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Impact on Firms of the Liberalization and Stabilization Policies in Chile: Some Case Studies

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I. INTRODUCTION

The aim of this paper is to analyze the adjustment process of industrial firms to the liberalization and stabilization reforms undertaken by Chile in the second half of the seventies. In particular, we are interested in distinguishing those actions and/or policies that helped towards the adjustment from those ones which represented obstacles. We are further interested in identifying the various forms that this adjustment process took. Our data came from a qualitative questionnaire completed by ten firms. We are aware that we cannot make population inferences from such a limited, non random sample, but we believe that if the results show a high degree of consistency with a priori expectations, they may have validity for more than the ten cases studied.

Unquestionably, manufacturing industry in Chile was highly protected by 1974. This protection had begun after the Great Depression and gradually increased after World War II. A first attempt to reduce excessive protection was made at the end of the 1960s. However, in the early seventies non-tariff protection was stepped up, State takeovers and control of firms became widespread; also extensive price controls were introduced. In these circunstances any quantitative measure of protectionism for this period becomes very dubious.

Although there is consensus in the profession as regards the excessive costs of a highly restrictive foreign trade regime (Bhagwati (1978), Krueger (1978)), there is less agreement and little experience with respect to the shape and timing of the liberalization process. As regards timing, given the potential unemployement linked to the reallocation of resources required, it is preferable to lower trade barriers in the expansionary phase of the economic cycle. As for the mechanics of deregulation, there are uncertainties regarding: (i) the final structure of protection and (ii) the speed of convergence of the pre-liberalization structure of protection to the final structure.

Recent experience in Chile with the liberalization of foreign trade provides an unique case study by virtue of the high and differentiated protection that existed before the reforms as well as to the speed and final structure of protection. It is therefore of great interest not only for Chile but also for other countries whishing to implement a trade liberalization process to draw lessons on when and how to do so.

Unfortunately, history never provides "pure" experiments, and so some allowances must be made for other factors that could have affected the firm's performance. For this purpose, we introduce, in our case study, questions dealing also with the identification and intensity of other shocks received by the firms during the liberalization episody.

The paper is divided into seven sections. In Section 2 the major macroeconomic developments during the period are summarized. In Section 3 we describe the evolution of the manufacturing sector during the reform period. From this developments we derive the main hypothesis regarding the expected evolution of the firms. This is done in Section 4. The characteristics of the sample and the questionnaire followed by a description of the firms that conform the sample is presented in section 5. In Section 6 we discuss the chief exogenous factors affecting the firms and in Section 7 we discuss the reactions of the firms to those factors, while in Section 8 we summarize the adjustments that firms made in their operations. The last section presents the main conclusions. In the appendix we present the questionnaire used for the interviews.

II. THE MACROECONOMIC SETTING

The military government that took power in 1973 implemented one of the most sweeping economic reforms in Chile's history. The general thrust of the policy reforms was to give a central role to market forces in the allocation of resources and in the distribution of goods and services. The reforms included: (a) liberalization of the goods markets through the dismantling of a highly diversified and sophisticated protection system together with the elimination of an entranched and widespread price controls; (b) de-regulation of the financial market; (c) in the initial years of the new government, a de facto deregulation of the labor market due to trade union loss of power; (d) a price stabilization program that included the erradication of a chronic fiscal deficit; (e) an overall reduction in government intervention in economic activities.

The formulation and implementation of the economic reforms listed above evolutioned thru time and was also shaped by external events.

During its first two years in office the new government concentrated on liberalizing prices and in the elimination of non-tariff trade restrictions. At this time some preliminary allowances with respect to the existing law regulating the domestic financial markets were also introduced. Another major initial goal was the reduction of inflation (around 1000% per year in late 1973) closely related to the fiscal deficit, which amounted to 25% of GDP in 1973. To reduce this deficit, a large tax reform (in 1974) and a drastic reduction in government expenditures were implemented.

The large external crisis that Chile suffered in late 74-early 75 (copper prices were cut almost by half while the price of oil quadrupled) at a time when international capital markets were practically closed for Chile forced the government to undertake an initial and partial opening of the economy, which was encouraged by a large peso devaluation. In this way, the implementation of a commodity trade aperture emerged as one of the central reforms. Initially this process of aperture was supposed to lead to a final situation where explicit tariffs (the only trade barriers) would range from 10 to 35%. Later on, the final objective was altered and a uniform 10% nominal tariff rate was achieved in June 1979. The only exception were motor vehicles with engines above 850 cc. The aperture to international capital flows started later.

As a consequence of the drastic fiscal crunch linked to the price stabilization effort and to the severe external shock, GDP dropped 12.9% in 1975. However, starting from that low level Chile had during the period 1976-1980 one of its best GDP growth performance helped by a "realistic" real exchange rate and by the dismantling of innumerable government controls accross all markets.

By early 1978 the government started to become increasingly concerned with the stuborn inflation rate wich had reached a plateau of 2.5 per month. By this time a contradiction started to appear between the orderly trade liberalization and the price stabilization strategy. Indeed, by now the government authorities gave a central role to the evolution of the exchange rate in the determination of the inflation rate. The implicit inflation model being used was, for the first time, an open economy model where domestic inflation was thought as being closely guided by international inflation plus the rate of devaluation. It was also thought that the rate of devaluation had an important effect on inflationary expectations. To implement this strategy, in February 1978 the link between the rate of devaluation and the previous month's inflation rate was abandoned in favor of a "tablita" that announced, up to the end of 1978, devaluations at a decreasing rate starting with a monthly rate of 2.5% and ending with one of 0.75% in December of that year. The subsequent peso appreciation determined a drop in the real exchange rate and as a consequence the import competing and export oriented sectors started to suffer.

Indeed, the peso appreciation that developed was equivalent to a second and more intensive trade liberalization.

As a culmination of the inflation strategy, in June 1979, the peso was pegged to the US dollar at a fixed rate. At the time, Chilean inflation was still substantially above international levels and therefore a large real peso appreciation followed. Furthermore, wage indexation based upon lagged changes in the CPI, in a period of decreasing inflation, resulted in large increases in real wages exacerbating the peso appreciation. The final consequence was a large drop in competitiveness, a very weak commercial account of the balance of payments, and heavy external borrowing. Paradoxically, the large increase in capital inflows made the exchange rate policy temporarely sustainable but at the same time it was the cause of the loss in competitiveness.

Monetary policy after being a central element of the macroeconomic strategy played a decreasing role later on. In the initial years of the military government a major source of money growth was the result of government deficit finance; following the deficit reduction due to the fiscal reforms of 1974-1975, the expansion in domestic credit loss substantial ground to exchange rate operations. As shown in table 1, for the years 1978 to 1980, while the domestic credit component of the money base was decreasing year after year, the exchange rate operations were highly expansionary (as the Central Bank was accumulating reserves) with the money supply (M1) growing at annual rates (Dec. to Dec.) of 67.0% in 1978, 64.5% in 1979, 59.4% in 1980 and 8.7% in 1981. However, in 1982, with the sharp drop in the demand for money due to the exchange rate modifications, M1 decreased roughly by 19%.

