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Review

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Global monetarism and destruction of industry

Víctor E. Tokman*

In recent years there has been much discussion of the effect on manufacturing industry produced by the recent application of global monetarist policies. In the present article it is asserted that they have introduced an anti-industrial bias which has diminished the importance of the sector and, in some cases, has even destroyed a large part of its installed capacity. To analyse this process, a study is made of the recent experience of Argentina since 1974 and of Chile since 1973.

Economic literature, and particularly that originating in the United Kingdom (see, *inter alia*, Singh (1977) and Blackaby (1981)) has been full of the concept of de-industrialization, applicable in countries where, after a high degree of industrial development has been reached, the process begins to decline and the size of the sector significantly contracts, while services start to take its place as the prime mover of growth.

The experience analysed in this article fits into the context of the discussion in question; but the severity of the adjustment undergone by the industrial sector in Argentina and Chile exceeds anything that has happened in other countries.

The article is organized as follows: in the first place, the evolution of the industrial sector is analysed in terms of production and employment during the period of application of the above-mentioned policies. Secondly, it is discussed whether the contraction of the industrial sector must be interpreted as a movement in the right direction of reallocation of resources as pursued by the policy, or whether its behaviour must be attributed to the policy's failure. Thirdly, the instruments of economic policy which most influence the behaviour observed are identified, and, in conclusion, some outlines are proposed for an interpretative model whereby the characteristics of a possible process of recovery can be analysed, together with its requisites in terms of investment and employment.

*Director, Regional Employment Programme for Latin America and the Caribbean (Programa Regional de Empleo para América Latina y el Caribe-PREALC) of the International Labour Organisation (ILO). The author wishes to express his thanks for the valuable collaboration of Molly Pollack.

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I Trends in the industrial sector: de-industrialization or destruction

As a first approximation to analysis of trends in the industrial sector, attention may be focussed on the behaviour pattern of the sector's participation in employment and the national product, together with the evolution of the indexes of industrial production and of employment in manufacturing industry. The information available shows that both in Argentina and in Chile, during the period of application of global monetarist policies a systematic contraction has been recorded in the indexes in question. For example, in Argentina industrial employment in 1974 represented 32.4% of non-agricultural employment, whereas in 1981 it amounted only to 24.2%; in Chile, from the 24% for which it had accounted in 1970-1971 it sank to barely 19.1% in 1981. Much the same thing is observable in the share of the industrial product in the total product, although in Argentina there were slight fluctuations in 1977 and 1979, in neither of which years, however, were the 1974 levels of participation re-established. The share in question fell in Argentina from 27.6% to 21.6% between 1974 and 1982, and in Chile from 25% to 20.2% between 1970-1971 and 1982¹ (see table 1).

The index of employment in manufacturing industry also reveals an unfavourable trend in the sector. In Argentina, industrial employment in 1982 represented only 63% of that generated in 1974, as a result of successive contractions throughout the period, by which the larger enterprises were the hardest hit. In Chile, employment in manufacturing industry also uniformly decreased during the whole period, reaching in 1982 only 72% of its 1970 level (see table 2).

The contraction undergone by the sector is also evidenced in the indexes of the physical volume of industrial output, although not so markedly as in industrial employment, particu-

¹In both cases the share is calculated on the basis of series at constant prices. At current prices, the reduction is greater, in view of the fall of industrial prices in relation to the deflator of the product.

Table 1
RELATIVE IMPORTANCE OF EMPLOYMENT
AND VALUE ADDED IN INDUSTRY

	Argentina		Chile	
	Employment ^a	Value added	Employment ^a	Value added
1970-1971	30.8	25.4	24.0	25.0
1974	32.4	27.6	...	29.5
1975	30.7	27.0	21.8	20.3
1976	29.7	26.3	21.2	23.3
1977	28.8	27.3	21.2	21.7
1978	28.5	25.3	20.4	22.4
1979	27.0	26.1	20.5	21.2
1980	26.5	24.9	19.7	21.5
1981	24.2	22.3	19.1	20.8
1982	...	21.6	...	20.2

Source: Argentina: Central Bank of the Republic of Argentina. Chile: National Planning Office (Oficina de Planificación Nacional - ODEPLAN).

^aThe reference is to the share in non-agricultural employment of employment in manufacturing industry.

Table 2
EVOLUTION OF EMPLOYMENT AND PRODUCTION
IN MANUFACTURING INDUSTRY

	Argentina		Chile	
	Employment	Production	Employment	Production
1970	86.3	81.2	101.2	99.8
1974	100.0	100.0	109.0	108.3
1975	103.8	95.7	98.8	77.9
1976	100.4	93.6	91.5	81.8
1977	94.3	99.2	91.0	90.0
1978	85.1	88.1	90.9	96.7
1979	83.3	105.1	89.9	104.2
1980	76.8	102.8	86.1	110.4
1981	67.2	86.4	83.6	110.4
1982	62.8	83.1	72.4 ^a	83.9

Source: Argentina: for employment and production, Instituto Nacional de Estadística y Censos, *Encuesta manufacturera*. Chile: for employment, Sociedad de Fomento Fabril; for production, Instituto Nacional de Estadísticas, *Encuesta manufacturera*.

^aThe employment index was published only up to May 1982. For the rest of the year it has been estimated on the basis of the evolution of production, and on the assumption that manpower productivity remained constant.

not uniform, however, as recoveries occurred in 1977, when the 1974 level was almost regained, and again in 1979-1980. Industrial production in Chile also shows a 16% reduction between the beginning and end years of the period under consideration, with a sharp drop in 1975, and a gradual recovery in the following years up to 1981, when once again the output of the sector plummeted (see table 2).

It might be supposed that the evolution of employment and production in the industrial sector during the period was "normal" if there were not exogenous referents against which to evaluate it. For this purpose recourse can be had to two types of comparison: the historical behaviour of the same series in the countries concerned, and the evolution of the same indicators during the period in question in other countries of the world.

