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**The 1990 Polish Recession:
a Case of Truncated Multiplier Process**

by

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April 1991

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1 Foreword

When the stabilization plan for the Polish economy was launched, many economists advanced the opinion -against the optimistic forecasts of J.Sachs (Lipton and Sachs (1990)) and others- that the consequences of the stabilization plan would have been a drastic fall in production and a massive unemployment (see Laski (1990), Caselli and Pastrello (1990)).

Surprisingly enough, on a Keynesian basis, while the first part of the pessimistic forecast has been confirmed, the second has not; indeed the industrial production fell down about 24 % in the period December 1989-December 1990, while the decrease of the industrial employment was only about 13%. This discrepancy, or better its reason and its consequences, is in our opinion the crucial starting point in order to understand what happened in the Polish economy.

What is at issue in the current discussion among economists (see Blanchard and Layard (1990), Calvo and Coricelli (1990), Chilosì (1990), Gabrisch (1990), Kolodko (1990), Marczewski (1990), Nuti (1990), Winiecki (1990)) is rather the discrepancy between the results ⁽¹⁾ and the quite different targets advanced by the government at the beginning of the year.

The word which has been most widely used in the comments on the outcomes of the Polish stabilization plan is **overshooting**, meaning that the government economic measures have gone wide of the mark, in terms of the obtained results. The main explanations run on two different analytical tracks: one is a supply side explanation, the other is a Keynesian one.

The supply shock thesis goes more or less in this way: state enterprises -according to Winiecki (see Winiecki (1990)) in particular capital goods producing enterprises- have risen their prices above the equilibrium level, thanks to their monopoly position, cutting the real

1) According to official estimates the Polish GNP has fallen 14% in the year 1990, the industrial production has fallen 25%, the unemployment rate is about 6 of the active population, the inflation rate is 684% on an yearly basis, the state budget has a surplus of 2.1 bill. zł., the trade balance records a surplus, in constant prices, of about 6 bill. zł., and the foreign debt increased to around 48 bill. dollars: these are the macro results after a year of implementation of the Balcerowicz plan.

wages, and feeding the inflation process. Had the polish enterprises behaved in a competitive manner, changing the product mix and entering new markets, the price rise would have been lower, with a smaller cut in real wages, with a consequently minor fall of output and unemployment. The decrease in production, according to this interpretation, is due to the role of price maker of polish industrial enterprises and to a bit of overshooting by the government monetary and fiscal policy.

The other explanation is advanced in pure keynesian style, arguing that the cut in demand has been too strong following, via multiplier effects, the cut in investment expenditure and the shift from a deficit to surplus state budget (see Gabrisch (1990), Laski (1990), Marczewski (1990)).

As far as the first interpretation is concerned, we share Sachs' opinionion (Lipton and Sachs (1990)) that the degree of monopolistic strength of polish enterprises has been overestimated; furthermore, and even more important, we think that the supply side approach overlooks the deflationary consequences of the supposed **virtuous** behaviour of polish state firms.

Referring to the second interpretation, whose keynesian framework we do share, we suggest that the specific polish setting gave origin to a peculiar truncated multiplier process and not to a standard one, milding the deflationary consequences of the cut in autonomous demand.

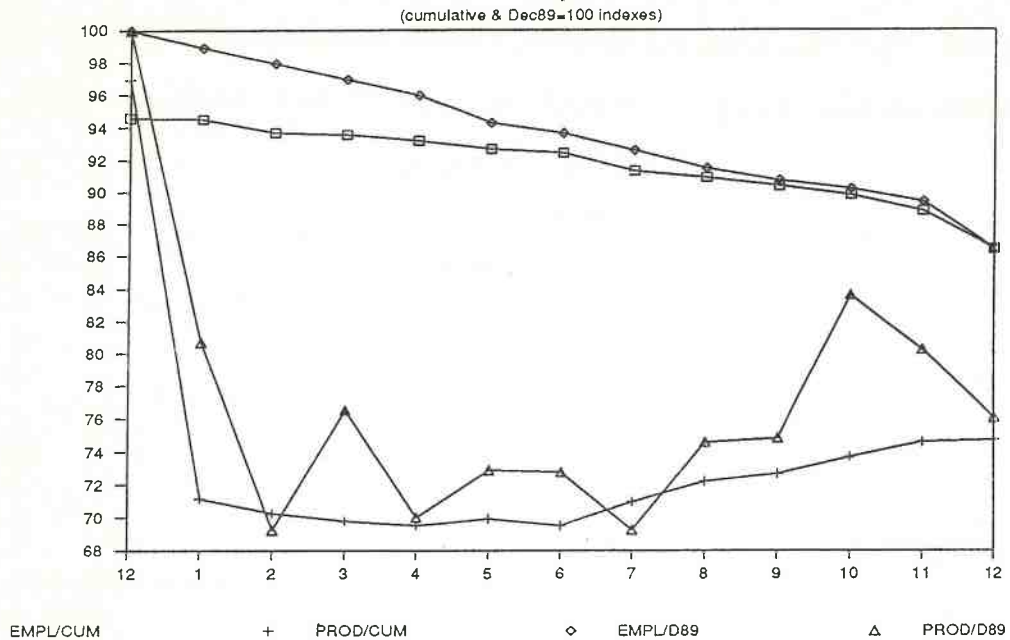
The arguments advanced to support both these interpretations take into account the overall year results, disregarding monthly dynamics. We think worthwhile, on the contrary, to begin with a closer inspection into this dynamics, in order to get useful insights for the interpretation of the overall outcomes.

2 The dynamics of the polish recession.

What happened to industrial production and employment in the five socialized sectors after the economic policy measures enacted by the polish authorities on the 31st of December 1989 can be seen in the Fig. 1 in which we have plotted the cumulative and monthly indexes of

employment and sold production.

FIG. 1: EMPLOYMENT & IND. PRODUCTION



After the first month fall of about 30% -in terms of the cumulative production index (²)- the industrial production got stuck at this level until July, and then recovered some five percentage points up to the end of the year; if we consider the monthly production index (with December 1989=100), we see that the period of recovery goes from July to October, beginning again to diminish after November, a decrease that goes on until current February. Both indices show that the initial fall has not been followed by a cumulative process.