In Chile, during the above period, an important debate came forward concerning the role of monetary policy. While the official view (that of the Central Bank) was that the money

TABLE 1

ANNUAL FINANCIAL INDICATORS

	Net Capital Inflow (Articule 14)	Total Net Cap.Inflow Except Reserves	Surplus in Commercial[1] Account	Surplus in Current Account	Changes in Reserves[2]	Errors[3] and Omisions	Changes in Monetary Base (at end of month): Domestic Credit	Changes in Monetary Base (at end of month): Exchange Operations	Change in Money Supply: M1	Change in Money Supply: M2	Real Interest Rate (Peso Loans)	Real Interest Rate (Dollar Loans)
	(millions of dollars)								(Percentage)		Percentage on an annual base	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1960	-	76.3	-85.7	-148.1	-28.4	43.4	-	-	48.9	32.7	26.9	-
1961	-	187.6	-154.2	-241.1	-108.6	-55.1	-	-	18.8	17.1	23.1	-
1962	-	133.2	-87.8	-181.9	-49.0	- 0.3	-	-	21.7	26.5	5.0	-
1963	-	107.6	-61.0	-157.8	-28.2	22.0	-	-	40.4	34.9	-14.2	-
1964	-	152.1	-17.9	-131.6	23.4	2.9	-	-	41.5	39.4	-14.8	-
1965	-	65.8	68.7	-56.6	46.7	37.5	-	-	58.6	45.8	0.0	-
1966	-	168.0	90.9	-82.2	119.6	33.8	303.2	-109.2	48.3	46.8	10.0	-
1967	-	125.5	105.3	-127.4	-23.4	-21.5	215.5	-130.2	27.9	30.1	9.5	-
1968	-	294.6	109.5	-135.3	117.9	-41.4	142.0	25.2	29.4	29.2	4.0	-
1969	-	222.5	246.5	-5.6	174.5	-42.4	74.3	93.5	40.2	40.2	3.7	-
1970	-	267.5	155.9	-81.1	113.5	-72.9	284.9	26.1	51.8	50.8	-	-
1971	-	-26.5	-16.3	-188.8	-299.8	-84.5	632.1	29.8	98.6	94.5	-	-
1972	-	327.4	-253.4	-386.6	-230.8	-171.6	2205.8	394.7	96.0	91.3	-	-
1973	-	333.0	21.0	-294.0	-21.0	-60.0	2440.5	134.1	272.5	285.5	-	-
1974	-	218.0	357.0	-211.0	-55.0	-62.1	845.5	49.8	300.9	278.6	-	-
1975	57.9	240	70.0	-491.0	-344.0	-93.0	148.07	472.10	232.88	-	18.24	22.50
1976	238.0	199	643.0	148.0	414.0	67.0	79.31	765.67	212.58	289.77	65.15	-19.85
1977	240.2	572	34.0	-551.4	113.0	92.0	275.12	389.60	164.97	225.40	57.97	9.10
1978	678.7	1946	-426.0	-1088.0	712.0	-146.0	-258.26	781.72	88.41	114.08	43.65	8.70
1979	921.8	2247	-355.0	-1189.0	1.255.8	-11.0	-276.67	832.43	59.84	85.82	16.98	0.22
1980	1809.0	3165	-764.0	-1971.0	1.759.9	50.0	-158.03	791.67	58.19	57.91	13.24	-10.12
1981	2947.5	4769	-2598.0	-4814.0	-295.7	115.0	-143.49	-66.59	32.81	89.48	39.72	11.13
1982	859.5	1304	218.0	-2382.0	-	-87.0	3048.06	-2199.55	-5.11	15.31	-	-

[1]FOB Value, since 1973 n.a. = not available.

[2]Col(4) + Col(2) - Col(5) + Col(6) = 0.

[3]The change in reserves corresponds to the old definition up to 1978 and the new definition thereafter (see Central Bank, monthly Bulletin, April 1981).

[4]Up to 1966 M_1 y M_2 are considered as variations in stock holdings, and mean values thereafter.

[5]The annual rates were obtained adjusting the nominal rates by the CPI of the year. The quarter rates were obtained adjusting the nominal rates by the variation of the CPI for that quarter expressed on an annual base.

Sources: Col(1) Annual Report, Central Bank, Col (2) to Col (6). Up to 1972, Economic Indicators, Central Bank (corresponds to the old definition of Balance of Payments) and Exposición sobre el Estado de la Hacienda Pública, Ministerio de Hacienda, Octubre 1982, págs. 38 y 39, thereafter. Cols(7) to (10) Series Monetarias, Central Bank up to 1974 and Monetary Synthesis thereafter; Cols (11) and (12) 1960-69 "Economic Policies and Stabilization Programs' Chile 1952-69", Ricardo French-Davis and Central Bank, Research Department, thereafter.

supply was demand determined, other economists (mostly in the private sector) believed that it continued being determined by Central Bank actions.

A recent study (Corbo and Matte (1984)) shows that both groups had not missed wholly the point. The monetary authority had some control over the money supply, control that could have been used to sterilize part of the monetary effect of the capital inflows.

Finally, the drastic reduction in external funding and the impact of the world recession induced a large local recession in 1982. Furthermore, the peso appreciation accumulated in the last three years was now incompatible with the drastically reduced capital inflows. Initially, the government tried to adjust the economy to this large reduction in capital inflows and export receipts, by a recession caused deflation. The downward inflexibility of prices did not permit the necessary adjustments causing a deeping of the recession together with a very weak financial sector. As the recuperation of competitiveness through deflation did not materalize and the world economy continued in a recession, the unemployment rate increased sharply to 25% of the labor force -from 11% in March 1981- and the number of bankrupt firms increased substantially. By middle 1982, the government decided to implement macropolicies so as to help the adjustment process and be able to reduce unemployment. The main policies were the alteration of the exchange rate policy of a fixed rate and the suspension of wage indexation.

The evolution of the main macro variables is presented in Table 2. The average rate of growth of GDP for the period 1976-1980 was 7.5%. Then it dropped to 5.3% in 1981. In contrast, in 1982, the GDP decreased by 14.3%. The fastest growing sectors have been the non-tradable ones (construction, commerce and other services) that grew at a rate over 9% on every year from 1977 to 1980.

Supported by the high level of capital inflows (Table 1), total domestic expenditures (private consumption plus government consumption and investment) grew, in constant prices, at an annual rate of 10.9% per year in the period 1977-1981.

The fact that Domestic Expenditures increased faster than GDP for a number of years was linked to a growing deficit in the current account of the balance of payments. This deficit as a percentage of GDP was -1.7 in 1976, 7.1 in 1980, and 14.1 in 1981.

TABLE 2

ANNUAL MACROECONOMIC INDICATORS

	1/ GDP Tradables (1)	2/ GDP Non-Tradables (2)	GDP Total (3)	3/ Absorption (4)	GDP Deflator (5)	CPI (6)	4/ Unemployment Rate (7)	Price of Copper cents per pound (8)
	(Percentage changes)							
1960	–	–	–	–	–	11.6	7.4	30.8
1961	5.5	2.6	4.8	6.1	7.0	7.7	6.6	28.7
1962	5.7	5.2	4.7	2.5	12.7	13.9	5.2	29.3
1963	3.9	8.3	6.3	5.8	44.0	44.3	5.0	29.3
1964	4.5	0.1	2.2	2.9	48.5	46.0	5.3	44.0
1965	1.1	1.1	0.8	0.5	39.1	28.8	5.4	58.6
1966	12.9	8.0	11.2	16.6	28.4	22.9	5.3	69.5
1967	2.8	4.3	3.2	0.6	25.7	18.1	6.1	51.1
1968	3.9	3.8	3.6	4.8	34.1	26.6	6.0	56.1
1969	-0.8	6.6	3.7	5.8	39.5	30.7	6.2	66.5
1970	1.4	2.9	2.1	1.8	40.9	32.5	7.1	64.1
1971	9.2	8.8	9.0	9.7	18.4	22.1	5.5	49.3
1972	-0.8	-1.1	-1.2	1.0	86.9	117.9	3.7	48.6
1973	-7.3	-3.7	-5.6	-6.2	418.2	487.5	4.7	80.8
1974	6.6	0.4	1.0	2.4	694.5	497.8	9.7	93.3
1975	-16.6	-8.4	-12.9	-20.81	342.0	379.2	16.2	55.9
1976	5.3	1.6	3.5	0.18	250.6	234.5	16.8	63.6
1977	7.8	9.4	9.9	14.21	103.6	113.8	13.2	59.3
1978	4.5	9.6	8.2	9.67	56.5	49.8	14.0	61.9
1979	7.0	9.9	8.3	10.47	46.3	36.6	13.6	89.8
1980	5.2	9.7	7.5	9.38	29.0	35.1	11.8	99.2
1981	2.9	5.4	5.3	10.85	13.7	19.7	11.1	79.0
1982	-12.4	-15.1	-14.1	-23.54	3.6	9.9	22.1	67.1

Rate of change for cols (1) to (4) computed from raw data at 1977 prices.

