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THE IMPACT OF EXTERNAL ECONOMIC DISTURBANCES ON POLAND SINCE 1971

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I. Foreign Induced Versus Domestically Generated Disturbances

1. The New Development Strategy

It is always difficult to separate the impact of foreign induced economic disturbances from the effect of those domestically generated disturbances that appear independently at the same time. Strong disturbances, which the world economy has experienced since 1973, occurred at the time when the new leadership in Poland finally decided to open up the economy and to increase involvement in foreign economic relations with the West. Moreover, the resulting increase in the sensitivity of the economy to international disturbances coincided with some strong domestically generated disturbances.

Follwoing the workers riots of December 1970 a new development strategy was introduced which involved rapid increases in both investment and consumption. The major objective was to make the rates of growth of the economy to depend more on increases in the productivity of inputs than on increases in their quantities, as it was the case until then. Large investment outlays were required to restructure and to modernize the economy. Significant increases in consumption were expected to provide incentives to stimulate labour productivity and to improve managerial motivation, in addition to obtaining support for the new leadership and securing political stability.(1)

This strategy had several implications for foreign economic relations of the country:

(1) Sufficiently big simultaneous increases in investment and consumption were only possible with the help of imported foreign capital which was available in large quantities only in the West. Therefore, adverse balances on current account, total and particularly in trade with Western advanced countries were expected to appear during the first few years.

(2) In order to increase efficiency it would be necessary to restructure and to modernize the economy with the help of the most modern technology imported from the West. The transfer of technology would, above all, take the form of the import of machines and equipment, but licences and industrial cooperation agreements would also be utilized. To the extent to which these imports would not be secured by expanding exports and loans, pressures on the balance of payments would appear.

(3) Further balance of payments pressures would be created by increased import of materials induced by higher rates of growth of the economy and increases in the disposable income of the population.

(4) In order to reduce unit costs, improve quality of products and to stimulate technological progress it would be necessary to make the economy more specialized. Priority allocation of foreign exchanges for the purchase of imported machines and licences would be secured for the export promoting investment.

(5) The expected improvement in the overall efficiency of the economy, the increased productive capacity and the creation of a viable export sector would allow to reduce the degree of indebtedness without great difficulty. Western credits would be repaid partly by increased exports of such raw materials as coal, copper and sulphur, the mining of which would be expanded, and, to an increasing extent, by the export of modern, high quality, technologically sophisticated manufactured goods which would be efficiently produced in new or modernized plants, utilizing the most modern Western technology, according to Western standards and in some cases, under industrial cooperation agreements with the Western firms. It should, therefore, be possible to secure positive balances on current account, including positive balances in trade with the West, in the near future with continuous increases in consumption and high rates of domestically financed investment.

This strategy assumed therefore temporary adverse balances on current account, financed by foreign borrowing, and the appearance of the balance of payments pressures was almost inevitable, even in the absence of any adverse developments in the world economy. Similarly, it would almost be impossible to avoid inflationary pressures in the domestic balance of the economy.

The success of the strategy was very sensitive to changes in the world prices of imported and exported goods, foreign demand, the level of domestic absorption and the level of domestic costs, as well as to the availability and the price of capital in the world financial markets.

At first the strategy seemed to be successful. The rates of growth of national income, industrial production, disposable income, expenditure on consumption and, above all, investment outlays were very impressive. There was however, no visible improvement in the efficiency of the process of growth, which still depended mainly on increases in the quantities of inputs, particularly capital, which was injected into the economy in large doses by borrowing from the West and be enforcing extremely high rates of domestic saving.

The pattern growth is illustrated by Tables I and II:

(1) The rates of growth of domestic net material product (DNMP), or "produced national income" in Marxist terminology, were high when the rates of growth of employment in national production were high in 1972-74 and declined when the latter declined in subsequent years, despite increases in the rate of growth of fixed directly productive capital. As the full employment of labour was secured, the reduction in the rate of employment was determined by a decrease in the rate of growth of the labour force over which the planners had no control.

(2) The rates of growth of net material product per worker in material production were very high in 1972-73, but declined in 1974-77 despite a rapid increase in the rate of growth of fixed directly productive capital per worker.

(3) The rates of growth of NMP per unit of fixed directly productive capital were also high in 1972-73 but declined to only one per cent in 1974 and became negative afterwards exactly at the time when improvements in capital productivity were expected to occur on a large scale.

(4) The difference between national material product (NNMP), or the "divided national income" in Marxist terminology, and DNMP, which had been negative between 1947 and 1971 every year with the sole exception of 1959, became positive in 1972-77, indicating an excess of import over export and, therefore, an inflow of capital which represented about 16 per cent of aggregated investment in 1975-76. This inflow of capital greatly exceeded the planned levels.

Considerable difficulties started to appear in 1974 and increased rapidly in subsequent years. Pressures on the balance of payments and on the domestic balance of the economy exceeded those which had been anticipated and the success of the new development strategy was seriously endangered or even completely frustrated.

2. Sources and Difficulties

There are many reasons for the difficulties which appeared during the implementation of the new development strategy. Even among domestic factors some were beyond the government control, such as exceptionally unfavourable weather conditions that adversely affected agricultural output creating additional pressures in the domestic balance and the balance of payments. But even in this sector the government policy aggrevated the situation.

There were also mistakes in the mscro-economic policy. Attempts were made to enforce excessively high rates of investment. Even taking into consideration import of foreign capital, the share of investment in NNMP probably exceeded optimum[2], especially in 1974 when about 32 per cent of NNMP was invested and in 1975 when the share reached 3

33 per cent (see Table II).

The planned rates of growth of both investment and real wages were very high, but it seems that the planners lost control over them and the difference between the actual and planned rates were quite considerable. The average rate of growth of investment was about 139 per cent above the planned rate during the whole period 1971-77 and the rate of growth of real wages about 112 per cent (see Table III). In comparison the difference of 40 per cent between the actual and the planned rate of DNMP was rather moderate. The annual rates of growth of investment and real wages exceeded the planned annual rates in all years except in 1976 and this was the case even when the planned rates of DNMP were not met, as happened from 1975 to 1977.

The disposable income of the population increased not only by rapid increases in wages. The actual employment in the socialist sector exceeded the planned level and some upward revisions and the extension of coverage of pensions and social welfare payments also added to the purchasing power in the hands of the population. The rates of growth of nominal disposable income exceeded the rates of growth of domestic net material products in three out of six years during the period 1971-76 but, except in 1975, they were considerably below the rates of growth of investment in fixed capital (see Table III). It seems that during the first part of the period from 1971 to 1974, the excessively high rates of growth of investment were the primary source of domestic macro economic imbalance and increases in disposable income played the secondary role. Without the excessively high rates of investment they would probably have been quite acceptable.

The situation was aggravated further because, when the aggregate demand was increasing more rapidly than it was intended, the aggregate supply was increasing at a lower rate than that which had been anticipated. The newly imported technology not always proved to be as efficient as expected. Some new machines and processes required more time for installation. Some newly created productive capacity was under-utilized because of the lack of complementary productive capacity elsewhere in the economy, the shortage of inputs of required quality or delays in their supply.

There were also mistakes in micro-economic decisions which adversely affected the balance of payments position at the time when it was already weakened by the domestically generated inflationary pressures. Not all investment outlays which were authorized as export promoting were in reality capable to expand profitable exports, particularly to the West. Too many products, enterprises and industries were designated as specializing in export production and scarce resources, especially R & D capacity and managerial skills, were too thinly spreaded.(3) Some of the new investments were heavily material- and fule-intensive and sharply increased demand for imports.(4)

Affecting adversely all macro-economic, micro-economic, export and import decisions was the mistaken assumption that the transfer of foreign technology on a large scale with the help of foreign borrowing was a viable alternative to economic reforms. Despite lively discussions only moderate reforms were introduced and some systemic improvements were withdrawn soon afterwards under the combined impact of the domestically generated and foreign induced inflationary and balance-of-payments pressures.(5)

Without sufficiently bold systemic reforms no rapid improvement in the overall efficiency of the economy could occur and the new strategy was seriously endangered.

The foreign induced pressures were over-imposed on the domestically generated pressures and created new disturbances throughout the economy through the propagation mechanism. Some additional disturbances were also created by policy responses aiming at constraint of external disturbances.

At first it was the world commodity inflation beginning in 1973 which had its impact on the Polish economy through the upward movement of the prices of importables and, in some years, adverse terms of trade. Subsequently, the world recession of 1974-75 and disappointingly slow recovery, together with the policies that were introduced in Poland to contain inflation, improve the balances of payments and restore the macro-economic balance, had even stronger impact which was reflected in a reduction in the rates of growth of DNMP in 1975 and more serious reductions in 1976 and 1977, without reducing inflationary pressures.

In addition to the lack of systemic reforms, foreign trade and agriculture are the main sources of current difficulties and the key to the solution of short- and long-run problems of the Polish economy. Difficulties in foreign trade have had some adverse effect on reforms and make the solution of at least some agricultural problems more difficult. The balance of payments position adversely affects further import of foreign technology and the possibility to continue increases in the standard of living. In turn, some difficulties in

foreign trade have been either created or aggregated by domestic factors. But there has also been an adverse impact of external disturbances and increasing protectionism which is associated with them.

II. Sensitivity of the Economy to External Disturbances

1. Market Power

In terms of population Poland with 34.9 million at the end of 1977 is a medium size country. Its resource base is, therrfore, wider and diseconomies of small scale production less severe than it is usually the case in smaller countries. On the other hand, it is still too small for achieving all major industrial economies of scale which at the end of 1950's seemed to require the population of at least 50 million.[6] This critical size has almost certainly increased since that time, especially in respect of high technology industries.

As a country at a medium level of development and with natural resources which include coal, copper and sulphur in large quantities, Poland is an important producer of some materials and industrial productes. It is, however, doubtful that she is a price-maker in respect of any of them.

Similarly, Poland does not seem to have a strong market power in any non-socialist countries with which she is trading. In none of them her overall trading position is sufficiently big. In 1977, among the most important non-socialist buyers of Polish exports (14 countries to which at least 1% of Polish exports was directed in that year), only in two (Finland and Libia) the share of Poland in their total import was above 2%. In three other countries (Denmark, Austria and Sweden) the share

was above 1% (see Table IV). Poland's position is slightly stronger as a market for export from some non-socialist countries. Among the most important non-socialist suppliers of Polish imports (13 countries with at least 1% share of total Polish import in 1977), the share of Poland in total export was 4.42% in Austria, 2.35% in Sweden and in six other countries (India, Brazil Switzerland, Federal Republic of Germany, France and Italy) the share was above 1%. Although Poland may be an important supplier of a particular commodity, or an important market for some specific exports for some countries, in terms of total trade she is only a marginal trading partner for non-socialist countries, except perhaps Austria. However, during a recession, when there is high unemployment and unused capacity, the Polish market is not insignificant for many advanced and less developed countries. This explains why it has been relatively easy for Poland to obtain credits from the West.

Poland is not technologically leading in any particular field on a significant scale and she has a limited number of international patents and commodities with well established trade marks, strong servicing connections with customers, or large advertising and other forms of non-price competition. The demand for Polish manufactured goods can, therefore, be expected to be elastic.

On the import side many commodities belong to

"unavoidable import" which cannot be reduced without reducing the output of the economy. The whole supply of natural gaz, bauxite, rubber, cotton and raw materials for chemical fertilizers, almost 100% of oil, more than 90% of iron ore, 75% of wool and, at present, up to 1/3 of grains and feeds have to be imported. Similarly many machines must be imported because they are complementary to those which were obtained in the early 1970's, or are required in order to fully utilize the newly created productive capacity in other sectors of the economy. However, as it will be shown later, there was a considerable decline in the income elasticity of import after 1973.

2. Involvement in International Economic Relations and Systemic Factors

While the lack of market power makes the Polish economy sensitive to the impact of external disturbances, a relatively low involvement in international economic relations, particularly with the West, tends to reduce this impact.

Like all other CMEA countries, Poland followed an inward looking development strategy until the middle of the 1960's with some more significant efforts to open up the economy being made after the workers riots of December 1970.

Per capita value of trade in current prices increased considerably between 1970 and 1977: import from $125 to $420 and export from $120 to $350.[7)]

These are, however, still relatively low figures even in comparison with other CMEA countries. Only Romania and the Soviet Union have lower per capita figures within that group. Total imports represented 1.4% of world imports and exports 1.2% of world exports in 1977.[8] Within CMEA these shares are only smaller than the shares of the Soviet Union, but they are approximately equal to those of the German Democratic Republic, a considerably smaller country.

No statistics are published on the share of foreign trade in national product and, because foreign trade is reported in the artificial "deviza zloty" at official parity with gold and major international currencies, it cannot be compared with the national product which is calculated in domestic currency (zloty). It has been reported that in 1977 the share of export plus import in net material product was about 30% at domestic prices of foreign trade.[9]

A relatively small involvement in trade does not necessarily mean that international economic relations are unimportant. They can have a decisive importance if only essentials are imported and an inability to expand trade more rapidly is often regarded as one of the main barriers to the growth of the Polish economy.[10]

Moreover, some factors that limit Poland's involvement in international economic relations also have an adverse effect on the economy's ability to cope with

external disturbances. They include a moderate level of development; the inflexibility of the centrally planned economic system in general[11] and in foreign trade in particular[12]; and the industrial structure that was constructed during the industrialization drive of the 1950's and was petrified during the 1960's.[13]

3. Geographic Structure of Trade

It was very unfortunate for Poland that the strong fluctuations in the world economy occurred exactly at the time when the new leadership introduced the new development strategy which increased the share of trade with the West in total Polish imports and exports.

Because of differences between the intra-CMEA trade prices and the world prices, the shares of the intra-CMEA trade are subject to a different degree of distortion in different years and the figures for different years are not, therefore, completely comparable. According to the official unadjusted statistics the share of Western advanced countries in total imports increased from 25.8% in 1970 to 50.8% in 1974 and started to decline in subsequent years. In 1977 it still represented 43.5%. The share of less developed countries declined from 5.6% in 1970 to 3.9% in 1973 and fluctuated between 4.2 and 4.9% in subsequent years. On the export side, the share of Western advanced countries increased from 28.4% to 36.3% in 1974 and fluctuated between 31.3 and 32.0% in the subsequent three years. The share of less

developed countries declined from 7.7% to 5.1% in 1973 and then it fluctuated between 8.0 and 8.6% (see Table V). It is evident that the economy has become more dependent on trade with countries outside the CMEA region, at least temporarily, and must therefore become more sensitive to disturbances in the world economy.