2) The cumulative index is the progressive sum over months related to the the corresponding period of the previous year; the corresponding formula is:

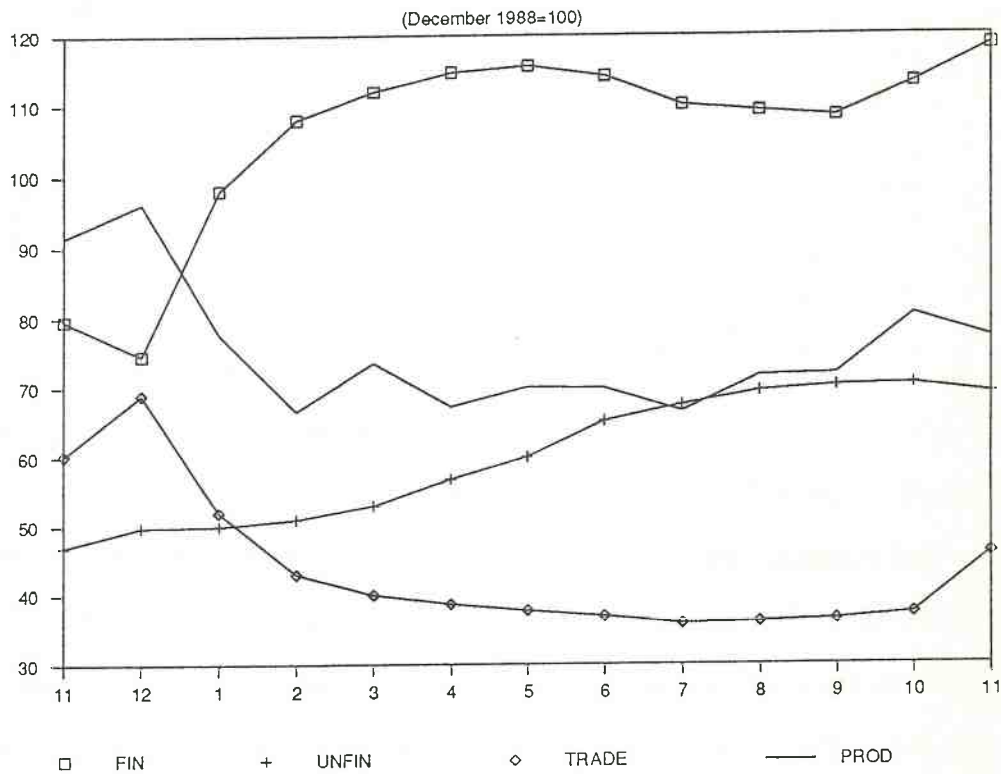
$$[1'] I(i,T)=\text{SUM}(1..i)[X(i,T)]/\text{SUM}(1..i)[X(i,T-1)] \quad (i=1,2,\dots,12)$$

where i indicates months, T the current year, and X is the variable under aggregation.

The cumulative index smooths the time profile and then stresses the trend component; while the monthly index is useful to detect the momentum.

It must be remembered that the above production index refers to the **sold** production and not to the **made** one. This obscures somewhat the relationship between production and employment. In the Fig. 2 we have plotted the monthly indexes (December 1988=100) of industry stocks of finished and unfinished goods, of trade stocks and of sold industrial production.

FIG. 2: STOCKS

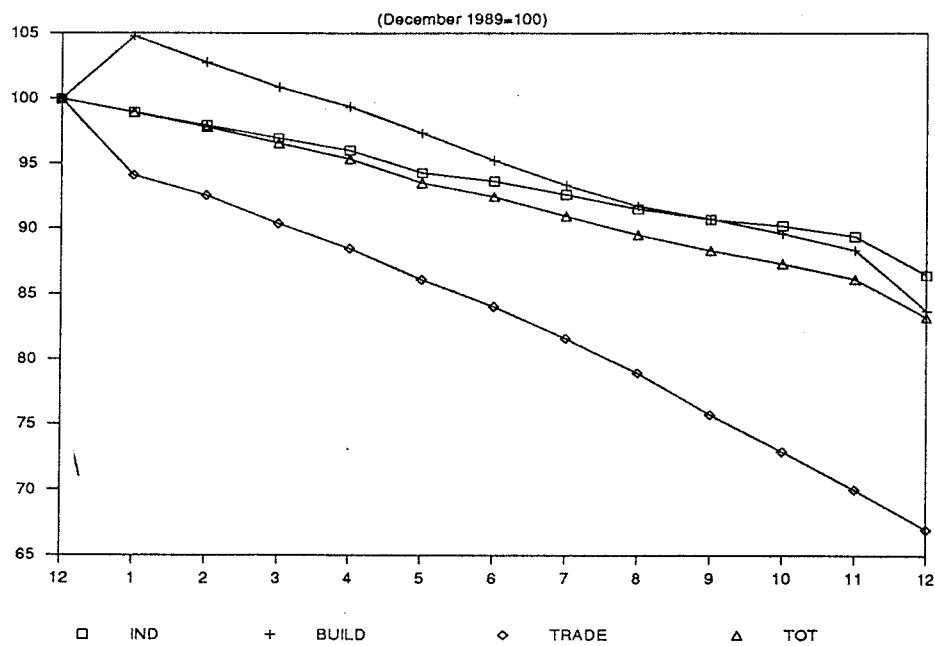


From December '89 to December '90 we observe a forty five points increase in the stocks of industrial finished goods. On a year basis it would be reasonable to interpret this rise simply as caused by the fall in demand. But both its magnitude and its time profile suggest an other interpretation. Indeed the **normal** expected behaviour of industrial firms facing a huge fall in demand would be a sudden increase in stocks of finished goods in the first period and then a gradual decrease, associated with a continuous fall in the stocks of unfinished goods. What is peculiar in this case is that industrial firms after the first sudden and huge increase in stocks have not destocked at all -slightly destocking only after the July shy reflationary measures-, while the stocks of unfinished goods went on increasing. The conclusion is that the stock increase

is only partly due to the demand cut, and partly to the fact that firms kept labour force working instead of firing it; in this way the industrial sector didn't wholly transmit on employment the fall in demand. On the contrary, the trade sector showed a normal adaptive behaviour in front of the demand fall, consistently reducing its stocks.