1/ Includes Agriculture, Fishing, Minning and Manufacturing,
2/ Includes Construction and Services,
3/ Includes private consumption, public consumption and total investment,
4/ Greater Santiago, U. de Chile.

Sources: Cols (1) to (5) Cuentas Nacionales de Chile 1960-1980 published by the Central Bank, Col (6), up to 1970 corresponds to the CPI published by the INE. From 1971 on, correspond to the revised CPI by Schmidt-Hebbel and Marshall, Feb. 81 Cols (7) and (8) Indicadores Econômicos 1960-1980 and Monthly Bulletin, Central Bank.

III. THE MANUFACTURING SECTOR 1973-1982

The macroeconomic evolution described in the previous section implied, a substantial change in the incentive system that the manufacturing sector faced. Both, the shocks and the forms of the adjustment had been different across firms and sectors.

At the aggregate level, the gross value of production for manufacturing sector grew at a lower average annual rate during the seventies than in the sixties. While during the sixties the industrial product rose at an average rate of 5.5% and the GDP at a rate of 4.3%, in the seventies they increased at an annual average rate of 2.1% and 2.8% respectively.

Looking at both national manufacturing censuses we can see that the gross value of production of the chilean industrial sector grew at a rate of only 3.6% in the period 1967-1979. The industrial production index from the National Statistical Institute shows that production keeps growing until 1980 and then it suffers a sharp decline during 1981 that continues in 1982.

The sectors that showed the major increases in production for the period 1967-1979 were: paper and paper products, petroleum refineries, plastic products, manufacturing of machinery and electrical appliances and tabacco. Among those sectors whose production decreased the most are: products derived from petroleum and coal, transport material and products of glass, etc. (see Table 3).

Among the sectors that grew, the ones who most heavily improved their share in the gross value of production of the industrial sector in the period 68-82 were the food sector, basic industries of steel and iron, wood industry and petroleum refineries. The ones who most considerably diminished their share in it for this same period were the textile sector, wearing apparel except footwear, rubber products and manufacturing of electrical and non electrical machinery.

In sum, the manufacturing sector as a whole diminished its share in the GDP from a 25.4% in 1970 to a 21.5% in 1980 and to a 20% in 1982. Considering the five year period 76-80 we see that the share of the industrial sector in the GDP was for this period lower than its share in any of the three five year periods immediately before.

TABLE 3

	Δ% GVP 1967/79	Share in the Industrial GVP 1968/70	1977/79	1980/82
Highly Protected Sectors				
362 Glass and Glass production	-18.88	0,9	0,7	0,5
354 Miscellaneous products of petroleum and coal	-89.40	0,5	0,9	0,1
353 Petroleum refineries	85.39	4,3	12,9	8,3
383 Manufacturing of electrical machineries and appliances	78.18	4,5	2,7	2,6
321 Textiles	-22.17	10,5	5,5	4,0
311 Food Products	28.77	18,8	23,4	28,4
355 Rubber Products	24.84	2,4	1,4	1,2
382 Manufacturing of machinery, except electrical	42.42	3,8	2,8	1,1
385 Professional equipment and optical goods	-29.06	0,1	0,1	0,1
Median Protected Sectors				
356 Plastic Products	83.13	1,3	1,0	2,3
351 Industrial chemical products	20.28	1,9	2,8	2,3
341 Paper and paper products	110.58	4,5	4,4	3,6
381 Metal products	14.52	5,3	4,0	4,3
390 Other manufacturing industries	15.26	0,4	0,3	0,5
371 Iron and steel basic industries	48.96	5,6	6,4	6,8
324 Footwear	-2.24	2,4	1,5	1,3
361 Pottery, china and earthen ware	-34.66	0,4	0,5	0,2
313 Drinks, wine, liquors industries and distilleries	39.60	4,8	4,3	4,7
Low Protected Sectors				
369 Other non metalic minerals	19.11	2,7	2,0	2,2
323 Leather products and tanneries	-15.93	1,3	1,0	0,7
352 Other chemical products	36.26	5,0	5,5	8,6
384 Transport material	-54.35	8,2	5,2	4,9
322 Wearing apparel except footwear	-10.28	2,7	2,1	2,0
331 Wood and wood products except furnitures	-23.94	1,8	2,4	2,9
332 Furnitures and fixtures (except primarily of metal)	-14.02	0,5	0,4	1,2
314 Tobacco industries	81.52	2,8	2,8	2,6
342 Printing, publishing and allied industries	-28.88	2,9	2,8	3,1

1/ Clasification according to Corbo and Pollack (1982)

SOURCES: Pollack (1984).
Censo Nacional Manufacturero 1967 y 1979. INE.

This evolution of the industrial product is parallel to a fall in the labor employment level in this sector. The national manufacturing censuses show that the number of people employed in the sector fell 4.89% between both censuses. The most important drop occured among the establishments employing more than 50 people where the number of people employed fell 6.05% in the same period.

This reduction in labor employed, in conjunction with the modest increase in production, implies an increase in labor productivity during these years.

Another indicator of the size reduction of the manufacturies sector between the two census years is the fall in the total number of establishments. This fall was of 13.1% and concerns mainly small establishments (those employing between 5 and 9 persons). This type of firms decreased by 18.9%. On the other hand, the large establishments (50 and more people employed) show roughly the same number in 1967 than in 1979.

For some particular sector the reduction of labor employed in the period 67-79 is considerable: a 37,1% reduction in manufacturing of metal products, machinery and equipment (sector 38 in the ISIC classification) and sector 39, (other manufacturing industries) where the fall is of 23.45%.

Also, the textile and clothing sector (32 in ISIC) diminished its labor employed in 13%.

Those sectors that showed the greatest increase in the number of people employed during this period were food, drinks and tabacco (sector 31) and paper, paper products and publishing (sector 34), when the figure was 19% for both sectors.

Trade Liberalization

Before the reforms, the chilean manufacturing sector was, heavily protected. Protection instruments included both tariff and non-tariff barriers. Among the later there were quotas, prohibitions, previous deposits, etc. (see Torres (1982)).

In september 1973, tariffs fluctuated between 0 and 750%. The average tariff, weighted by the number of positions, was 105%. The tariff mode was 90%.

The reform period starts with tariff reductions. These were relatively larger for the positions with higher nominal tariffs. In July 1975 the maximum tariff had been reduced to 120% and the average tariff weighted by the number of positions had been reduced to 57%.

In a second stage, a tariff target was defined with six nominal tariffs ranging between 10 and 35%. This target was achieved in August 1977. During this period the average weighted tariff reached 19,7%.

The last stage consisted in gradual tariff reductions that ended in June 1979 with an uniform tariff of 10% except for one item: motor-vehicles. The average tariff reached 10.1%. Furthermore, the reforms implied the removal of all non-tariff barriers.

In 1974 the nominal tariffs in the manufacturing sector ranged between 185% and 32% (annual average). The highest tariff was for sector 322 (clothing) and the lowest for sector 369 (non metalic mineral products). (See Aedo (1984)). It is precisely the clothing sector the one which suffers the largest reduction in its nominal tariff in the period 74/75: a reduction of 45%. Nevertheless this sector keeps having the higher nominal tariff during all the process of reforms (excluding motor vehicles).

The lowest tariff reduction in the first stage of the reform was of 19%, in sector 382 (non-electrical machinery).

The first sector in reaching the 10% nominal tariff target was sector 369, non-metalic minerals, (which always was the sector with lower nominal tariff in the whole manufacturing sector).

For sectors such as clothing, textiles, leather, footwear, glass, printing and beverages, the tariff reductions implied a fall in the nominal tariff rate of 90% in six years.

Some of these sectors had in the pre-reform period negative effective protection. An example of this is the clothing sector (Corbo and Meller (1979)). Instead, textiles, glassware, construction, electrical appliances, etc. had the highest effective protection rates (Corbo and Meller (1979)).

Price Controls[1]

Chile has a large history in the use of price controls. They have been used as an inflation repressing as well as an income distribution device.