On making the comparison it can be noted that during the five-year period prior to the adoption of the new policy both employment and production in the two countries' industrial sectors had been growing at rapid rates, so that their behaviour during the period of application of the monetarist economic policy implies a decided slump in relation to past experience. Industrial employment had been growing at annual rates of about 3.5% in Argentina between 1970 and 1974 and 3% in Chile between 1967 and 1972; in the period considered, it decreased at annual rates of 6.1% in Argentina and 2.7% in Chile. The situation was much the same in respect of industrial production; in Argentina the share of the industrial product in the total product went up from 23.2% in 1960 to 25.4% in 1970 and nearly 28% in 1974; in Chile the corresponding proportion rose from 23.5% to 25% between the first quinquennium of the 1960s and the beginning of the 1970s.

Comparison with the evolution of employment and production in other countries during the same period (see table 3) reveals that albeit in every country in the world the growth rate of industrial production slowed down during the second half of the 1970s, it continued to be high, particularly in the developing countries with market economies, and above all in Latin America. Thus, the Latin American countries raised their output by 6.2% between 1968 and 1980, at annual rates of 5.8% from 1970 to 1980 and 3.8%

larly in the case of Chile. In Argentina, by 1982 the volume of industrial production was about 83% of output in 1974. The downward trend was

from 1974 to 1980. In Argentina, on the other hand, during the period 1974-1980 industrial production declined by 4.5% yearly, while in Chile it virtually came to a standstill. A similar situation arose with regard to industrial employment, which expanded very rapidly both in the developing countries in general, and in Latin America in particular, at annual rates exceeding 4%. In Argentina and Chile, on the contrary, as remarked above, the rates recorded for industrial employment were negative during that period (see table 3).²

The foregoing observations point to the conclusion that the decline of the industrial sector in the two countries is a product of the policies pursued during that period, since it neither follows a pattern generalized at the international level nor reflects the sector's historical behaviour. On the contrary, it signifies a disruption of the industrial development that was taking place in both countries, and, in particular, constitutes an important change in their economic structure, both on account of the magnitude of the downward movement and because of its protracted

Table 3
PRODUCTION AND EMPLOYMENT IN THE INDUSTRIAL SECTOR, 1968-1980
(1975 = 100)

	Production			Employment		
	World	Developing countries	Latin America	World	Developing countries	Latin America
1968	73	61	61	86	67	68
1970	82	70	71	91	72	73
1973	101	93	94	98	89	89
1974	104	98	100	100	95	95
1976	108	107	105	102	105	103
1977	113	114	109	104	109	106
1978	119	126	113	106	114	107
1979	124	125	121	107	116	110
1980	125	128	125	—	—	—
<i>Annual rates</i>						
1968-1980	4.6	6.4	6.2	2.0	5.1	4.5
1970-1980	4.3	6.2	5.8	1.8	5.4	4.7
1974-1980	3.1	4.6	3.8	1.4	4.1	3.0

Source: United Nations, *Yearbook of Industrial Statistics, 1980*, New York, 1982, Vol. 1.

duration. This suggests that rather than fluctuations in the use of installed capacity, what occurred during the period was the progressive destruction of productive apparatus in the industrial sector. Conclusions of this type are borne out by the information available on the decrease in the number of establishments in the sector, and on the group of them that have had to close

down in consequence of bankruptcy or liquidation. That a considerable part of the industrial sector has been destroyed in Argentina and Chile is apparent when the number of establishments and the volume of employment recorded in 1981 are compared with levels prior to the monetarist experiment. In Argentina the comparison can be made in relation to 1974, the year in which the last economic census was taken, while in Chile 1967 can be adopted as the reference year. The industrial census of that year provides an appropriate basis for looking back to a period regarded as more normal and presenting a

²The years 1980 for production and 1979 for employment are the last for which data are available, according to the source used.

breakdown consonant with that available for 1981.³

Table 4 shows that in both countries the number of establishments and the volume of employment in industry diminished during the

application of the monetarist policy. Moreover, the trends recorded in the two countries closely coincide. The number of establishments decreases by about 15% and employment does so in still greater measure, by approximately 30%.

Table 4
EVOLUTION OF NUMBER OF ESTABLISHMENTS AND EMPLOYMENT
IN THE INDUSTRIAL SECTOR

	Argentina (1974 = 100)						Chile (1967 = 100)											
	Number of establishments			Employment			Number of establishments						Employment					
	1	2	3	1	2	3	1	2	3	4	5	6	1	2	3	4	5	6
<i>Total manufacturing industry</i>	82	81	89	70	73	66	87	98	78	88	75	76	74	97	76	85	75	64
Food, beverages and tobacco	88	97	90	85	93	74	110	105	108	134	133	121	112	107	105	126	131	105
Textiles, clothing and footwear	73	73	86	54	54	53	64	78	65	69	49	60	58	76	61	67	48	53
Wood and furniture	62	62	67	83	38	87	84	98	85	59	38	25	67	94	85	62	55	19
Pulp and paper	90	90	92	80	82	77	103	118	84	117	70	100	92	116	83	109	66	94
Chemicals/plastics	88	87	93	85	94	73	110	129	93	98	140	116	110	127	91	93	134	115
Non-metallic minerals	86	85	95	75	72	81	74	98	45	96	27	114	72	96	47	96	31	84
Basic metalworking	76	76	78	64	46	72	78	107	64	83	57	83	33	109	69	66	64	21
Machinery and equipment	84	84	89	62	65	59	81	104	64	88	74	57	66	104	64	86	73	52
Other industries	72	72	50	38	2	43	79	71	131	63	60	—	61	68	133	56	56	—

Source: Argentina: Instituto Nacional de Estadística y Censos (INDEC) (1982). Chile: *Censo manufacturero 1967*; unpublished data from the 1982 industrial survey.

Notes: Argentina: 1. Total; 2. Establishments employing between 25 and 399 persons; 3. Over 400 persons employed. Chile: 1. Total; 2. Establishments employing between 10 and 14 persons; 3. 20 to 49 persons employed; 4. 50 to 99 persons employed; 5. 100 to 199 persons employed; 6. Over 200 persons employed. (The reference is to Greater Santiago.)

