Industry. The electronics industry produces both intermediate and final goods. In Central Europe this sector made both military

and civilian products but the reputation of electronics enterprises relied on the former. The industry had strong links with CMEA markets. In this sector, enterprises are often multi-plant and multi-product suppliers of medium or large size. These were usually profitable companies with a high level of R&D. Many electronics companies set up cooperation agreements or created joint venture companies with Western firms. The degree of concentration appears to differ from one country to the other: highly concentrated in Hungary and Bulgaria, for instance, and less concentrated in Poland. Privatization of companies belonging to this sector might be easy although the collapse of CMEA trade, particularly with the former Soviet Union, has cut sales and probably made potential Western investors reluctant to invest.

4. Enterprise Adjustment

The case studies were formulated so that we could investigate the different ways that firms were responding to the changes in their market environment. The approach was to categorize the possible changes, and then to calibrate firms' responses to each development. In this paper, we are concerned with the relative adjustment of different *sectors* to the transitional shocks pertaining in one country, Poland, between 1989 and 1992. We will first categorize the changes in the firm's market environment, before considering enterprise responses in the short and the long run.

Managerial and Financial Autonomy

Prior to reform, even in Poland, most enterprises were not really independent in many areas of decision making (Ellman 1989). In the absence of effective "ownership" arrangements, reform greatly increases the actual autonomy of management or an employee-manager coalition to make choices, and the range of activities over which the firm is permitted to engage. The initial increase in managerial autonomy during the early phase of transition may, however, be offset by increased constraints on managers and workers imposed by creditors and ultimately new owners. Reform, in principle, introduces full financial accountability, including by bank and trade creditors, and by owners when these are well-defined (Estrin, Hare and Suranyi 1992). By implication, the specter of bankruptcy for insolvent firms is also raised. These factors should partially offset the increase in managerial autonomy, or at least prevent "perverse" behavior by managers in response to reform initiatives.

Changes in Product Markets

As we have seen, prices were freed on 1 January 1990 for both outputs and material inputs, and international competition became a reality. The array of price regulations, trade and hard currency quotas and investment credits along with inherent shortages which distorted nascent inter-firm supplier relations were eliminated. The opening of markets introduced alternative sources of supply and marketing opportunities.

The distortion of prices in pre-reform economies reflected the priorities of the communist regimes. Prices of consumer necessities such as food or rent were kept very low, and of luxuries very high. Within the intermediate sector, inputs such as raw materials and especially energy were kept very cheap, while outputs were sold at higher prices. Thus, activities such as engineering, capital goods manufacture, chemicals and electronics were kept artificially profitable at the expense of production for final consumers—consumer durables, light engineering, etc. The reform has changed the relative prices in the direction of world prices. The opening of product markets also coincides with dramatic shifts in the relative attractiveness of domestic, ex-CMEA and Western markets. Export markets within the CMEA zone contracted sharply because of the move to convertible-currency trade, the deteriorating situation in the USSR, which was the major market for the exports of most of the economies of Central and Eastern Europe, and the loss of most of the former GDR's market with German reunification. The relative attractiveness of Western markets has also risen, because of real devaluations initiated to regain macro-balance and because of some relaxation of trade restrictions by the EC and USA.

Development of Factor Markets

Even in Poland, wages bore little relationship to relative labor scarcities (Boeri and Keese 1992), and the emergence of free labor markets is likely to be slower than for product markets. Recognizing this, the reformers have included an incomes policy to restrain wages but this did not eradicate wage pressures (Schaffer 1992).

Markets for financial capital and real capital assets, including land, are also developing more slowly. Private ownership of productive physical assets has been virtually unknown and the banking system used to be monopolized in the hands of the central bank. The locus for important investment decisions has not been with either firms or with specialized financial institutions and enterprises will only slowly learn for themselves about how to

evaluate and finance projects. The relative prices faced in factor markets will also change considerably. In particular, tightening macroeconomic policies has caused increases in nominal and real interest rates, and quantity constraints on the volume of bank credit (Gomulka 1992).