The total employment of the socialized sector fell much more slowly almost at about a constant rate of 1.3% monthly. As can be seen from the Fig. 3 in which we have plotted industry, building, trade and total employment indexes (December 1989=100), total employment shrank about 16.8 points, but with quite different sectorial behaviours:

FIG. 3: SECTORS EMPLOYMENT



trade is the sector which has been hit most by the economic recession in terms of labour force expulsion totalling some 30%, followed by the building sector with a 11,5% decrease, the industrial one with a loss of 15.6%, and transport with 12%, communication employment remains

constant ⁽³⁾).

The fall of these aggregates follows from the action of three major deflationary impulses: the cut in real wages, the reduction in the budget expenditure together with the increase in taxation, the fall in investments.

The cut in real incomes caused by the economic policies measures of the government is striking in its dimension as can be seen from the Fig. 4 in which we have plotted the cumulative index of the real wage bill of the socialized productive sectors, the one of all real labour incomes, and the one of the real total expenditure on goods ⁽⁴⁾.

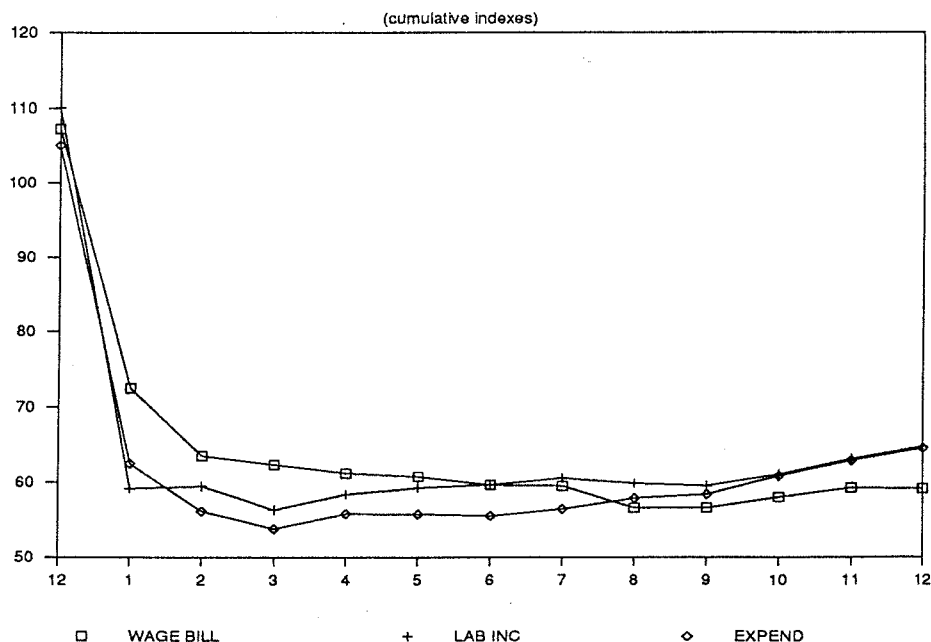
3) The values reported in the text refer to the fall from December 1989 to December 1990; we prefer to use these values instead of year average values, because average values underestimate the relevance of the phenomenon. From the available sources (Statistical Information, January 1991) it comes out that the total net creation by the private sector (including agriculture) is sensibly smaller than gross creation of the private sector outside agriculture -plus 27%- signalling a reshuffle inside the private sector.

4) Our data are from the Polish National Bank (PNB) series (reported in SI [Statistical Information], January 1991) of **receipts** (przychody) and **outlays** (wydatki) of the population, which we have deflated with the retail price index (December 1989=100).

From the PNB classification we know that the first aggregate is made up by total labour incomes payed in the overall socialized sector, social transfers (swiadczenia społeczne), loans, gross proceeds from sale of agricultural output, and other items.

The second aggregate is made up by the expenditure on goods and services; the remaining part -which is negligible- is made by taxes, contributions and loans repayments. We have considered the goods expenditure as a proxy of the households real demand.

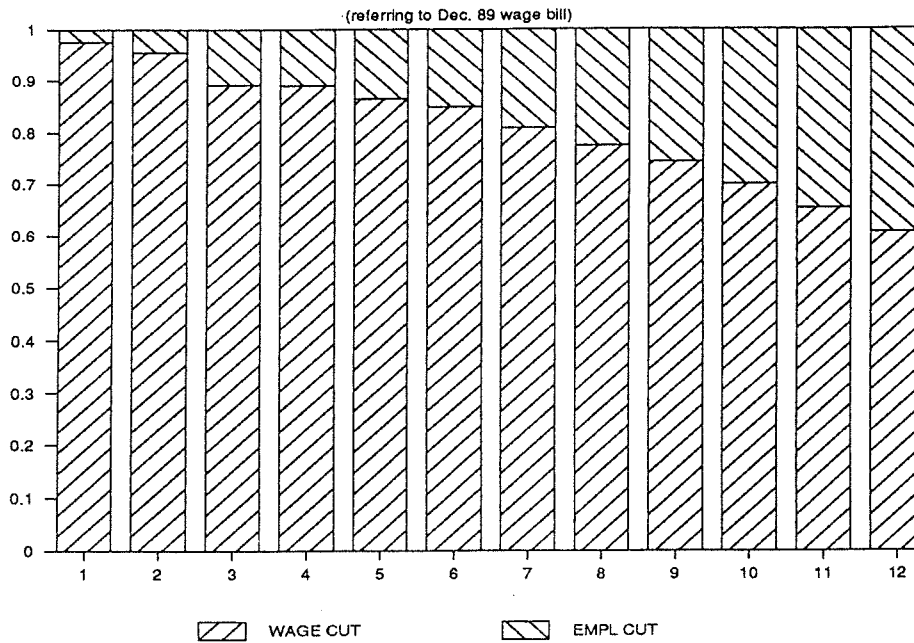
FIG. 4: INCOMES & EXPENDITURE



The real wage bill of the productive socialized sector went down thirty five points in the first two months, slowing down its descent until September, reaching a value of minus 26% in December. Total labour incomes fell about forty points in January, reaching the minimum in March, then recovering ten points at the end of the year. The fall of the real expenditure touches its lowest point in March, forty six points, but then onwards beginning to gain some twelve points at the end of the year. What we want to stress is the fact that the decrease in real incomes -and then in demand-, as compared with the corresponding period of the previous year, occurs in the first two three months; and this fall has, correspondingly, the analogous time profile of the production index.

