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Developmentalism, Socialism, and Free Market Reform

Three Decades of Income Distribution in Chile

Mario Marcel
and
Andrés Solimano

How do the poorest 40 percent fare under market-oriented reform? Lower income groups suffer when real wages fall and unemployment increases. Then their situation improves as medium-term growth takes off and conditions improve in the labor market. A sort of Kuznets relation can be traced between reform and distribution.

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After relatively stable income distribution in the 1960s, and a redistribution toward low-income groups under Allende, income shares declined for the 40 percent of the population (low- and lower-middle income groups) under Pinochet. The top 20 percent benefited most from the income shift away from low-income groups. Under Aylwin, the income share of the bottom 40 percent returned to previous levels, but the share of the top 20 percent remained above its pre-1973 historical average.

Marcel and Solimano show that in the first years of market-oriented reform income for the poor deteriorated, chiefly because of persistent high unemployment and a squeeze on the real minimum wage and other wage categories.

The share of the middle class (the third and fourth quintiles) in national income declined by an average 3 percentage points during 1974-89 — because of cutbacks in public sector employment and steadily declining public sector wages.

Recession with high unemployment especially hurts the poor, and growth does not equalize conditions until it strengthens labor markets. Only when Chile's economy approached full capacity, when wages rose and unemployment dropped to a historic low in the early 1990s, did income distribution for the poor improve. If growth continues and investment grows even faster, as in the past two years, the labor market will remain tighter than in any period in the past 30 years and distribution may improve more significantly.

Is a liberalized economy compatible with social equity? Marcel and Solimano show that initially income distribution deteriorated under reform, chiefly because of macroeconomic crises and subsequent high unemployment and depressed real wages. However, it is not clear that trade liberalization and deregulation are socially regressive, though the market outcomes that dominate in a liberalized economy may generate a failure in the labor market that social policy should correct.

There is more potential for improving the quality of social services today than in the past, but targeting of social services should be designed to prevent the "poverty trap." Targeting and social policies should be designed to encourage personal efforts to escape poverty and to avoid alienating middle-income groups.

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Developmentalism, Socialism and Free Market Reform: Three Decades of Income Distribution in Chile*

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Developmentalism, Socialism and Free Market Reform: Three Decades of Income Distribution in Chile

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1. INTRODUCTION.

The recent economic history of Chile of the last three decades is perhaps one of the most fascinating (albeit dramatic) cases of radical changes in development strategies and political regimes in Latin America. Central to those policy shifts lies the role attached to income distribution by the different actors that led political and economic changes in Chile during that period. The explicit quest for redistribution started in the mid sixties, when a centrist government led by President Eduardo Frei took power under the banner of a "revolution in freedom" that would introduce gradual changes in the patterns of wealth and income distribution in Chile, through agrarian reform and expanded social services, within the framework of a developmentalist economic strategy. In 1970, a democratically-elected Marxist President, Salvador Allende, was put in office under the promise of a radical redistribution of wealth and income in favor of the urban working class and the peasantry. Redistributing income and wealth and establishing the foundations for Chilean-tailored socialism ("the Chilean Way to Socialism") were the top priorities of the Popular Unity government. After an initial bonanza followed by a couple of years of economic destabilization and acute political conflict, the military took power, deposed Allende and established an authoritarian regime. The new regime, once again, sought to reshape the economic landscape of Chile, this time along free market lines. Hyperinflation and large macroeconomic imbalances were to be tackled first, as a precondition for success in the program of trade liberalization, privatization, financial sector reform and

labor demobilization. Income distribution was to be less important than adjustment and liberalization.

After the military regime, a civilian government led by President Aylwin took office in early 1990. The economic program of the new administration preserved most of the structural reforms adopted in the Pinochet regime. A more progressive distributive twist was in order though, to redress a forgotten dimension of the liberalization program initiated by the military regime. This was to be achieved by a significant increase in social spending, supported by sustained GDP growth and changes in labor legislation and in the tax system.

