Monopoly Power, Import Competition, and Price Liberalization in the CSFR

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Chapter 12

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> *It is pointless to liberalize*
> *prices in a monopolistic environment.*
> Vaclav Klaus, 1990.

Introduction

The post-socialist countries have inherited monopolistic market structures, in which few but large firms produce for the home market in many branches of the economy.[1] Beyond the standard microeconomic arguments that price-setting firms tend to produce lower quantities and charge higher prices compared to price-takers, the possible presence of monopoly elements in the transition economies of Eastern and Central Europe is of special concern for a number of reasons. First, it is apparent that the enormous level of concentration under central planning was well beyond the degree justified by the

[1] This feature has been particularly widespread in the former Soviet Union. See Snyder (1993) for an informative presentation of these distorted market structures.

possible presence of scale economies. Second, as large enterprises are privatized, there is reason to fear that the hoped-for benefits of the economic reform package will be swallowed up by monopoly profits, with negative consequences for both growth and distribution. Third, one of the most important, and still unresolved, issues in privatization is the timing of restructuring – one of the most important components of which is the breakup of the large enterprises into firms that are smaller and "more competitive" (in every sense). Finally, the domination of enterprise managements by members of the "nomenklatura" imparts a political aspect to the problem of monopoly: the public is likely to have especially low tolerance for the reform policy if this class is perceived as its prime beneficiary.

For these reasons, it has sometimes been argued that transition policy should first seek to break the power of the monopolies, prior to liberalizing prices. This sequencing argument that demonopolization must precede price liberalization and privatization has been countered by the proposition that import liberalization, implemented simultaneously with price liberalization, would create sufficient competition. Empirically[2] and theoretically,[3] however, the issue remains unresolved.

In practice, most of the post-socialist economies have chosen the second route: rapid "big bang" liberalization of many areas of the economy simultaneously. It has been hoped that freeing prices would create positive incentives and that import competition would dampen "excessive" price increases. The results of these policies are well known: among other things, prices skyrocketed and output collapsed. In many of the countries, these results are attributed in large part to the freedom now granted to monopolies to exercise their previously restrained power. Several countries, for example, Lithuania, Romania, and Ukraine, are considering reintroducing price controls for just this reason. But the degree to which the price increases actually reflect the presence of monopolies, rather than a number of other factors, remains unknown.

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[2]See, for instance, Jacquemin and Sapir (1990) in a study on the the completion of the European internal market, who make the following statement: "External trade liberalisation is, however far from being a perfect substitute for domestic competition and could even have perverse effects – for instance, when a small number of foreign firms dominate the market."

[3]See Ross (1988) who provides a theoretical treatment of this issue and concludes, "In some cases the lower tariff did serve to control price increases, but in others it did not."

This paper presents a preliminary analysis of price behavior of Czechoslovak industries in the first year after liberalization, in an attempt to assess the competing views on policy sequencing. We examine the behavior of prices and other variables at both the industry and firm levels, and consider the relationships of the movements of these variables with concentration ratios by industry. In the next section, we examine the patterns of price changes by 2-digit industries after price liberalization in 1991. Remarkably, prices in nearly all industries jumped almost immediately in the first quarter of 1991 to new levels at which they then more or less remained. The following sections catalogue the factors that may have contributed to this price behavior and report preliminary results of a test of the import discipline hypothesis. The last section contains conclusions and our ideas for future research.

Price Behavior in the Year after Liberalization

In the classic centrally planned economy, prices are per definition regulated. Unlike some of its neighbors, Czechoslovakia under socialism retained most of the features of classic central planning, including the setting of prices by a central authority, right up to the changes in 1989. Czechoslovak prices were massively and rapidly liberalized starting in January 1991, reducing the regulation ratio (proportion of goods and services set by the state) from 85 percent in 1990 to between 5 percent and 6 percent in October 1991. At the same time, maximum ceiling prices for "sensitive" goods and services like public utilities, rent, coal, fuel and oil products, and metallurgical products were introduced. An additional regulation covered industrial sectors with a "high degree of market power," which were made subject to obligatory prior notification of price increases, the "time-related price regulation" (OECD, 1991).[4]

Price liberalization was hardly the only systemic change in the transformation process of Czechoslovakia after the fall of the old regime in late 1989. Already in 1990 exchange rates were devalued several times until pegged to a currency basket after January 1991. The first steps to introduce current account convertibility were made, and most parts of trade with former CMEA

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[4]Although price liberalization started in January 1991, for several energy, fuel, and chemicals prices administered increases were carried out beginning in the last quarter of 1990. In the following section, we focus on the outcome of price liberalization which was introduced in January 1991.
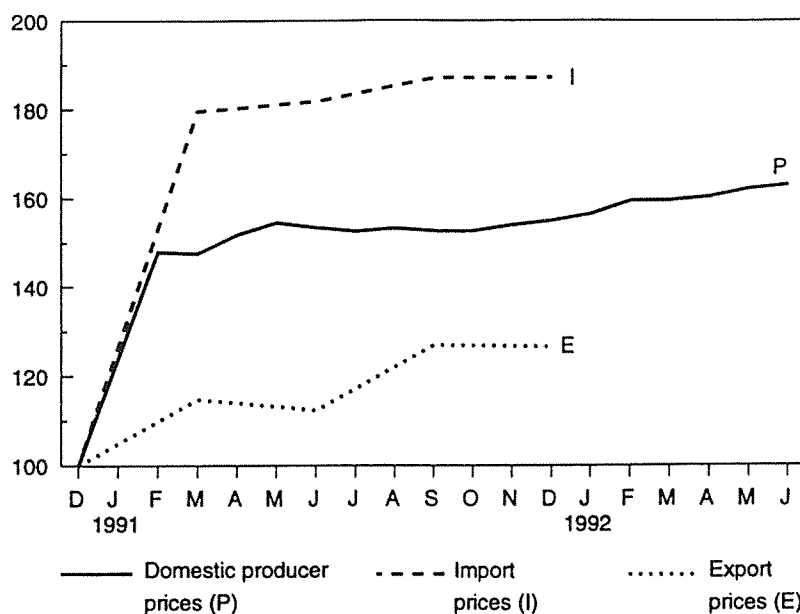
Figure 12.1. Total domestic producer, import, and export prices in the CSFR, December 1990 to June 1992, 1990 December = 100 percent. Source: Federal Statistical Office.

countries had to be carried out with hard currency transactions.[5] The evolution of domestic prices therefore cannot be studied in isolation. In the following analysis we compare the movements of import and export prices and evaluate and interpret domestic producer price movements during the introduction of price liberalization.