4. Commodity Structure of Trade

During the period 1971-76 the largest two commodity groups (SITC classification) on the import side were "machines and transport equipment" and "other manufactured goods", together representing 61.9% in 1976. From 1971 through 1974 the relative position of other groups remained unchanged: "raw materials, except for food" was the third, "food, beveriges, tobacco, including raw materials" the fourth, "chemicals" the fifth and "mineral fuels" the smallest group (see Table VI). In 1974, mainly under the pressure of the increased price of crude oil and petroleum products, the group "mineral fuels" moved to the fourth place to share it with "food etc". Another change occurred in 1976 when "food" moved to the third place as the result of difficulties experienced by the Polish agriculture.

In import from advanced countries various groups had the same relative positions as in total import and all the groups maintained them during the whole period, except that the relative importance of "raw materials"

declined and that of "food" increased. In trade with less developed countries the two most important commodity groups were "raw materials" and "food", interchanging their relative positions. "Mineral fuels" appeared in this trade for the first time in 1973 and assumed the fourth position in subsequent years after "other manufacture commodities" which maintained its position as the third largest group of imports througout the period.

As the prices of fuels and raw materials increased more rapidly than the prices of manufactured commodities during the world commodity inflation of 1973-74, the structure of total imports and imports from advanced countries was favourable during that period. The structure of imports from less developed countries, with the large share of raw materials and food, was unfavourable but the relative importance of trade with these countries was small.

In subsequent years the structure of total imports and imports from advanced countries became less favourable because of changes in relative prices in the world market. The structure of imports from less developed countries became, at the same time somewhat more favourable. This change was, however, only slightly reflected in the relative importance of advanced and less developed countries as there is little potential substitutability between imports from these two directions.

On the export side, the structure was also favourable, especially in respect of export to advanced countries,

during the commodity inflation of 1973-74. In total export the relative position of various groups was relatively stable. The largest group were "machines" (40.5% in 1976), followed by "other manufactured commodities"(21.9%) and "mineral fuels" (18.1%) (see Table VI). Although the dominant position of "machines" and "other manufactured commodities" was not favourable at that time,"fuels and food" together represented 26% in 1973 and 27% in 1974.

The structure of export to advanced countries was even more favourable. The largest commodity group was "food" in 1971-73 and "fuels" in 1974-76. Increases in the prices and quantities of coal exports had a decisive importance for a very rapid increase in the share of "mineral fuels" in 1974-75. The structure of exports to less developed countries was less favourable from the point of view of the impact of the world commodity inflation, as it was dominated by manufactured commodities.

In the advanced countries the groups of imports which are most sensitive to fluctuations in the domestic level of economic activity are "machines and equipment" and "mineral fuels".[14] Structural changes in Polish exports between 1971 and 1976 increased the relative importance of these two groups. Their share in total export increased from 52.8% in 1971 to 58.6% in 1976, in exports to advanced countries from 31.2% to 46.2% and the share in exports to less developed countries from 42.8% to 49.2%. It means that the sensitivity of Polish exports

to fluctuations in the world level of economic activity has increased and the largest per cent point change occurred in the export of these two groups in exports to advanced countries. It can therefore, be expected that the impact of domestic fluctuations in those countries will now be greater than in the past.[15]

It appears, therefore, that the commodity structure of Polish trade was relatively favourable to cope with the disturbances in the form of increased prices of fuels and raw materials but is increasingly more unfavourable from the point of view of the impact of the world recession and slow recovery that followed.

III. Channels of Impact

1. Relevant International Economic Disturbances

For Poland the relevant disturbances in the world economy are those which take place in commodity markets and affect the prices of Polish imports, terms of trade and demand for exports.

Disturbances in financial markets are also important because of the considerable volume of foreign borrowing which has taken place since the beginning of the 1970's. Total net hard currency debts exceeded $ 10 billion at the end of 1976. In that year Polish total exports were $ 11.0 billion and exports to non-socialist countries $ 4.4 billion. New loans have to be obtained to refinance some of those loans which approach maturity, to reduce the burden of debt servicing, or to cushion the impact of further difficulties in foreign trade.

Changes in the price and availability of credit in international markets can, therefore, have a strong impact on the Polish economy. However, the balance-of-payments statistics are not published by the Polish Central Statistical Office and no information on financial transactions is available in published sources. Although not much can be said about this source of disturbance, its existence and relative importance should be stressed.

Fluctuations in the rates of exchange of hard currencies, particularly the value of US dollar, have

also considerable effect, apart from the impact on regular trade and finance. There are considerable transfers of foreign cash from relatives abroad, pensions, honoraria, and similar private transactions, most of which are quite legal. Private individuals are now allowed to acquire foreign currencies in this way and to hold it.

Foreign currencies can be sold to financial institutions by private citizens at special favourable rate of exchange. They can also be used for foreign travel, to buy imported goods at special stores and to buy the so called internal export, i.e. various Polish made goods that are either unavailable in the domestic market or for which there are long waiting lists when the transaction takes place in domestic currency. Automobiles, apartments and even some producers' goods for the non-socialist sector in agriculture, handicrafts and services belong to this group of commodities. There is a direct effect of changes in the value of US dollar on prices in this market. It represents a significant share of total transactions by population but its importance far exceeds its relative size as it provides sometimes the only possibility of obtaining within a reasonable period of time some highly preferred consumption goods or producers' goods which can eliminate bottlenecks in private small scale production or service establishments.

The annual value of transactions at special stores (PEWEX and POLMO) is about $ 200 million, or about

2.

2.5% of the total expenditure by population on goods and services at the free market rate of exchange. An approximately equal amount is deposited on the foreign currency accounts at the banks from which foreign exchange can be withdrawn for travel and some special transactions. This amount represents, again at the free market rate of exchange, about 7.5% of total personal savings deposited with financial institutions.[16]

These are considerable amounts. Because of the existence of the special market, the value of dollar at the black market, where foreign currencies are traded illigally among private individuals, moves often in the opposite direction to the movement in the world money market, depending on the demand for foreign travel, for commodities which can only be obtained in the special market, domestic shortages, the length of waiting lists and changes in the volume of transfers from abroad.

The special market, foreign exchange deposits and the black market represent a potential source of disturbance which can be triggered off by fluctuations in the world money market. Considerable changes in demand for and supply of domestic currency and in the effective demand for goods and services in the domestic market can occur as the result of some developments outside the country and/or changes in expectations as to the future movements of the value of some foreign currencies.

On the other hand, there seems to be no direct

impact of disturbances in the labour markets in the West. There are no Polish gastarbeiters in Western Europe. Although occasionally Polish construction workers and technical personnel are employed not only in other socialist countries, but also in some less developed countries and in Western Europe in connection with construction or installation contracts effected by Polish firms and a few students take summer jobs abroad, mainly in Sweden, these are marginal cases and they have no effect on the Polish labour market.

The demonstration effect may be responsible for a continuous pressure for higher wages, better working conditions and improvements in welfare services. It is, however, a long-run force and not a result of economic fluctuations in the world economy. It is not, therefore, relevant for this study.

2. Changes in Prices and Quantities of Imports

Polish import prices declined in 1971 and 1972. The big increases of 8.1, 16.9 and 14.0 came in 1973-75. They were followed by almost no change in 1976 and an increase of over 5% in 1977. Average increase in prices of total imports was 7.5% in 1971-75. The highest average increase in import prices took place in trade with less developed countries (12.3%), followed by trade with Western advanced countries (11.2%). Increases in prices of imports from other socialist countries were much lower

(5.8% average) (see Table VII).

Increases in the share of import from advanced countries accurred already in 1971 and 1972 when reductions in prices in that market were sharper than in trade with socialist countries. The very big increases in the share of imports from advanced countries in 1973 and 1974 were partly the result of very high price increases in this trade (28.0 and 32.8%) when prices in trade with socialist countries declined in 1973 and increased only slightly in 1974. On the other hand, the decline in the share of trade with advanced countries and increase in trade with other CMEA countries that occurred in 1975 were probably simply the result of differences in price increases in the two markets (3.3% in the case of imports from advanced countries and 26.1% for imports from CMEA).

On the whole the membership in CMEA reduced the impact of world commodity inflation on Poland by spreading the increases over a longer period of time.

There are no statistics on the prices of individual imports and it is possible to calculate average prices only for some groups of products. The average prices are, of course, affected by changes in the proportion of trade with other CMEA countries, by changes within the group as to its commodity structure and by changes in the quality and other factors which affect relative prices of individual commodities which belong to the group. For these reasons the average prices can be used, even as

a rough indicator, only in the case of relatively homogeneous groups, such as primary products. Table VIII presents the value, quantity and unit price of 14 fuels and raw materials selected from the list of the most important Polish imports which together represented from 17 to 23 % of the total value of imports in 1970-76. Table IX shows changes in quantity imported and changes in unit prices. Increases by 20 or more per cent occurred in respect of 3 out of 14 imports in 1973, 7 in 1974 and 9 in 1975. In addition, in each of these three years there were 2 items with increases of more than 5 and less than 20%. In 1976 there was no increase greater than 20% and only in respect of 3 items increases were greater than 5.

The biggest increases were in respect of phosphates and apatites 164.4% (1974), rye 145.6% (1974), coking coal 117.5% (1975, crude oil 106.9 (1975), natural gas 102.4% (1975), oilseeds 92.9% (1973), barley 79.9% (1973) and pig iron 62.3% (1975).

In some cases quantities imported were reduced when a big increase in the price of the commodity occurred. For example there was a 5.0% decline in the imported quantity of crude oil when its unit price increased by 25.2% in 1974 but a year later there was an increase of 25.7% in quantity when the price increased by 106.9%. Most of decreases were limited to one year only. Often increases in prices were associated with considerable increases in the imported quantities.

To some extent, the changes in quantity could have been affected more by expectations as to the future movements of prices and changes in domestic requirements rather than by the current price changes. It seems, however, that on the whole there was very little freedom of manoeuvre for the planners in respect of these imports.

Very little imports were switched from more expensive non-socialist markets to the CMEA market which, because of the time lag with which its prices follow changes in world prices, was cheaper for some time. On the contrary, the share of quantity imported from CMEA started to decline as from 1973 in respect of such important commodoties as crude oil (from 100% in 1972 to 77.1% in 1976), petroleum products (from 80.5% to 50.2% in 1975 and 61.0% in 1976), iron ore (from 84.7% to 74.7% in 1976), pig iron (from 99.2% to 77.3), phosphorites and apatites (from 42.7% to 18.5%), wheat (from 84.7% to 1.4% in 1976).

Again, the planners had apparently little freedom of manouevre in this respect and this containment policy was not available for them.

The rates of growth of import at constant prices were very high from 1971 until 1974, especially in 1972 and 1973 when they reached 22.1 and 22.6%. This was in accordance with the new development strategy although until 1973 the actual rates exceeded the planned rates (see Table X).

In subsequent years, under the combined impact

of external difficulties, domestic pressures and policies attempting to improve the balance-of-payments position and to restore the domestic balance of the economy the rates of growth of import declined, bringing with them a decline in the rates of growth of DNMP. In 1977 there was no increase in real import and the rate of growth of DNMP declined to about 54% of the average 1972-74 rate.

Calculated in constant prices income elasticity of imports increased very rapidly in 1971-73 as compared with its average level during the 1960's (see Table X). Starting with 1974 income elasticity of import was every year below its long-run average level, particularly in 1977 when it was zero and in 1975 when it was about one third of the average for the previous decade. As the decline in income elasticity of import appeared already in 1974 it is doubtful that it was induced by increased prices alone. It is more reasonable to assume that some increases in the import substituting capacity had taken place during the investment drive of the early 1970's as the result of the deliberate policy which had been formulated before the occurrence of world commodity inflation.

3. Changes in Export Prices and Terms of Trade

Polish export prices increased when import prices declined in 1971-72 and terms of trade improved. The impact of the world commodity inflation was stronger on

import prices than on export prices in 1973-74 and terms of trade declined. The impact was, however, somewhat reduced by the terms of trade with socialist countries moving in the opposite direction to terms of trade with advanced and less developed countries in 1973. When the terms of trade with socialist countries became, in turn, negative the deterioration was gradual, spread over two years and happened at the time when there was big improvement in the terms of trade with advanced countries in both years and the terms of trade with less developed countries in the second year. The overall terms of trade were also favourable in 1976 but they became negative in 1977, for the third time since 1970 (see Table VII).

The most important single commodity in Polish exports is coal. Fluctuations in its unit price had a considerable influence on the movements in the overall export prices and terms of trade. In 1970 about 20% of its total was exported and about 58% of the quantity exported was directed to outside the CMEA region. The share of this export in the total value of Polish exports was 9.6%. In 1971 the unit price increased by 23.8%, there was an increase in the quantity exported but a decline in the share of non-CMEA countries. The share of coal in total export increased to 11.4%. In 1972 the unit price increased by less than 4% and it declined by more than 3% in 1973. Despite increases in the quantity exported the share of coal in total export declined to

10.9% in 1972 and 9.8% in 1973. However, in 1974 the unit price increased by 47.8% and the quantity exported,and the share of non-CMEA countries increased. The share of coal in total export reached 12.6%. In 1975 the unit price increased by 64.3% and,despite a reduction in the quantity exported, the share of coal reached 16.0%. In 1976 there was a decline in the unit price by 8% and almost no change in the quantity exported and the share of coal dropped to 13.9% (see Table XI).

Fluctuation in the unit price of Polish coal export did not follow the pattern of coal prices listed by I.M.F. in their commodity price statistics. In 1971 the two sets of prices moved almost by the same percentage but in the opposite directions and there was no decline in the latter prices in 1973 and 1976.

Because of a rather favourable structure of trade from the point of view of coping with the world commodity inflation of 1973-74, which was dominated by rapidly increasing prices of fuels and row materials, the per cent declines in terms of trade which occurred in these two years were relatively small and the imrpovement in the subsequent two years was greater than that decline. Another deterioration occurred, however, in 1977 with, this time, much smaller increases in world prices and prices of Polish imports and exports.