In september 1973, more than 3.000 prices were controlled by DIRINCO (Dirección de Industria y Comercio). The elimination of these controls (one of the first reforms of the mili-

[1]This section draws on Wisecarver (1983).

tary government) was achieved through the promulgation, in october of this same year, of a law decree (Nº 522) that defined 3 groups of goods and services:

a) Those whose prices were to be freely determined by producers and importers;

b) 33 goods and services whose prices were still to be fixed and

c) 18 commodities whose prices were to be informed, that is, these prices were non-controlled subject to the non-rejection by DIRINCO (informed price goods).

Among the industrial products whose prices were fixed according to DL 522 were, bread, flour, sugar, oil, tea, milk, simple pastas and processed food, all of them in the food sector. Other industrial goods that were subject to price controls were: steel and copper tubes, sanitary articles, paper, matches, tires, cigarrettes, motor vehicles, detergents television sets and liquid gas containers and their valves.

The industrial products that were in the informed price list were: pharmaceutical products, plane glasses for construction, lubricants, vehicle replacement parts, shoes, processed cement products, white goods, nails and wire, tableware and alluminium receptacles, materials for handicraft, instant coffe, toiletries, electronic products, beer, pens, glass bottles and school uniforms.

In december 1980, a new law decree established that informed price goods could not be returned to the list of fixed prices and that the freely priced ones could not be returned to either the fixed or informed list.

Financial Markets and the Real Interest Rate

Without any doubts, the reforms in the financial sector were of the major importance in the following outcome.

Before the reforms were implemented three were the main features of this sector:

1) Government ownership of the main share of the banking system.

2) Nominal interest rate control that, coupled with high levels of inflation, determined a negative real rate. This led to the existence of a wide variety of quantitative restrictions for the rationing process.

3) Highly restricted inflow of private capitals.

We can think of the process of liberalization of this sector as consisting of the following two stages:

1) Internal market reforms that consisted mainly of the gradual elimination of controls on the nominal interest rate and the privatizing of the government-owned banks through a bidding process.

The first of these reforms was fully achieved in october 1975, and from then onwards, the real interst rate drastically changes moving to high positive levels (annual rates of 30% for domestic currency loans were usual during the period 1975-82).

2) International market reforms consisting mainly of the gradual opening of the capital account for private inflows of capital. This process started in September 77 when commercial banks were allowed to use artiucle 14 of the exchange law for their capital inflows, although quantitative restrictions on international borrowing persisted. In June 1979 the global limits for commercial bank borrowing were eliminated, and in April 1980 all quantitative restrictions on external borrowing under article 14 were eliminated.

Only two restrictions were mantained:

- A limit on overall borrowing.
- A reserve requirement on external borrowing that depen-

ded on the loans maturity.

Firms also could borrow, in the external market under article 14. This situation, coupled with the high real interest rate in the internal market made worthwhile for some firms (those with access to external financial markets) to engage in an internal private lending position.

The Evolution of Real Wages

Real wages in the manufacturing sector played a significant role in the firms performance during the reform period. In Table 4 we can see the wage and salaries index for the manufacturing sector deflated by industrial component of the wholesale price index.

TABLE 4

INDEX OF REAL WAGES IN THE MANUFACTURING SECTOR[1]

Year	Base 1970 = 100
1970	100.00
1971	125.43
1972	150.91
1973	71.34
1974	50.95
1975	43.20
1976	51.29
1977	67.61
1978	76.56
1979	76.39
1980	81.21
1981	94.05
1982	90.41

[1]Based on the Index of Wages and Salaries for the manufacturing sector and the Industrial component of the wholesale price index. Both of them are computed by the National Office of Statistics.

SOURCE: Monthly Bulletin; Central Bank of Chile.

From Table 4 we can see that real wages during the whole period never reached the 1970 level although they sharply increased from the very low base of 1975.

The drop in real wages during the years 1973-1975 helped the firms when the reforms were starting to be implemented. The recovery that followed became specially important in the years of the peso appreciation. At that time, labor costs continued increasing although producers couldn't carry over this increase to prices.

IV. THE EXPECTED IMPACT OF THE REFORMS IN THE MANUFACTURING SECTOR

As we saw in the previous section, during the period covered by this study the firms were affected by a series of exogenous factors to which they had to react if they were to maintain their profitability. With respect to the effect of the reforms at the firm level we would expect the following:

1) Import competing firms in those highly protected sectors, faced an important drop in the relative price of their output between the years 1976 and 1979.

2) Export oriented firms were benefitted by the large devaluation of 1974/75 and by the tariff reductions of some of their inputs.

3) Both export oriented and import competing firms suffered with the peso appreciation in the period 1980-1982. But due to the favorable evolution of the terms of trade, export oriented firms, started to feel the loss of competitiveness only in late 1980.

4) Import competing firms during 1982 suffered due to the sharp domestic recession.

The adjustments at the firm level can be analized using the following profit maximizing model:

$$\pi = \Sigma\ P_i\ Q_i - \Sigma\ W_j X_j,$$

where:

π = profits

P_i = price of good i (i = 1,...n)

Q_i = quantity produced of good i (i = 1,...n)

W_j = price of input j (j = 1,...m)

X_j = quantity of input j (j = 1...m)

subject to the production possibility frontier.

$$T(Q_1,...Q_2;\ \ X_1,...,X_m) = 0$$

In this context the liberalization of trade and deregulation of domestic prices directly affects the sales prices of goods (P_i) and the price of intermediate inputs (some W_j). Faced with these changes, the reaction of the firms should have been an alteration in the structure of goods produced (including changes in quality) and in the structure of inputs utilized. If the primary raw material inputs have low substitution elasticity the bulk of the adjustment via inputs should be made through a change in employment (the main input variable).

The deterioration in the real exchange rate after February 1977 and especially since June 1979 should have intensified the adjustments within the import-competing and exporting firms.

The sharp downturn in economic activity starting in the second half of 1981 is the main shock received by the import competing firms in the last year of the study.

V. DESCRIPTION OF THE QUESTIONNAIRE AND CHARACTERISTICS OF THE FIRMS STUDIED

The questionnaire used as a basis for the interviews is essentially qualitative in nature. A quantitative questionnaire was also tested in two pilot cases, but it proved to be very costly for the firms to answer it. Our research is therefore based only on the qualitative questionnaire[1]. All interviews were conducted by the authors. Generally, the interviewee was the general manager or a senior executive who had worked in the firm throughout the reform period. The questionnaire, which in all cases was sent in advance to the interviewees, was divided into five parts:

1. Basic parameters of the firm: This section sought information on ownership, organization, branch of activity, sales and market share.
2. Sources of "shocks": The purpose of this section was to determine the principal changes (favorable or unfavorable)

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[1]The questionnaire utilized appears in the appendix.

caused by the reforms to the environment in which the firm operates.

3. Reactions to the shocks: In this part of the questionnaire we tried to determine the speed of response to the previously identified exogenous factors, i.e. if there was any delay in the reaction of the firm, and if so why.

4. Adjustments in the operations of the firm: What were the major forms of adjustment to the shocks? Changes in production strategy, marketing and prices, labor practices and/or financial adjustments?

5. Diversification of activities: In the case of Chile, many firms became involved in new activities as a result of the reforms. In this section we wished to determine whether this was a major form of adjustment and if so, why the firms reacted as they did.

6. Market characteristics and price decisions: Here we wanted to determine the extent to which the reforms changed the structure of the market in which the firm operated and whether this had an impact on price decisions.

The interviews were held between August 1982 and August 1983 when the reforms were already in place and Chile's economy was suffering from a severe recession that placed the firms in a difficult position.

Composition of the sample

Our sample was composed of ten firms. Of these, three are multinational subsidiaries; in one of these, local shareholders have a limited holding. Five are national companies linked to economic conglomerates and the remaining two are corporations belonging to family groups.

On the basis of sales volumes for 1980 and 1981, six of the firms selected are large by Chilean standards, since they sold more than US$60 million per year. Two firms are medium-sized, selling more than US$10 million but less than US$60 million per year. The two remaining firms are small, with sales of less than US$10 million per year.

As regards the number of jobs provided, seven are large, employing more than 500 people; two are medium-sized (200 to 500) and one is small (less than 200).