No process of concentration seems to have taken place during the period because both in number and in employment the reduction was proportionally more substantial in the larger establishments. The fact that it was bigger in respect of the number of persons employed resulted in a contraction of average size, especially

in the case of the largest establishments (employing more than 400 persons in Argentina and more than 100 in Chile). The explanation of the smaller absorption of manpower on the part of those large establishments that did not close down might lie in the introduction of technological innovations that made for more efficiency and less employment. If it is borne in mind, however, that production and investment in the sector declined during the period, such an explanation does not seem very convincing. This question will be reverted to later.⁴

³If the comparison were made in relation to 1973 or the most recent industrial census, taken in 1979, were introduced, the conclusions reached would not be significantly affected. Taking 1967 as the base, the number of establishments was reduced to 96 in 1973, 97 in 1979 and 82 in 1981; the level of employment reached 105 in 1973, 86 in 1979 and 71 in 1981. The evolution by branches of industry is also relatively uniform, in the sense of showing that 1973 presents great similarities with 1967 and 1979 resembles 1981.

⁴Given the sources used in the case of Chile, it may also have happened that the size of establishments was reduced through a change of classification interval in between the years compared. The decrease in average size per establish-

It is worth asking, then, why the contraction, contrary to expectations, was concentrated in the bigger units. A possible explanation is related to the differential characteristics of the establishments by size and *modus operandi*. The smaller establishments, which operate with a higher percentage of family labour,⁵ less linkage to production for export and a smaller proportion of loaned capital, or none at all, are not so much affected by the loss of international competitive capacity and the rise in interest rates. The larger establishments, on the contrary, have to face keener competition from imported products, lose profits on their exports and have more frequent recourse to loans at very high real interest rates which make short-term amortization extremely difficult.

Surprising, too, is the similarity of the impact of the policies adopted in the two countries on branches of industry. While in Argentina the number of establishments and the volume of employment decrease in all branches, and the same thing happens in Chile, except in the case of the food and chemicals industries, there are some branches in which the negative effect is more marked. Thus, in both countries the textile, metalworking and wood and furniture industries underwent considerable reductions.⁶ The first

two are the sectors in which tariff protection was strongest prior to the monetarist experiment and where price decreases of major significance were recorded in the producer countries, in textiles because of the increasing introduction of synthetic fibres and in metalworking because of technological progress in electronics. In the furniture industry the reduction was linked to the decline in domestic demand and, in particular, in real wages.

By way of confirmation of the foregoing remarks, the information available on bankruptcies in Argentina and Chile indicates that during the period 1974-1982 a large number of establishments in both countries declared bankruptcy, went into liquidation or instituted insolvency proceedings. In Argentina about 5 000 establishments were affected, the annual records showing a more rapid increase in numbers as from 1978. The liabilities of the establishments in this situation amounted in the course of the period to US\$ 10 160 000. In particular, industrial establishments so placed registered liabilities exceeding US\$ 5 billion. The liabilities most affected by financial collapses of the type in question in the industrial sector were recorded from 1977 onwards, a peak being reached in 1982. In Chile, too, a rising trend is observable throughout the period, but a notable feature was the accelerated increase in the number of industrial joint-stock companies (or corporations) between 1979 and 1982 (see table 5).

In short, a significant proportion of the industrial sector disappeared, the deterioration being concentrated in the larger establishments and in the textile, metalworking and wood and furniture industries. Lastly, it must be pointed out that the conclusions reached here underestimate the real impact, since only in 1981 was the negative effect of monetarist policy beginning to make itself felt in Argentina, while Chile was still experiencing its "economic miracle". Thus, recent research on Chile (PREALC, 1983) shows, for example, that of the country's five largest textile enterprises existing in 1981, one went bankrupt and the other entered into liquidation in 1982. The remaining three reduced the number of jobs they provided by 15%.

ment recorded in all the intervals, but to a lesser extent than in that of over 200 persons employed, suggests that this transfer from one category to another does occur, but that the number of closures still remains higher in the larger establishments.

⁵In Argentina, according to the Economic Census taken in 1974, the share of owners and family members in the total number of jobs provided by establishments employing from 1 to 35 persons was 49%, whereas in those with over 500 persons employed it was 0.1%. In Chile, in industrial establishments providing 5 to 50 jobs, 10.5% of the persons employed were owners and family members, while in enterprises employing 200 persons and over the corresponding proportion was 0.1%, according to the Industrial Census of 1967.

⁶In Chile the wood industry contracted a little less than in Argentina because of the export trade. Again, in the case of non-metallic minerals the contraction was more severe in Chile than in Argentina, in consonance with the different behaviour pattern of the construction industry in the two countries.

Table 5
ESTABLISHMENTS GOING OUT OF BUSINESS IN ARGENTINA AND CHILE

	Argentina (indexes 1974 = 100)			Chile		
	Number of establishments affected	Amount of liabilities		Number of bankruptcies (1973=100)	Number of joint-stock companies (corporations)	
		Total	Manufacturing industry		Industry (1977=100)	Total
1975	46.1	12.7	48.5	356.5	...	...
1976	22.1	1.4	0.1	573.9	...	...
1977	47.0	105.8	326.7	973.9	100.0	100.0
1978	132.9	216.2	306.5	1 395.7	172.2	113.3
1979	103.0	374.2	585.0	1 600.0	88.9	53.3
1980	111.1	606.5	236.4	1 856.5	133.3	126.7
1981	213.7	607.9	158.0	1 873.9	194.4	140.0
1982	142.1	756.7	719.7	3 521.7	416.7	313.3
Total 1974-1982	4 886 ^a	10 167 ^b	5 087 ^b	2 823 ^a	199 ^{a/c}	127 ^{a/c}

Source: Argentina: Fundación de Investigaciones Económicas Latinoamericanas (FIEL), *Indicadores de coyuntura*, Buenos Aires, several issues. Includes establishments declaring bankruptcy, in liquidation or instituting insolvency proceedings. Chile: Sindicatura de Quiebras. Includes only establishments declaring bankruptcy.

^aNumber of establishments.

^bMillions of dollars.

^cRelating to the period 1977-1982.

II

Efficient de-industrialization?