Taking the level of prices in 1970 as 100, the export price level was 152.5 and the import level 149.6

in 1977 (see Table VIII). The overall movements of prices during the whole period were, therefore, favourable to Poland. However, import exceeded export every year with the adverse gap growing until 1976, with the greatest increases in 1973 and 1974 and the gap in 1977 still the second largest in the whole period (see Table VI). The losses of real income resulting from adverse terms of trade were, therefore, relatively big. They represented 4.1% of the total value of import in 1973, 3.6% in 1974 and 2.0% in 1977. On the other hand the gains of real income resulting from favourable terms of trade were small, except in 1971. They represented 4.1% of the total volume of import in 1971, 1.7% in 1972, 0.3% in 1975 and 1.0% in 1976 (see Table XII). For the period 1971-77 as a whole there was a net loss of 1.6 billion deviza zloty (about $ 485 million at the official rate introduced in 1973) or an equivalent of about 3.5% of the total value of import in 1977. If the first two years are excluded the net loss for the period 1973-77 was 2.6 billion (about $ 780.5 million) or approximately 5.3% of the 1977 value of import.

4. Changes in Demand for Exports

Rates of growth of Polish exports (at current prices) to non-socialist countries were increasing rapidly from 1971 to 1974. They were exceptionally high in 1973 (27.1%) and in 1974 (45.7%). There was a decline in 1975

(11.9% and another in 1976 (7.7%). The average rate declined from 25.0% in 1971-74 to 9.8% in 1975-77 (see Table XIII).

During the period 1971-77 fluctuations in the rate of growth of Polish exports to non-socialist countries were close to the pattern of fluctuations in world imports at current prices, which can be accepted as an indication of changes in the world demand for exports. There was high correlation between the two sets of rates (the correlation coefficient 0.9258). The Polish average rates were lower than the world rates in both 1971-74 and 1975-77 but the decline in the Polish average rate between the two sub-periods was somewhat smaller (-60.8% as compared with -63.4% in the average rate of growth of world import).

Among the major commodity groups classified according to the sector of the economy in which they are produced, the highest correlation with the rates of growth of total world import was shown by the rates of growth of export of metallurgical products (the correlation coefficient 0.9334) and chemical products (0.9159). The degree of correlation for the products of light industry and fuels was considerably lower (0.6226 and 0.6020). There was very little correlation in the case of food and agricultural products, and the negative correlation for the exports of the electrical and mechanical industry.

The same pattern emerges when the rates of growth

of Polish exports to advances countries, grouped according to SIT classification, are compared with the rates of growth of the total imports of industrial countries (see Table XIV). Correlation is somewhat stronger in the case of total export (0.9455). Strong correlation is shown by chemicals (0.9750), other manufactured commodities (0.9668) and raw materials (0.9051). Mineral fuels, and food, beverages, tobacco including raw materials, have very weak correlation (0.4462 and 0.2850 respectively) and machines and transport equipment show quite strong negative correlation (-0.7028).

When the rates of growth of Polish exports to less developed countries are compared with the rates of growth of world imports there is again negative correlation (-0.6930) and the two largest groups have very weak correlation with the rates of growth of world import (0.3224 for machines and transport equipment and 0.3132 for other manufactured commodities).

It has been observed before that in the advanced countries the import of machines and transport equipment and mineral fuels are highly sensitive to fluctuations in the level of economic activity and that the increase in the share of these two groups may tend to increase the sensitivity of the Polish economy to the impact of international disturbance.

The above calculations of correlation show that, indeed, the Polish exports to advanced countries are highly

sensitive to fluctuations in the demand by industrial countries, but the two groups of commodities have not been responsible for it. On the contrary, mineral fuels have weak correlation and machines and equipment show quite strong negative correlation. However, the rates of growth of Polish export of fuels were subject to particularly strong upward fluctuations in 1974 and 1975, which was a one year lag in comparison with fluctuations in world import and import by industrial countries. Similarly the decline came with a one year lag in 1976. Moreover, all fluctuations were much larger and depended more on changes in expectations as to the future prices and shortages of fuels and the rates of substitution of one fuel for another. They had a strongly disstabilizing force by their size, but by their timing they stabilized the rates of total trade.

The rates of growth of electrical and mechanical industry were experiencing a cycle of their own (see Table XIII). The rates of growth were rapidly declining in 1971-73 when there was strong domestic demand arising from the program of rapid restructuring and modernization of the economy. There was a sudden upward jump in 1974 (from 14.2% to 38.2%) and another big increase in 1975 (47.6%). This was probably when the newly created productive capacities constructed with the help of imported machines and licences which were heavily concentrated in this industry, and systemic improvements which were introduced there on a larger scale and somewhat sooner, started

to give favourable results. A severe decline came in 1976, one year after the deepest decline in the rate of growth of world imports and imports by industrial countries, and a considerable recovery in 1977. The average rate of growth in this sector declined only from 29.0% in 1971-74 to 27.5% in 1975-77, or by -5.2%, the lowest decline among all commodity groups and much lower than the decline in the average rate of growth of world imports.

So far Polish exports to less developed countries have been much more unstable than to advanced countries (see Table XIV) with fluctuations apparently depending on other factors than changes in world demand, with overall share in total exports fluctuating between 5.1 and 8.6% (see Table VI).

During the period 1971-76 the share of mineral fuels in export was subject to very wide percentage point changes, especially in exports to advanced countries. The share fluctuated between 15.3% in 1973 and 34.8% in 1975, the spread of 19.5 points. The second largest fluctuations were taking place in the share of food, again especially in export to advanced countries with a sharp decline after 1973 caused by both domestic agricultural difficulties and growing commercial protectionism, particularly in the European Economic Community. Fluctuations in the share of machines were also wide in export to less developed countries where the spread was 9.9 percentage

point (from 34.9% in 1974 to 44.8% in 1972) and in export to advanced countries where the spread was 6.5% point (from 10.1% in 1974 to 16.6% in 1976). On the whole the shares of various commodity groups had widest average fluctuations in trade with less developed countries. However, fluctuations in the commodity shares in trade with advanced countries were not much smaller. In total trade, as well as in trade with advanced and less developed countries, there was greater instability in the structure of export than in the structure of imports (see Table VII)

Not all fluctuations in the commodity structure of Polish exports to advanced and less developed countries were caused by changes in prices and in foreign demand. The other possible factors were probably difficulties experienced in production which were different in different sectors. Some of them could have been related to reductions in import and were therefore caused by external disturbances. Other were purely domestic, origin, such as unfavourable weather which affected agricutural exports, domestically generated pressures and various institutional factore that affect differently production, quantities available for export and foreign trade marketing, and which may affect differently different sectors.

Fluctuations in the value of total export were less pronounced that fluctuations in trade with non-socialist countries confirming the stabilizing role of trade within the CMEA region. In 1971-74 the average rate of total export was lower than the average rate of export to non-socialist countries (18.3% as compared with 25.0%), but

in 1975-77 it was higher than the average rate of growth of export to non-socialist countries (14.1% as compared with 9.8%).

Total exports at constant prices fluctuated, of course, less than total exports at current prices. The average rate was only 11.4% in 1971-74. It declined to 7.3% in 1975-77. The decline between the two sub-periods was, therefore, greater at constant prices than at current prices (-36% as compared with -23%) (see Table XIII). There seems to be some correlation between the rates of growth of Polish total export at constant prices and the rates of growth of the index of national income of non-socialist countries, also at constant prices (the correlation coefficient 0.6192) with one year lag between the change in national income and the change in export.

All these calculations are not inconsistent with the hypothesis that there was some impact of changes in the world economic activity on the rates of growth of Polish export and even a stronger impact of changes in the rates of growth of imports by industrial countries on Polish exports to advanced countries.

5. The Four Channels

We may, therefore, conclude that during the period 1971-77 disturbances in the world economy had four channels through which they exerted influence on the Polish economy, excluding the effect of disturbances in the financial markets.

Increases in world prices, by increasing the foreign currency prices of Polish imports from the West directly and imports from the CMEA countries indirectly with a time-lag, exerted a pressure on domestic prices, to the extent to which they were allowed to be transformed into increases in the domestic prices of imports. Reductions in the rates of growth of imports had a tendency to restrict the rates of growth of national income, through the supply multiplier, by creating bottlenecks in production. Relative movements of the import and export prices resulted in unfavourable terms of trade in three out of seven years and with a considerable excess of import over export caused declines in real income of a significant size. Finally, fluctuations in foreign demand for Polish exports contributed to wide fluctuations in the rate of growth of exports to advanced and, even more so to less developed countries. Through the effective demand multiplier these fluctuations must have tended to induce fluctuations in national income or, to the extent to which prices were controlled and full employment secured, in the changes in inflationary pressures.

Not all of these four channels were equally important all the time. The impact of rapidly increasing world prices had a particularly strong impact in 1973 and 1974 and in subsequent years only to the extent to which their transformation was subject to time-lags. The second channel was particularly important in 1975-77 when the combined

effect of the domestically generated and foreign induced inflation on the balance of payments, and on the domestic balance of the economy, forced the planners to attempt to reduce imports, particularly from the West as the main imbalance was in that direction. The adverse impact of unfavourable terms of trade was felt in 1973, 1974 and 1977 but the effect was stronger than that of favourable terms of trade in the other four years. The impact of world recession on the rates of growth of Polish exports appeared in 1975-77.

IV. Transformation Mechanism in Operation

1. Transformation of World Commodity Inflation

In the centrally planned socialist economies the domestic currency prices of imports can be insulated from changes in their foreign currency prices. Howerer, the operation of the insulating system has adverse effects on economic efficiency. For example, when the prices of imported goods increase in the world markets, but their domestic currency prices remain unchanged, the producers and the consumers have no incentive to substitute domestically produced goods for imports, which are now relatively cheap. Similarly when the prices of export increase in the world markets, but their domestic currency prices remain unchanged, the producers have no incentive to direct a larger proportion of output for export. Under these circumstances it is difficult to conduct efficiently foreign trade, and indeed all economic processes. It is practically impossible to construct a domestic price structure by administrative methods which would take care of all supply and demand relationships. It is even more difficult to make it sufficiently flexible to adjust to continuous changes in these relationships. For these reasons the modified centrally planned economies attempt to incorporate the foreign trade prices into the domestic price structure and to link the latter to the world price movements.

One of the most important systemic modifications introduced in Poland at the beginning of 1970's was the inclusion of foreign trade transactions at the so called

"transaction prices" into the financial results of the production enterprises. These are the prices which are actually paid for imports, or received for exports, in foreign currencies re-calculated into the domestic currency not at the official rate of exchange but with the help of currency exchange coefficients, differenciated according to the payments area (i.e. a different coefficient for hard currencies than for transactions with the CMEA countries). In addition there was a series of price reforms, which took place as from January 1st,1971, January 1st, 1975, and January 1st, 1976, and which aimed at the adjustment of domestic prices to the world prices.

Domestic prices of imported commodities and prices of producers' goods in general are not published. It is, therefore, difficult to establish how much of the fluctuations in the foreign currency prices are transformed into changes in the domestic currency prices.

Some indication as to the movements in the domestic general price level can be obtained by comparing increases in the domestic net material product in current and constant prices. There was a considerable upward movement (5.6%)in 1971, reflecting an effort to bring prices closer to the world prices in the price reform at the brginning of that year. In the following year prices were almost constant. In 1973, the first year of the world commodity inflation, the domestic general price level was still relatively stable (1.08% increase) but the increase in 1974 was already almost 3%. It was followed by a small increase of 2.4% in 1975.

A very sharp increase of more than 10% took place in 1976, the first year of the new five year plan.

The general price level is composed of three types of prices. Prices of producers' goods are mainly accounting prices which are determined centrally. Their readjustment usually takes place at the beginning of the new five year plan and, as it happened in 1975, when it became necessary to increase prices of fuels and some materials because of the world inflation and upward price adjustment in the CMEA market.

The second group of prices are prices of commodities, mainly consumption goods, which are purchased by the population from the socialist sector. These prices are also centrally fixed but usually tend to be more flexible. To a certain extend, they are adjusted to reflect changes in the supply and demand, except in the case of some basic foodstuffs which have been kept more or less constant for political reasons since the attempted price increase in December 1970 and another one in June 1976.

The third group is composed of prices of foodstuffs in the market places which basically are the market prices.

The first group among the producers' goods are fuels, raw materials and intermediate goods. In 1973, the last year for which this information was given, 16.5% of industrial fuels and materials were imported. This proportion has undoubtedly increased since that time. The total share of import for the production purposes, i.e. fuels and

materials increased in constant prices from 10% in 1968 to 16% in 1975, despite considerable increases in import for investment and for consumption by the population, which took place during that period.[17]

The cost of materials, fuels and power used up in the process of production calculated at current prices, increased at a slower rate than the domestic net material product at current prices in 1971 and only insignificantly faster in 1972. However, already in 1973 the increase in the cost of fuels, materials and power was 1.3 percentage point higher than the rate of DNMP. The difference was 3.2 percentage point in 1974, 2.0 in 1975, and 3.3 in 1976. The cost of fuels, materials and power per one unit of real DNMP was 1.24 in 1970;it increased slowly during the next two years (1.26 and 1.27); it became 1.37, 1.44 and 1.66 in the subsequent years (see Table XV).

Some conclusions can perhaps be advanced as to the relative importance of foreign induced versus domestically generated inflationary pressures. In 1971-76 the average rate of growth of DNMP at constant prices was 9.3%. At current prices DNMP increased on average by 13.5%, the wage fund in the socialist sector, the most rapidly increasing component of disposable income, increased at the average rate of 13.4%, only slightly lower than DNMP at current prices. Total disposable income of the population increased by 11.2%. On the other hand the cost of fuels, materials and power increased by 14.5% and total material cost (the cost of fuels

materials and power plus the cost of transportation and other services directly related to production) by 15.1%. The fact that material costs, which are affected by the prices of imports increased more rapidly than the disposable income suggests that the foreign induced inflation was partly transformed and played a relatively more important role than at least one of the domestic sources of inflationary pressures. This tendency is even more clearly seen in the case of industry (see Table XVI), where imported raw materials are relatively more important than in other sectors of the economy. During the whole period 1971-76 the average rate of growth of net industrial production was 10.4% at constant and 12.8% at current prices. The average rate of growth of total labour earnings in industry was 11.3% and it was lower than the rate of growth of output at current prices. The average rate of growth of the cost of power was 9.1%, total material costs 14.3% and cost of fuels and materials 14.4%. Again, the component most affected by the prices of imported commodities increased more rapidly at current prices than the output and the labour costs.

The calculation of total material cost at constant prices can be made in an indirect way as it represents the difference between the gross and net industrial production. Because of the well known weaknesses of the gross industrial production as a statistical measure, the results can only be accepted as approximate. It appears that unit costs were relatively constant and slightly declining between 1971 and 1973 (see Table XVI). They increase by 6.0% in 1974.