The experience of Chile is very interesting for addressing a broad set of questions related to economic reform, income distribution and public policies. Does macroeconomic adjustment and its sequels in the labor market -- like protracted unemployment and decline in real wages -- affect the distributive position of low income groups? What is the impact of inflation on income distribution? Is economic growth inequalizing or equalizing? Is a more liberal policy regime compatible with social equity? Does inequality initially worsen and then improve in the process of economic reform? What is the scope for social policy through the public provision of education, health, housing and transfers to correct distributional outcomes of pure market processes?

The paper contains three sections besides the introduction. Section 2, gives an overview of the different economic policies adopted in the period 1960-92 and the associated distributive and

macroeconomic outcomes, discussing the nature and impact of the social policies implemented in that period.

In section 3, a simple econometric model of determination of personal income distribution in Chile is estimated using time series information on income shares by quintil for the period 1960-91.[1] The analysis seeks to gauge the relative importance of labor market variables (unemployment and real minimum wages), macroeconomic factors (GDP growth, inflation, rate of capacity utilization) and structural variables (education, type of policy regime). The model is estimated under a set of alternative closures. A decomposition exercise is carried out to evaluate the relative contribution of the explanatory variables to explain actual changes in the share of the bottom 40 percent and the top 20 percent income groups for relevant sub-periods. The paper closes in section 4 with final remarks and conclusions.

2. INCOME DISTRIBUTION, STRUCTURAL REFORMS AND SOCIAL POLICIES: AN OVERVIEW.

Income distribution in Chile is very unequal. While the bottom 40 percent of the population receives around 10 percent of national income, the top 20 percent receives 60 percent. The situation is even more dramatic if we consider that the income share of the bottom 20 percent of the population is around 4 percent. The ratio of the income shares of the top and bottom 20 percent of the

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[1] The focus here is on patterns of distribution rather than on poverty. An extensive analysis of the relationship between development and Poverty is carried out in the World Development Report, 1990.

population has fluctuated between 18 and 23 in the last three decades in Chile[2]. This pattern of income distribution is more unequal than the one in East Asia and the OECD. However, in Latin America, income distribution is more unequal -- than in Chile -- in countries like Brazil, Peru and others, though in Argentina and Uruguay income distribution is less unequal than in Chile[3].

This section looks at changes in the patterns of income distribution in Chile in the last three decades with particular interest in the changes taking place after 1974 when a new model of market oriented reform started to be implemented[4].

Table 1 provides information on the evolution of income distribution (shares in national income by quintils) during the last five governments in Chile, from 1959 to 1992. The figures correspond to the shares of income recipients per capita from an homogenous sample of around 3,000 households in the Great Santiago, as compiled by University of Chile (for a discussion of other sources of information, for selected years on income distribution in Chile, see annex). The basic picture emerging from table 1 is that of a relatively stable income share of the bottom 40 percent

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[2] Survey data may tend to under-estimate the degree of income inequality in the country for two reasons. On the one hand, non-wage incomes (in particular capital incomes, rents and interests earnings) tend to be underreported by surveys respondents. On the other hand, the survey covers the metropolitan area of Santiago and not rural areas where income distribution tends to be more skewed.

[3] See Larraín and Vergara (1992) and Cardoso and Helwege (1992).

[4] Studies on income distribution and its relation to economic policies in Chile in that period include, Pollack and Uthoff (1986), Rodriguez (1985), Torche (1987), Oyarzo (1990), Meller (1991), Raczynski and Romaguera (1992), Solimano (1992).