Figure 12.1 displays the aggregate import and export prices and the domestic producer prices. This graph provides a drastic image of the most important stylized facts of the aggregate outcome of price liberalization. First, it is remarkable that most of the price change in 1991 was completed by February. Between December 1990 and February 1991 prices rose (in two steps) by more than 50 percent. After February 1992, the monthly price increase averaged below 1 percent.

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[5]Hrnčíř and Klacek (1991) mention price liberalization, privatization, and convertibility as foundations for the new economic, social, and political developments described as the return of the CSFR to Europe.

The second remarkable feature is the simultaneous deterioration of the terms of trade. By March 1991 aggregate import prices rose by more than 80 percent relative to the level of December 1990. Export prices increased by only one-fourth of this value. The reason for this disparity is only indirectly related to price liberalization. In the course of the dissolution of the CMEA, energy import prices increased by almost four and a half times. This increase was larger and hit the CSFR economy much harder than the energy price increases in 1973 and 1979–1980 could affect the OECD countries. Currently energy imports account for nearly one-quarter of total CSFR goods imports. This is by orders of magnitude greater than in all OECD countries. Energy prices alone accounted for more than three-quarters of the aggregate import price increase.

The other factor contributing to the strong terms-of-trade loss was the breakdown of trade with other CMEA economies. The trade with Eastern European economies was reduced dramatically within a short period of time, an enormous shock in itself. For the CSFR, only a strong increase of foreign trade with OECD countries could replace the loss of markets in the East. In order to overcome entry barriers to new markets in the West, export prices had to be kept low.

Figures 12.2 to *12.4* reveal the development of domestic producer prices during the period of price liberalization for 19 industries grouped into energy and basic materials (*Figure 12.2*), heavy industries (*Figure 12.3*), and light industries (*Figure 12.4*). The abbreviations can be identified in *Table 12.1*. *Table 12.1* shows the levels of domestic wholesale prices for all industries in January, April, July, and October 1991.

Figure 12.2 presents the image of stable energy and raw material prices in Czechoslovakia after the first price level adjustments were made. Prices of fuels had already increased by 50 percent in the last quarter of 1990. Price liberalization, therefore, did not bring many additional price changes. Energy prices (basically electricity) had also already increased in 1990, but price liberalization contributed to a further considerable price adjustment. Iron and noniron metallurgic product prices nearly doubled in the 18 months after price liberalization was introduced in January 1991. Whereas noniron metallurgic products show some overshooting, iron metallurgic product prices exhibit a more gradual approach to their new equilibrium level. It may seem justified to talk about equilibrium prices not only in these two cases, because after May 1991 not many price changes may be observed. Fuels and raw materials have approximately changed in the same proportion as the

Table 12.1. Domestic wholesale prices in CSFR industry in 1991, 1 January 1989 = 100 percent.

Sector	Jan. 1991	Apr. 1991	Jul. 1991	Oct. 1991
Total	145.2	177.8	178.6	178.7
Fuels (F)	.154.3	173.4	176.9	177.1
Energy industry (E)	154.2	254.3	258.1	265.4
Iron metallurgy products (I)	150.6	183.3	188.3	189.7
Noniron metallurgy products (N)	156.6	213.5	201.7	201.2
Chemicals, rubber, asbestos (C)	210.4	222.9	221.4	223.7
Machinery (M)	123.7	165.5	175.3	177.0
Electrical eng. products (E)	129.4	174.0	173.8	169.7
Building materials (B)	133.5	168.0	171.7	168.3
Wood (W)	128.3	165.5	168.4	167.9
Metal processing (W)	160.3	205.2	204.3	206.7
Paper and pulp (P)	131.7	192.7	191.1	184.7
Glass, ceramics, porcelain (G)	154.6	194.9	195.3	195.9
Textile (X)	145.2	183.8	176.3	172.4
Clothing (C)	131.4	152.7	154.9	154.9
Leather (L)	161.0	183.1	185.8	177.5
Printing (P)	101.3	215.6	214.3	214.7
Foodstuffs and seasonings (F)	117.3	127.1	122.2	121.7
Tobacco, frozen food, mineral water (B)	226.4	230.9	232.0	232.0
Other industry production (O)	116.3	160.9	159.7	153.4

Letters in parentheses refer to letters in *Figures 12.2 to 12.4.*
Source: Federal Statistical Office.

average price index (relative to 1989). Only energy prices rose considerably more.

Figure 12.3 shows the price development for heavy industry. Again one has to consider that prices of chemicals had already increased by three-quarters in late 1990. Once more we find that large price changes only occurred during the first month of price liberalization. Later, the monthly price variation is by orders of magnitude smaller than the initial jumps.

More *action* can be seen in *Figure 12.4*, illustrating the evolution of prices in the light industries. The initial price jumps not only vary much more, but the subsequent behavior of prices also shows more variation.

A sectoral disaggregation of import and export price data replicates the general features of domestic price data. Price adjustment takes place mainly in the first months of 1991, and relative price changes are considerable.
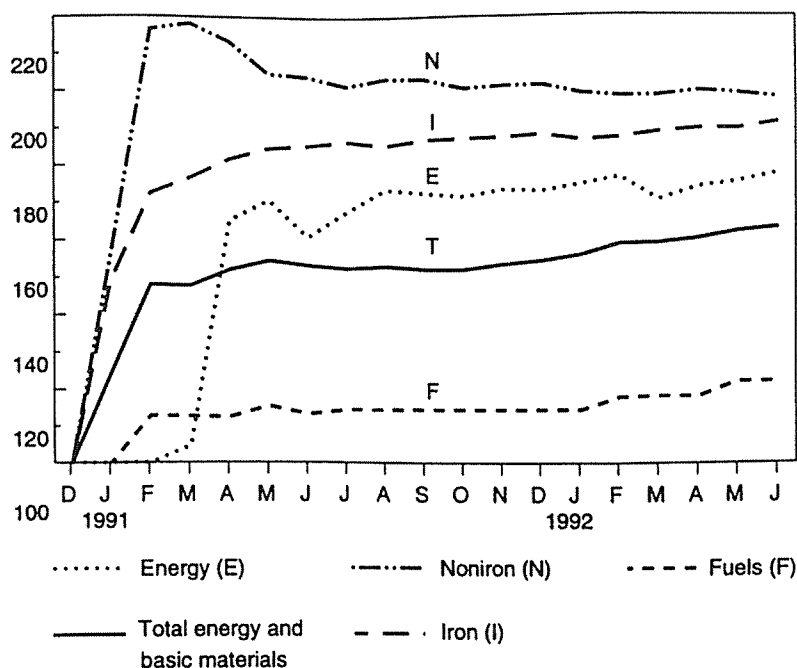
Figure 12.2. Development of domestic producer prices of energy and basic materials, December 1990 to June 1992, 1990 December = 100 percent. Source: Federal Statistical Office.