Then there was only a small increase of 2.2% in 1975 and a very sharp increase of 12.3% in 1976.

It appears, therefore, that increases in the world prices of fuels and materials were partly transformed. They were reflected in increased material costs, but the process of transformation was subject to a time lag. The most significant increase took place in 1976, the first year of the five year plan and not in 1973 and 1974. It was probably convenient for the planning and administrative purposes to keep increases in the domestic currency prices of most of the materials relatively limited until the end of one five year plan and to effect a major revision at the beginning of the new plan period.

Another group of producers' goods are machines, equipment and construction materials which all enter into the cost of fixed investment. Again, no prices are available but some indication of price movements may be obtained by comparing the national net material product (the "distributed national income") and its component parts. Because of the nature of statistics at constant prices the calculations have to be accepted with caution.

For the whole period 1971-76, NNMP, which included an excess of import over export every year durin that period had a higher average rate of growth than the DNMP at both current and constant prices. However, the average rate of growth of implied prices was somewhat lower in the case of NNMP than DNMP (see Tables XV and XVII). A possible explanation is that the revisions of domestic prices, which were

effected in 1971, 1975 and 1976 and included prices of both tradeables and non-tradeables, had a greater effect than the impact of increases in the prices of importables which, after all, represented only a small proportion of net material production.

Among the component parts of NNMP (see Table XVII) the highest average rate of growth of implied prices is that of changes in stocks, indicating perhaps that the prices of fuels and materials were subject to higher increases in prices than other groups of commodities. The average rate of growth of the implied price of expenditures on consumption was the lowest. It could be a combined effect of (1) keeping prices for some basic foodstuffs constant and (2) more rapid increases in fuels and materials and investment goods, the larger proportion of which is imported than is the case of consumption goods. The proportion of imported consumption goods increased from 6.9% in 1970 to 9.2% in 1972 and then started to decline and reached 8.0% in 1975 and 8.3% in 1976 (see Table XVIII).

The average rate of growth of the implied prices of outlays on fixed investment was considerably higher than the rate of growth of the implied prices of personal consumption (4.5% as compared with 3.4%) and higher than the average rate of growth of the implied prices of total material costs in industry (3.9%) (see Tables XVI and XVII).

The high increases in the price of investment goods

were probably partly the result of upward adjustments during the price reforms from their very low levels in comparison with the prices of consumption goods. However, this group of commodities had a particularly great injection of imports. In 1973 imports represented 17.5% of all commodities allocated for investment. In 1971-76 imports of machines and transport equipment represented from 34.5 to 40.8% of total import and between 28.0 and 38.3% of import from advanced countries. As in the case of fuels and materials, the greatest increase in the domestic prices of investment goods did not take place in 1973 and 1974 but in 1976. The price increases in that year were, however, quite big (see Table XVI).

2. Transformation of Changes in the Quantity of Trade

In 1971-77 there was a stronger correlation between fluctuations in import and DNMP than between export and DNMP (all at constant prices). When the period is divided into two sub-periods, in 1971-74 fluctuations in export were more correlated with DNMP than fluctuations in import. In 1975-77 it was a very weak correlation between fluctuations in export and DNMP that reversed the relative position of the two (see Table XIX).

There was a sharp increase in the rate of growth of DNMP from 8.1% in 1971 to 10.6% in 1972 that was associated with big increases in the rates of growth of both export and import. In 1972-74 the rate of growth of DNMP remained approximately constant above the 10% mark while

the rates of growth of export were considerably below their 1972 level in 1973 and 1974 and the rate of growth of import, after remaining almost unchanged above 22% in 1972 and 1973, declined to 14.2% in 1974. In 1975-77 the rate of growth of DNMP continued to decline and reached in 1977 its lowest level since 1970 (5.2% in 1970 and 5.7% in 1977). The rate of growth of export declined to 8.3% in 1975 and 5.4% in 1976, but recovered to 8.2% in 1977. The rate of growth of import declined to 5.0% in 1975, increased to 10.3% in 1976 and was reduced to nil in 1977.

The high rates of growth of domestic production in 1971-75 reflected the new development strategy. The export of capital in 1970 and 1971 was replaced by a very rapidly growing import of capital until 1975 (see Table II). The plan for 1971-75 envisaged that the rate of growth of import would exceed that of export by 0.6 persentage point the actual difference was 4.5 at current and 4.7 at constant prices. In 1971-75 the actual rates of growth of export at current prices exceeded the planned rate every year, but at constant prices the actual rate was higher only in 1972. The actual rates of growth of import at current prices also exceeded the planned rates every year during that period and at constant prices they dropped below the planned rates only in 1974 and 1975.

From the point of view of the balance of payments it is the difference between the rates of growth of export and import at current prices that increases or reduces the deficit on current account. In 1972 the deficit increased

by less than it was planned, but in 1973 and 1974 it increased more rapidly (in 1973 more than twice as fast than it was planned) and in 1975 it did not start to decline at the rate at which it was planned. The situation was clearly out of control.

In 1976 and 1977 the actual rates of growth of export, at both current and constant prices, were considerably below the planned rate. The rates of growth of import were, therefore, drastically reduced. In 1976 the actual rate of growth of export, at both current and constant prices was below the planned rate and in 1977 the actual rate at current prices was above the planned rate while the rate of import at constant prices dropped to zero. Despite the reduction in the rate of growth of import at current prices below the planned rate, the deficit on current account increased as the import grew at 3.5 percentage point higher than export and in 1975, despite completely stagnant import at constant prices the rate of growth at current prices was twice as big as the planned rate and the improvement of the deficit was therefore much smaller than that which was planned.

The comparison of planned and actual rates suggests, therefore, that it was this unsatisfactory export performance that made cuts in imports necessary and they both together had an adverse effect on the rate of growth of national product. The responsibility for the poorer than expected increase in exports, which ocurred despite giving priority to the export promoting investments, modernization of capital

stock, import of technology and increased material incentives and administrative commands, must be partly placed with various domestic factors. Strong inflationary pressures in the economy, micro-economic mistakes in planning and lack of sufficiently bold reforms were probably all important. However, as we have seen before, there was a high correlation between the rates of growth of Polish exports and the rates of growth of world imports, and particularly between the rates of growth of Polish exports to advanced countries and the rates of growth of imports of industrial countries. Therefore, the reduction in growth of foreign demand in 1975-77 could have also played a prominent role.

We may, therefore, conclude that fluctuations in foreign demand have probably been transformed into fluctuations in the rates of growth of domestic production. This happened, despite the ability of ensuring full employment by increasing domestic absorption at the time when foreign demand for export declines. This suggests, therefore, that the impact was indirect through an enforced reduction in the rates of growth of imports. Those reductions were necessary in order to avoid further deterioration in the balance of payments position. However, decline in the rates of growth of imports created, in turn, bottlenecks which induced a decline in the rates of growth of domestic production. In this way a reduction in foreign demand for export was transformed into a decline in the rate of growth of domestic production.

V. The Propagation Stage

1. Prices

Very little can be said about the propagation of the foreign induced disturbances throughout the Polish economy because of the lack of relevant statistics.

Increases in world prices were transformed, with a time lag and not to the full extent, into increases in domestic prices of imported goods. The prices of consumption goods seemed to be least affected. But the official price index is published only for commodities purchased by the population, mostly consumption goods. For this reason the index tends to understate the degree of inflation in the economy. It does not even reflect the degree of inflation in the consumption goods sector of the market. Like most other official indices of this nature, it shows only the movements in the prices of a given basket of goods and the authorities can manipulate the results by the selection of the basket and by keeping low those prices which are prominent in the selected basket. Moreover, the enterprises can introduce higher prices for "new products" and these changes are not recorded by the index. Some of these products may be virtually unchanged although they are classified as "new products". Other products may be modified but the old, cheaper products are removed from the market. Any control in these matters is very difficult, especially because under the centrally planned system there are some vested interests in the enter-

prizes as well as in the administration, which encourage, or at least do not discourage, any measures which improve such success indicators as the value of output, or the value of sold production. Judging by the frequency with which Polish economists discuss this problem, it is of a significant importance in Poland.[18]

The official indeces are presented in Table XX. In 1977 for the first time the overall index of prices of all commodities and services bought by the population was not published. For 1976 its two component parts, the prices of consumption goods and services and the prices of non-consumption goods and services are not combined into one index of goods and services purchased by the population but are presented as two separate indices.

Between 1966 and 1972 there was a very high degree of stability of the overall index and of its two main components. Fluctuations in the prices of food purchased at market places, and a few relatively big adjustments in the prices of alcoholic beverages in 1969 and 1970 and food consumed at restaurants in 1969, were the only significant exceptions.

This stability of indices ended in 1973, the year of the world commodity inflation. As all prices are centrally administered, except those at market places, only the latter reflect fully the inflationary pressures. Between 1970 and 1976 these prices increased by 66.3%, with the biggest increases taking place in 1974 (18.2%) and 1976

(21.5%). The increases in prices at market places were of course, the direct effect of the adverse situation in agriculture. However, the fact that they were possible indicates the existence of sufficient purchasing power in the hands of the population.

Also other prices were subject to some big increases: alcoholic beverages 24.6% in 1974, food at restaurants 17.4% in the same year, and non-consumption goods 16.5% in 1976. The index of all consumption goods and services registered an increase of 7.1% in 1974, 3.0% in 1975 and 4.4% in 1976 and the index of all non-consumption goods and services bought by population increased by 13.4% in 1976.

Three observations can be made in connection with the movement of prices shown by the official indices: (1) the planners seem to prefer big adjustments made from time to time rather than gradual increases every year, probably for administrative reasons despite the fact that this approach may be politically less desirable; (2) there is a tendency to adjust upward different component parts at different times in order to reduce the total impact in any one year; (3) there was a time lag between the world price inflation and the main adjustment in the prices of goods and services both by the population, most of which occurred in 1974 and 1976.

On the whole the rate of open inflation in this segment of the market was quite substantial in 1974 and 1976. It is impossible to say how much of it was the transformed

world commodity price inflation, propagated through the system until it reached the retail price level, and how much of it was caused by domestically generated pressures resulting from unsatisfactory agricultural production, excessively high rates of investment, or excessively rapid increases in the purchasing power in the hands of the population.

2. Wages

In 1971-72 when the prices of goods and services purchased by the population and the cost of living were practically constant, the average real wage in the socialist sector increased by 5.7% in the first and 6.4% in the second year (see Table XXI). In 1973-75 increases in prices and in the cost of living were associated with very big increases in money wages and the average real wage increased by 8.7% in 1973, 6.6% in 1974 and 8.5% in 1975. In 1976 the second highest increase in the cost of living since 1970 was associated with a considerably smaller increase in money wages, and there was the lowest increase in real wages since 1970.

Three interpretations of developments since 1973 are possible. According to one of them, the planners decided to maintain the growth of nominal wages, in order to create incentives for improvements in labour productivity, and concentrated on adjusting prices upward in order to keep increases in real wages within same limits. This policy is presented as a "new strategy" in wage administra-

tion which has been consciously introduced to replace the old strategy that consisted of curtailing increases in both nominal wages and the cost of living.[19]

The second possible interpretation is that the planners lost control over increases in nominal wages partly for political reasons. For this reason during the period 1970-76 nominal wages increased by 73.3% and net labour income in the socialist sector, which is affected not only by increases in wages but also increases in employment, increased by 113.4%, while net material product in the socialist sector increased at constant prices by 87.9%. The planners were, therefore, forced to adjust prices upward to prevent excessive increases in real wages which, however, increased by 41.5% instead of the planned 18%[20] for the plan period 1971-75, and by 47% between 1970 and 1976.

But it is also possible that the upward adjustments in prices were made by the planners at least partly in response to price changes in the world market and increases in nominal wages were allowed, or were forced upon the planners as without them it would be impossible to continue the policy of increasing real wages.

The most probable is that there was a combination of the three processes. Most likely the planners have decided to use the money illusion for political reasons and intended to restrict increases in real wages rather than nominal wages but the actual increases in both went out of

control, and while some prices were increased in response to increases in nominal wages other were adjusted because of changes in the world prices.

As has been stated before, material costs increased more rapidly than labour costs (see Table XVI) and this fact provides some strong evidence that at least some increases in prices were an independent variable and were not induced by increases in nominal wages.

3. Costs

Some indication as to the existence of cost-pushed inflation and of its sources can be obtained by examining material and non-material costs and financial accumulation[20] and their various component parts (see Table XXII).

There was quite strong cost-pushed inflation in 1974-76. Total cost per unit of net product increased by +0.14 zloty in 1974, +0.04 in 1975 and 0.36 in 1976. In 1974 and 1976 these increases were the result mainly of big increases in total material costs, which in turn were caused above all, by increases in the cost of materials and relatively small increases in the cost of fuel. These increases,as it has been stated before, can be related to the world commodity inflation as foreign currency prices were transformed, with a time lag and only to some extent, into increases in domestic prices.

Wages per unit of net real output stayed remarkably steady until 1976. They were constant in 1970-73, slightly declined in 1973 and remained constant again at the new

level in the subsequent two years. A relatively moderate increase in wages occurred in 1976. Somewhat bigger increases occurred in total non-material costs. As wages were constant, and the 1976 increase was smaller than that in total non-material costs, the latter were pushed by increases in social insurance payments and other expenditures on labour.

The price increases were sufficient to increase financial accumulation in the socialist industry in 1973-75. In 1976, despite a very big increase in prices, accumulation per unit of net real product declined by -0.11. As accumulation in the socialist industry is the main source of the state revenue in that year the cost-pushed inflation reduced, therefore, the ability of the economy to finance its own growth and/or to maintain increase in various state expenditures.

VI. Containment

1. The Mechanism

The containment mechanism can be divided into two sets of measures: (1) built-in stabilizers, and (2) discretionary policies. The centrally planned economy of Poland appears to have powerful built-in stabilizers. So far as the impact of external price inflation is concerned, there is an insulation layer provided by the separation of domestic currency prices of imports from their forign currency prices with the losses of the foreign trade enterprises, and under the present modified system also the losses of the production enterprises, financed by the price equalization subsidies. However, if the increases in the foreign prices of imports are transformed into some increases of domestic prices of materials and costs, and this as we have seen has happened to some extent in Poland, the second insulation layer is provided by centrally administered retail prices with losses of the internal trade and production enterprises again covered by the price equalization subsidies from the state budget. Finally, the central planners have control over nominal wages and/or total wage bill. Recently instead of fixing nominal wages, the plans attempt to fix the total wage bill of enterprises, because, as we have seen, total labour costs increased much more rapidly than wages, and there also seems to be a preference for controlling real

rather than nominal wages.