An interesting point comes from a closer analysis of the monthly behaviour of the real wage bill of the five socialized sectors, starting from December 1989. If we split this fall in two components: the fall in the real individual wage, and the fall in the employment level, we can observe in the Fig. 5 the smooth change in the proportions between the two components.

FIG. 5: REAL WAGE BILL CUT



At the end of the year the monthly real wage bill (which we have reconstructed from the available data), in spite of the wage increases allowed in the second half of the 1990, has simply regained the January level; we may therefore conclude that the rise of individual real wage has only compensated the cut in the total wage bill due to the fall in employment.

The cut in real incomes due to price increase constitutes the first and more important deflationary impulse, which immediately creates a huge demand gap in the economy which acts with no time lag.

The second deflationary impulse comes out from the restrictive budgetary policy, which at the outset was intended to get a balanced budget, but at the end resulted in a consistent budget surplus. At a first glance we could consider the difference between the past year deficit and the current surplus as representing the global negative impulse given to the economy. But to a closer inspection things are somewhat more complicated.

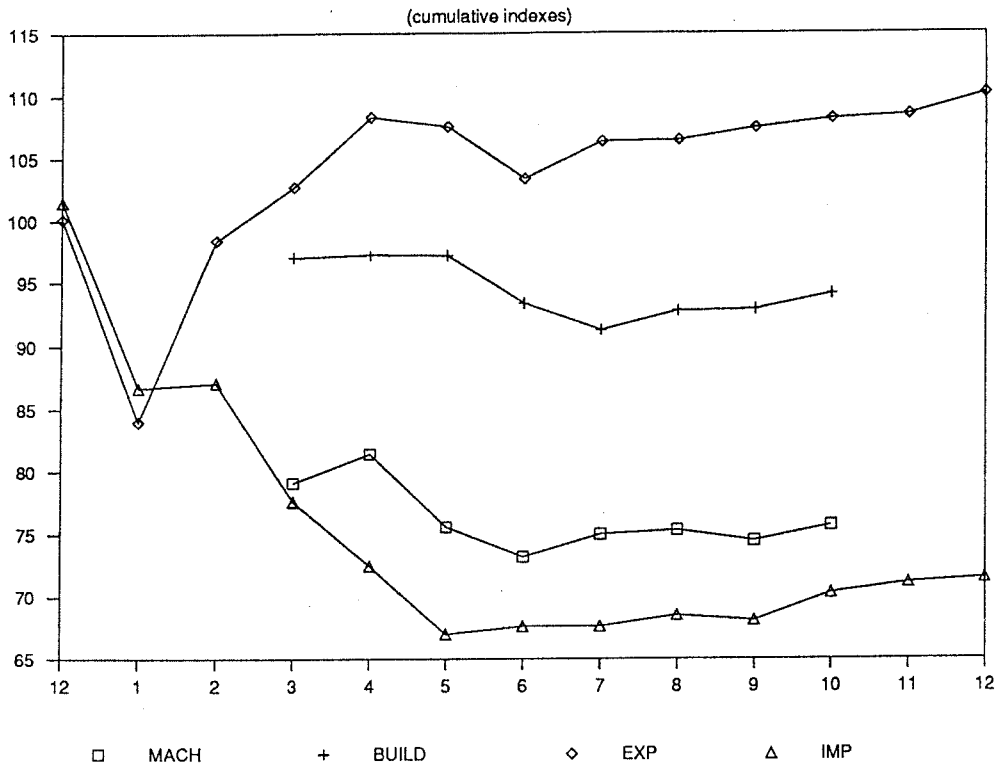
Obviously the real cut in direct government expenditure on goods and services, and also in social transfers to households, releases negative impulses via multiplier process. But from the point of view of state receipts we must take into consideration the fact that, under the present

taxation system the main part of direct taxes receipts come from state enterprises, and therefore their increase has no direct influence on households expenditure (apart from the profit distribution which is negligible on a year span), diminishing only firms savings out of profits.

One of the main targets of the budget policy was the reduction of subsidies to firms. This cut, together with tariff increase, exchange devaluation and the rise of interest rates, has contributed to the process of rising costs and prices by firms. In so far as the fiscal tightening is transferred on prices, the workers real wage, the real value of the budget transfers to households and the real value of direct state purchases of goods and services are cut.

The third deflationary impulse, starting at the beginning of the period, is represented by the fall in investments: the fall in investment machinery is about 20 % in the first quarter, touches a maximum of 27% at the end of the second quarter, and goes back to 20% in November. It's worthwhile to add that the machinery imports fell less than total machinery investments (see *Informacja Statystyczna* [IS] 8/1/1991, p. 36); hence the deflationary effect on domestic production is greater than the one reported above. The building investments fell only about 3% yearly; its decrease has been hampered by the utilization of state and local funds made free by the creation of a financial surplus in the state budget (as can be seen in the Fig. 6, where we have plotted the other macro components, a part from the fall in real incomes, which gave negative and positive demand impulses -i.e. machinery investments, building investments, exports and imports).