The decline in the level of employment in the industrial sector and the closing-down of establishments may also be interpreted as a positive effect aimed at by the policy pursued, i.e., a reallocation of resources to the sectors endowed with greater comparative advantages: a measure that would be detrimental to an inefficient industrial sector sheltering under the aegis of an industrialization process protected by high tariffs.

We shall attempt to analyse how far this assertion is correct. In the first place, we shall examine changes in the structure of employment, since if the allocation of resources promoted is to be effective, the drop in the levels of employment generated in the industrial sector should be offset by the creation of jobs in high-productivity activities other than industry.

Secondly, as one of the important functions of the industrial sector, owing to the external constraint prevailing in the two countries, is to contribute to the supply of manufactured goods available without pressure on the balance of payments, another indicator of the degree of industrial efficiency should be the net foreign exchange effect of external trade in manufactures.⁷

⁷This criterion is known in the literature as the "Cambridge view", and was introduced by Singh (1977), who defined de-industrialization as a symptom of inefficiency or imbalance in the industrial sector in relation to an "efficient" sector, understood as one whose function is the provision (real and potential) of sufficient net exports to cover global import requirements at socially acceptable levels of product, employment and exchange rates. See also Cairncross (1981) and Brown and Sheriff (1981).

With reference to the first criterion, in Argentina and in Chile alike employment in manufacturing industry decreased both as a percentage of urban employment and in absolute terms. Keeping to the traditional classification of sectors, in both countries it is trade and services that absorb most of the reduction in employment in industry.⁸ Greater absorption of manpower is also observable in the sectors linked to finance, an effect produced by the expansion of capital markets which the adoption of the models under discussion implied. Lastly, the role of construction in Argentina, where the level of employment in this sector was raised, differed from the part it played in Chile, where employment declined in construction just as in manufacturing industry (see table 6).

Table 6
VARIATIONS IN THE STRUCTURE OF
EMPLOYMENT^a

	Argentina ^b	Chile
1. Sectoral structure of employment		
Manufacturing	-100.0	-56.5
Construction	30.8	-43.5
Energy	1.4	2.1
Trade, transport and services	38.0	59.8
Finance	29.9	38.1
2. Structure of the labour market		
Manufacturing sector	-99.0	-25.7
Non-manufacturing modern sector	46.9	-66.6
Subtotal for variation in employment in modern sectors	-52.1	-92.3
Informal sector	25.6	17.9
Domestic service	-1.0	-7.7
Minimum Employment Programme		33.1
Overt unemployment	27.6	49.0

Source: Argentina: INDEC, *Encuesta permanente de hogares 1974 y 1981*. Gran Buenos Aires.

Chile: *Muestra nacional de hogares. Encuesta continua de mano de obra*, October-December 1970; October-December 1971; October-December 1981.

^aThe coefficients are estimated by applying the structure in the initial year (Argentina, 1974; Chile, 1970-1971) to the economically active population in the final year (1981) and subtracting the effective figure for the last year.

^bThe reference is to Greater Buenos Aires.

⁸It must be noted that in both countries the transport sector reduced its share in employment.

Although classification by sectors suggests that employment in manufacturing industry was diverted to the tertiary sectors, this does not make it possible to evaluate the types of job generated as an alternative. To that end some sectorialization criterion must be utilized whereby jobs can be classified by their levels of productivity. Accordingly, in line with the methodology worked out by PREALC,⁹ the destination of those workers who were not absorbed in manufacturing industry is analysed.

In Argentina, between 1974 and 1981, out of every 99 workers who lost their jobs in the industrial sector, 47 found work in other modern sectors, while the remaining 52 went to swell the ranks of those working in low-productivity occupations or left without any job at all. In the case of Chile, comparison of the period 1970-1971 with the year 1981 reveals a similar situation. Out of every 26 workers who lost their jobs in the industrial sector, 13 fell into overt unemployment and the other 13 had to make do with low-productivity activities and, in particular, the emergency programmes that provided an income equivalent to only one-third of the minimum wage (see again table 6).

The result is much the same in both countries. It is not the new jobs generated in the modern activities that serve to absorb the overflow of manpower from the industrial sector; rather do these workers go to swell the volume of overt unemployment, or participate in disguised-unemployment programmes (as in Chile), or have to resign themselves to undertaking lower-productivity activities. It might further be argued that the reallocation of resources implies changing urban jobs for rural jobs. The information available on this subject is limited, but in the case of Chile, for which some data were available, it must be noted that in the period analysed rural employment decreased in absolute terms by about 14 000 persons, and that if the share of rural employment in the total labour force had been kept constant, there should have been, in 1981, 150 000 more rural workers than were actually recorded in that year.

⁹The methodology consists in breaking down labour markets by four segments: two rural and two urban. In the urban sector a distinction is drawn between a modern sector and an urban informal sector.

Lastly, the other criterion by which to measure the efficiency of the sector would be its contribution to the balance of payments in terms of trade in manufactures. Once again, this does not seem to have been a period in which the lower levels of production and employment in the sector were offset by greater efficiency in the generation of foreign exchange. On the contrary, in the course of the period an increasing deficit was recorded as between imports and ex-

ports of industrial products. In both countries, especially from 1978 onwards, the deficit on foreign trade in manufactures more than trebled the historical levels recorded at the beginning of the 1970s. As will be seen later, the speeding-up of its rate of increase was largely attributable to a combination of tariff reductions and the exchange lag registered during the last sub-period of the monetarist experiment (see table 7).

Table 7
FOREIGN TRADE IN MANUFACTURES
(Millions of dollars)

	Argentina			Chile			
	Exports	Imports	Balance	Exports	Imports	Balance ^a	Balance ^b
1971	...	...	...	119.6	975.7	-856.1	-834.5
1972	...	...	...	82.4	1 152.5	-1 070.1	-1 054.6
1973	1 568.0	2 235.3	-667.3	84.4	1 356.0	-1 271.1	-1 236.6
1974	2 034.7	3 634.9	-1 600.2	290.6	2 050.7	-1 760.1	-1 720.4
1975	1 436.6	3 946.5	-2 509.9	390.6	1 084.8	-694.2	-634.0
1976	1 972.8	3 033.0	-1 061.2	520.1	1 519.4	-999.3	-919.1
1977	2 959.5	4 161.5	-1 202.0	627.6	2 243.7	-1 616.1	-1 516.4
1978	3 401.5	3 833.7	-432.2	782.0	2 699.0	-1 917.0	-1 763.7
1979	4 381.4	6 700.1	-2 318.7	1 245.0	3 904.8	-2 659.8	-2 453.0
1980	4 442.5	10 540.6	-6 098.1	1 558.9	4 782.3	-3 223.4	-2 942.5
1981	4 454.8	9 430.0	-4 975.2	1 279.6	5 995.8	-4 716.2	-4 389.6

Source: Argentina: Central Bank of the Republic of Argentina.