As for the orientation of trade, one firm exports its entire production; two others sell some of their production domestically and export the rest, 50% in one case and 30% in the other. The other firms are basically oriented toward the domestic market although some of them have made occasional attempts at exports.

The firms exporting all or part of their production primarily use natural resources.

Of the firms oriented toward the domestic market, all but one produce goods that compete with imports.

As regards the pre-reform protection affecting their products, three of these firms manufacture products that previously were highly protected, the level of effective protection exceeding 95%. The effective protection of five firms was low (less than 30%) and for the remaining two it was between 30% and 95%.

These data are given in full in Table 5.

The firms interviewed had been founded long before the reforms were implemented, although one of them resulted from a merger of the two then-largest companies in the sector during the early years of the reforms.

The reason for having selected these firms in our sample, is that we wanted it to include firms with different levels of protection at the eve of the reforms and with different trade orientation. In the textile sector we selected two firms (one who did very well and one who went bankrupt) because this was one of the sectors who supposedly was to suffer the sharpest adjustment.

TABLE 5

DESCRIPTION OF SAMPLE

Firm	Sector	ISIC	Organization	Size: Total Assets	Size: Sales	Size: Nº of Jobs	Level of Protection 1/	Orientation of Trade
1	Pulp, paper and paper products	3411	Local group	Large	Large	Large	Average	50% exportable 50% import-competi
2	Alluminium and glazed articles	3833	Family Corporation	Medium	Small	Medium	Average	Import-competing
3	Electrical Appliances	3812	Local Group	Large	Large	Large	High	Import-competing
4	Articles for the home (detergents,margarine, etc.)	3523	Multinational (2)	Large	Large	Large	Low	Import-competing
5	Fish oil and meal	3114	Local Group	Large	Large	Large	Low	Export based on natural resources
6	Packaged food products	3112	Multinational (3)	Large	Large	Large	Low	Import competing
7	Food processing and canning	3113	Local Group	Medium	Medium	Large (4)	Low	30% exportable 70% non-tradable
8	Manufactures of foot-wear except rubber	3240	Multinational	Large	Large	Large	Low	Import-competing
9	Textiles	3211	Local Group	Medium	Medium	Medium	High	Import competing
10	Textiles	3211	Local Corporation (5)	Small	Small	Small	High	Import competing

NOTES:

(1) Source: Behrman J. (1976, based on an original study by S. de la Cuadra).

(2) Until 1981 this company was partly locally-owned.

(3) 20% held locally.

(4) This company has a permanent work force of only 110, but during production periods (production in seasonal) employs more than 1,000.

(5) This firm is a corporation although the shares essentially held by one family.

Brief Description of the Firms Included in the Study

Firm one is classified in the sector 3411 of the ISIC clasification, that is, pulp, paper and paperboards and is one of the largest private corporations in Chile.

The products manufactured by this firm are: paper products such as newsprint, wrapping paper, printing paper, writing paper and packing paper; packing items such as the following products: paper bags, multiwall paper bags, corrugated cardboard boxes, fruits wrapping papers and trays for eggs, fruit and trays for supermarkets; manufactured products such as toilet paper, paper towels and paper handkerchiefs; bleached, semibleached and unbleached celluloses; chemicals for their own use; wood and electric power for their own use.

In terms of physical production, the company manufactured during 1981, 279.495 tons. of cellulose and 236.741 tons. of paper and paper products and it exported near US$ 123,050 thousand dollars during 1980 and near US$ 90,000 thousand dollars in 1981.

It employs near three thousand people.

Firm two is a very old family firm but has been a corporation only since 1965. The main products produced by this firm are pots and kitchen utensils mainly of alluminium.

Currently, the firm has two hundred and fifty workers distributed in two industrial plants.

Firm 3 is one of the largest firms in its sector (the 3833 of the ISIC). It was formed in 1905 with a different name. It exists in its present structure since 1975, when it was formed from the merger of two of the largest firms within the sector.

The principal products manufactured by it are household appliances, specifically, stoves, refrigerators, washers, etc.

Their sales increased sharply during the period 1976-1980,amounting to 31,1 million dollars during 1976, and to 85,0 million dollars in 1980. During 1981 they decreased to 80.4 million dollars, although the firm never lost market share.

Firm 4 is a multinational with no local holding since 1982. They produce mainly brand-name products for home use. Its output include cleaning products as well as, good products. This firms is basically oriented to the local market.

Firm 5 is based mainly in natural resources. It is export oriented and has been in the business for more than twenty years, with considerable success. They attribute their success in great part to their international marketing strategy. This strategy consists basically in being member of an association of local producers that have a common marketing board. The joint marketing effort has existed since the sixties. The benefits of operating in such way are, the pricing power, economies in insurances, freights, payments to dealers, etc.

This firm is part of an economic conglomerate but without connection with the banking sector.

Firm 6 was founded in 1934. Since then it has been producing branded food products that have become very well known by local consumers. It is mainly a multinational although it has some local holders. They have several plants distributed along the country and can be considered one of the main producers in their business field.

Firm 7 is a corporation founded more than twenty years ago. The ownership is mainly related to an economic group and some small shareholders. They produce food products in general specially canning and preserving of fruits and vegetables, preparation of industrial food products such as fruit pulps and food services for institutions. They are oriented to both local and foreign market.

Firm 8 is a large multinational corporation that produces leather footwear. This is a very highly vertical integrated corporation since they not only manufacture the footwear but also manufacture the leather and sell their final products. This may hind some information because although the corporation as a whole did very well, the importance of the commercial part versus the productive part (in both leather and footwear manufacturing) changed considerably during the reforms. In particular, the commercial branch did very well during the peso appreciation while the production branch was working at half of its capacity during the same period.

Firm 9 was founded in 1939 and was the only firm of the sample that went bankrupt during the implementation of the reforms. It was one of the textiles and their main products were spinning, weaving and finishing of textiles. This firm was part of an economic conglomerate.

This firm was taken over during the Allende regime and was returned to their owners during the reforms. During 1980 it merged with other firms of the sector in an attempt to withstant foreign competition.

Firm 10 is the smaller firm of the sample and it is, as firm 9, in the textile sector. It is a family owned corporation, and in opposition to the other textile firms it grew during the whole period of the refoms. Furthermore, when the interview took place, in the middle of a major depression, this firm was buying a new plant from a previous competitor that had gone bankrupt.

VI. THE SHOCKS

This section reviews how the firms classified the various shocks or exogenous factors - both favorable and unfavorable - affecting them as a result of the reforms. Tables 6 and 7 summarize the responses. The firms had to rank each factor, marking 0 if it was not applicable, 1 if it was not significan, 2 if it was somewhat significant, 3 if it was significant and 4 if it was very significant.

A look at Table 6 shows that the favorable most important exogenous factor considered, by the firms in the sample, was the introduction of new labor legislation that enabled them to negotiate wages and working conditions with employees. As expected, this factor together with the elimination of restrictions on recruitment and layoffs, increased in impact after mid-1979 when the firms began to feel the effects of the appreciation of the peso resulting in part from a waning of inflation and from wage indexing, which pushed real wages up significantly.

TABLE 6
SUMMARY OF FIRM'S RESPONSES TO FAVORABLE SCHOCKS

SHOCKS	FIRMS 1	2	3	4	5	6	7	8	9	10
1. Elimination of restrictions for hiring and firing allowing the firm to adjust labor force and wages.	4-79/81	4	1	1	3	4-81/82	4-79/80	3-81	4-80 on[2]	3
2. Better Access to working Capital financing	2	1	2	3	1	3	0	0	4-77 on	0
3. Better Access to Fixed capital financing	3	3	2	2	2	3	0	0	2	3
4. New opportunities, to buy foreign machinery and equipment not available before	3	4	2	3-78/80	0	3	2	2	0	3
5. New opportunities, to substitute raw materials for imported raw materials.	0	4	3	1	0	3	3	4	0	4
6. Reduction in the restrictions to import raw materials previously imported.	0	4	0	3	0	3	3	1	3	4
7. Relaxation of price controls over the firm's products.	4	4	3	4-80 on	0	0	0	2 before 74	4	3
8. Increase in Export Oportunities	0	3	1	0	0	0	3	2	2	0
9. Clearer rules in the relations with the state.	3	3	3	3	*1	3	2	2	3	3
10. Reduction in competition of local producers.	0	4	2	2	0	0	4-78/80	3	0	0
11. Opportunities of adjusting the organizational and productive structure by association or acquisition of other firm's	0	0	4	0	0	3	4	0	3	0
12. Elimination of Restrictions that inhibited the acquisition of foreign know-how.	1	0	3	0	0	2	0	0	2	0
13. New labor regulation that allows to negotiate wages and work conditions.	3	4	2	2	4-82	4 81/82	4-79/80	4	4	2
14. Social Security Reform that permited labor cost, reductions.	4	4	2	2	3	3	2	1	2	4
15. Capacitation laws that reduce the cost of training labor.	3	4	2	3	2	3	0	3	3	3

[1]This shock was considered by this firm as an unfavorable shock rather than a favorable one.