Changes in Ownership and Management Environment

Polish reformers followed a variety of routes to privatization (Gomulka 1993). One of the key elements of reform should therefore be to define clearly the concept of ownership and its associated rights and obligations (Estrin 1991). Weak ownership of firms implies ambiguous property rights, with workers and managers having some rights to surpluses but not the right to realize the value of assets directly. Because privatization may include the possibility of foreign participation, the process may also have a major impact on management behavior and company performance. The impact on management in any given firm will, of course, depend on the structure of corporate governance that evolves in the course of reforms.

Table 3 summarizes some key statistics of sectoral adjustment relevant to the firms under investigation. Confidentiality requirements prohibit providing detailed data about any of the firms, so the first row of Table 3 reports information about the impact of reform on the industry of each firm's principal product. It can be seen that the transformation process has had a severe negative impact on output, employment and profitability in all three sectors between 1988 and 1991. Output fell by as much as 78% for semiconductors, and the decline in both employment and profitability in the electronics sector proved to be particularly marked. The sectoral output and employment decline was least in the white goods industry.

Our reading of the cases is that, contrary to prior expectations, the three firms have faced very similar changes in their economic environment since 1990. This is despite the fact that they each produce for different markets, use different capital-labor ratios and face different degrees of internal competition. The reason is that managers have had to concentrate above all on declining demand, both at home and in CMEA markets. We attempt to summarize our reading of the cases in Table 4, in which we use an heuristic scale from 1 (which is assigned when the case does not discuss the issue of all) to 5 (which is assigned when this shock is the predominant focus of the case, a view supported by accounting data). We first note that while managers may have been in principle more autonomous, the rapidly declining financial situation in all three companies has severely restricted their ability to maneuver. The influence of workers in all three cases has been considerable, and has been directed toward involvement in general

TABLE 3

Shocks by Sector: Enterprise Perceptions

	Iron and Steel	Electronics	White Goods
1. a. Managerial autonomy	1	3	2
b. Financial independence	3	4	3
2. a. Product market liberalization	5	5	5
b. Violent market shifts	5	5	5
3. Development of factor markets			
a. Labor	1	1	1
b. Capital	3	3	3
4. Changes in ownership	1	1	1

We use a scale from 1 to 5, where 1 means no major impact from 1990 reforms and 5 means enormous impact from reforms.

managerial decisions rather than toward purely material issues such as wages. The real shock to firms from reform, however, has come from the product markets, and even adjustments to managerial autonomy are primarily a corollary of the resulting decline in demand and the increases in costs, especially of energy, but also of interest costs. The development of factor markets has remained slow. Because none of the firms are profitable, neither privatization nor foreign investment appear to be feasible options.

Our findings related to managerial and financial autonomy, product market liberalization, factor markets, and ownership are summarized using ordinal scales in Table 5.

Regarding managerial autonomy, decisions can be increasingly made to meet the objectives of managers; for example, to maximize profits (for future privatization which may serve their future employment) or to facilitate a management buyout. Alternatively, managers might be influenced by the objectives of the labor force; for example, to maintain employment or to raise wages. Finally, increased managerial autonomy in the absence of effective ownership raises the possibility of perverse enterprise behavior; for example, managerial rent-seeking or joint management-employee consumption of the capital stock. In Table 5, we provide our personal evaluation of the responses in the cases, with behavior consistent with profit maximization awarded 5 and perverse behavioral responses being given 1. By perversity we mean evidence of the managers or the workers playing

TABLE 4

Shocks by Sector: Enterprise Perceptions

	Iron and Steel	Electronics	White Goods
a. Managerial and financial autonomy	2	3	2
b. Product market liberalization	5	5	5
Development of factor markets			
Labor	1	1	1
Capital	3	3	3
Changes in ownership	1	1	1

We use a scale from 1 to 5, where 1 means no major impact from 1990 reforms and 5 means enormous impact from reforms.