On this basis, let us summarize two stylized facts of Czechoslovak price behavior after the liberalization:

1. There was a considerable price jump in all industries, which was in nearly all cases essentially completed within two or three months. After April 1991 aggregate producer prices stayed approximately constant. Thus price liberalization increased the average price by about 80 percent above the 1989 level. Price liberalization allowed a rapid adjustment of price levels without contributing to higher inflation.

2. Relative prices changed considerably. Energy prices rose 50 percent faster than the average producer price and food prices increased by 30 percent less. This span is approximately equal to the size of the aggregate price increases during the liberalization period. Price liberalization thus allowed a considerable adjustment of relative prices.
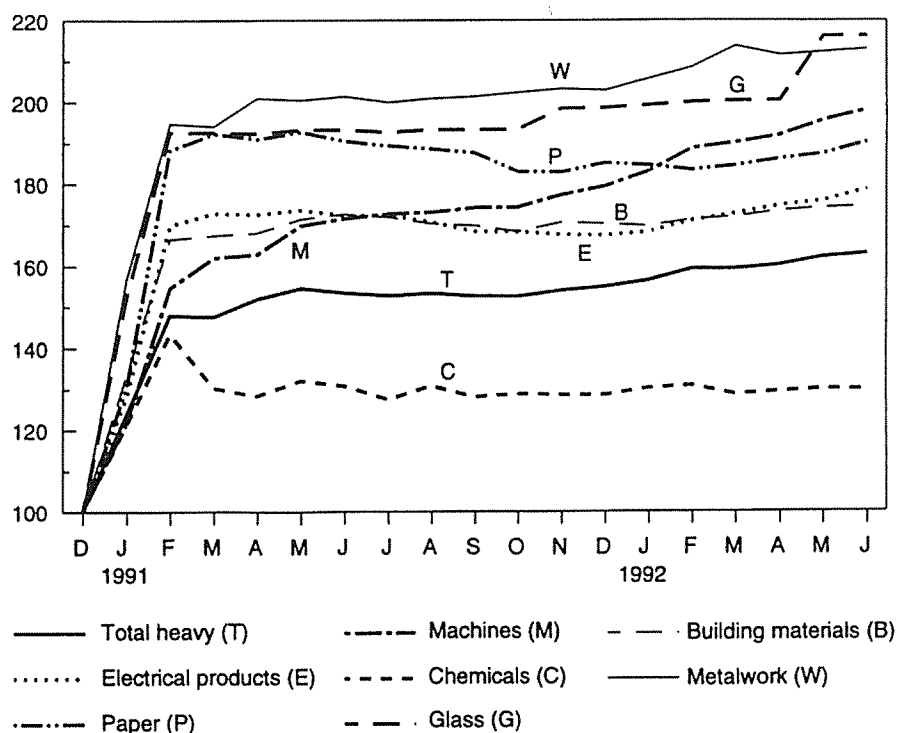
Figure 12.3. Development of domestic producer prices of heavy industries, December 1990 to June 1992, 1990 December = 100 percent. Source: Federal Statistical Office.

Factors Affecting the Price Behavior of Enterprises

What factors could explain the interindustry pattern of price jumps in 1991? The real socialist economies were characterized by monetary overhang and widespread shortages; most obviously, elimination of these shortages would be accomplished through price increases in competitive markets. The Czechoslovak economy is often considered to have had relatively little macroeconomic imbalance (see, for instance, Angelis, 1991), but queues were also common for many goods. Moreover, since prices bore little relation to relative scarcities, even if there was little aggregate overhang, the degree of shortage likely varied from industry to industry. Thus, even if everything else were constant across industries, price increases would vary with the prior degree of shortage.
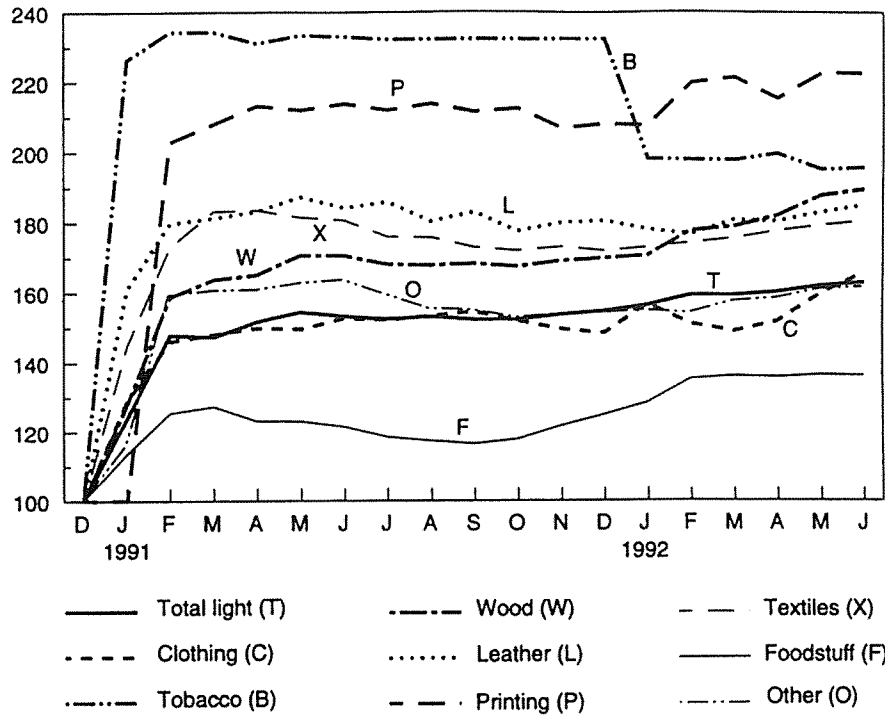
Figure 12.4. Development of domestic producer prices of light industries, December 1990 to June 1992, 1990 December = 100 percent. Source: Federal Statistical Office.