FIG. 6: INVESTMENTS & FOREIGN TRADE

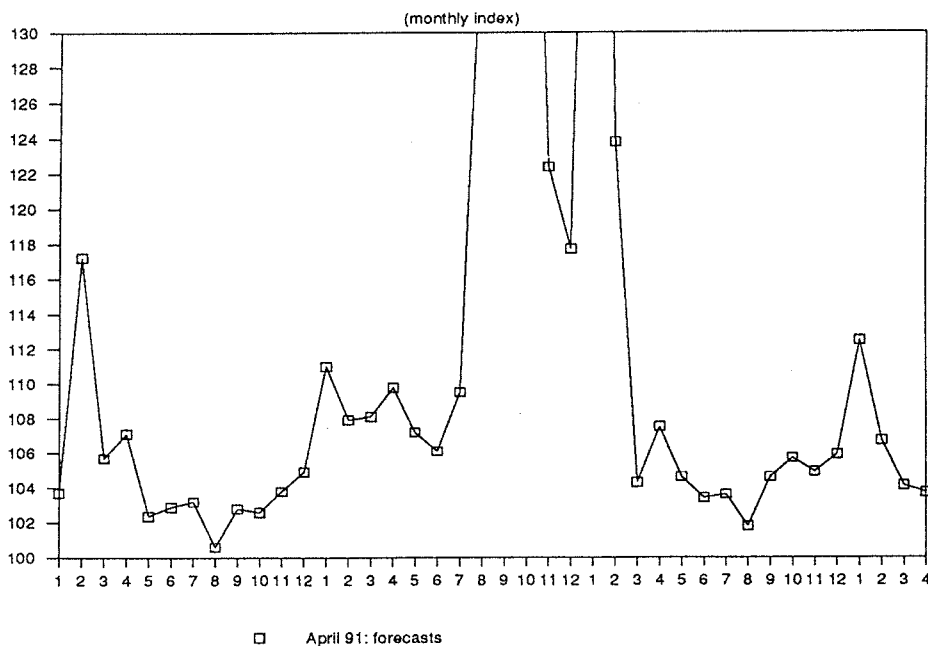


The dynamics of foreign trade has only partly counteracted the above deflationary impulses. The volume of exports decreased only in the first month, reaching the level of the preceding year at the end of March, from April onwards it grew at 10% compared to the previous year. This result is the sum of two different dynamics as far as the geographical direction of Polish trade is concerned: the exports towards ex CMEA countries fell about 11% compared to the previous year, while exports towards western countries rose about 34%. Imports on the contrary fell dramatically following the drastic cut of domestic absorption, from CMEA countries of 40%, while from western countries of about 14%. The achieved trade surplus is due more to shrinking imports than to the rise of exports.

The reduction of the inflation rate has been one of the major economic targets of the government. The discussion among economists and policy makers has generally taken into

account only the last year time span; we think useful to consider a longer period in order to get a better insight in the polish inflationary process. In the Fig. 7 we have plotted the monthly inflation rates over the time span '88-91.

FIG. 7: INFLATION 1988-91



We can observe some lower peaks due to administrative price increases, and two greater hyperinflationistic peaks due to the two subsequent (August '89 and January '90) liberalization shocks. If we look at the period from the beginning of the stabilization plan up to now, we can observe an inflationary floor of 3%-4% monthly. All in all the real gain of the wage and monetary restrictions has been to push the inflation rate from the level attained in '89, before the first liberalization shock, back the '88 level: a 6 % inflation gain has been payed by a 25% fall in production; an exceptionally high trade-off. The real structural change in the inflationary process is that before the first liberalization shock, inflation was generated by an excess demand impulse, amplified by a cost-price spiryal, built-in after the '82 economic reforms. After the dampening of hyperinflation by means of wage and monetary restrictions, the inflation floor is now almost totally determined by a cost-price spiryal.

3 The truncated multiplier.

In the previous paragraph we discussed the time profile of the industrial production; since monthly data for GNP are not available we think reasonable to take the industrial production profile as a proxy of GNP one.

In fact agricultural production has fallen only 3%, showing that households have obviously reduced their non-food consumption (whose share in global consumption has consequently shrunk); the outlays on the output of the building sector - which decreased less than the industrial one - come out from state and local administration funds, from enterprises funds, from private funds, whether or not channelled by cooperatives; hence this expenditure cannot be considered as financed from current incomes and, in Keynesian terms, is of autonomous kind.

Hence the fall in real demand, autonomous and induced, is reflected in the industrial production; indeed the industrial sectors oriented towards final demand has been hit more severely than other sectors.

As we have seen the time profile of the decrease in industrial production is peculiar, being insofar concentrated in the first two months of the year (see Fig. 1). The dynamics of production has run 'as if' the propagation process of the cut in real autonomous demand (⁵) have been inhibited, originating then a 'truncated multiplier' process.

We will now try to estimate the consequence of the 'truncation' on a year basis. To begin with, we take as a starting point the figures given in Laski (1990), where he tried to assess the magnitude of the fall in GNP following the government measures of January 1990, basing on the first available estimates of GNP (Komunikat o sytuacji społeczno-gospodarczej kraju, see

5) Obviously, taking into account the monthly dynamics, the cuts have to be considered as a monthly impulses; the corresponding propagation dynamics is the progressive sum of such amplified impulses, and has a greater magnitude than the 'one-shock' generated process.

Statistical Sources), and then we will recalculate it using the definitive official values given in the last *Rocznik Statystyczny 1990* [RS] (Statistical Yearbook)] edited by the Główny Urząd Statystyczny [GUS] (Central Statistical Office).