In rows a and b, the scale ranges from 1 (perverse response) to 5 (profit maximizing response). In the remaining rows, the scale ranges from 1 (little or no response) to 5 (considerable response).

an endgame in the enterprise, such as stripping the assets for private gain. The cases provide little evidence of a profit orientation. The primary concern seems to have been to keep the firm going and to maintain employment, with little apparent thought for either optimal responses or personal enrichment.

Regarding financial autonomy, an important area of response could be in the provision, evaluation and use of financial influence. The tightening of financial constraints should induce major management changes to reflect the new-found importance of financial variables; for example in improved cost accounting, inventory control and financial analysis. We rank these adjustments on a scale from 1 (zero adjustment) to 5 (full adjustment). In practice, responses have been surprisingly modest, with only the simplest changes introduced as yet; for example, in accounting procedures. All firms have yet to introduce Western-type inventory controls, for example, and there are few instances of financial planning.

Regarding product market liberalization, one might expect firms to develop capabilities to sell; through improved marketing, developing new products, establishing joint ventures, and the like. On the input side, we could see diversification of suppliers. Again, these can again be ranked from 1 (zero adjustment) to 5 (full adjustment). It is in this area that enterprise adjustments have been greatest. All three firms have developed marketing departments, and sought new markets at home (often attempting to develop

TABLE 5

Enterprise Responses in the Short Run

	Iron and Steel	Electronics	White Goods
1. a. Managerial autonomy	1	2	2
b. Financial autonomy	2	3	3
2. Product market liberalization	3	4	4
3. Factor markets			
Labor	1	1	2
Capital	2	2	2
4. Ownership	2	2	2

In columns 1.a and 1.b, scale ranges from 1 (perverse response) to 5 (profit maximizing response). In the remaining columns, scale range from 1 (little or no response) to 5 (considerable response).

their own distribution network) and in the West. They have also sought to differentiate products more carefully, and to reduce the product range in order to concentrate upon a limited number of goods' characteristics. At the same time, there has been some attempt to widen the range and quality of suppliers, and to reduce input inventories.

Regarding factor markets, labor market adjustments could include a shift from benefit to cash compensation, new payment systems, widening wage differentials and tighter labor discipline. As Table 5 shows, there is no mention in the three cases of such developments. In capital markets, responses also include the diversification of financial instruments, building relationships with banks and creditors, and vertical disintegration or other forms of restructuring. There is some limited discussion of these matters, most notably about building relationships with debtors and creditors, but once again this has not been an area of speedy company response.

Regarding ownership, prior to privatization, commercialization would involve the establishment of clear independent loci of "ownership." Boards of directors would be constituted and the organizational structure might change to reflect the concentration on profits. The potential ranking runs from 1 (continued weak property rights) to 5 (full private ownership). As one would expect from our earlier findings, there is almost no evidence of clarification of ownership rights or of an emerging system of corporate governance.

In summary, responses have been much more rapid in product than factor markets, or with regard to ownership. All firms have focused on new marketing devices, product differentiation, export promotion and to a lesser extent improved financial planning. Few have made significant progress in altering personnel priorities or in diversifying their dealings with the capital market. Workers have considerable authority in all three firms, and have used their power to influence plans on restructuring, employment and pay. It is also striking that short-term responses have not been markedly slower or less effective in the heavy industrial firm than in consumer goods manufacture.

Long-Run Responses

Shocks on the scale of those associated with transition might be expected to precipitate fundamental long-run changes in the firms with respect to technology, market strategy and corporate governance. One might also expect sectoral variation in this adjustment, with clearer more positive long-run plans from the white goods or electronics manufacturers than from the iron and steel company. Given the paucity of even short-run responses, it is clear that, in our firms at least, such expectations will not be met. The picture we paint is one of firms overwhelmed by huge changes in their market environment, particularly in their ability to sell their output, and making as yet only minimal adjustments in their behavior.