Interindustry variations in price increases may also be a reflection of variations in cost functions. A relatively steep marginal cost function implies that shortages would be eliminated more through price increases rather than by increases in output. The apparent lack of aggregate "supply response" to price liberalization has been considered at length by macroeconomists, but it is also clear that supply responsiveness can differ from sector to sector.

Differences in the demand functions faced by industries, and by individual firms within industries, may also account for differences in price behavior. Industrial structure and therefore behavior and performance varies significantly from sector to sector. Some industries are characterized by a high degree of concentration, while others have many small producers. All else equal, industries characterized by monopoly would have raised prices more and quantities less, relative to competitive industries. It is important to

note, however, that while competitive industries always increase output as well as prices to eliminate a shortage, the output behavior of monopolists depends on the pre-existing degree of shortage. If prices were fixed at a very low level prior to liberalization, it is possible that profit-maximizing monopolists would increase output after price liberalization.

Nonetheless if this were the whole story, then the finding that output had fallen in a particular sector would be sufficient to conclude that monopoly power existed in that sector. Only the characterization of sectors which experienced output increases would remain in doubt. As we have seen, however, output declined in nearly all sectors. Simultaneous with the price liberalization occurred a number of other changes that render quite difficult the assessment of the role of monopoly in the price jumps.

First, as mentioned above, foreign trade was liberalized and currency convertibility for current account transactions was introduced. Trade liberalization involved a removal of most licensing requirements and granting permission to any registered enterprise to engage in foreign trade, thereby abolishing the monopoly of the Foreign Trade Organizations (Benacek and Mejstrik, 1991).[6] From the perspective of domestic producers of tradable goods, this was equivalent to a demand shock. Consumers substituted imported for domestic goods for reasons of quality and variety as well as price. This demand shock by itself could not have resulted in reduced output in competitive industries, as long as prices rose, and thus the inference that reduced output implies the presence of monopoly is not directly overturned. The structure of many industries, however, was affected: domestic demand became more elastic. In the extreme case, domestic monopolists became competitive firms in the world market. Other markets simply became less monopolistic. This, of course, is the "import discipline hypothesis" that import competition can dampen monopolistic behavior (see De Melo and Urata, 1986; Caves, 1980; Jacquemin, 1982; and Jacquemin and Sapir, 1990).

For the sake of completeness, a second change with a potentially similar effect should also be listed: entry of domestic producers was liberalized. Although in the long run, the development of new private firms and the

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[6]To complicate the picture, a temporary import surcharge of 20 percent was introduced simultaneously and applied to consumer goods such as food, cigarettes, textiles, clothing, consumer electronics, cars, and furniture. The surcharge was reduced to 18 percent in May and 15 percent in June 1991. There were also global import quotas for some agricultural products. Furthermore, access to foreign exchange was supposed to be free, but the State Bank required many imports to be financed through trade credits; this was abolished in October 1991 (see OECD, 1991).

restructuring of the product lines of old state enterprises may be the most important factors in creating a competitive environment, it was clearly a minor factor in the short time since liberalization of prices of those goods that we are considering.[7]

Third, the Czechoslovak koruna was successively devalued in late 1990 and early 1991. A 55 percent devaluation in October 1990 and 16 percent on 28 December 1990 resulted in a rate of CSK 28 to the US dollar. This policy had at least two effects: it raised the costs of imports, including many important raw materials, but it also limited the competitiveness of imports in domestic markets. The first effect is a type of negative supply shock, the second a positive demand shock; both could differ from sector to sector. With regard to the former, because negative supply shocks would reduce output, even competitive industries may have experienced output declines.[8] With regard to the latter, interindustry differences in structure and in cost functions implies that the level of the exchange rate also matters for the ability to import a price structure from abroad.

Fourth, the shift to hard currency in internal CMEA trading also functioned as a supply shock, raising import prices for inputs. Accompanying this was a tighter budget constraint on hard currency (which after internal convertibility had to be purchased at market rates) for enterprises, which prevented many from obtaining needed inputs.

Fifth, the breakdown of the coordination of central planning meant that the supply of inputs was reduced and became in general less reliable. Again, this functioned as a supply shock to domestic producers.

In addition to these simultaneous changes, a number of special factors of these economies in transition make it difficult to draw conclusions about market structure.

First, despite the rhetoric of the imposition of hard budget constraints on enterprises, a number of avenues of soft support still existed. Banks still engaged in lending that was not tied to rational evaluations of the profitability of alternative investments, and real interest rates were negative. Moreover, inter-enterprise debts (together with the expectation, which was later partly realized) provided an escape from hard constraints.

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[7]The domestic output response becomes important for the working of the import discipline hypothesis if foreign firms are the source of monopoly power (Geroski and Jacquemin, 1981).

[8]A further negative aggregate supply shock resulted from the real balance effect of the price increases consequent upon the devaluation.

Second, enterprises may have continued to behave in their old, irrational (at least, from the social point of view) mode. Perhaps the interests of workers dominated the maximization of profits in enterprise behavior. For instance, if enterprises behaved like producer cooperatives, then theory would predict the response of a reduction in output to an increase in price.

Third, it is important to note that the degree to which these price increases were anticipated affected behavior even prior to the liberalization. For instance, an important part of the story is inventory behavior, both of inputs and of finished goods. To the degree that industries vary in their capability to hold inventories, price behavior may be affected. For instance, industries that accumulated output inventories in 1990 probably had smaller price and output movements in 1991 (Blinder, 1982).

Anticipated price changes also affected demand. It is well known that goods of all kinds were hoarded and store shelves were empty just prior to the liberalization on 1 January 1991. As long as firms were on their supply functions (a heroic assumption, for reasons just cited), this expectational effect only served to exacerbate shortages beforehand, and should therefore not have shifted demand either before or after the price liberalization.