His multiplier formula is:

$$[1] \quad Y = (GI + B + D) * 1 / (1 - c)$$

where GI represents gross investments of the enterprise sector, B the trade balance surplus and D the State budget deficit (the value of the multiplier is 2.8). Substituting numerical values concerning the first estimates of 1989 GNP we have:

$$[2] \quad 100 = (27.5 + 4.6 + 3.6) * 1 / (1 - 0.643)$$

Going back to the standard income accounting identity we have:

$$[3] \quad Y = C + GI + B + G$$

and substituting the numerical values (in billions zlotys at 1989 prices; for 1990 lacking of the own deflators of the aggregates considered, we have deflated it with the available retail price index) we obtain:

$$[4] \quad 118 = 45.5 + 45.5 + 4.6 + 22.4$$

It must be noticed that RS does not give the utilization account of GDP, which must be reconstructed from various RS tables; hence C is the value of consumption from household incomes (RS p.189; taking into account that monetary incomes of the population (RS p.189) amount to 61.5 bill. zl. the consumption coefficient out of household incomes, let's say k, is 0.74, which obviously differs from the coefficient c, used in the multiplier formulas, which is related to GNP); GI includes overall gross investments both in fixed assets, equal to 19.3 bill. zl., and stocks increase, 26.2 bill. zl. (RS p.125); B, the foreign trade balance, amounts to 4,6 bill. zl. (RS p.394); G represents the purchase of goods and services financed by the state budget (the value is obtained by difference between total state expenditures, which amount to 33.7 bill. zl. (RS p.139), and transfers to socialized sector, 11.9 bill. zl. (RS p.140), but does not round exactly.

It's possible to transform this accounting identity in the above multiplier (see [1] and [2]) simply imputing to C the consumption of public services financed by taxation, net of transfers to the socialized sector, and then we obtain:

$$[5] \quad 118 = (45.5 + 4.6 + 3.6) * 1 / (1 - 0.545)$$

and the value of the multiplier is about 2,2. If, on the contrary, we include in the autonomous expenditure all the direct purchases by the state, using G instead of D, we obtain a smaller multiplier (i.e. 1.63):

$$[6] \quad 118 = (45.5 + 4.6 + 22.4) * 1 / (1 - 0.386)$$

From the first estimates we know that the polish GNP has diminished of about 12% in real terms, which in absolute terms is equal to a fall of 14 bill. zl. at 1989 prices.

We know that investment in fixed assets fell of about 9%, i.e 1.7 bill. zl.; from the monthly statistical bulletin we have estimated the real decrease in stocks of about 2 bill. zl. (hence the fall in gross investment is of about 8%); deflating the zlotys equivalents of the trade balance (46 bill. zl.; IS, 22/1/91, part II) we have obtained a trade surplus of 6.7 bill. zl.; deflated 1990 budget outlays amount to 26.6 bill. zl., while deflated budget receipts are about 28.7 bill. zl. (the budget surplus being 2.1 bill. zl.); we guess, lacking more precise information, that total transfers to the socialized sector have been almost halved; the fall in real consumption, according to GUS estimates, amounts to about 25%. Hence the 1990 GNP accounting identity becomes as follows:

$$[7] \quad 103.8 = 34.8 + 41.8 + 6.7 + 20.5$$

considering the difference identity:

$$[8] \quad -DY = -DC - DGI + DB - DG$$

and substituting with numerical values, we obtain:

$$[9] \quad -14.2 = -10.7 - 3.7 + 2.1 - 1.9$$

or according to Laski's multiplier:

$$[10] \quad -14.2 = -6.9 - 3.7 + 2.1 - 5.7$$

but we prefer from here onwards to work with our multiplier in order to isolate the cut of the real consumption out of population incomes.

Now the crucial point is the answer to the question whether the fall in consumption should be considered as fully, or partly, induced by the action of the standard autonomous expenditure (GI, B and G) on consumption through the multiplier.

According to the normal propagation process, the induced decrease in consumption is due to the cumulative shedding of labour force following the primary fall (i.e. that of autonomous expenditure: GI, B and G) in real demand. Now, we do know that the shrinkage of employment has occurred at a much slower pace, and has been much more smaller, than that of production. Of course it might be argued that the fall in employment, and hence in the wage bill, has been substituted, in the multiplicative process, by a direct cut of wages, without unemployment creation, via cumulative price rise; but in this case the propagation process would have had the same time profile as the standard process based on employment cut.

On the contrary all the empirical evidence we have, does not confirm this hypothesis. The most of the price increase has occurred in the two first months of the year, and the same happened to the decrease in production. Furthermore we know that the propagation process takes time in order to fully work out its effects. Hence the one shot fall in production goes against the interpretation of the fall in consumption as a fully induced one. Our conclusion is, on the contrary, that the main part of the decrease in real consumption must be considered as autonomous, due to the sudden and sky high price increase.

Let's try to estimate the autonomous part of the fall in real incomes which following the 1990 price increase has been about 25% on an year basis; the 1989 monetary incomes of the population (at 1989 prices) was about 61.5 bill. zl.; if we take into account a marginal propensity to consume out of population income: $k'=0.6$ (recalling that the average propensity k was equal

to 0.74) we obtain a first-step cut in consumption of 9.2 billions zlotys (at 1989 prices), the remaining part, up to 10.7 bill. zl., being considered as a decrease induced by the multiplier process. The accounting identity which takes into account this splitting becomes:

$$[11] \quad -DY = -DCI + (-DCA - DGI + DB - DG)$$

where DCI and DCA stand for the induced and the autonomous fall in consumption; substituting with numerical values we have:

$$[12] \quad -14.2 = -1,5 + (-9.2 - 3.7 + 2.1 - 1.9)$$

hence the multiplier becomes:

$$[13] \quad -14.2 = (-9.2 - 3.7 + 2.1 - 1.9) * 1 / (1 - 0.11)$$

and its value is about 1.12. We want to recall that the value which appears in the multiplier formula is the value of c' , i.e. the marginal propensity to consume related to GNP, and not the k' , the marginal propensity to consume related to personal income, which only served to estimate the autonomous fall in consumption.

If the above (see [6]) multiplier would have run through all the secondary rounds, the fall in income would have been:

$$[14] \quad 20.7 = -12.7 * (1.63)$$

Things run otherwise: the action of the multiplier has been truncated by the reluctance of Polish firms to fire labour force. Therefore the following step is to explain why the labour shedding didn't take place in the expected magnitude.

4 Polish state enterprises: private vices and public virtues.

In our opinion the missing of the labour shedding required by a complete run of the income multiplier may be explained by the unorthodox behaviour of Polish state enterprises as far as the level of employment is concerned.