In practice the system of built-in stabilizers is less impregnable as it looks because the objective of price stability may be in conflict with other objectives. The price equalization subsidies stabilize the general price level at the cost of preventing changes in relative prices to take place which would reflect changes in relative prices outside of the economy. There is here a clear conflict between stability and efficiency when the domestic price structure is increasingly more separated from the world price structure despite involvement in trade.

Moreover the growing separation of the domestic currency prices from the foreign currency prices of imports and of retail prices from the wholesale and production prices, results in a rapid growth of the share of the state budget which is allocated for the price equalization subsidies. Whether or not this situation presents a real burden for the economy[21], by reducing other budgetary expenditures may be an open question. It seems, however, to be inflationary in practice and in this way the inflationary pressures that originate within the budget are substituted for the externally induced pressures.

For the same reasons it may be undesirable to create a growing gap between the relatively stable retail

prices and rapidly growing wholesale and production prices, or between the relatively stable production prices and rapidly growing cost of production.

As to the control over wages it seems to be now less effective despite the absence of independent trade unions, a free wage bargaining mechanism and in spite of illegality of strikes. Pressures for higher wages can be exerted in various ways within the enterprises and, through the fear of another workers' riots, at the political level. In the final analysis the price and income stability policy depends in all systems on the political strength of the government and, after four major confrontations with the population in 1956, 1968, 1970, and 1976, the government in Poland has become quite sensitive to these pressures, at least for the time being.

The adverse impact of a reduction in foreign demand for export can be stabilized relatively easy under central planning by increasing domestic absorption to the required dimention. Again, there are some difficulties in practice. It is possible to readjust the structure of aggregate demand, by increasing expenditures on investment, or consumption. To the extent to which commodities produced for export can be directed to the domestic market, or the productive capacity in the export sector can be used to produce commodities for the domestic market, the real adjustment in the structure of the aggregate supply will follow. If, however, a reduction in foreign demand for export cannot

lead to an immediate expansion of production for the domestic market, the result would be either an accumulation of stocks composed of unsold exportables, or unused productive capacity in the export sector. in a moderately developed, inflexible economy this is a real danger, especially when the share of machines and equipment, component parts, industrial materials and fuels is large and increasing, as it has been the case in Poland. A readjustment of the aggregate supply to correspond to changes in the structure of aggregate demand may require new investments and will take time.[22]

To contain the impact of the adverse terms of trade the centrally planned economy can relatively easily direct a larger volume of current output to export, or to allocate additional resources for the production for export. Two sorts of difficulties are here present. In an economy working above the full employment- full capacity level of national income, there must be a corresponding decline in domestic absorption. If the planners are committed to growth, they may try to protect investment outlays by reducing consumption. This policy depends, however, again above all on the political strength of the government. If the freedom of manouevre is here limited, quite apart from the undesirability of reducing material incentives by imposing rigid constrains on consumption, the long run rate of growth has to be sacrificed, as it happened in 1976 when investment outlays on fixed capital increased in real terms by 1.7%.

The second problem is the above mentioned difficulty of adjusting, within a short period of time, the structure of aggregate supply, in this case in the direction of expanding exports. A reduction in the expenditure on investment and/or consumption may result in the accumulation of stocks of unexportable commodities, or some unused productive capacity. Again, it may not be possible to effect the switch without additional new investments.[23]

Systemic changes can also be listed among discretionary measures. The moderate Polish reforms were stopped,and partly reversed, among other things, in order to strenghten the insulation layer which had just been weakened by increasing links between foreign trade and the financial results of enterprises.

The withdrawal from the systemic reforms and reductions in the planned rates of investment, in the rates of growth of net national product, disposable income, consumption and wages which occurred in 1975-77 were all at least partly caused by external disturbances, although, as it has been stated before, the domestically generated pressures were probably the main source of the difficulties which started to appear in 1974

2. The Price Equalization Subsidies and Taxes

Statistical data and published information on the operation of the price equalization mechanism are very scarce.

The first two rapid increases in the price equalization subsidies paid from the state budget occurred in

1973 and 1974 (see Table XXIII) and coincided with the price increases in the world market, although foreign trade was not the only source of price distortion. In 1975, the last year for which data are available, the price equalization subsidies absorbed 23% of the total revenue of state budget. Starting with 1972 subsidies exceeded taxes and sharp increases in net subsidies occurred in 1973, 1974, and 1975. In 1975 net subsidies exceeded the total budgetary allocations on fixed investment and major repairs, and were slightly greater than the total budgetary allocations on education, science, culture, arts, health and social welfare.[24] The appearance of net subsidies coincided with very marked reduction in the budgetary surplus.

In the centrally planned economies it is an accepted practice to regard the budgetary revenue as a source of, not only the usual government expenditures, but also of all grants and credits to the socialist economy and the population. Even the banking system, instead of being regarded as a source of potential finances for the government, is a recipient of budgetary allocations for credits to be advanced to the economy and the population. As the budget collects a great majority of saving generated within the socialist sector of the economy, it is assumed that the total expenditure cannot exceed total revenue without creating an inflationary gap, an assumption which is probably correct so long as the economy is at, or above,

the full employment level.

For this reason, when a large share of the total budgetary expenditure has to be allocated to the price equalization subsidies, other expenditures have to be limited.

When the subsidies reach the enterprises they are used to cover their losses. A large part returns subsequently to the budget as profit deductions and enterprise income tax payments. Another part remains, however, in the enterprises and is used to finance various funds which can be used for small investments, bonuses and various amenities. These expenditures are, therefore, very sensitive to the size of subsidies.

Some indication as to the degree of distortion created by the price equalization mechanism in the financial results of the socialist enterprises can be obtained by comparing subsidies with the turnover tax payments, profits and losses, and total accumulation generated within those enterprises (see Table XXIV). Starting with 1974 the price equalization subsidies exceeded the turnover tax, the most important source of the revenue of state budget.

In the absence of these subsidies a number of enterprises which, at the existing price structure, show losses would greatly increase. The total amount of subsidies and losses was equal to about 50% of all net profits made by the socialist enterprises in 1974 and about 57% in 1975. As the price adjustment in 1976 reduced somewhat the degree of price distortions, the proportion declined

to 40.9% in 1976. As the result of the price distortions entire sectors of the economy were showing losses in some years. The socialist agriculture was making losses consistently during the whole period 1970-76, as it had been doing before. Similarly, housing and the so called communal economy has been making losses every year since 1971 (see Table XXV).

Within industry, which is the main source of financial accumulation generated within the economy, there are some branches that were the recipients of net subsidies every year between 1970 and 1975 (see Table XXVI). The food industry and "other industries", a group which is dominated by the feeds industry, are subsidized because of the policy of keeping basic food prices constant and supporting the production of meat. However, the list includes also the metallurgical industry and "electrical and engineering industries", one of the main Polish exporters througout the period with the share of its product growing in the total value of export. The chemical industry was receiving net price equalization subsidy from 1970 to 1973 and the wood and paper and the light industries, another important exporter in three out of six years. Separate data for foreign trade are given only for years ending in 1973. The sector changed from a net tax payer to a net subsidy receipient in 1971 and the net subsidies increased in the subsequent two ywars. As the combined figures for foreign and domestic trade show very big increases

in the net subsidies in 1974 and 1975, it is reasonable to assume that foreign trade received net subsidies in those two years as well. However, in 1976 the combined net subsidy was reduced almost by half as the result of drastic upward adjustments in domestic prices and it is possible that the net subsidies in that sector were finally eliminated, or at least considerably reduced. If this is true, it means that it became necessary to reduce the containment of foreign induced inflationary pressures and to allow their transformation with the time lag.

All these figures demonstrate the extent to which the price equalization mechanism was used. They suggest a high degree of distortion in the price structure and in the financial results of the socialist enterprises. The real cost of this enormous containment mechanism is probably a high degree of inefficiency throughout the economy.

The transformation of external disturbances in the form of price inflation was delayed and probably reduced. However, to the extent to which the economy became less efficient as the result of containing these disturbances, it also became less able to cope with external disturbances in the form of world-wide recession and slow recovery that followed the world commodity inflation. We have seen that also for some other reasons, such as for example the change in the structure of exports, the economy has become more sensitive to the impact of changes in the domestic income of non-socialist countries.

It is, therefore, the main conclusion of this paper that the impact of the recession of 1975 and of the slow rates of growth in the West has been more harmful to the Polish economy than the impact of the world commodity inflation of 1973-74, although the effect of that disturbance was not negligible.

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Table I

Rates of Growth of Net Material Product, Employment in Material Production, Fixed Directly Productive Capital and Relationships

Year	Domestic Net Material Product (1)	Employment (2)	Fixed Directly Productive Capital (3)	Fixed Directly Productive Capital Per One Employee (3) ÷ (2)	DNMP per Worker (1) ÷ (2)	DNMP per Unit of Fixed Directly Productive Capital (1) ÷ (3)
1966-70	5.8			4.3	3.5	
1971	8.1	1.2	6.2	4.9	6.8	1.9
1972	10.6	2.3	6.5	4.2	8.1	3.8
1973	10.8	2.2	7.6	5.3	8.4	3.1
1974	10.4	2.8	9.3	6.3	7.4	1.0
1975	9.0	1.4	10.2	8.6	7.5	-1.2
1971-75	9.8	2.0	8.0	5.9	7.6	1.2
1976	7.1	0.0	9.9	9.9	7.1	-2.6
1977	5.7	0.9**	n.a.	n.a.	n.a.	n.a.

* Produced National Income
** Employment in the Socialist Economy only
Sources: G.U.S., Rocznik statystyczny (Statistical Yearbook)

Table II

National Net Material Product (NNMP or "Allocated National Income"), Domestic Net Material Product (DNMP or "Produced National Income"), Balance of Foreign "Productive" Transactions (NNMP - DNMP)* and Saving ("Accumulation")

Billion Zloty; Constant 1971 Prices

Year	NNMP	DNMP	NNMP-DNMP	$\frac{\text{NNMP-DNMP}}{\text{DNMP}}$ (%)	A	$\frac{\text{NNMP-DNMP}}{\text{A}}$ (%)	$\frac{\text{A}}{\text{NNMP}}$ (%)	Rates of Growth DNMP	NNMP	A
1970	766.0	791.3	-25.3	-3.20	213.8	-11.83	27.9	5.2	5.0	7.4
1971	841.8	855.4	-13.6	-1.59	246.6	- 5.52	29.3	8.1	9.8	15.3
1972	948.4	945.9	+ 2.6	+0.27	299.6	+ 0.87	31.6	10.6	12.7	21.5
1973	1,083.6	1,048.1	+35.5	+3.39	381.9	+ 9.30	35.2	10.8	14.3	27.5
1974	1,214.3	1,157.6	+56.7	+4.90	461.0	+12.30	38.0	10.4	12.1	20.7
1975	1,309.6	1,237.6	+72.0	+5.82	464.0	+15.50	35.5	9.0	10.9	10.6
1976	1,403.3	1,326.0	+77.3	+5.83	483.6	+15.98	34.5	7.1	7.2	4.1
1977	1,466.4	1,401.6	+64.8	+4.62	n.a.	n.a.	n.a.	5.7	4.5	n.a.

* Commodity trade and so-called "productive services" which include transport and communications, licenses and technical documentation, services in connection with export and expenditures on fairs and exhibitions. Difference between National Net Material Product and Domestic Net Material Product includes, in addition to the balance of foreign trade and "productive services" also (1) "wastes of national income" and (2) "amounts unaccounted for". In 1970-75 the sum of these two items represented about -1% of DNMP.

Sources: G.U.S., Rocznik statystyczny 1976, p.XXIV, 1977, pp 54,58; "Polski handel zagraniczny w 1977 roku" (Polish Foreign Trade in 1977), Handel zagraniczny, No 3, 1978, p. 25

Table III

Planned and Actual Rates of Growth of Domestic Net Material Product, Investment and Real Wages.

(Percentages)

		1971	1972	1973	1974	1975	1976	1977	1978	Average 1971-75	Average 1976-80
Domestic Net Material Product	Plan	5.8	6.1	7.9	9.5	9.8	8.6	5.7	5.4	7.0	7.0-7.4
	Actual	8.1	10.6	10.8	10.4	9.0	7.1	5.6		9.8	
Investment	Plan	7.2	9.6	12.9	12.4	6.1	5.8	1.4	-5.0	7.8	2.1
	Actual	7.5	23.6	25.0	22.5	14.2	3.5	2.5		18.6	
DNMP/Investment	Plan	0.81	0.64	0.61	0.77	1.61	1.48	4.07		0.90	3.33
	Actual	1.08	0.45	0.43	0.46	0.63	2.84	2.24		0.53	
Real Wages	Plan	4.2	5.6	6.6	5.3	5.0	3.5	2.0	1.8	3.4	3.2-3.4
	Actual	5.3	6.5	8.7	6.6	8.5	3.9	2.3		7.2	
At current prices:											
Disposable Income	Actual	10.6	12.7	13.5	13.2	13.6	13.3	n.a.		12.7	
Net Fixed Investment	Actual	10.3	27.5	27.3	22.6	16.5	1.7	n.a.		20.8	
DNMP	Actual	14.1	11.2	12.0	13.6	11.6	18.3	n.a.		12.5	

Sources: Gospodarka planowa, No 4, 1971; No 5, 1972; No 4, 1973; No 4, 1974; No 4, 1975; No 5, 1976; No 5, 1977; No 4,1978; G.U.S., Rocznik statystyczny 1977, p.297.