A Test of the Import Discipline Hypothesis

Although the movements of the price variables described in the previous section may be intrinsically interesting and could appear sometimes to be suggestive of the possible presence of monopoly power, their usefulness in this analysis suffers from a basic weakness: nearly all the variables are endogenous. Moreover, while it is tempting to draw inferences on the basis of the magnitudes of the changes from pre- to post-liberalization, in fact, such inferences are very difficult, since it is practically impossible to know what the pre-existing degree of distortion was. A large change (for instance, in price or in output) may simply be the result of a larger prior distortion.

In the preliminary results reported here we maintain the hypotheses that concentration and imports may be regarded as exogenous in the case of CSFR enterprises in 1991,[9] and seek to measure their relationship with monopoly elements, as represented by profitability. We can test the relative importance of imports and concentration for the exercise of monopoly power, as measured by profitability, with the help of a simple regression. First we

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[9]Imports were found exogenous by De Melo and Urata (1986). This is a hypothesis that we plan to test in future research.

Table 12.2. Industry indicators in the CSFR in 1991.[a]

Sector	Production in mill. CSK	Real production 1984 = 100	Profit in mill. CSK	Concentration ratio
Fuels	92,619	57.1	28,235	0.58
Energy	95,784	40.2	35,608	0.84
Ferrous metallurgy	142,129	91.2	9,575	0.71
Nonferrous metallurgy	31,672	72.0	2,204	0.50
Chemicals	184,014	88.4	18,236	0.47
Mechanical engineering	258,231	78.5	20,226	0.22
Electrical engineering	57,398	–	4,561	0.15
Building materials	34,306	–	2,605	0.21
Woodworking	38,538	96.1	3,011	0.19
Metalworking	59,618	109.7	5,890	0.22
Paper and pulp	31,592	85.6	2,267	0.48
Glass and porcelain	25,056	101.3	4,083	0.33
Textile	54,835	79.3	4,664	0.13
Clothing	12,185	80.4	686	0.48
Leather	29,141	69.9	2,027	0.60
Printing	9,635	–	1,156	0.31
Foodstuffs and seasonings	172,289	72.5	13,999	0.11
Tobacco	9,486	69.6	2,856	0.84
Others	18,997	–	2,223	0.40
Industry total	1,357,525	75.9	164,112	–

[a]For explanation see footnote 10.

examine the pair-wise correlations of profitability and concentration and of profitability and imports, and then we conduct a multivariate analysis of the relationships among them.

Most studies of profitability and concentration have found only a small and statistically weak relationship (see Schmalensee, 1989). We constructed four-firm concentration ratios using data on medium and large enterprises in Czechoslovakia for each 2-digit industry.[10]

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[10]The data set contains all enterprises in industry with 100 employees or more. The concentration ratio for a given industry is defined as the ratio of the sum of the output of the four largest enterprises in the industry to the total output of all firms that are in the industry and that are represented in the data set. Thus, small firms (less than 100 employees) are excluded; if there is significant variation across industries in the importance of smaller firms, then these ratios could be biased. We are also aware that the concentration ratio should best be defined in terms of total domestic sales, including imports in the denominator and excluding exports from both numerator and denominator; we are working to obtain the data necessary to calculate this better measure.

In *Table 12.2* we find the concentration ratios for 19 industrial sectors. The range is quite large, from 0.11 in food and 0.13 in textiles to 0.84 in both energy and tobacco, with a mean of 0.41 and standard deviation of 0.23. The highest concentration ratios can be found in energy, tobacco, fuels, ferrous and nonferrous metallurgy, and leather industries. Low concentration ratios are present in food industries, textiles, wood products, building materials, metalworks, and mechanical and electrical engineering.

It is very difficult to judge how much the past concentration ratios tell about today's market power in the CSFR. The large privatization only began in 1992, and especially the large enterprises are in a process of reconstruction and reform. Again a safe conclusion seems to be that concentration ratios vary considerably from branch to branch.

We calculated the correlation of this concentration ratio with profitability, defined as the ratio of profits to sales revenue. The correlation for 1991 was large (0.613) and significant at 1 percent level. Thus, there seems to be a strong association of concentration and profitability across Czechoslovak industries, which is evidence for the presence of monopoly elements.

The import discipline hypothesis suggests that the ability of monopolies to exercise their power may be disciplined by foreign competition that increases demand elasticity. It is an implication of oligopoly models with conjectural variation that the greater the elasticity of demand, the lower the price-cost margin (see Tirole, 1988). We therefore constructed import penetration measures, defined as the ratio of imports to domestic sales, for each industry.[11] The variable's range is from 2 percent (energy) to 33 percent (electrical engineering) in 1990 and from 3 percent (energy and glass and porcelain) to 48 percent (fuel) in 1991. There is a very high correlation (0.85) of import penetration across the two years, possibly implying that little change in the structure of imports occurred. Moreover, the correlation of this variable with profitability is weak: 0.11 for 1991. Perhaps imports did not constrain domestic monopolists much after all.

To consider the joint effects of concentration and imports on profitability in 1991, we specified a regression function with profitability (π) as the

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[11] Disaggregated data have been obtained from the Federal Ministry of Foreign Trade for import products, which we then matched with our industry data to obtain industry import estimates. Imports were unavailable for two industries, printing and other, for the year 1990, so we have only 17 observations for that year. Unfortunately, we had no industry export data for 1991, so the denominator of the import penetration variable includes exports; we are working to obtain this 1991 data to improve this measure.

dependent variable and the concentration ratio (CR) and the measure of import penetration (IP) as independent variables:

$$\pi_i = \beta_1 + \beta_2 CR_i + \beta_3 IP_i + u_i \ ,$$

where i indexes industries and u is an additive disturbance. This specification treats CR and IP as exogenous. Since 1991 was the first year of liberalization, the former exogeneity assumption seems easily acceptable; the second should perhaps be amended, but other studies (e.g., De Melo and Urata, 1986) have rejected the endogeneity of imports (albeit with different data for a different country). Previous studies of the effects of imports add other covariates (see Schmalensee, 1989), such as the export ratio and various proxies for the presence of scale economies and diseconomies, to the equation, but the justification for their inclusion is not entirely clear. Our simple specification has the added virtue of parsimony.