It is widely known among economists the great potential of disguised unemployment built in the employment structure of CPE's; it may be worth remembering the work done by Porket (1984), who estimated a labour hoarding of about 15-20% of the labour force for the soviet economy, while Brada (1990) more recently estimated a rate of 18% of hidden unemployment for the tschechoslovakian economy in the period 1960-1979. Rutkowski (1990), in a study on labour hoarding in the polish industry, estimated that labour hoarding was about 25% of the labour force; this corresponds with the estimates of 'excessive employment' -about 15-33%- given in Kwiatkowski (1990).

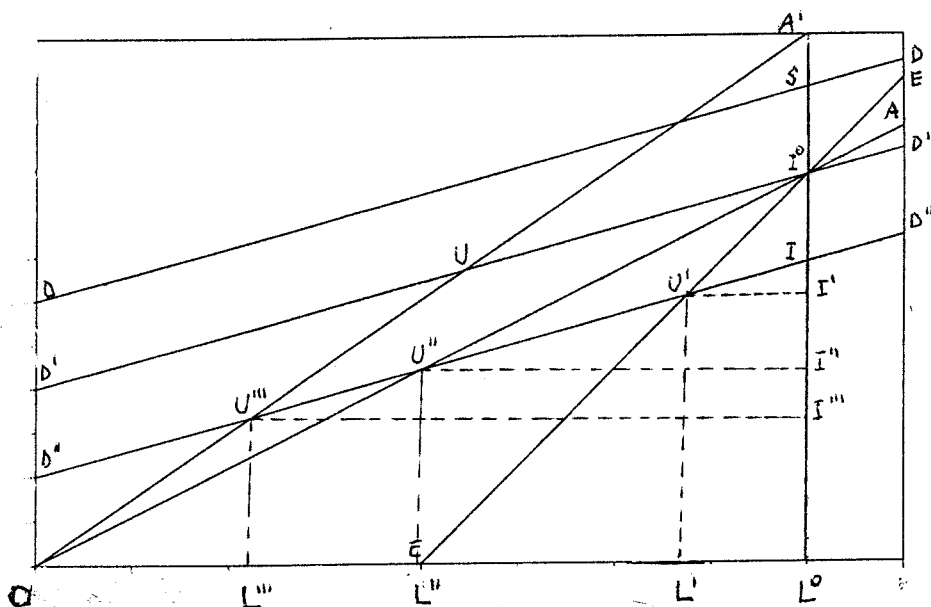
In a previous paper (Caselli and Pastrello (1990)) we stressed the potential unemployment of the polish economy, due to the X-inefficiencies and spare capacity existing in all planned economies, that would have come into the open, if deflationary policies would have been implemented in a too harsh way. Our conclusion was that the marketization of a planned economy would have revealed a huge deflationary gap: the implicit assumption was that the firms, under new market constraint would have been moving towards the efficiency frontier, at the existing technological level, leaving a part in our argument technological innovations.

It is for this reason that in agreement with professor Laski's classical keynesian analysis on the likely deflationary effects of the January measures, we argued that had polish enterprises reduced their X-inefficiency, the deflationary effects on the level of income and employment would have been stronger than those foreseeable with his analysis.

The real dynamics have shown both to be wrong: polish enterprises neither have bettered their efficiency, neither have maintained their existing inefficiency; rather they, releasing labour force at a slower pace than that of the fall in production, have considerably worsened their short period conditions of efficiency.

This is depicted in Fig. 8.

FIG. 8: TOTAL DEMAND & FIRMS BEHAVIOUR



On the X-axis we put the level of employment, and on the Y-axis the level of real income; the lines OA and OA' represent Keynes-type supply curves (and not the Hansen' straight line of demand-and-supply equilibrium) respectively with and without X-inefficiency and spare capacity; the point L^0 on the X-axis represents the full employment level (but in 1989 the polish economy worked already below this level); drawing from L^0 a parallel to the Y-axis we cross the line OA at the point I^0 , which is the maximum attainable income at the existing conditions. The line $DD(P^0)$ represents the usual keynesian demand curve at the level of prices existing before the enacted measures; this line crosses the vertical line, drawn on L^0 , at the point S , which lies over I^0 and represents the conditions of shortage (i.e. excess demand) prevailing in CPE's.

The measures advocated by Laski would have implied a fall of the line $DD(P^0)$ to $D'D'(P')$ -where P' indicates a new expected level of prices-, and the new line should have crossed the

vertical line at the point I° , cutting the excess demand, and in this way reaching the macro-equilibrium conditions⁽⁶⁾. Here we can see our point compared to Laski's one: in fact if polish enterprises would have moved towards the line OA' , the equilibrium level would have lied on the line $D'D'$ between the point I and U , associated with a lower level of income and employment than the desired one.

What has really happened has been a shift from $DD(P^{\circ})$ to $D''D''(P'')$ - P'' indicates the attained level of prices, higher than the expected one- which crosses the vertical line on I ($I^{\circ}I$ represents the fall in autonomous demand); this shift has been much greater either than the one forecasted by the government, either than the one required in order to cut only the excess demand.

We introduce now the line EE which crosses the vertical line on I° and describes the firms' behaviour towards labour shedding in front of the fall in demand: the steeper the slope of the line EE , the smaller the labour shedding operated by the firms (we want to stress that this line has not a **technical** content but only a **behavioural** one). Obviously a comprehensive approach should take into account the fact that the slope of the line EE may be itself a function of the fall in output, but for the sake of simplicity we take it as given.