Table IV

Share of Poland in Total Import and Export of Polish Major Non-Socialist Trading Partners

(Percentages)

Polish Exports					Polish Imports				
Country	Share of Total Polish Export in 1977	Share of Poland in Total Import 1960	1970	1975	Country	Share of Total Polish Import in 1977	Share of Poland in Total Export 1960	1970	1975
German Fed. Rep.	6.4	0.74	0.68	0.78	German Fed. Rep.	7.2	0.63	0.53	1.45
France	3.2	0.24	0.36	0.66	USA	4.0	0.70	0.16	0.54
USA	2.9	0.25	0.25	0.25	Austria	3.6	1.81	1.56	4.42
Britain	2.7	0.80	0.70	0.48	Switzer-land	3.4	0.70	0.55	1.37
Italy	2.4	0.79	0.81	0.81	Italy	2.6	0.57	0.55	1.16
Finland	2.2	2.73	1.49	2.21	Sweden	2.2	0.76	0.58	2.35
Switzer-land	1.7	0.37	0.24	0.30	Nether-lands	1.8	0.35	0.24	0.54
Sweden	1.7	0.81	0.82	1.09	Belgium	1.8	0.42	0.23	0.76
Norway	1.5	0.31	0.48	0.72	Brazil	1.4	2.07	0.87	1.55
Austria	1.2	2.21	1.63	1.56	Canada	1.2	0.31	0.09	0.35
Nether-lands	1.2	0.18	0.21	0.42	India	1.0	0.61	1.38	1.90
Denmark	1.0	1.22	1.02	1.77					
Brazil	1.0	1.36	0.39	0.24					
Libia	1.0	0.10	1.12	2.57					

Sources: G.U.S. Rocznik statystyczny handlu zagranicznego 1977 (Statistical Yearbook of Foreign Trade, 1977, Warsaw 1977, p. 56; "Polski handel..." op. cit., p.27

Table V

Geographical Structure of Polish Trade and Trade Balances (Deviza Zloty, Current Prices)

Million Deviza Zloty

	1970	1971	1972	1973	1974	1975	1976	1977
Export to:								
CMEA Countries	8,599.7	9,205.9	10,990.8	12,417.8	14,637.9	19,453.3	20,845.5	23,451.2
Other Socialist Countries	464.3	564.3	533.9	541.8	758.5	1,018.9	1,007.6	1,115.6
Advanced Countries	4,027.5	4,622.0	5,514.8	7,303.2	10,013.1	10,767.5	11,711.0	12,741.6
Less Developed countries	1,099.0	1,097.1	1,093.2	1,092.3	2,215.3	2,921.0	3,036.2	3,464.3
Total Export	14,190.5	15,489.3	18,132.7	21,355.1	27,624.8	34,160.7	36,600.3	40,772.7
Import from:								
CMEA Countries	9,502.5	10,407.2	11,418.6	12,902.3	14,717.5	18,257.8	20,687.7	24,080.5
Other Socialist Countries	389.8	475.6	585.1	583.6	750.8	829.1	899.8	1,078.2*
Advanced Countries	3,721.1	4,407.4	6,679.4	11,596.5	17,681.4	20,539.2	22,528.7	21,109.4
Less Developed Countries	816.7	860.5	929.3	1,020.4	1,673.2	2,024.6	1,954.7	2,290.6*
Total Import	14,430.1	16,150.7	19,612.4	26,102.8	34,822.9	41,650.7	46,070.9	48,558.7
Trade Balance with:								
CMEA Countries	-902.8	-1,201.3	-1,031.9	-484.5	-79.6	1,195.5	157.8	-629.3
Other Socialist Countries	74.5	88.7	-51.2	-41.8	7.7	189.8	107.8	37.4
Advanced Countries	306.4	214.6	-1,164.6	-4,293.3	-7,668.3	-9,771.7	-10,817.7	-8,367.8
Less Developed Countries	282.3	236.6	163.9	71.9	542.1	896.4	1,081.5	1,173.7
Overall Balance	-239.6	-661.4	-1,479.7	-4,747.7	-7,198.1	-7,490.0	-9,470.6	-7,786.0

*Calculated as residuals.

Table V contd.

Percentages of Total

	1970	1971	1972	1973	1974	1975	1976	1977
Export to:								
CMEA Countries	60.6	59.4	60.6	58.1	53.0	56.9	57.0	57.5
Other Socialist Countries	3.3	3.6	2.9	2.5	2.7	3.0	2.8	2.7
Advanced Countries	28.4	29.8	30.4	34.2	36.3	31.5	32.0	31.3
Less Developed Countries	7.7	7.2	6.0	5.1	8.0	8.6	8.3	8.5
Total Export	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Import from:								
CMEA Countries	65.8	64.4	58.2	49.4	42.3	43.8	44.9	49.6
Other Socialist Countries	2.8	2.9	2.9	2.2	2.2	2.0	2.0	2.2
Advanced Countries	25.8	27.3	34.1	44.4	50.8	49.3	48.9	43.5
Less Developed Countries	5.6	5.3	4.7	3.9	4.8	4.9	4.2	4.7
Total Import	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

N.B. (1) Because of differences between the intra - CMEA trade prices and world prices, the shares of intra - CMEA trade are subject to different degree of distortion in different years;

(2) Percentages not always add up to 100 because of rounding.

Sources: G.U.S., Rocznik statystyczny handlu zagranicznego, 1976, p.4; 1977 , p.4.
"Polski handel...", op. cit., pp. 26-29.

Table VI

Commodity Structure of Polish Trade, Total and with Non-Socialist Countries
(SITC Classification, Current Prices)

A. Export

Group	Total Export						To Advanced Countries						To Less Developed Countries					
	1971	1972	1973	1974	1975	1976	1971	1972	1973	1974	1975	1976	1971	1972	1973	1974	1975	1976
0 + 1	11.4	13.3	13.6	11.1	8.5	8.7	29.2	30.5	30.6	19.8	15.6	17.1	5.7	7.5	11.5	7.4	6.9	11.7
2 + 4	4.2	3.5	4.0	4.2	3.8	4.0	9.1	8.7	9.5	9.1	8.7	8.7	1.0	1.6	1.8	3.3	3.5	3.5
3	14.0	13.5	12.6	15.9	20.1	18.1	20.9	18.6	15.3	26.7	34.8	29.6	3.6	2.6	3.6	6.8	9.3	12.1
5	8.0	7.9	8.1	9.5	7.6	6.8	6.5	6.3	7.1	10.0	5.4	5.4	15.1	16.8	17.6	24.4	19.8	8.9
7	38.3	39.0	38.6	35.5	38.2	40.5	10.3	12.6	13.0	10.1	15.0	16.6	39.2	44.8	36.6	34.9	35.7	37.1
6 + 8	22.6	22.7	23.1	22.8	21.8	21.9	24.0	23.4	24.4	24.4	20.5	22.7	36.4	26.6	28.9	23.2	24.8	26.6
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

B. Import

0 + 1	12.5	9.9	10.3	9.9	9.2	11.1	14.1	11.8	13.9	11.0	10.8	16.1	38.4	37.6	35.6	24.3	25.4	36.7
2 + 4	16.0	13.7	12.3	12.7	11.8	10.8	19.5	15.2	13.5	12.4	10.4	9.2	48.3	38.5	33.7	43.6	46.3	36.2
3	6.1	5.8	5.5	5.2	9.2	9.9	1.3	0.8	2.7	3.3	4.7	5.8	-	-	0.2	6.3	9.0	7.2
5	6.8	6.7	5.9	7.4	7.4	6.9	12.6	10.6	7.8	10.0	9.4	9.0	1.6	2.0	1.2	1.1	1.2	0.8
7	34.5	38.7	40.8	38.5	37.7	39.1	28.0	36.7	35.3	33.2	38.3	35.8	0.2	1.3	3.2	1.6	0.5	0.9
6 + 8	24.0	25.3	25.3	26.3	24.7	22.8	24.7	24.9	26.8	29.9	26.5	24.0	11.5	20.5	26.1	23.2	17.6	18.3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

0+1 Food, beverages, tobacco, including raw materials; 2+4 Raw materials except for food; 3 Mineral fuels; 5 Chemicals; 7 Machines and transport equipment; 6+8 Other Manufactured Commodities.

Sources: G.U.S., Rocznik statystyczny handlu zagranicznego 1976, pp. 48-49; 1977 , pp. 46-48.

Table VII

Annual Changes in Export and Import Prices and Terms of Trade

(Percentages)

	1971	1972	1973	1974	1975	1976	1977	Average 1971-75
Total Trade								
Export prices	2.4	1.4	5.7	16.4	15.6	2.4	2.9	8.3
Import prices	-1.8	-0.4	8.8	16.9	14.0	0.4	5.4	7.5
Terms of trade	4.3	1.8	-2.9	-0.5	3.2	2.0	-2.4	
Trade With Socialist Countries								
Export prices	0.7	1.8	0.6	2.4	21.4	n.a.	n.a.	5.4
Import prices	-0.4	0.2	-0.4	3.5	26.1	n.a.	n.a.	5.8
Terms of trade	1.0	1.5	1.0	-1.0	-3.7	n.a.	n.a.	
Trade With Advanced Countries								
Export prices	6.4	1.2	16.7	45.3	8.6	n.a.	n.a.	15.6
Import prices	-5.8	-2.1	28.0	32.8	3.3	n.a.	n.a.	11.2
Terms of trade	13.0	3.4	-8.8	9.4	5.1	n.a.	n.a.	
Trade With Less Developed Countries								
Export prices	3.9	-1.3	2.1	40.4	4.6	n.a.	n.a.	9.9
Import prices	0.5	-2.6	12.2	54.7	-3.3	n.a.	n.a.	12.3
Terms of trade	3.4	1.3	-9.0	-9.2	8.2	n.a.	n.a.	

Sources: G.U.S., Rocznik statystyczny handlu zagranicznego 1977, p.5; "Polski handel...", op.cit. 26; A. Stepiewska, H. Molewicz, "Terms of Trade polskiego handlu zagranicznego" (The Terms of Trade of the Polish Foreign Trade", Handel zagraniczny, No 7, 1976, pp. 35-38.

Table VIII

Value, Quantity, Unit Price, Share in Total Import and CMEA Share of Total Quantity

Commodity	1970	1971	1972	1973	1974	1975	1976
Crude oil							
Value (million zloty)	451.7	525.8	653.4	786.4	935.5	2,433.7	3,041.5
Quantity (thousand tons)	7,011	7,987	9,703	11,140	10,582	13,306	15,095
Unit price	64.4	65.8	67.3	70.5	88.4	182.9	201.5
Share in total import	3.1	3.3	3.3	3.0	2.7	5.8	6.6
CMEA share (quantity)	100.0	100.0	100.0	94.9	92.1	81.8	77.1
Petroleum products							
Million zloty	338.1	328.2	338.8	507.8	738.9	976.8	1,033.0
Thousand tons	2,424	2,267	2,332	3,079	3,019	3,133	3,216
Unit price	139.5	144.7	145.3	164.9	244.7	311.8	321.2
Share in total import	2.3	2.0	1.7	1.9	2.1	2.3	2.2
CMEA share (quantity)	90.9	77.6	80.5	54.2	55.1	50.2	61.0
Natural gas							
Million zloty	61.3	91.5	92.2	105.1	130.2	312.3	362.5
Thousand tons	1,002	1,488	1,500	1,710	2,117	2,510	2,549
Unit Price	61.5	61.5	61.5	61.5	61.5	124.4	142.2
Share in total import	0.4	0.6	0.5	0.4	0.4	0.7	0.8
CMEA share (quantity)	100.0	100.0	100.0	100,0	100.0	100.0	100.0
Coking coal							
Million zloty	61.3	75.0	79.2	78.0	81.7	161.9	158.8
Thousand tons	1,095	1,264	1,157	1,165	1,203	1,096	1,080
Unit price	56.0	59.4	68.4	66.9	67.9	147.7	147.0

	1970	1971	1972	1973	1974	1975	1976
Share in total import	0.4	0.5	0.4	0.3	0.2	0.4	0.3
CMEA share (quantity)	100.0	91.2	100.0	96.7	92.9	100.0	100.0
Iron ore							
Million zloty	439.5	468.4	482.3	531.2	646.5	866.0	870.6
Thousand tons	11,843	12,430	12,548	13,668	15,509	15,423	15,829
Unit price	37.1	37.7	38.5	38.9	41.4	56.1	55.0
Share in total import	3.0	2.9	2.5	2.0	1.9	2.1	1.9
CMEA share (quantity)	83.7	83.0	84.7	81.2	72.9	72.0	74.7
Pig iron							
Million zloty	275.8	289.2	273.8	281.0	309.9	544.1	616.8
Thousand tons	1,489	1,552	1,471	1,498	1,662	1,798	1,974
Unit price	185.3	186.3	186.1	187.6	186.5	302.6	312.4
Share in total import	1.9	1.8	1.4	1.1	0.9	1.3	1.3
CMEA share (quantity)	99.5	100.0	99.2	99.1	99.4	85.9	77.3
Phosphorites and apatites							
Million zloty	103.3	123.9	140.1	126.9	380.5	582.8	388.8
Thousand tons	2,018	2,466	2,864	2,525	2,861	3,308	3,232
Unit price	51.2	50.3	48.9	50.3	133.0	176.2	120.3
Share in total import	0.7	0.8	0.7	0.5	1.1	1.4	0.8
CMEA share (quantity)	51.4	58.7	42.7	38.9	25.9	24.4	18.5
Potassium fertilizers							
Million zloty	241.3	261.6	254.2	289.5	317.4	513.1	521.8
Thousand tons	2,197	2,191	2,108	2,422	2,658	2,933	2,857
Unit price	109.8	119.4	120.6	119.5	119.4	174.9	182.6
Share in total import	1.7	1.6	1.3	1.1	0.9	1.2	1.1
CMEA share (quantity	92.4	97.1	93.5	92.5	98.5	99.4	98.7

	1970	1971	1972	1973	1974	1975	1976
Cotton							
Million zloty	447.8	446.6	467.0	435.0	589.5	683.3	615.5
Thousand tons	151	145	157	145	152	160	145
Unit price	2,960.0	3,062.1	2,967.2	2,991.5	3,883.7	4,267.7	4,244.8
Share in total imp.	3.1	2.7	2.4	1.7	1.7	1.6	1.3
CMEA share (quantity)	68.2	71.7	60.5	64.1	72.4	71.2	69.4
Oilseeds							
Million zloty	108.3	106.9	192.6	493.3	527.6	472.2	497.3
Thousand tons	313	316	543	721	794	948	1,024
Unit price	346.5	338.4	354.5	683.9	664.9	498.0	485.6
Share in total imp.	0,8	0.7	1.0	1.9	1.5	1.1	1.1
CMEA share (quantity)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wheat							
Million zloty	320.5	565.4	336.1	455.3	592.6	703.8	1,152.7
Thousand tons	1,099	1,910	1,274	1,620	1,758	1,477	2,311
Unit price	291.8	296.1	263.9	281.1	337.0	476.4	498.8
Share in total imp.	2.2	3.5	1.7	1.7	1.7	1.7	2.5
CMEA share (quantity)	93.3	95.1	84.7	62.1	93.4	56.2	1.4
Barley							
Million zloty	172.5	119.6	222.8	234.9	429.2	523.1	278.0
Thousand tons	1,093	616	1,332	780	1,135	1,376	742
Unit price	157.8	194.1	167.3	301.0	378.3	380.1	374.7
Share in total imp.	1.2	0.7	1.1	0.9	1.2	1.3	0.6
CMEA share (quantity)	2.7	29.1	7.7	3.0	18.2	19.0	26.1

	1970	1971	1972	1973	1974	1975	1976
Rye							
Million zloty	12.5	24.9	22.0	4.5	35.2	23.4	84.9
Thousand tons	56	111	114	24	76	69	225
Unit price	224.2	224.1	193.1	189.6	405.6	337.6	377.3
Share in total imp.	0.1	0.2	0.1	0.0	0.1	0.1	0.2
CMEA share (quantity)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Corn							
Million zloty	53.7	62.7	66.4	173.9	304.0	282.4	831.9
Thousand tons	231.1	267.7	338.5	685.5	765.9	634	2,035
Unit price	232.5	235.1	196.8	254.1	397.4	445.4	408.8
Share in total imp.	0.4	0.4	0.3	0.7	0.9	0.7	1.8
CMEA share (quantity)	15.2	7.9	20.4	13.9	0.0	0.0	4.1

Sources; G.U.S., Rocznik statystyczny handlu zagranicznego, 1971, pp.106 - 254; 1972, pp. 404-407; 1973, pp. 416-420; 1974, pp. 212-222; 1976, pp. 92-196; 1977, pp. 76-173.