The results of estimation with the 19 2-digit industries for 1991 were as follows:

$$\pi_i = \ \ 0.008 \ + \ 0.250 CR_i \ + \ 0.093 IP_i \ + \ u_i$$
$$(0.451) \quad (0.794) \qquad (0.145) \ ,$$

with estimated standard errors shown in parentheses, $R^2 = 0.39$, and standard error of the regression (SER) equal to 0.077. Concentration is positive and strongly significant, but the coefficient on imports has the wrong sign, although it is not statistically different from zero. Of course, in the long run, imports should not affect the profitability of a competitive industry, but it is somewhat surprising that they seem to have so little impact in the disequilibrium environment of a transition economy. Collusion between foreign and domestic producers could also generate a positive coefficient, but again this seems unlikely in the case of Czechoslovakia in 1991. This result therefore seems to further support the hypothesis that imports provided little effective competition for the domestic monopolists.

The industrial organization literature contains some basis for the argument that the more appropriate specification allows the effect of imports on profitability to vary with the level of concentration. The specific hypothesis is that high concentration is associated with a stronger (negative) impact of imports on profitability. We therefore added an interaction term: the product of IP and CR. This term could also be interpreted as the effect of

imports on the concentration–profitability relationship. In either case, we would expect its coefficient to be negative. The results were as follows:

$$\pi_i = 0.029 + 0.200CR_i - 0.049IP_i + 0.336CR \cdot IP + u_i$$
$$(0.064) \quad (0.130) \quad (0.324) \quad (0.678) \ ,$$

with $R^2 = 0.40$ and SER $= 0.079$. The coefficient on imports now has the predicted sign, but it is still insignificant. The interaction term has an effect opposite to that predicted: either imports increase the effect of concentration on profitability or concentration lowers the (negative) effect of imports on profitability, but neither is very intuitive.

Among others, we also tried a specification that dropped the CR variable. The variable IP had a negative and almost statistically significant effect,[12] but the interaction term remained large, positive, and quite significant. It seems, paradoxically, that the negative effect of imports on profits is less, the more concentrated the industry.

A final specification examined the effect of changes in the measure of import penetration from 1990 to 1991, the argument being that it is only the new imports, responding to profitable opportunities, that represent real competition for domestic monopolists. This variable (ΔIP) was defined simply as $IP_{91} - IP_{90}$. The results using only this and CR as independent variables were as follows:

$$\pi_i = 0.027 + 0.226CR_i + 0.582\Delta IP_i + u_i$$
$$(0.035) \quad (0.075) \quad (0.266) \ ,$$

where $R^2 = 0.54$ and SER $= 0.072$. These results imply that an increase in import penetration actually raises profits, even holding the concentration ratio constant! Don't look for any empirical support for the import discipline hypothesis here.

Conclusion

The discussion in this paper remains preliminary because we believe this topic merits treatment at the firm level, or as disaggregated as possible. Unfortunately, our price data are only at the level of major sectors (2-digit); we intend to re-examine these relationships with at least 3-digit price and other data. Furthermore, the fundamental question of the degree to which

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[12]The small sample size, arguing for the use of a higher significance level, should be borne in mind.

monopoly power is exercised in the Czechoslovak economy, and therefore what the optimal policy sequence may be, can only be answered with structural estimation. This requires formalizing the choice problem of enterprises, including all the considerations and constraints suggested by the analysis in this paper. We hope to report on the results of such an inquiry at some future date.

Nevertheless we would like to mention a few pieces of basic statistical information which we consider remarkable. At first it is clear that price liberalization did bring a great deal of relative price changes. This has been the main goal of eliminating most price controls and thereby allowing prices to reflect relative scarcities. It has to be remembered that, at least for our analysis, unfortunately quite a lot happened simultaneously in Czechoslovakia in 1990 and 1991. Not only did domestic prices reveal many relative changes, import and export price changes also varied considerably by sector.

The simultaneity of devaluation, energy price shocks, and price liberalization makes it difficult to isolate the relation between foreign trade and domestic monopoly power. Our simple regression experiments delivered a positive relation between the increase of import penetration from 1990 to 1991 and profitability. Under the assumption that profits are a result of the past, while imports are responding to above average profit opportunities, we could conclude that import competition will finally have a dynamic effect reducing domestic monopoly power.

The static effects of current monopoly power on average inflation of producer prices during price liberalization in 1991 are certainly negligible relative to the contribution of the devaluation in 1990 and the fuel price increases to the price level jump in 1991.

The merits of foreign trade liberalization may therefore have more to be seen in their dynamic effects contributing to incentive-related supply effects through productivity increases which are generated by international integration.

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Comments on John S. Earle and Andreas Wörgötter's Paper

Michael Jones

Professors Earle and Wörgötter present an informative paper on a transition economy. The reforms of internal price liberalization and unrestricted international trade in goods aim to promote efficiency of resource allocation and the usefulness of money. Prerequisites for markets to work well in this sense are profit-maximizing incentives on the part of firms and the absence of pervasive market failures. When privatization is incomplete and/or significant market power is unleashed, the move to markets replaces old problems with new ones. If it can be shown that convertibility in the absence of a fully competitive environment implies greater transitional costs and delays than would a future, simultaneous movement on all fronts, there may be a case for gradualism. For most of the formerly planned economies, this issue is largely hypothetical: to maintain credibility, there is no turning back on the key reforms. Nonetheless, it is important to understand the functioning of the economy caught in the gray area of liberalized markets but perverse incentives, both to measure the cost of this reform sequence (relative to the competitive ideal and to no reform) and to recommend policies to ease the transition.

Czechoslovakia exemplifies this gray area. It aggressively freed internal prices from administrative control. It offered unlimited convertibility to hard currencies at a unified exchange rate for most current account transactions, and now has an average tariff which is low, even by Western standards. On the other hand, Czechoslovakia has moved more cautiously toward privatization than some of its neighbors; and it lacked the experience with Western markets and the tradition of small-scale market experiments of Hungary or Poland. Potential market power, as reflected in concentration ratios, exists. Unfortunately, as the authors document, Czechoslovakia has been subjected to so many shocks between 1990 and 1992 that it is impossible to infer from the aggregate data how market imperfections have affected the adjustment to liberalization or what the pattern of adjustment implies about the extent of market imperfections. The authors are appropriately cautious in drawing detailed conclusions. Accordingly, I limit my comments to three aspects of the role of monopoly power in the CSFR transition.