Chile: Central Bank of Chile.

^aRelates exclusively to manufactures.

^bIncluding non-traditional agricultural exports (fresh fruit, beans, wool, fresh fish and algae).

It might also be argued that the more and more adverse effects of de-industrialization on the balance of payments may have been offset by the export of products in which the country enjoys comparative advantages, such as fruit, fish,

etc., in the case of Chile. But exports of these products during the period did not suffice to cushion the increasing impact of the negative balance generated in trade in manufactures (see table 7).

III

Explanatory factors

The destruction of industrial capacity is especially manifest in the disappearance of employment opportunities in the sector, which

were not replaced in the rest of the economy. Notwithstanding the argument frequently adduced by the defenders of the economic policy

pursued, it does not seem to have been wage increases that determined the fall in employment. On the contrary, in the period in question, both in Argentina and in Chile, real wages in the industrial sector decreased. If in addition increases in productivity are taken into account, the cost of manpower per unit of output systematically declined in both countries, dropping in 1982 to 53% of the 1974 level in Argentina and 69% of the 1970 level in Chile. The average reduction in the cost of manpower, in the periods analysed, amounted to 32% and 37% in Argentina and Chile, respectively (see table 8).

Table 8
COST OF LABOUR IN THE INDUSTRIAL SECTOR

	Industrial wages (A)	Industrial productivity (B)	Cost of labour per unit of output (C) = $\frac{(A)}{(B)} \times 100$
<i>Argentina</i>			
1974	100.0	100.0	100
1975	85.7	107.3	80
1976	55.7	108.0	52
1977	58.9	112.3	52
1978	64.4	103.8	62
1979	77.2	127.5	80
1980	96.3	112.7	85
1981	82.8	108.3	77
1982	61.3	115.9	53
<i>Chile</i>			
1970	100.0	100.0	100
1974	49.2	103.5	48
1975	40.5	79.5	51
1976	48.4	93.9	52
1977	63.5	104.4	61
1978	69.8	109.5	64
1979	69.0	113.0	61
1980	73.8	122.7	60
1981	90.8	126.5	72
1982	82.9	120.4	69

Source: PREALC, 1982, and data from each country.

(A) Industrial wages deflated by the wholesale price index for industrial products in Chile and by the wholesale price index for non-agricultural domestic products in Argentina.

(B) Output-employment ratio in the industrial sector.

Secondly, the elimination of jobs might be due to changes in the production system of the sector, which, in face of external competition,

had to step up its productivity. Neither does this seem to have been the explanation. On the one hand, entrepreneurs encountered two contradictory investment trends. The instability of economic policy and its restrictive character exercised a negative influence, whereas the cheaper cost of imported capital goods encouraged investment. The available information is scanty and partial, but it suggests that in Chile at least, the reduction of the investment coefficient in the industrial sector between 1968-1970 and 1977-1979 was in the neighbourhood of 31%.¹⁰ Nor do there seem to have been increases in productivity per worker surpassing the historical trends. On the contrary, annual productivity increments fell short of 2% in both countries (see table 8). With respect to Chile, a recent study (PREALC, 1983) identifies the technological effect as an important explanatory factor of changes in the level of industrial employment, but this effect consisted mainly in increases in the participation of the smaller establishments.

It is therefore worth while to explore the factors that determined the decline in industrial production and the changes in its composition, effects which in their turn were reflected in a reduction of employment. Generally speaking, four important explanatory variables can be identified: one relating to level and the other three to relative prices. The first is the restrictive character of global monetarist policy in the two countries. During much of the period analysed, the money supply in real terms showed negative variations in both countries, particularly in the early years of application of the policy.

Secondly, three mechanisms make for changes in relative prices. The first is the loss of ability to compete in the international market as a result of the reduction of tariffs and of the exchange lag. Both in Argentina and in Chile, the exchange rate-industrial wages ratio increased at

¹⁰The coefficient of investment over the sector's production dropped from 4% to 2.76%. The reduction of the coefficient expressed in relation to value added was 15%, because the share of value added in total production decreased as a result of the opening-up of the market to imports. Investment relates to new additions to assets, depreciation not being included. Data come from INE's industrial survey and the censuses of manufacturing industry taken in 1967 and 1979.

the time of initiation of the monetarist policy, only to drop abruptly as from 1976 in Argentina and 1975 in Chile. The downturn is even sharper if the effect of tariff reductions is included. In Argentina the exchange rate-wages ratio sank to 48% of the 1970 level in 1981 and in Chile to 35% in 1982. The loss of competitive capacity might also have its origin in wage increases. But as has

already been mentioned, despite variable behaviour during the period, real wages in the sector (deflated by the producer price index for manufactures) averaged during the period 73% of the 1974 level in Argentina and 64% of the 1970 level in Chile. Furthermore, in no year did they reach the same level as in the initial year (see table 9).