[2]This could have been very important but it only was possible to implement in late 1980. At this time it was very late.

Another favorable factor, especially for import-competing firms, was the relaxing of price controls, since initially, when the tariffs were high, the elimination of price controls enabled many firms to appropriate the benefits for themselves. This deregulation occurred at the beginning of the period for the products of all firms in the sample except for Firm 4, whose products were removed from price controls only after 1980.

Another factor rated as being most significant was the training legislation that resulted in lower training costs. Almost all firms interviewed said that training was an important aspect of their overall strategy for improving efficiency.

Greater clarity in the rules of the game with the State received a high rating, except from Firm 5, which indicated that in its sector the rules of the game with the State had been unclear in recent years.

Another favorable factor for the firms was undoubtedly a decline in labor union activity, which meant freedom in negotiating wages and working conditions. Firm 8, for example, previously had employee commissions that reviewed costs, prices, rates and the like. Moreover, a rate schedule based on time and motion studies (which had to be discussed with the commissions) was prevalent. Thus, if a study showed that a specific job took one hour, it had to be taken up in discussion with the commission. This is no longer true.

Another example is Firm 10, which had certain positions that had to be negotiated with the unions. Thus, if the firm wanted an employee to do a job other than his previously negotiated position, the change had to be approved by the labor union. After 1973 it was much easier to move employees from one position to another. This internal reallocation of labor was esencial for the change in output mix called for by the change in incentives.

One exception is Firm 5 in which, according to its executives, the labor unions are as powerful as ever, even thought strikes are no longer used as pressure tactic.

However, it is surprising that greater access to working capital was ranked so low, given the financial reforms during the period. This might reflect a bias in our sample since by Chilean standards the firms interviewed are basically large and prestigious companies that never had problems with access to the credit market.

Also striking is the low importance assigned to the elimination of restrictions prohibiting the acquisition of foreign know-how coupled with the possibility of purchasing foreign-made machinery and equipment previously unavailable. This is because traditionally in Chile imported equipment and machinery have enjoyed special treatment in the form of low tariffs and/or preferential rates of exchange[1].

Another favorable factor rated less significant was the increase in export possibilities. As the exporting firms were already doing so before the reforms, this did not represent a great benefit to them. Of the rest, primarily import-competing firms, only one made attempts to export, which had to be abandoned in 1981 when costs in local currency were increasing sharply at a time when the exchange rate was fixed. As the firm could not increase its prices abroad it started to incur heavy losses in this operation.

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[1]See C. Torres (1982) for a description of the special tariff treatment for capital goods.

TABLE 7
SUMMARY OF FIRM'S RESPONSES TO UNFAVORABLE SCHOCKS

SHOCKS	FIRMS									
	1	2	3	4	5	6	7	8	9	10
1. Increases in working capital cost	3	4	4	1	1	4 81/82	4 80/81	2	4[2]	2
2. Introduction of rigidities in labor law that difficulted the the required adjustment in the labor force.	0	4	3	1	1	0	0	1	4	0
3. Unit labor costs increasing more rapidly than the price of the product.	3 79/81	4	3	2	3	4 79/81	0	2	4 79/80	2 79/81
4. Increase in foreign competition due to reduction in import restrictions.	3	1	4	3	0	3	4	3-77 on	4	0
5. Increase in foreign competition due to the peso appreciation.	4-79/81	3	4	3	0	3	4	3-80/81	4	0
6. Reduction in export profitability caused by a lower price in US$ from their export products.	4-81/82	0	0	0	4-81/82	0	0	0	2	0
7. Reduction in export profitability caused by the peso appreciation.	4-79/81	4-81	1	0	4-79/81	2	4	0	2	0
8. Introduction of price controls in your products.	0	0	0	0	0	0	0	0	0	0
9. Increases in domestic raw materials prices greater than the increases in the product price.	3	1	3	1	4-78/81	0	2	1	0	0
10. Changes in tax laws.	0	3	0	2	2	3	2	0	0	4[1]

[1]This was considered by this firm as an favorable shock rather than a unfavorable one.

[2]The interviewces asked for a 5 or 6 for this shock.

The unfavorable factors considered by the firms to be the most significant were the increases in the cost of the working capital throughout the period and unit labor cost, which rose more rapidly than product prices from 1979 to 1981.

For the import-competing firms, the main shock was an increase in foreign competition owing to a reduction in import restrictions beginning in 1976 and specially with the appreciation of the peso beginning in the second half of 1979.

For the exporting firms, the major shock was the lower profitability of exports owing to the appreciation of the peso as of 1979, exacerbated by a fall in international prices in 1981.

VII. FIRMS' REACTIONS

In general, all the firms stated a prompt reaction to the announcement that tariffs would be between 10 and 35%, although they did not believe (except 1) that tariffs would fall as low as 10%. The typical response was a drastic reduction in costs through production streamlining, involving better inventory management, more efficient use of the factors of production, etc. The cost cutting measures were generally not associated with the purchase of new equipment.

The fixing of the exchange rate in June 1979 and the subsequent appreciation of the peso also sharpened foreign competition, placing the firms dealing in tradable goods in a difficult position.

None of the ten firms, however, initially believed that the exchange rate would be maintained. They therefore preferred to borrow in pesos rather than dollars, at a time when the ex-post interest rate was substantially higher for peso borrowing.

An example of this is provided by the multinational companies in the sample: two of them received orders from the parent firm not to borrow in dollars because of the risk of devaluation.

After some time, the local office began to try to persuade the parent firm that the exchange rate would be maintained since the authorities repeatedly claimed that the peso would not be devalued. In early 1982 the parent firms began to have faith in the fixed exchange rate and reversed their original orders. In June of that year the peso was devalued.

Apparently, the firms'expectations that the peso would be devalued were cyclical; initially they were very high, then declined but rose again at the end of 1981 and in early 1982, except for Firms 6, 7, and 8 which, acting on expectations generated by the authorities, transferred their borrowings to dollars and at the time of devaluation had debts totally denominated in US dollars.

As regards the time taken to react to these exogenous factors, two firms referred to the costs implicit in implementing measures. For example, Firm 8, which began to replace domestic raw materials with imported raw materials, had to learn how to import before it could reap the full advantage of this new benefit provided by the reforms.

The original announcement that tariffs would be between 10 and 35%, when actually a tariff of 10% was implemented, and the newly-fixed exchange rate, which sparked the appreciation of the peso, were the main contradictions and/or ambiguities in the opinion of the firms. In addition, Firm 4 felt that a contradiction in economic policy was to maintain price controls for such a long time (up to 1980) when foreign competition was growing.

VIII. ADJUSTMENTS IN FIRMS' OPERATIONS

The effects of the reforms triggered a series of responses on the part of the firms to the new sets of incentives. For the purpose of the questionnaire, we grouped the adjustments into four types.

The results are given in Table 8.

The major type of adjustment opted for by the firms in the sample involved labor practices, especially after 1979. Specifically, the most frequent adjustment was a reduction in the labor force, which is consistent with the perception that the major favorable factor was the elimination of restrictions on recruitment and layoffs.