First, the paper suggests but does not resolve the extent and cost of monopoly power in Czechoslovakia. The authors construct four-firm concentration ratios and profit rates for 19, 2-digit industries. Comparisons between these ratios and those of the West and those of the other transition economies would be informative. The concentration ratio average of 40 percent at the 2-digit level is very high by Western standards, and the anecdotal evidence suggests high potential power in many industries. On the other hand, the profit rates tell a more moderate story. If we crudely estimate Harberger deadweight losses by assuming a unitary demand elasticity and using the estimated markups which average at 12 percent, we obtain a cost of monopoly power on the order of 1 percent of industrial output. This moderate deadweight loss is dwarfed by the real output reductions of recent years.

A convincing analysis awaits a refinement of the profit rates and a sharper sectoral breakdown, but I am surprised that the initial data do not show more dramatic inefficiencies.

Indeed, deadweight losses based on profit rates will overstate the cost of monopoly, for at least two reasons. First, such calculations do not account for the countervailing pressures in an economy where market failures are pervasive. In essence, if production inputs are in fixed supply, then not all sectors can produce too little, and power exercised in one market will mitigate the impact of monopoly in another. Also, monopoly power indirectly lessens the environmental damage of the large industries. Piecemeal application of antimonopoly policy can do harm in this second best setting. Second, a snapshot of monopoly cannot reveal the dynamic process of future entry and the cost-saving incentives of potential competition. Few Czechoslovak industries are natural monopolies: current concentrations are the residue of central planning rather than scale economies. The profits we observe now are the incentive for new entry. It will be interesting to see whether entry can substitute effectively for formal restructuring and antimonopoly law. My sense is that entry will resemble a desirable piecemeal policy with pervasive monopoly, because entry should occur most readily in sectors where market power has generated the highest monopoly profits and inefficiency. For these reasons, the paper has just begun to penetrate the extent and cost of market power in the CSFR.

A second focus of the paper is on how heavily Czechoslovakia can rely on the forces of free trade for antitrust. Czechoslovakia took the essential steps of stopping the rationing of hard currency among importers and minimizing quantitative restrictions on imports. Without these steps, the monopoly power of firms which serve the domestic market with import substitutes would be maintained and perhaps enhanced by facilitating collusion. Tariffs retain the fundamental feature of free trade: the unlimited availability of imports which substitute for domestic goods must increase the elasticity of demand for home goods and hence lower market power. Exactly how effective this check on monopoly power will be depends on the cross price elasticity of demand between imports and domestic goods. If import penetration is positively related to the cross price elasticity in the cross section, then high import penetration should result in small profit rates if free trade is restraining market power. Instead, the authors find a weak and sometimes positive relationship between import penetration and profits rates.

I do believe that free trade has limited antitrust potential, but the authors' regressions cannot tell us this. Surely, import penetration is sensitive to the profit markup; thus, the regressions suffer from a simultaneous determination of import penetration and the profit rate. The regressions may simply show that sectors which attempt large markups attract imports. What we need is independent evidence on the cross price elasticities, which awaits empirical demand studies. Perhaps we might appeal for guidance from the many studies on goods substitutability in international trade. Purchasing power parity studies on tradable, homogeneous goods reveal significant violations of the law of one price. Econometric studies of substitution elasticities between home goods and import substitutes in the USA

reveal a wide range of elasticities but an average between 2.5 and 3. These numbers tell us that markups over cost in a monopolized domestic industry could be as high as 50 percent. Especially in the short run, the absence of quantitative restrictions lessens, but will not eliminate, monopoly power.

A third issue is: short of restructuring to promote competition, what should be done to lessen the monopoly problem? The goal is to increase the flow of resources to the monopolized sectors. Unfortunately, of the several ways to do this, none is compelling or immediately available to the transition economies.

1. We could intervene directly in the monopolized market. For example, we could subsidize production, enriching the monopolist. Or we could impose a scientifically determined price ceiling, which could avoid the increase in profit. Either way, we reintroduce the controls that liberalization was meant to replace. This is unacceptable, for it would destroy the credibility of the reforms.

2. We could act indirectly to drive resources out of other markets. In particular, we could raise tariffs on the consumption imports which compete with home goods. This policy can increase real income, but it is risky. It is a fine-tuning policy, which balances one distortion against another. Also, in the sector with market power, the gain is an increased profit which outweighs consumer loss. Because of this distribution, if the expansion is funded from abroad or through direct investment, the home country is likely to hurt itself.

3. Finally, and most attractive, Czechoslovakia might encourage capital inflows. The expansion of new enterprises that foreign capital finances will disperse monopoly power, even in the nontradable sector. As profits are shifted from home firms, a gain is not guaranteed – but in many instances there will be net national gain. Direct investment has the further advantage of bringing productivity-enhancing knowledge. From the perspective of antimonopoly, as well as general needs for growth and transition, we must wonder when and how Czechoslovakia can begin to run a larger current account deficit.