In fact, there is little evidence of long-run planning in any of the firms. There is no simple way to summarize the evidence to this effect because long-run strategy is a subject rarely mentioned in the cases and even then, not realistically. To quote the conclusion of the white goods case "the company has not yet adopted any more significant long-term measures which could decide its future. The directors pursue a reasonable policy of short-term adaptations of market, production and investment type. However the company's financial situation is more and more difficult." In contrast, the electronics firm does have a long-term strategy, with fundamental restructuring, employment reduction, and orientation to exports intended as a precondition to privatization by either sale to a foreign company or a management buyout. However, quoting again from the conclusions of the study "the short-term adjustments made so far cannot prevent a steadily approaching bankruptcy. For (the firm) to survive, it must reduce its production capacities, modernize and find a market for its products. The accepted dates of internal privatization are rather unrealistic."

Oddly enough, the situation at the iron and steel works is (slightly) less pessimistic. The enterprise has a long-run program providing for

transformation into a holding company, with privatization of the production units by employee-management buyouts or foreign sales. It is intended to restructure from manufacturing raw materials to manufactured items. Environmental factors also enter the long-term calculations encouraging restructuring. The case study concludes "the directors perceive the present situation and prospects of the steel works in a quite realistic and accurate way. We have not discovered any great errors in the way that the steel works is managed."

5. Conclusions

The enterprise responses in our cases seem to be driven by several factors common to all Polish firms in these transitional industries, factors which swamp any sector-specific effect. The first has been the magnitude of the fall in demand, which has left all three firms with excess capacity, large wage bills and rising debt. The demand shock was clearly associated with the Polish "big bang" transition policy, and appears to have weakened the ability of firms to respond, even those in sectors which in principle stand to gain from the changes in relative prices and costs. In addition, the shortage of capital has severely restricted the ability of firms to embark on restructuring, or to invest in order to exploit the new opportunities opened up by the reforms. The situation has deteriorated even further as a result of the increasingly uncompetitive exchange rate that emerged during 1990.

Second, the absence of clear ownership rights which has continued in most firms for the two years of the reforms has hampered the development of long-run thinking. For the most part, the existing managerial elite (though not necessarily the existing management) have remained in place, with their skills concentrated on the engineering aspects of production rather than on finance, strategy or marketing. To a greater or lesser extent, they have all had to take account of the firm's employees in key decisions, including those concerning managerial pay and privatization. For example, in the electronics firm the case notes that "the former managing director and several vice-directors had to leave the company because they did not attain results that would be satisfactory for the employee council and trade unions." Similarly, the privatization project of the white goods manufacturer "did not win acceptance of the employee council and the trade unions." Indeed, the relative success of the iron and steel company may stem from "an efficient management system reinforced by . . . effective cooperation between the top management and the employee self-government and trade unions." Pay differentials between manual workers and management remain narrow, and a major source of poor managerial motivation.

Finally, it is surprising that none of the firms in the cases had progressed far towards foreign involvement, or joint venture. One reason is no doubt the power of employees in Polish firms. A second may relate to the relative instability of the macroeconomic environment (compared, for example, to Czechoslovakia or Hungary). The consequence is that for most Polish firms, long-run macroeconomic adjustment will be difficult because access to new capital, technology, and managerial know-how is much restricted. This finding again appears to be common across sectors, rather than applying only to the less competitive areas.

Notes

1. Council for Mutual Economic Assistance, the former institution that organized trade among socialist countries on a barter basis. The CMEA was dissolved in 1991.
2. Integrating the share of the secondary economy would modify the figures though the kind of services rendered by the informal sector cannot be compared with such activities as banking and financial services to the population, catering and transport.
3. With the paradoxical outcome that firms' assets located in resorts or in nice surroundings have a higher value than their productive assets.

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