In 1982 all the firms had smaller staffs than in 1976, having made rather deep cuts in employment ranging from a high of 50% (for the largest of them) to 20% (the smallest). The sole exception was Firm 5, whose work force in 1982 was 4% larger than in 1976 and the same as it was in 1977. These reductions occurred mainly in 1981 when the adjustment required was greatest. In virtually all cases the reductions helped raise average labor productivity since they permitted greater selectivity in the labor force. Firm 8, for example, attributed much of its increase in productivity to that fact.

Another firm, whose production is clearly seasonal, was able to make adjustments replacing 50% of permanent personnel by seasonal workers.

TABLE 8

SUMMARY OF THE MAJOR FORMS OF ADJUSTMENTS MADE BY THE FIRMS

	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6	Firm 7	Firm 8	Firm 9	Firm 10
Production Strategies	3	3	4 up to 80	2	0	2	3	2	3	3-76 on
Prices and Marketing	2	2	2	4	0	2	3	3	2	0
Labor Practices	4-79/81	4	1	3	3-79/82	4	4-79/80	4-81 on	3	3-76/80
Financial Adjustment	3	3	3	3	2	3	2	1	3	4[1]

[1]Mainly due to investments.

Almost unanimously, the firms stated that these staff cuts had meant substantial increases in productivity, even though six of the ten firms surveyed had made major investments during the period. The figures reported by the firms for these increases in productivity are in some cases spectacular. Firm 10, a textile manufacturer which made heavy investments during the period, indicated by way of example that a laborer who in 1976 was capable of producing 1,000 meters of cloth per month is today able to produce 28,000 meters. Another example was provided by Firm 3, one of those making the least amount of investments during the period, which said that it had increased productivity per worker sevenfold. The driving force behind these investments (in the case of the import competing firms) was an attempt to cut costs so as to meet foreign competition. Firm 8, for example, indicated that clients would come to it with the imported product, saying that bringing the good in from outside cost them x and asking how much the firm would charge to produce the same article. This forced the firm to make the necessary adjustment to meet that competition.

In the first phase of the reforms, the main means of adjustment opted for by the firms was to change their production strategy. Specifically, the most significant change mentioned involved product quality, particulary among the import-competing firms. Several indicated that they never before had to be concerned with product quality. Although in most cases the adjustments to quality went in the direction of improvements, in one instance a firm had to lower product quality so as to be able to compete with cheap imports.

The firms that exported their products, however, did not have to alter quality, since prior to the reforms they had already been producing to international standards.

For the import competing firms, changes in the range of goods produced were also ranked high. The trend was to reduce production lines strictly to those in which the firms felt that they could compete with the growing volume of imports. In many cases, the firms competing with imports began themselves to import products that were no longer manufactured domestically. The reasons for this behavior ranged from "in order to maximize use of our distribution network" to "so that other firms won't do so". In one case the importing of products was part of a marketing strategy to open the market for future domestic production.

However, only one of the import-competing firms, Firm 2, attempted to export certain production lines, specifically copper made goods. To this end it imported technology and spent nearly US$300,000 trying to penetrate the U.S. market. This experiment began in the third quarter of 1976 and had to be abandoned in 1980 when the firm could not maintain its prices due to rising domestic costs.

The other change in production strategy indicated by almost all firms was inventory management. In a time of high real interest rates the financial costs associated with high inventory levels prompted the firms to take drastic measures to reduce them to "almost dangerous" levels, as reported by one firm.

The closing of plants by import-competing firms reflects their expectations regarding the durability of the import boom. Firms 2 and 4, for example, definitively closed a number of plants because they were inefficient to compete with increasing imports.

Firm 8, however, expected that "cheap" imports could not last, leading it to enter what it called "the plastic era" which consisted of keeping its machinery well maintained and covered with plastic, ready to enter into production at any moment.

Changes in prices and marketing were more significant for the import-competing firms than for those dealing in exportables. The critical factor in this connection was that the reforms imposed ceilings on the prices set by the former. This obliged them to set prices primarily on the basis of those charged by the foreign competitor rather than in terms of costs.

Surprisingly, domestic competition was not given as a factor influencing prices before the reforms, possibly because of the monopolistic position of those firms at that time.

Before the reforms and until aproximately the end of 1977 the cost of labor was an important factor in price setting. From then on the major factor became foreign competition, although the cost of labor kept rising during the time that the peso appreciated, it could not be carried over to prices.

Careful financial management was crucial to the profitability and even survival of the firms in a period of high interest rates.

The exporting firms, for example, juggled advance payments (preembarques) in order to obtain funds that they could invest in the short-term market.

Another financial maneuver, which in some cases was relatively significant, especially during the period that the exchange rate was fixed, was straightforward financial intermediation. Firms with access to external credit brought in borrowed dollars and invested them at the high interest rates prevailing in the domestic market.

Keeping cash for investments in the short-term financial market was also a strategy followed by one firm, for which this represented an important flow.

However, the most important financial strategy in terms of profitability was undoubtedly related to borrowing. From 1979 to 1981 there was a considerable differential between the real cost of credit in pesos versus that in dollars, with the latter consistently lower.

Following the expectations generated by the authorities, many companies switched from borrowing pesos to taking out loans in dollars, the latter being less costly. Those companies had lower financial costs as long as the exchange rate remained fixed, but were hard hit be the June 1982 devaluation. Three firms in our sample had borrowings denominated entirely in dollars on that date.

CONCLUSIONS

One of the main conclusions emerging from our work is that the firms in the manufacturing sector were affected by two very distinct types of exogenous factors. The first was the liberalization of trade during the period from 1975 to 1979. The second was the appreciation of the peso in 1980-82.

Adjustments during the liberalization period were made primarily by streamlining the activities of the firms, without much investment. The streamlining took the form of fewer production lines, closing of inefficient plants, reassignment of workers and changes in product quality. As a result of these adjustment, average labor productivity rose substantially.

A "de facto" second trade liberalization was the large peso appreciation of the years 1980-82, which came at a time when firms did not have any more room for efficiency improvements. The recession that started in late 1981 and 1982 compounded the problems that firms faced.

An important lesson to draw from these case studies is the cental role of the macro management that should accompany all liberalization attempts. Thus, with the protection reduction for import competing firms, there was a substantial release of labor (which increased labor productivity in the manufacturing sector) that was not sufficiently absorbed by other expanding sectors (non-tradables and export sectors), causing an increase in unemployment.

The second important lesson is the central role of the exchange rate and foreign borrowing policy. Indeed the policies followed from 1978 on, caused a sharp reduction in the relative price of tradables that reversed the signal, given at the beginning of the reforms, to the export oriented firms. For the import competing firms it was equivalent to a second, and more intensive, trade liberalization that proved very difficult to surmount.

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APPENDIX 1

QUALITATIVE QUESTIONNAIRE

Country ______________________________

Name of the Firm ______________________________

ISIC Clasification
(4 digits) ______________________________

Date(s) of Interview(s) ______________________________

I. Firm Setting: Basic Parameters

1. Ownership. (Local Corporation, Multinational association, affiliated corporation, family firm, state firm). Has the ownership changed hands during the reform period?.

2. ¿Does your firm belong to any financial group?.

____ No

____ Yes Name of the Group ______________________________

If you answered yes, has this firm's participation in the group come about as a result of the reforms? (when and under what circumstances?).

3. Production and Sales

Please provide the following information about the three products that had the largest share in total sales at the beggining of the reforms).

Product Name	Value of Sales			Share of your production in domestic sales			Share of imports in domestic sales		
	Before the Reforms	1977/78	1981/82	Before the Reforms	1977/78	1981/82	Before the Reforms	1977/78	1981/82
1.									
2.									
3.									

(Domestic Sales = Domestic Production - Exports + Imports. If share is $\leqslant$ 2% indicate negligible)

Total Value of Firms' Sales: ______________________

4. If the three main products in your sales have changed during the reforms, please provide the same information for the three most important in 1981/82.

1. ______________________

2. ______________________

3. ______________________

Adjustment in the Firm's Operations

II. Sources of Shocks

The reforms changed the environment in which your firm operates. Below we consider separately favorable and unfavorables changes. Please evaluate the relative importante of these changes for your firm. In doing so please use the following code.