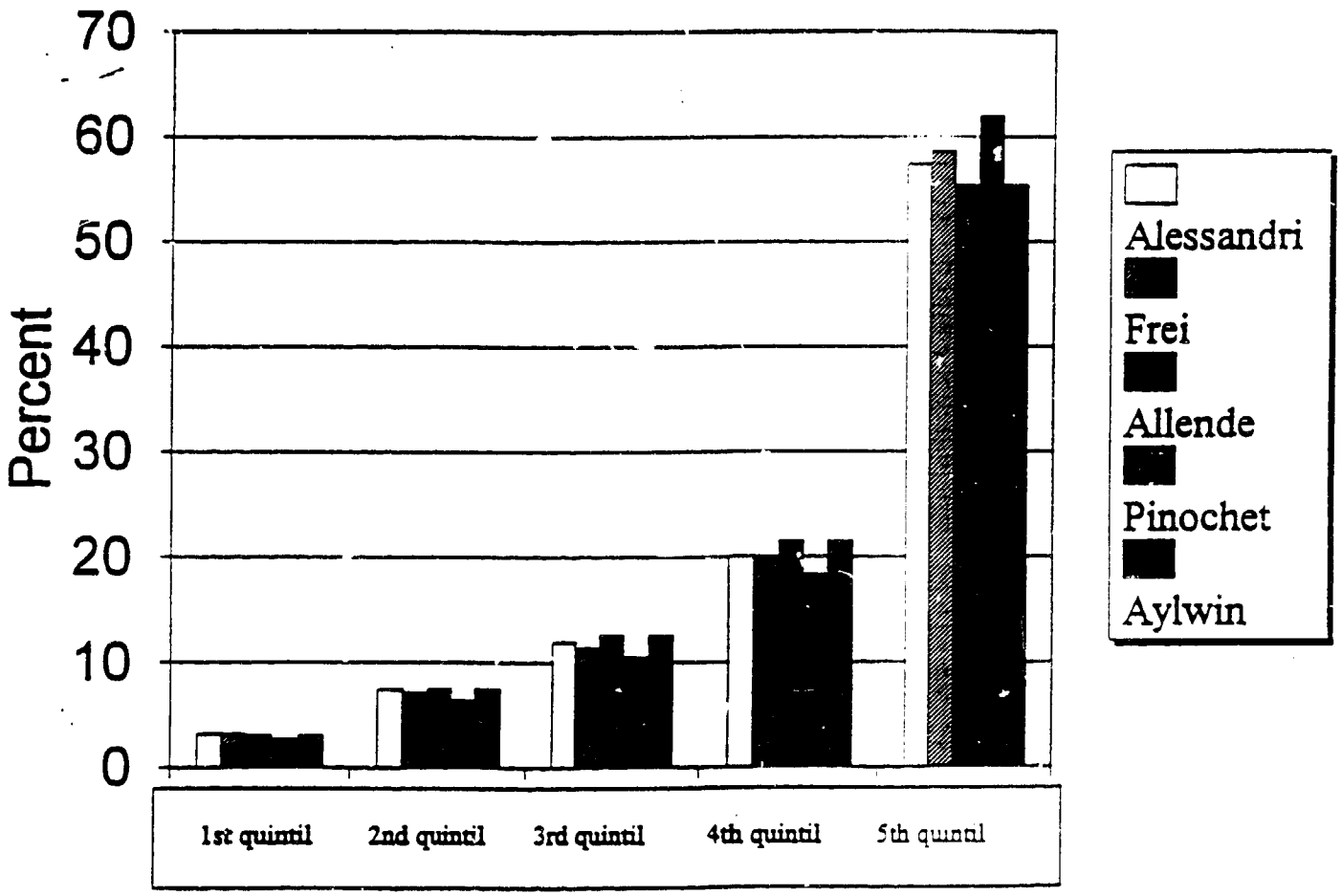
Table 1: Income Distribution in Chile, 1959-1992
(Income Shares per Quintile, percent)

	1st Quintile	2nd Quintile	Bottom 40% (1st & 2nd Quin.)	3rd Quintile	4th Quintile	Middle 40% (3rd & 4th Quin.)	5th Quintile	Ratio 5th Quintile over 1st Quintile
Alessandri Govt. 1959-64	3.2	7.5	10.7	11.5	20.1	32.0	57.9	18.1
Frei Govt. 1965-70	3.2	7.1	10.3	11.4	19.7	31.1	58.6	19.5
Allende Govt. 1971-73	3.1	7.5	10.6	12.5	21.5	34.0	55.4	17.9
Pinochet Regime 1974-89	2.7	6.4	9.1	10.6	18.3	28.9	62.0	23.6
Aylwin Govt. 1990-92	3.4	6.7	10.1	10.5	17.9	28.4	61.5	18.1

Source: Survey of Household Incomes. Universidad de Chile.