Table IX

Import of Fuels and Selected Materials: Annual Increases in Quantity and Unit Prices

Commodity		1971	1972	1973	1974	1975	1976
Crude oil	Quantity	13.93	21.48	14.81	-5.01	25.74	13.45
	Unit price	2.19	2.29	4.83	25.23	106.91	10.17
Petroleum Products	Quantity	-6.46	2.86	32.04	-1.95	3.78	2.65
	Unit price	3.76	0.38	13.50	48.41	27.39	3.01
Natural gas	Quantity	48.41	0.83	13.97	23.82	18.5	1.55
	Unit price	0.00	0.00	0.00	0.00	102.37	14.31
Coking coal	Quantity	15.39	-8.46	0.73	3.25	-8.89	-1.46
	Unit price	5.96	15.32	-2.22	1.48	117.54	-0.47
Iron ore	Quantity	4.96	0.95	8.92	14.21	-1.20	2.63
	Unit price	1.62	2.16	1.04	6.43	35.51	-1.96
Pig iron	Quantity	4.29	-5.24	1.84	10.94	8.17	9.79
	Unit price	0.54	-0.11	0.81	-0.59	62.31	3.24
Phosphorites and Apatites	Quantity	22.20	16.16	-11.85	13.28	15.64	-2.30
	Unit price	-1.76	-2.78	2.86	164.41	32.48	-31.90
Potassium fertilizers	Quantity	-0.26	-3.79	14.87	9.76	10.35	-2.59
	Unit price	8.74	1.01	-0.91	0.08	46.48	4.40
Cotton	Quantity	-3.97	8.40	-7.62	4.40	5.47	-9.38
	Unit price	3.45	-3.11	0.82	29.82	9.89	-0.54
Oilseeds	Quantity	1.02	71.98	32.78	10.0	19.48	8.02
	Unit price	-2.34	4.76	92.92	-2.78	-25.10	-2.49
Wheat	Quantity	73.86	-33.31	27.16	8.55	-15.97	56.47
	Unit price	1.47	-10.87	6.52	19.89	41.36	4.70
Barley	Quantity	-43.66	116.24	-41.40	45.43	21.25	-46.08
	Unit price	23.00	-13.81	79.92	25.68	0.48	-1.39
Rye	Quantity	99.28	2.52	-79.39	221.7	-8.20	226.09
	Unit price	0.00	-13.83	-1.81	145.57	-27.50	11.76
Corn	Quantity	15.40	26.55	102.81	11.75	-17.13	220.98
	Unit price	1.12	-16.29	29.12	56.40	12.08	-8.22

Source: Table VIII

Table X

Planned and Actual Rates of Growth of Export and Import, Income Elasticity of Import and Export

Year	Export			Import			Difference Between Rates of Growth of Export (+) or Import (-)			Elasticities (Constant Prices)	
	Plan	Actual Current Prices	Actual Const. Prices	Plan	Actual Current Prices	Actual Const. Prices	Plan	Actual Current Prices	Actual Const. Prices	$\frac{dM}{dY} \times \frac{Y}{M}$	$\frac{dX}{dY} \times \frac{Y}{X}$
1970	7.1	14.9	10.4	4.9	14.5	8.7	+2.2	+0.4	+1.7		
1971	n.a.	9.2	6.5	n.a.	11.9	13.8	n.a.	-2.7	-7.3	1.70	1.25
1972	4.9	17.1	15.2	16.4	21.4	22.1	-11.5	-4.3	-6.9	2.08	0.70
1973	12.9	17.8	11.0	20.1	33.1	22.6	-7.2	-15.3	-11.6	2.09	0.98
1974	18.9	29.4	12.8	22.0	33.4	14.2	-3.1	-4.0	-1.4	1.37	0.81
1975	22.3	23.7	8.3	14.7	19.6	5.0	+7.6	+4.1	+3.3	0.56	1.08
1971-75	9.2*	19.2	10.8	9.8*	23.7	15.5	-0.6	-4.5	-4.7	1.56	0.96
1976	16.6	7.1	5.4	14.4	10.6	10.3	+2.2	-3.5	-4.9	1.45	1.31
1977	13.0	11.4	8.2	2.7	5.4	0.0	+10.3	+6.0	-8.2	0.00	0.70
1978	10.0										
1976-80	11.8			4.7			+7.1			0.64 to 0.67**	1.59 to 1.69**

* As of May 1972. ** Implied by the Plan targets

Sources: Gospodarka planowa, No 4, 1971, p. 235; No 5, 1972, p.264; No 4, 1973, p. 240; No 4, 1974, p. 230; No 4, 1975, p. 272; No 5, 1976, p. 216; No 5, 1977, p. 258; No 4, 1978, p. 180; Handel zagraniczny, No3, 1977, p. 18; No 3, 1978, p. 26.

Table XI

Output, Quantity Exported, Value of Export and Unit Price of Coal

Year	Million Tons									
	Output	Quantity Exported	Export Outside CMEA	Quantity Exported as % of Output	Export Outside CMEA as % of Quantity Exported	Value of Export (million deviza zloty)	Share of Total Value of Export %	Unit Price (deviza zloty)	Change in Unit Price %	Change in Quantity Exported %
1970	140	28.8	16.8	20.6	58.3	1,357.8	9.6	47.12		
1971	145	30.3	14.6	20.9	48.2	1,767.6	11.4	58.34	+23.8	+5.2
1972	151	32.7	17.0	21.7	52.0	1,978.2	10.9	60.52	+3.7	+7.9
1973	157	35.9	19.6	22.9	54.6	2,102.3	9.8	58.63	-3.1	+9.8
1974	162	40.1	24.8	24.8	61.8	3,474.9	12.6	86.67	+47.8	+1.7
1975	172	38.5	22.4	22.4	58.0	5,480.1	16.0	142.42	+64.3	-4.0
1976	179	38.9	24.5	21.7	63.0	5,105.0	13.9	131.09	-8.0	+1.0
1977	186	40.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	+3.6

Sources: G.U.S., Rocznik statystyczny handlu zagranicznego 1976, pp. 36-43; 1977 p.76;
G.U.S., Rocznik statystyczny 1977, pp. XXXIV, XXXV;
"Polski handel...", op.cit., p.30.

Table XII

Gains and Losses of Income in Million Deviza Zloty
Resulting from Changes in Terms of Trade

Year	Gaines (+) or Losses (-)			Gain or Loss as % of Total Import
	Import	Export	Net	
1971	+295.6	+362.7	+658.3	4.1
1972	+80.2	+243.7	+323.9	1.7
1973	-2,163.2	+1,101.5	-1,061.7	4.1
1974	-4,744.3	+3,575.0	-1,169.3	3.6
1975	-3,537.2	+3,682.9	+145.7	0.3
1976	-130.1	+597.2	+467.1	1.0
1977	-1,755.7	+780.8	-974.9	2.0
Total 1971-77			-1,610.9	
1973-77			-2,593.1	

Source: Table VII

Table XIII

Rates of Growth of World Imports (c i f) and Polish Exports to Non-Socialist Countries (Current Prices)

	1971	1972	1973	1974	1975	1976	1977	Aver. 1971-74	Aver. 1975-77	% Decline in Aver.	Correlation between Polish exports and world imports
World imports	11.7	17.3	38.0	46.4	3.6	13.4	14.2	28.4	10.4	-63.4	
Polish exports to non-socialist countries											
Total	11.6	15.5	27.1	45.7	11.9	7.7	9.9	25.0	9.8	-60.8	0.9258
Fuels and power	29.5	4.8	10.1	143.6	42.3	-4.6	0.2	47.0	12.6	-73.2	0.6020
Metallurgical products	-5.9	2.7	31.9	55.3	-4.1	13.1	15.4	21.0	8.1	-61.4	0.9334
Electrical and mechanical	43.6	19.9	14.2	38.2	47.6	14.6	20.3	29.0	27.5	-5.2	-0.2082
Chemical ind. products	13.6	12.0	40.9	110.1	-15.9	-16.7	11.3	44.2	-7.1	-116.1	0.9159
Light ind. products	11.4	23.8	43.6	23.7	8.9	26.3	27.6	25.6	20.9	-18.3	0.6226
Food and agric. products	-3.1	24.0	27.7	-7.0	-2.5	22.6	3.2	10.4	7.8	-25.0	0.0762
Polish total exports in current prices	9.2	17.1	17.8	29.4	23.7	7.1	11.4	18.3	14.1	-23.0	
Polish total export in constant prices	6.5	15.2	11.0	12.8	8.3	5.4	8.2	11.4	7.3		
Income of Non-Socialist countries	4	6	7	1	-1	6		4.5	2.5 (1975-6)		

Sources: G.U.S., Rocznik statystyczny handlu zagranicznego 1977, pp.11-12; I.M.F., International Financial Statistics.

Table XIV

Rates of growth of World Imports, Imports of Industrial Countries (c.i.f.) and Polish Exports, SITC Classification (Current Prices)

	1972	1973	1974	1975	1976	1977	Correlation Coefficients: Export to A.C. and Import of Industrial Countries	Export to LDC and World Imports
Imports of Industrial Countries	19.3	37.6	40.8	0.2	15.9	13.6		
Total World Import	17.3	38.0	46.4	3.6	13.4	14.2		
Polish Export to Advanced Countries	19.3	32.4	37.1	7.5	8.8	8.8	0.9455	
Food, beveriges, tobacco incl. raw materials	24.6	32.9	-11.1	-15.4	19.5		0.2850	
Raw materials	13.1	45.5	31.2	3.0	8.1		0.9051	
Mineral fuels	6.1	9.4	138.7	40.2	-7.5		0.4462	
Chemicals	14.1	51.1	91.4	-41.2	7.0		0.9750	
Machines and transport equipment	46.3	36.6	6.2	59.8	20.1		-0.7028	
Other manufactured comm.	16.6	38.1	36.7	9.6	20.7		0.9668	
Polish Exports to Less Developed Countr.	0.4	0.1	102.8	31.9	3.9	14.1		-0.6930
Machines and transp. equip.	13.8	-18.5	93.4	35.0	8.1			0.3224
Other mfd. commodities	-25.0	8.5	62.5	41.1	11.8			0.3132

Sources: G.U.S., Rocznik statystyczny handlu zagranicznego 1976, 1974, pp. 47-48
IMF, International Financial Statistics

Table XV

Material Costs, Disposable Income and Domestic Net Material Product.

	Increase 1970-76 %	Annual Rates of Growth (%)						
		1971	1972	1973	1974	1975	1976	Av.Rate 1971-76
In current prices								
Cost of materials fuel & power	124.8	10.3	11.5	13.3	16.8	13.6	21.6	14.5
Total material cost*	130.9	10.9	11.4	13.7	17.8	13.5	23.0	15.1
Wage fund in socialist sector	111.7	8.8	11.1	15.6	17.6	17.4	9.8	13.4
Personal disposable income**	106.8	10.6	12.7	13.5	13.2	13.6	13.3	11.2
DNMP	113.0	14.1	11.2	12.0	13.6	11.6	18.3	13.5
In constant prices								
DNMP	67.6	8.1	10.6	10.8	10.4	9.0	7.1	9.3

* Total material cost = cost of materials, fuels and power + transport cost + other"material"services

** Withou payments in natura

Sources: G.U.S., Rocznik statystyczny 1976 , pp 70.71, 79; 1977, pp. 54, 55, 68.

Table XVI

Material Costs, Total Earning and Net Industrial Production (Socialist Industry)

	Rates of Growth (%)						
	1971	1972	1973	1974	1975	1976	Average Rate 1971-76
In current prices							
Fuels	18.3	0.4	7.1	35.1	15.8	26.9	17.3
Materials	10.5	11.1	11.1	17.8	12.2	22.9	12.4
Cost of materials and fuels	10.7	10.9	11.6	18.2	12.1	22.7	14.4
Cost of power	6.1	9.6	5.3	-1.3	12.2	22.6	9.1
Total material cost	10.5	11.1	11.1	17.8	12.2	22.9	14.3
Wage bill	8.6	9.7	8.8	11.5	10.3	16.9	11.0
Total earnings	8.7	10.6	9.1	11.5	11.2	16.6	11.3
Net Industrial Production	6.3	8.7	15.3	26.5	17.6	2.3	12.8
In constant prices							
Global Industrial Production	8.3	10.7	11.3	11.5	11.0	9.3	10.4
Net Industrial Production	9.1	10.5	11.6	12.2	11.4	9.3	10.7
Total Material Costs	7.8	10.9	11.1	11.1	9.8	9.4	10.0
Total Mat. Current / const.	2.5	0.2	0.0	6.0	2.2	12.3	3.9

Sources: G.U.S. Rocznik statystyczny przemyslu 1977 (Statistical Yearbook of industry 1977), Warsaw 1978, pp. 77, 82, 86, 237. G.U.S. 1977, p. 124.