0 = not relevant
1 = not significant
2 = somewhat significant
3 = significant
4 = very significant

Favorable Changes:

Code

A_1 ☐ Elimination of restrictions for hiring and firing allowing the firm to adjust labor force and wages.

A_2 ☐ Better access to working capital financing.

A_3 ☐ Better access to fixed capital financing.

A_4 ☐ Better opportunities to buy foreign machinery and equipment not available before.

A_5 ☐ Better opportunities to substitute raw materials for imported raw materials.

A_6 ☐ Reductions in restrictions for importing raw materials previously imported.

A_7 ☐ Relaxation of price controls over firm's products.

A_8 ☐ Increase in Export opportunities.

A_9 ☐ Greater transparency in the "rules of the game" in dealing with the state.

A_{10} ☐ Reduction in competition from national producers.

A_{11} ☐ Opportunity to adjust the organizational and productive structure for acquisition of and/or association, with other firms.

A_{12} ☐ Elimination of restrictions that inhibited the acquisition of foreign "know-how".

A_{13} ☐ New labor legislation that allows to negotiate wages and work conditions.

A_{14} ☐ Social security reforms that permited labor cost reductions.

A_{15} ☐ Capacitation laws that reduced the cost of training labor.

A_{16} ☐ others (please specify)

Unfavorable

B_1 ☐ Increases in cost of working capital.

B_2 ☐ Introduction of labor legislation which makes the required adjustments in the labor force difficult.

B_3 ☐ Unit labor costs rising more rapidly than the price of the product.

B_4 ☐ Increase in external competition due to the reduction of restrictions on imports.

B_5 ☐ Increase in external competition in the national market due to the appreciation of the peso.

B_6 ☐ Decrease in the earning power of exports due to a lower dollar value of exports products.

B_7 ☐ Decrease in the earning power of exports due to the appreciation of the peso.

B_8 ☐ Introduction of price controls for your products.

B_9 ☐ Increase in domestic raw materials greater than the increase in the price of the product.

B_{10} ☐ Changes in tax laws.

B_{11} ☐ Others (Please specify).

For the changes (favorable or unfavorable) you ranked as very significant (3) please explain the importance of them in terms of profits and the period in which they were more significant.

Code

____

____

____

____

____

III. Reaction to the Shocks

1. From this changes in the economic conditions that you identified as having a very significant impact (favorable or unfavorable), in your firm's operations, list those to which you didn't react because you thought that were transitory.

2. For the changes listed in question 1, above, for how much time, starting at the moment of their inception, did you thought that they were transitory.

3. If you thought that the shocks were transitory, what decisions were taken at your firm based on this perception.

4. What was the aproximate lag (in months) between the moment in which the reforms were announced and/or implemented and the moment in which the main adjustment in your firm's operation began.

____

____

____

5. If they were any lags, which were the reasons for them? ¿Could they have been shorter?. If yes, aproximately how shorter.

____

____

____

6. Did you find any ambiguities and/or contraditions in the announcements and/or implementation of the reforms?. If yes, please give one or two important examples and explain the impact that these ambiguities and/or contradictions had over the selection or implementation of adjustments in your firms operations.

____

____

____

IV. Adjustment in the Operation of the Firm.

1. Plese indicate the relative importance of the adjustments listed below in terms of their impact on the net revenues, using the following code:

0 = not applicable
1 = not important
2 = somewhat important
3 = important
4 = very important

Please add (-) if the impact was negative (for example: 2-).

Production Strategy ☐

Code

Of which:

Change in the area of activities (for example: beggining to import or to offer financing).	☐	A_1
Alteration in the package of produced goods.	☐	A_2
Changes in inventory policy	☐	A_3
Plant closings and/or line consolidation	☐	A_4
Changes in product quality	☐	A_5
Greater vertical integration	☐	A_6
Lesser vertical integration	☐	A_7

Pricing and Marketing: ☐

Of which:

Changes in marketing strategy	☐	B_1

Changes in price decisions B_2

Labor Practices:

Of which:

The possibility of being able to freely negotiate salaries and the relaxation of union activity . C_1

Improvement in the selection and training methods for workers of different skill categories. C_2

Change in the composition of the labor force C_3

Reduction in the labor force. C_4

Subsidies for additional hiring of labor. C_5

Financial Adjustments

Of which:

Greater Caution in financial management. D_1

Net change in Assests D_2

Net Change in Liabilities D_3

Increases in Investment [ ] D_4

Others (specify) [ ] D_5

Others (specify) [ ] D_6

2. For those adjustments which you indicated as being very important (4) please explain what measures were taken (i.e. steps taken, and their effect on income and/or costs).

<u>Code</u>

3. For each of the identified, please rank the adjustments by increasing rate of difficult (0 = not applicable; 1 = not difficult; 2 = somewhat difficult; 3 = difficult; 4 = very difficult).

	1976/79	1979/82
Production Strategy	[ ]	[ ]

Pricing and Marketing

Labor Practices

Financial Adjustments

4. For the adjustments that you classified as the most difficult please explain why were the most difficult.

Code

5. Please describe any adjustments (if there were any) which had to be reversed or abandoned due to policy changes.

V. Diversification of Activities

Please answer this question only if your firm has undertaken new activities. Of the activities listed below, please indicate the relative importance of the following when undertaken that activity.

0 = Not applicable
1 = Not important

2 = somewhat important
3 = Important
4 = very important

(1) Imports and/or Assembly and distribution

- [ ] Access to or ownership of a chain of distribution
- [ ] Previous contact with foreign sellers.
- [ ] A labor force trained to handle imported goods.
- [ ] Possesion of an import license, which gave the firm an advantage.
- [ ] Rising earnings due to the the intermediation of commercial financing.
- [ ] Sales margin earnings.
- [ ] Greater freedom in the firm's pricing decisions.
- [ ] Others (please specify)

(2) Financial Activities

- [ ] Disponibility of a large share of highly liquid assets.
- [ ] Emphasis on an activity for which the consumer requires substantial financing.

☐ Others (please specify).

VI. Market Characteristics and Pricing Decisions

1. Please indicate how does your firm compares with its competitors in terms of each of the following items using the appropiate code.

   0 = Irrelevant
   1 = Less competitive
   2 = Equal
   3 = More competitive

	Before the Reforms				Currently			
Product Prices	0	1	2	3	0	1	2	3
Product Quality	0	1	2	3	0	1	2	3
Quality control	0	1	2	3	0	1	2	3
Scale of Production	0	1	2	3	0	1	2	3
Marketing and Distribution	0	1	2	3	0	1	2	3
Organization of Production and Administration	0	1	2	3	0	1	2	3
Financial Management	0	1	2	3	0	1	2	3

2. Please indicate the aproximate changes in the number of domestic competitors for each of your three main products. If the names of the products have changed please indicate the new name in parenthesis.

Before the Reforms				Currently		
0 to 5	5 to 10	More than 10	Name of Product ( )	0 to 5	5 to 10	More than 10
☐	☐	☐	1.	☐	☐	☐
☐	☐	☐	2.	☐	☐	☐
☐	☐	☐	3.	☐	☐	☐

3. For the same products indicate the aproximate changes in the number of foreign competitors.

0 to 5	5 to 10	More than 10	Name of Product ( )	0 to 5	5 to 10	More than 10
☐	☐	☐	1.	☐	☐	☐
☐	☐	☐	2.	☐	☐	☐
☐	☐	☐	3.	☐	☐	☐

4. <u>Pricing Decisions</u>

Please rank the following factors according to their importance (0 = not applicable; 1 = not important; 2 = somewhat important; 3 = important; 4 = very important).

	Before the Reforms	1977/79	1981/82
To maintain market share			
Negotiation and/or fulfillment of salary and employment rules.			
Costs of capital and raw materials			
Price controls and/or expectation of future price controls.			
Competition among domestic producers.			
Import competition			

Using the same code as in the previous question, please rank those factors which contributed to continued participation in the market.

Sales Credit			

Advertising to create consumer loyalty			
Changes in the quality of products, including presentation.			
Competitive prices.			