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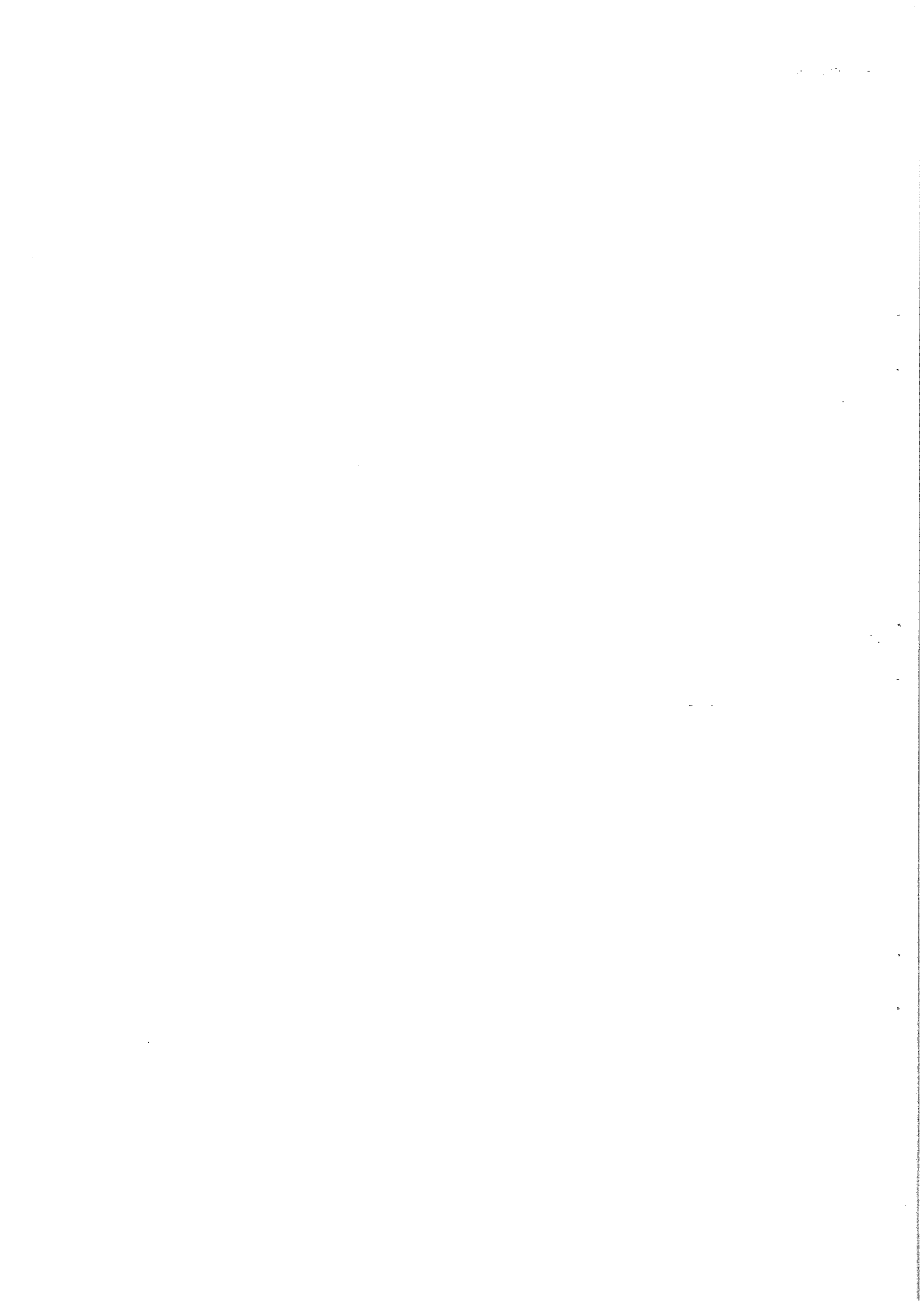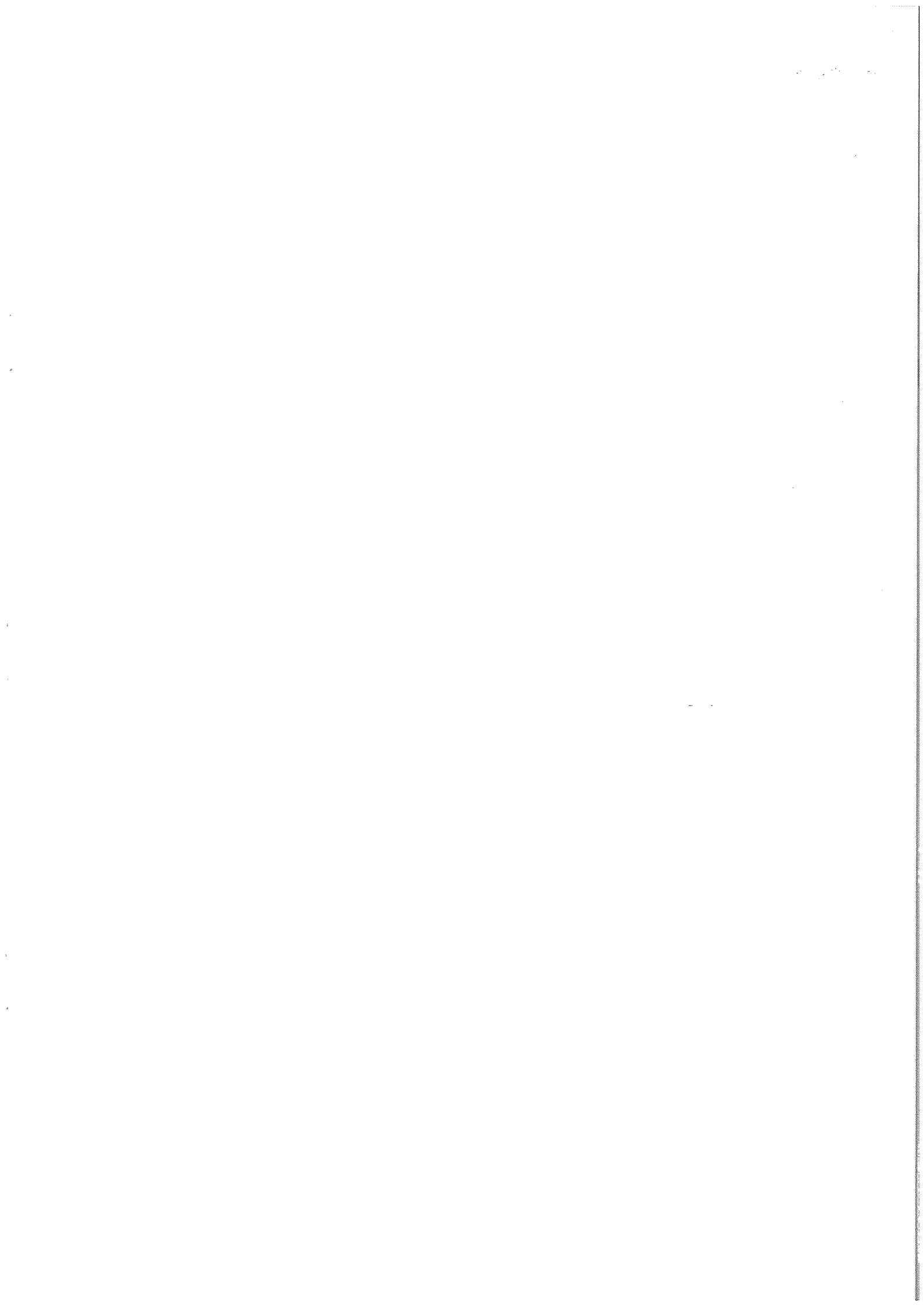
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