Table XVII

National Net Material Product ("Distributed National Income") and Its Main Component Parts at Current and Constant Prices

	Annual Rates of Growth (%)						
	1971	1972	1973	1974	1975	1976	Average Rate 1971-76 (%)
N.N.M.P.							
Current prices	15.1	13.0	17.2	16.7	11.9	17.1	15.2
Constant prices	9.8	12.7	14.3	12.1	10.9	7.2	11.2
Implied prices	4.8	0.3	2.5	4.1	0.9	9.2	3.6
Personal Consumption							
Current prices	8.3	8.9	11.9	13.9	15.2	14.8	12.2
Constant prices	7.0	8.8	8.5	6.8	11.3	8.7	8.5
Implied prices	1.2	0.1	3.1	6.6	3.5	5.6	3.4
Other Consumption							
Current prices	10.0	11.1	11.6	17.8	13.2	18.8	13.8
Constant prices	11.6	10.9	6.2	10.5	9.6	9.8	9.8
Implied prices	-1.4	0.2	5.1	6.6	3.3	8.2	3.7
Net Fixed Invest.							
Current prices	32.1	27.7	27.6	17.7	11.8	16.5	22.2
Constant prices	10.3	27.5	27.3	22.6	16.5	1.7	17.7
Implied prices	19.8	0.2	0.2	-4.0	-4.0	14.6	4.5
Change in Stocks							
Current prices	42.7	4.9	32.0	30.7	-10.3	34.3	22.4
Constant prices	33.0	3.8	28.2	13.9	-2.5	14.9	15.2
Implied prices	7.3	1.1	3.0	14.7	-8.0	16.9	5.7

Sources: G.U.S., Rocznik dochodu narodowego 1976 (Yearbook of National Income 1976), Warsaw 1977, pp. 57 and 74.

G.U.S., Rocznik statystyczny 1977, p.58

Table XVIII

Imported Goods as Percentage of Total Supply for the Domestic Market (Excluding the Supply of the Public)

	1970	1971	1972	1973	1974	1975	1976
Total of Goods purchased by Population	6.9	8.0	9.2	8.9	8.4	8.0	8.3
Consumption goods	6.8	8.8	9.3	8.8	8.0	7.7	8.4
food	(6.4)	(7.7)	(8.5)	(7.8)	(8.2)	(8.3)	(8.7)
alcoholic beverages	(5.0)	(5.0)	(5.9)	(7.0)	(6.5)	(6.2)	(6.7)
non-food	(7.4)	(9.1)	(10.5)	(9.9)	(8.3)	7.7	8.6
NonOcom. goods	7.7	7.0	8.2	9.1	10.8	10.5	7.8
Goods for Accumulation	11.0	10.9	14.4	17.5	n.a.	n.a.	n.a.
Total of Goods for Production	10.4	11.5	11.6	12.6	n.a.	n.a.	n.a.
in industry	(13.7)	(15.3)	(15.4)	(16.5)	n.a.	n.a.	n.a.
in agriculture	(2.4)	(2.4)	(2.4)	(2.7)	n.a.	n.a.	n.a.

n.a. - not available

Sources: G.U.S., Rocznik statystyczny 1976, p.361, 1977, p. 301, 1975, p. 45.

Table XIX

Correlation Between Fluctuations in Export and DNMP and Import and DNMP (Constant Prices)

	Correlation Coefficients		
	1971-74	1975-77	1971-77
Export/ DNMP	0.7613	0.8505	0.1174
Import/ DNMP	0.823	0.6910	0.4073

Source: Table X

Table XX

Annual Changes in Prices of Goods and Services Bought by the Population

(Percentages)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	Increase 1970-76
Overall Index	1.2	1.5	1.5	1.3	1.1	0.4	0.0	2.7	6.6	2.9		
(1)All consumption comm. and services	1.2	1.5	1.6	1.4	1.1	-0.1	0.0	2.8	7.1	3.0	4.4	18.3
(I)Consumption commodities	0.0	1.4	1.5	1.5	1.2	-0.2	-0.1	3.0	7.2	3.2	4.6	18.9
Food (total)	-0.9	1.3	2.6	2.7	2.2	2.5	-0.1	1.1	6.2	0.5	4.8	15.8
-do (socialist trade enterprises	-0.3	0.5	2.4	1.7	2.7	1.5	-0.8	1.0	1.6	0.2	2.7	6.3
-do (restaurants)	0.0	1.6	2.4	5.1	0.9	1.6	-1.9	0.1	17.4	1.2	7.4	27.3
-do (market places)	-4.7	4.8	3.0	7.6	-2.4	7.6	4.0	2.1	18.2	1.4	21.5	66.3
Alcoholic beverages	-0.1	0.0	0.0	5.1	10.0	0.0	0.0	0.0	24.6	2.1	0.0	27.2
Other than food	1.3	1.4	0.0	0.1	-0.1	-2.8	-0.1	5.8	3.6	6.3	6.0	19.9
(II)Consumption services	10.2	2.9	2.9	0.1	0.5	0.3	0.6	1.9	6.5	1.7	3.2	15.0
(2)Non-consumption commodities and services	1.5	1.0	0.8	0.4	1.1	4.2	0.4	1.7	3.1	2.3	13.4	27.2
(I)Commodities	1.8	0.5	0.3	0.1	0.8	5.7	0.1	1.0	2.1	1.0	16.5	28.4
(II)Services	0.5	2.7	2.2	1.1	1.9	1.1	0.9	3.2	5.3	5.2	5.4	23.0

Sources: G.U.S., Ceny 1974 (Prices 1974), Warsaw 1974, pp.2-3;
G.U.S., Rocznik statystyczny 1977, p.319.

Table XXXI

Nominal and Real Wages, Net Labour Income and DNMP ("Produced National Income") in the Socialist Sector

Index:	Annual Rates of Growth						Average Rate of Growth	Increase
	1971	1972	1973	1974	1975	1976	1971-76	1970-76
Prices of goods and services purchased by the population	0.4	0.0	2.7	6.6	2.9	4.6*		
Cost of living	-0.2	0.0	2.6	6.8	3.0	4.7		17.9
Average nominal wage	5.5	6.4	11.5	13.8	11.8	8.8		73.3
Average real wage	5.7	6.4	8.7	6.6	8.5	3.9		47.0
Net labour income (current prices)	9.0	12.3	15.0	17.8	16.7	10.5		113.4
DNMP in Socialist Sector (constant prices)	9.0	11.7	12.5	13.3	11.8	8.3		87.9

* Prices of consumption goods and services only

Sources: W. Krencik, "Wezlowe problemy polityki plac w latach 1971-1975" (Main Problems of the Wage Policy in Years 1971-1975), Gospodarka planowa, No 6, 1978, pp. 294-295.

Table XXII

Costs and Financial Accumulation in Socialist Industry at Current Prices, Total and Per Unit of Net Industrial Production at Constant Prices

	Billion Zloty at Current Prices							Per Unit of Net Industrial Product (Constant Prices)						
	1970	1971	1972	1973	1974	1975	1976	1970	1971	1972	1973	1974	1975	1976
Cost of fuel	22.4	26.5	26.6	28.5	38.5	44.6	56.6	0.06	0.06	0.06	0.06	0.07	0.07	0.08
Cost of materials	623.3	688.6	769.0	856.8	1,007.7	1,129.8	1,382.1	1.64	1.66	1.68	1.68	1.76	1.77	1.98
Total mat. cost*	773.3	854.4	949.4	1,055.2	1,242.6	1,394.8	1,714.8	2.04	2.06	2.07	2.06	2.17	2.18	2.45
Wages	127.2	138.1	151.5	164.9	183.9	206.0	240.9	0.33	0.33	0.33	0.32	0.32	0.32	0.35
Total labour cost	132.2	143.7	159.0	173.4	193.3	215.0	250.6	0.35	0.35	0.35	0.33	0.34	0.34	0.36
Total non-mat. cost**	184.4	202.1	224.4	263.4	319.2	370.0	460.9	0.49	0.49	0.49	0.52	0.56	0.58	0.66
Total cost	957.6	1,056.4	1,173.8	1,318.6	1,561.8	1,764.8	2,175.7	2.52	2.55	2.56	2.58	2.72	2.76	3.12
Turnover tax	129.5	105.7	121.3	138.3	157.8	229.3	223.2	0.34	0.26	0.26	0.27	0.28	0.36	0.32
Net profit	94.9	128.5	145.9	163.1	212.7	227.2	113.8	0.25	0.31	0.31	0.32	0.37	0.36	0.16
Price equalization tax & other trnsfrs.	18.5	20.3	6.3	24.0	49.9	68.7	164.4	0.05	0.05	0.01	0.05	0.09	0.11	0.24
Total fincl. accumulation	242.9	254.5	273.5	325.4	420.4	525.2	501.4	0.64	0.62	0.58	0.54	0.74	0.83	0.72
Net Ind. Prod. (Constant Prices)	379.8	414.4	457.9	511.0	573.3	638.6	697.9	-	-	-	-	-	-	-

* Cost of materials, fuels and power, amortization, transport cost, repairs and other costs

** Wages, other expenditures on labour, social insurance payments

Sources; G.U.S., Rocznik statystyczny przemyslu 1977 (Statistical Yearbook of Industry 1977), Warsaw 1978, pp.86,235,240

Table XXIII

Price Equalization Subsidies and Taxes in the State Budget

(Billion Zloty)

	1970	1971	1972	1973	1974	1975	1976
Price equalization taxes	100.2	52.4	43.9	40.0	42.6	39.9	49.5
Price equalization subsidies	77.4	48.9	57.0	74.9	128.0	165.5	n.a.
State budget: total revenue	389.6	403.5	438.3	483.8	604.1	720.1	881.4
Price equalization subsidies as per cent of total revenue	19.9	12.1	13.0	15.5	21.2	23.0	n.a.
Net subsidies (-) or taxes (+)	+22.8	+3.5	-13.0	-34.9	-85.5	-125.6	n.a.
Budgetary outlays on fixed investment and repairs	50.5	53.9	92.0	101.6	111.8	120.3	131.9
Budgetary outlays on education, science, culture, health and social welfare (operating costs)	66.4	73.2	84.7	99.7	111.3	123.0	138.3
Budgetary surplus	10.3	10.9	5.0	1.6	1.9	5.5	8.9

Sources: G.U.S., Rocznik statystyczny 1976, pp. 494, 495; 1977, pp. 413, 414.

Table XXIV

Price Equalization Subsidies and Taxes, Turnover Tax, Profits and Total Accumulation of the Socialist Enterprises

(Billion Zloty)

	1970	1971	1972	1973	1974	1975	1976
Price equalization subsidies	100.8	67.7	91.3	123.2	191.0	235.0	284.5
Price equalization tax	103.5	46.9	46.1	38.9	62.1	69.4	196.0
Net subsidies (-) or taxes (+)	+2.7	-20.8	-45.2	-84.3	-128.9	-165.6	-88.5
Turnover Tax	144.0	126.3	139.2	141.5	190.6	234.3	266.2
Profits	128.4	221.9	255.7	272.6	309.0	356.8	259.2
Losses	-21.4	-17.1	-16.5	-10.1	-21.1	-38.2	-17.5
Total accumulation	269.4	310.6	333.4	320.1	349.9	387.6	419.4
Losses and net subsidies or taxes	-19.0	-37.9	-61.7	-94.4	-150.0	-203.8	-106.0

Sources: G.U.S., Rocznik statystyczny 1976, p.514; 1977, p. 425.

Table XXV

Financial Accumulation of Socialist Enterprises According to Sectors of the Economy

(Billion Zloty)

Year	Total	Industry	Construction	Agriculture	Forestry	Transport & Communication	Commerce	Housing & Communal Economy	Other Production
1960	113,767	83,322	5,021	-44	6,669	2,475	16,453	-498	369
1965	173,795	137,934	3,915	-1,064	4,924	4,678	24,526	-2,339	1,221
1970	269,403	202,127	3,031	-3,299	4,318	9,052	51,387	438	2,349
1	310,630	220,956	13,340	-3,001	7,264	11,683	57,609	-313	3,092
2	333,448	234,443	18,624	-5,090	6,316	13,718	59,594	-495	6,338
3	320,059	247,073	16,036	-8,907	6,511	16,366	41,780	-4,117	5,317
4	349,877	329,668	6,494	-11,076	6,431	13,014	5,751	-6,926	6,521
5	387,621	393,467	-5,298	-16,478	6,484	14,003	-7,074	-4,263	6,780
6	419,403	330,000	25,655	-16,304	9,314	32,951	38,920	-2,610	1,477

Source: G.U.S., Rocznik statystyczny 1976, p. 514; 1977, p.425.

Table XXVI

Net Price Equalization Taxes (+) or Subsidies (-) in the Socialist Sector of the National Economy

(Million Zloty, Current Prices)

Sectors	1970	1971	1972	1973	1974	1975	1976
Total Socialist Sect. of the National Econ.	2,765	-20,805	-45,272	-84,258	-128,946	-165,579	-88,493
Total Socialist Ind.	-14,143	-16,793	-35,760	-39,121	-42,715	-49,701	-23,565
Fuel & energy ind.	758	1,144	78	829	7,485	7,232	
Metallurgical ind.	1	-208	-235	-282	-1,251	-14	
Electrical & engineering ind.	-232	-852	-2,091	-2,266	-1,742	-237	
Chemical ind.	-1,771	-2,555	-2,720	-2,790	5,848	2,223	
Mineral ind.	67	154	122	145	299	-535	
Wood & paper ind.	-152	36	75	-210	-329	212	
Light ind.	-1,171	353	989	452	-2,889	-662	
Food ind.	-5,664	-10,802	-26,178	-27,846	-37,560	-44,274	
Other ind.	-5,979	-4,063	-5,800	-7,153	-12,576	-13,646	
Socialist countr. ind.	8	7	5	-5	2	-10,538	-11,480
Socialist agric.	-4,548				-17,486	-20,637	-27,022
Forestry	1				-16	-21	279
Transport & communication	-437	39	-282	-204	-3,463	-4,236	3,593
Trade foreign	19,010	-4,144	-4,836	-6,217	-54,215	-79,065	-39,315
Trade domestic	-4,273	5,884	16,429	-20,013			
Housing & communal economy	-1,445				-9,081	-9,581	-9,387
Other production	1,113				1,477	1,329	-4,556

Source: G.U.S., Rocznik dochodu narodowego 1976 (Yearbook of National Income 1976), Warsaw 1977, pp. 30, 34-36, 38, 43.