Table 9
EVOLUTION OF THE MAIN MACROECONOMIC VARIABLES

	e_r/w_i	e'_r/w_i	w_{ir}	i_r	\dot{p}	\dot{P}	\dot{M}_1
<i>Argentina</i>							
1974	65.4	65.4	100.0	n.d.	40.1	6.1	
1975	79.8	79.8	85.7	n.d.	334.9	-0.9	-32.7
1976	163.2	163.2	55.7	-59.2	347.5	-1.7	-20.3
1977	160.6	126.6	58.9	8.6	160.4	4.9	-13.6
1978	129.7	96.3	64.4	9.2	169.8	-3.9	0.2
1979	80.4	55.8	77.2	-0.7	139.7	6.8	2.4
1980	49.3	34.2	96.3	23.2	87.6	1.1	5.4
1981	48.3	68.5	82.8	2.4	131.3	-6.0	-27.1
1982	134.8	93.9	61.3	-0.9	209.7	-5.7	4.1
<i>Chile</i>							
1970	100.0	100.0	100.0	-32.3	34.9	3.7	15.8
1973	109.2	109.1	77.0	-87.5	508.1	-3.6	-12.5
1974	118.8	93.6	49.2	n.d.	369.2	5.7	-27.1
1975	163.3	125.9	40.5	9.1	343.3	-12.9	-14.4
1976	115.8	81.0	48.4	37.5	197.9	3.5	9.4
1977	78.0	49.0	63.5	41.9	84.2	9.9	36.9
1978	68.4	40.1	69.8	38.5	37.2	8.2	23.2
1979	54.7	31.2	69.0	15.0	38.9	8.3	14.5
1980	37.8	21.5	73.8	11.7	31.2	7.8	36.9
1981	28.3	16.1	90.8	37.9	9.5	5.7	-12.2
1982	34.6	19.6	82.9	48.4	20.7	-14.1	-11.1

Source: Fundación de Investigaciones Económicas Latinoamericanas (FIEL), *Indicadores de coyuntura*, Buenos Aires, several issues; and Central Bank of Chile, *Boletín estadístico*, Santiago, Chile, several issues.

Notes:

e_r = exchange rate.

w_i = wages in manufacturing industry.

e'_r = exchange rate modified by lifting of tariff barriers = $\frac{(1+g)}{(1+g_0)} e_r$, where g is the tariff rate; 0 , the base year; i , the current year.

w_{ir} = industrial wages in real terms deflated by the wholesale price index for manufactures in Chile and by the wholesale price index for non-agricultural domestic products in Argentina.

i_r = annual equivalent of lending interest rate for 30 days deflated by the same indexes as wages.

\dot{p} = variation in consumer price index, from December to December.

\dot{P} = growth rate of gross domestic product.

\dot{M}_1 = changes in the money supply in real terms deflated by the consumer price index.

A second factor affecting production possibilities was the high cost of money. Both monetarist experiments introduced a major change in the operation of the capital market, which implied positive and very high real interest rates, especially in Chile. Industrial entrepreneurs in both countries, who were used to working with a high percentage of loaned capital and negative real rates of interest, were hard hit by this change. It meant an additional cost, which, in combination with the high level reached, generated a borrowing financial-burden spiral which obliged many enterprises to close down and affected almost all enterprises in the economy. This happened on so large a scale that in Argentina (in mid-1982) and in Chile (early in 1983) the Government had to take energetic steps with a view to resolving the problem, thereby marking the beginning of the end for the economic policy that was being applied.

Lastly, a third element that helps to account for the decline in the industrial sector is the change in the system of incentives as a whole. We have already seen how they became negative for the sector, but that also signified the creation of other possibilities of obtaining higher rates of return, especially over the short term. The loss of competitive capacity diverted resources to the sectors producing non-tradeable goods, in particular construction; the "apertura" or opening-up process, together with the exchange lag, paved the way for a boom in incomes linked to imports; and the inordinate rise in interest rates switched reproductive resources to financial speculation, which during the period afforded profits impossible to earn in the production system.

These are, in our opinion, the four factors that caused the destruction of a significant proportion of the industrial sector: the fall in demand resulting from a restrictive monetary policy; the loss of international competitive capacity due to the exchange lag and the reduction of tariffs; the rise in interest rates, a product of the financial reform; and the creation of incentives that promoted non-productive investment. These factors operated with different degrees of intensity at different times. It is therefore useful to analyse the behaviour of the variables in three distinct sub-periods: that of market liberalization

and monetary control; that of de-indexing of key prices; and that of global monetarism.¹¹

The first phase was characterized by the liberalization of markets together with monetary restrictions and devaluations of the currency, and extended from the launching of the monetarist economic policy up to 1977 in Argentina and 1976 in Chile. The main determining factor was the fall in effective demand brought about both by the contraction in real liquid balances and the sharp drop in real wages, related in turn with the inordinate rise in domestic prices, resulting from the liberalization of the markets. This caused a steep decline in levels of employment and production in the industrial sector. At the same time, the capacity to compete in international markets improved, thanks to the devaluations, but, at bottom, in consequence of the fall in real wages. Tariff reductions got off to a slow start during this period, and largely absorbed the existing superfluous protection. In Chile this phase coincided with a significant change in the capital market, implying a high rate of interest in real terms, whereas in Argentina the rate in question continued to be negative until early 1977. This meant that industrial production contracted more in the first country than in the second.

A characteristic feature of the second phase was the de-indexing of certain key prices and, in particular, of the exchange rate, as an instrument for frustrating inflationary expectations. This phase occurred in Chile between 1976 and 1979 and in Argentina from 1978 onwards, with different results, depending upon the degree of deceleration of domestic price increases in the two countries. The exchange rate-wages ratio can be seen to have dropped abruptly, especially if tariff reductions, which speeded up, are taken into account. The decrease in the ratio is partly linked with the recovery achieved by real wages, which alleviated the existing constraint on demand and, in Chile's case, allowed of increases in industrial production. The interest rate, in real terms, continued to be high and in Argentina reached its peak in 1980, precipitating the collapse of the

¹¹For a more detailed analysis of the economic policy pursued during the period see Canitrot (1980 and 1983) for Argentina, and Foxley (1982) for Chile.

policy pursued, since it was superadded to a very serious loss of competitive capacity. In relative terms, the non-alignment of the growth of domestic prices with that of international prices accelerated this loss of competitive capacity more rapidly in Argentina than in Chile, affecting the balance of payments and making it essential to raise the rate of interest as an instrument for maintaining the inflow of capital from abroad.

In this second phase the effects of the opening-up of trade can be more clearly appreciated, since demand was not subject to constraint (wages recovered in real terms) and the loss of competitive capacity (owing to the deterioration of the exchange rate-wages ratio) was not yet so marked.