The actual demand curve $D''D''$ crosses EE at U' , which corresponds to a level of income I' , and crosses OA and OA' respectively at U'' and U''' , which corresponds to the levels of income I'' and I''' . The polish firms in front of a cut in autonomous demand equal to $I^{\circ}I$ shed labour according to the slope of EE , hoarding labour and worsening their productivity, but acting as employment stabilizers; this behaviour has forbidden the complete run of the income and employment multiplier; hence global demand fell only from I° to I' and employment from L° to L' . Had the firms simply maintained their previous level of efficiency (or of X-inefficiency)

6) Laski does not advocate the immediate reaching of full employment equilibrium, but admits that a certain degree of unemployment is temporarily necessary in order to smooth the restructuring of the economy.

income would have fallen to I'' and employment to L'' ; and a fortiori had they moved towards the efficiency frontier the reduction both in income and employment would have been greater (equal respectively to $I^{\circ}I''''$ and $L^{\circ}L''''$). If otherwise the line EE would have been vertical -i.e. the cut in demand would have been totally transmitted on productivity-, then the multiplier process would have been completely interrupted, and the total fall in demand would have been equal to the autonomous one, with no employment cut.

What we want to stress is that from the point of view of **macro-equilibrium** conditions, the real content of an enterprises **elastic** behaviour is the shift from OA to OA' ; indeed, the behaviour of a standard market enterprise in the very short period is to let its productivity conditions to worsen, but afterwards to move towards OA' .

5 Conclusions

The behaviour of polish enterprises which, either being inherited from the central planning experience either being a response to a situation of social uneasiness, caused the discrepancy between the fall in income and in employment, has been interpreted by many commentators in a misleading way.

The supply side overshooting thesis maintains indeed that a **virtuous** -i.e. competitive and not monopolistic- behaviour of polish firms would have made the recession milder, via a smaller cut in real expenditure thanks to a minor price increase.

It seems to us that polish firms acted rather in a 'traditional' way than in a 'monopolistic' one; i.e. they didn't take into account an ex-ante trade-off between prices and quantities but rather, following their standard behaviour of price formation -of **cost-plus** type- they simply reacted (as would have done, more or less, the real and not textbook market firms) to a turbulent environment of rising costs, keeping in the short period their mark-up substantially constant. Indeed we can observe that the industrial sectors hit more by the demand fall -i.e. consumer sectors- have recorded a drastic fall in their ex-post profitability (see IS 8/1/91, tab. 37).

Furthermore many commentators have pointed to the 'survival' and not 'maximizing' behaviour of enterprises (see Chiloski (1990), Kolodko (1990), Winiecki (1990)) as the main cause of the failure of government measures, because they didn't react in a 'flexible' way to the new market conditions. In the short run quantity-effects (i.e the fall in production due to negative income-effects) run faster and are overwhelming in comparison to price-effects (i.e the expected increases in production due to substitution-effects; see Clower (1965), Leijohnuvud (1968)); in a situation of deep recession product-mix variations are forcibly marginal; then the only 'flexibility' open to enterprises would have been the shedding of labour. **Had they acted in the advocated 'flexible' way the multiplier would have fully acted, and the recession would have been much deeper.**

Acting their own way polish firms have been income stabilizers, stopping the recession spirals that government policies would have provoked, if not counteracted by these unusual income stabilizers.

Obviously the unemployment overhang (which has substituted the monetary overhang) has only been moved onwards, and this constitutes an impending problem for the polish economy, but all in all precious time would have been gained in order to revert the situation with a new economic policy.

On the contrary the polish government did not pick up this opportunity; after a brief period of softening the tight wage and monetary policy -the so called **korekta**, which took place in the period Summer-Autumn of the past year- economic authorities quickly reverted to the old policy.

On the economic polish press a debate developed on the effectiveness of reflationary policies; in this context someone advanced the curious idea -referring to such a deep depressionary environment- that the pursued reflationary policy had only inflationary effects with no quantity effects (the more outspoken supporter of that thesis was the former Finance vice-minister Marek Dambrowski; among others his view is discussed by Herer and Sadowski (1991)). A cursory inspection of statistical data shows that from July to October the fall of industrial

production has been almost halved, and investment activity showed a slight recovery; then the conclusion that demand impulses are working, in Polish conditions, only downwards, is unsound. The point is that the outcomes were correspondent to the given impulses: i.e. reflationary measures have been **too weak** and pursued for **too a short time**, and **so** was the recovery.

Fresh news of current economic activity are alarming: the level of activity of the first three months of this year fell below the level of the same period of the past year, which was already exceptionally low; real wages have kept on falling, releasing further deflationary pressure. Furthermore capital and intermediate goods producing sectors which were less hit during the past year by the final demand fall, due to the time-lag in the transmission mechanism record at the beginning of the current year a consistent fall in their sold production.

Polish government hastily stopped reflationary measures obsessed by fear of resurgent inflation. If one takes as reference the inflation August minimum, the September and October price increases may be considered alarming. But if, as we did suggest above, there is an inflation floor of cost-price nature in the Polish economy, the instrument to fight it cannot be monetary. The monetary instrument usually tends to kill two birds: prices and production; given the extremely high trade-off between the two, in order to reduce inflation to the target level, it would be necessary to tighten monetary policy even more and for a too long period, shrinking production at unsustainable levels.

In order to dampen inflation in a non monetary way it would be necessary on the external side to stop importing inflation by means of a real, and not nominal, exchange rate anchor; and on the internal side it would be necessary to stabilize real incomes through social agreements, as suggested among others by Tadeusz Kowalik, agreements which should encompass not only dependent workers but also the rural world.

Till now polish firms have been **improper** income stabilizers; it's undoubtedly necessary that they begin shedding labour force more rapidly in order to gain efficiency and competitiveness, but doing so they will release the deflationary overhang which up to now they have absorbed.

Abandoning inflation and surplus (or even balanced) budget obsessions it's high time that economic policy regains its proper role of regulating the overall level of economic activity. What is needed is a determinate reflationary policy, centered on strong investments incentives, and on a global industrial policy of restructuring the polish economy, which is not a task that can be left only to privatization or to foreign investment.

If this will not happen, the insisted monetary, budget and wage restrictions will not only depress the current production levels, but also the expectations of future recovery, dampening investments and the perspectives of productive capacity renewal and expansion. To pursue further the enacted economic policy threatens to transform the foreseeable long recession of the polish economy in a lasting stagnation.

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