The data on Chile available for 1976-1979 suggest some conclusions with regard to the reaction respecting investment and degrees of specialization provoked by the demolition of tariff barriers. In the first place, keener external competition did not generate a process of modernization and capital accumulation to cope with it, but, on the contrary, investment in manufacturing industry stood below its historical levels. Only in nine of the 37 branches of industry was there an increase in the investment coefficient, in most cases corresponding to export sectors (wood, pulp and paper and foodstuffs) and only in two (clothing and footwear) to sectors that endeavoured to adjust to competition from imported products. Secondly, an intensive reversal of the process of import substitution occurred, which was only very partially offset by increases in exports of manufactures. The latter expanded at very rapid rates (of about 23%), but this expan-

sion was concentrated in the wood industry, the only branch which considerably enlarged its share in total exports of manufactures. Only three branches (wood, furniture and paper) were net exporters, and these three were linked to the existence of abundant natural raw material in respect of which the country is endowed with absolute comparative advantages.¹² Lastly, changes also took place in the structure of production and employment. The most highly-protected and more labour-intensive sectors were those worst affected by the opening-up process (in particular, textiles and metalworking) and major technological effects were produced, with increased participation of smaller establishments in production (PREALC, 1983).

In Chile the third phase dawned only in the year 1979, when it was considered that the economy had successfully passed through the second phase and was ready for the introduction of global monetarism with automatic adjustment of disequilibria. Its main characteristic was the fixing of the exchange rate, which speeded up still more the loss of competitive capacity. The rate of interest in real terms again began to rise, reaching unprecedented figures in 1981 and reproducing with a time lag of one year the situation described in phase two for Argentina: loss of competitive capacity, balance-of-payments deficit, raising of the interest rate as a mechanism for ensuring the inflow of capital and a decline in industrial employment and production, accompanied by the liquidation of many enterprises. In short, the monetarist experiments of the 1970s collapsed.

IV

Destruction of industry and conditioning factors of reactivation

The cost of the policy pursued has been considerable in terms of potential employment and production in the industrial sector. In Argentina,

¹²The existence of large quantities of timber is the result of afforestation plans set afoot two decades ago. Similarly, exports of paper were feasible because of the existence of

even if industrial employment had continued to grow at the slow historical rates of the period 1950-1970, i.e., by 1% per annum, the cost would amount to 20% of cumulative employment during the period and 17% in terms of cumulative production in relation to the potential that would have been attained if an annual growth rate of 4% had been maintained. A similar situation occurred in Chile, where the cost averaged 16% of cumulative employment and nearly 30% of cumulative production during the period.¹³ The effects were calculated in relation to potential annual growth rates of 2% in the case of employment and 5% in that of production. Even if the potential growth rate of industrial production is assumed to have been 3%, the cost would still be as much as 16%.¹⁴ The shaded areas in figures 1 to IV give a clear idea of the magnitude of the above-mentioned effects.

Notwithstanding the importance of the foregoing observations, the aim pursued in this section is to explore the effect of industrial destruction on the possibilities of reactivating the economy and on the long-term growth model. In the first place, the destruction of industry implies introducing an asymmetry in short-term fluctuations in so far as recovery cannot be based on the use of idle installed capacity. While a margin of unutilized capacity does exist, some of the losses in production and employment in industry were due not only to the liquidation and closing down of a large number of enterprises, but also to the

plants installed in the preceding decade with State support. In any case, it seems clear that the opening-up process afforded an opportunity of activating a sector which, on the basis of the existence of absolute comparative advantages in respect of raw material, introduced into its structure various degrees of processing: sawnwood, furniture, and pulp and paper.

¹³The equivalent in terms of years with effective average levels would be as follows: Argentina, employment 2 years and production 1 year 8 months; Chile, employment 1 year 9 months and production three-and-a-half years.

¹⁴Part of the loss can be attributed to the change in the international situation. If account were taken of the average Latin American rate of deceleration of growth in industrial employment and production as from 1974 (see again table 3), the losses would be as follows: Argentina, employment 90.3% and production 14.4%, with projection rates of 0.66 and 2.6%, respectively; Chile, employment 13.5% and production 15.7%, with projection rates of 1.3 and 3%, respectively.

unusability of equipment resulting from the sharp fall in investment rates. When reactivation is faced with only marginal idle capacity, its rate depends upon constraints on demand and possibly on the availability of inputs. In this case, in addition to such constraints as these, there is a physical restriction consisting in the non-existence of productive capacity. This has at least two consequences. The first is that investment requirements are greater, since not only depreciation but also destruction of capital has to be covered. The second is that given the rigidities obstructing investment "leaps" and the time required for new investments to yield returns, the recovery of the pre-crisis levels will take longer than the phase of contraction lasted.

Figure 1

ARGENTINA: INDUSTRIAL PRODUCTION

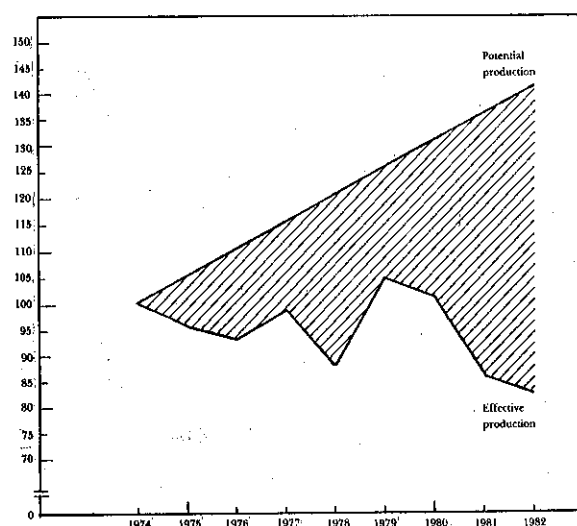
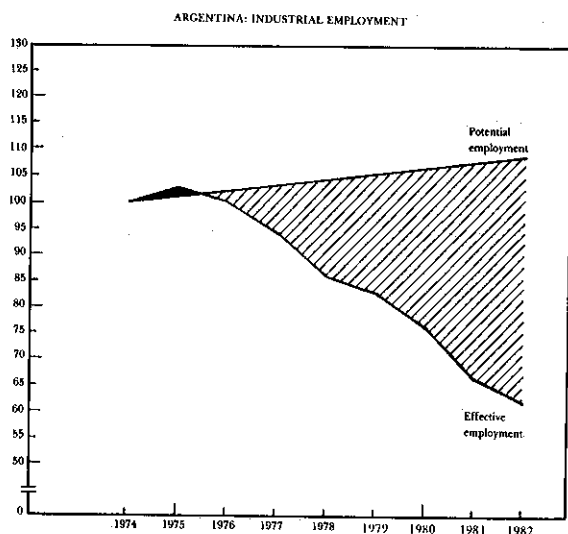


Figure IV

Nevertheless, the destruction of installed capital carries with it the advantage of allowing "technological leaps" whose incorporation is a slower business when marginal changes are in question. To change a machine or a production subprocess is a different matter from installing a new plant. It seems clear, moreover, that in the last decade technological innovations have been generated which revolutionize some production processes, in particular, by the introduction of micro-processors and robotization. This has

meant that the technology available at the international level has also progressed by leaps and bounds. The combination of the two factors will mean that the characteristics of the production process after the crisis will be very different from what they were before.

Figure 11



Take, for example, the textile and motor-vehicle industries which existed in both countries, and which to a large extent physically disappeared, and consider the type of plant that could be accessible to the national entrepreneur if he were to observe the changes that have taken place in production in these branches of industry at the world level. In the textile industry self-programming robotic arms have been introduced for cutting; as well as computerized systems for design, producing patterns, monitoring the quality of fabrics, and guiding laser beam cutters. Micro-processors are being used to control fast stitching, knitting heads and ink injectors which can be rapidly adjusted to produce different designs and colours (Rada, 1980). In the United States motor-vehicle industry, undoubtedly one of the most backward in the developed countries, 2 800 robots have now been incorporated, which carry out many of the assembly line jobs with greater rapidity and precision than can be achieved by manual means (Alexander, 1983).

What are the predictable characteristics of this new technology? In the first place, they are known to be "superior" in the sense that they raise the levels of productivity of both capital and labour.¹⁵ Secondly, higher productivity per person employed will imply lower levels of employment.¹⁶ Thirdly, a change will be brought about in the skills required, inasmuch as unskilled labour will be superseded by personnel with higher skills.¹⁷ With this substitution will be associated a change in average wages and in wage structure. Average wages paid in the industrial sector will follow an upward trend and intra-sectoral distribution will be homogenized.

All this will have a bearing on the long-term style of development. If the bigger surplus generated by the technological leap is not appropriately invested or is insufficient, the result will be a more heterogeneous structure and a more unequal distribution of income. Those who are privileged to enter the modern industrial sector will be proportionally fewer, better paid and more homogeneous; but the differences between them and the workers not so incorporated will tend to widen. In effect, there will be a reproduction of the historical style of development in Latin America which had been slowly giving way to something better. This will perhaps be the great paradox of global monetarism: not only has it failed to resolve the structural deficiencies that gave it its justification, but it has implied regression to a situation which these countries had already left behind.

¹⁵In the textile industry, for example, the application of the methods mentioned makes it possible to economize on labour, skills and materials. The saving on materials alone ranges from 8% to 15% (Rada, 1980).

¹⁶While the net effect of the technological changes mentioned is a moot question, there seems to be a consensus to the effect that fewer persons would be required in the first place in services, but subsequently in industry, owing to the change in products and processes. While the use of the new technology implies the possibility of saving capital per unit of output, it significantly increases the capital-labour ratio. This generates a twofold effect: substitution of manpower and reduction of potential creation because of its higher cost (Rada, 1980).

¹⁷This poses the problem of adaptation of the industrial workers who will be left unemployed, both because of the shortage of new jobs and because of the type of skills which management of the new technology requires and the high cost and risk of re-training.

Figure III

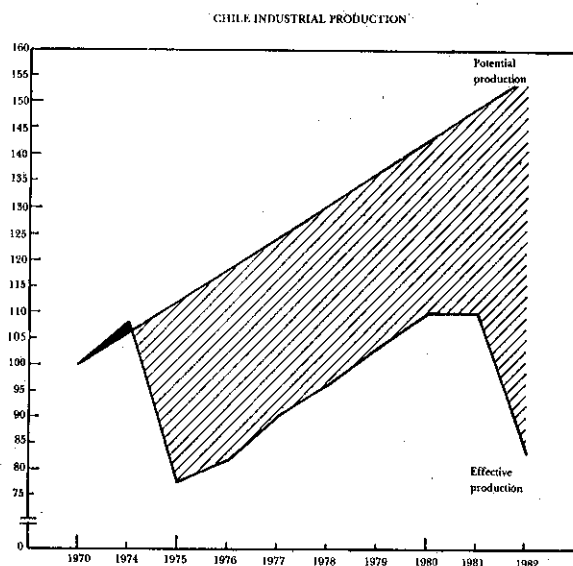
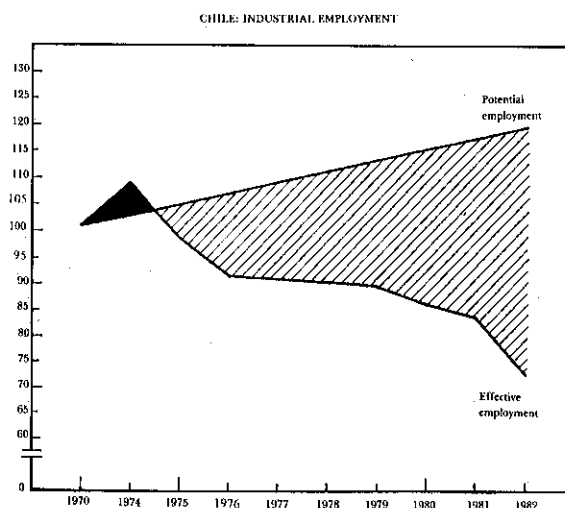


Figure IV



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