FIGURE 1

INCOME DISTRIBUTION IN CHILE 1958-1992



of the population during the 1960s with some increase during the Allende Government. During the Pinochet Regime (1974-89), however, the income share of the bottom 40 percent declined, on average, by 1.5 percentage points vis à vis the 1960-73 period. This represents a drop of nearly 14 percent in the income share of that group. In the Aylwin Government there is a reversal in that trend as the share of the bottom 40 percent during its first two years in office increased by 1 percentage point compared to the Pinochet regime.

The story for the top 20 percent is the opposite. Its income share increased modestly in the sixties, declined by nearly 3 percentage points under Allende and increased by 4.7 percentage points during the Pinochet Regime, during the period 1960-73. In the Aylwin Administration, the share of the top 20 percent declined by 0.5 percent.

It is interesting to note that a major part of the redistribution of income during the Pinochet period took place from the "middle class" (third and fourth quintils), that declined their income share by more than 3 percentage points (respect to 1960-73), to the top 20 percent. During the Aylwin Government there is a decline in the share of the middle 40 percent and the top 20 percent by 0.5 percentage points that is redistributed to the bottom 40 percent.

Economic policies and politics in Chile experienced major swings in the last three decades. The Alessandri Government of 1958-64 was a conservative administration that focused most of its energies to the task of abating inflation and consolidating

macroeconomic stability. Economic liberalization was not a major part of the economic agenda of the Alessandri Government at that time[5]. The Frei Administration starting in early 1965, comprised a program of economic modernization with moderate redistribution. That program included the implementation of an agrarian reform, the quasi-nationalization of foreign-owned copper mining, the main source of foreign exchange at the time, besides an aggressive program of expansion of education, public health and physical infrastructure. Labor union affiliation expanded significantly. In macroeconomic terms, the Frei Administration was relatively orthodox, giving high priority to assuring moderate inflation and controlling potential fiscal and balance of payments disequilibria.

The Allende Government[6] was an attempt--strongly influenced by the rise of the political left in Chile (and elsewhere) in the late 1960s -- of radical redistribution of income towards the urban working class and the peasantry. The economic program of the Allende Government, with strong Marxian roots, included the nationalization of most medium- to large-scale industrial firms, the banking system, the main natural resources, and an acceleration of the agrarian reform. The stated goal was to lay the foundations for transforming the Chilean economy into a socialist one. In the macroeconomic front, very expansive monetary and fiscal policies

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[5] A very complete discussion of the economic policies of the Alessandri and Frei administrations is in Ffrench-Davies (1972).

[6] An insider view of that period is provided by Bitar (1979). See also Larraín and Meller (1991).

were pursued along with generous increases in minimum and public sector wages supported by price controls and tight foreign exchange rationing. This expansionary stance also extended to social spending as we will see below.

A military coup ousted the Government of President Allende in september of 1973. The economic policies of the military regime (amply documented elsewhere)[7], included a vast program of economic liberalization and reform to be carried-out in an authoritarian context. The liberalization program included trade opening, a rationalization of the public sector, including the privatization of most state-owned enterprises, and financial sector and social security reforms. Labor unions were demobilized and repressed initially, and then allowed to operate under a new labor legislation that precluded nation-wide and sectoral level negotiation over wages and other working conditions. In the macroeconomic front, the main objectives were to reduce and stabilize inflation, (very high after Allende, see table 2), correct a large fiscal deficit and assure a sustainable balance of payments position. At the political level, left-wing parties were banned for most of the period and centrist political parties were considerably restricted in their activities. The Parliament remained closed for 16 years.

Finally the Aylwin Administration, elected in the first open Presidential election since 1970, preserved many of the structural

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[7] See Edwards and Edwards (1985), Fontaine (1989), Meller (1990), Corbo (1993), Corbo and Solimano (1991).

reforms implemented during the previous administration that yielded high growth in the late 1980s. To make the Chilean model more equitable, changes in the tax system were introduced. Corporate and personal income taxes were raised, as well as the value added tax, in order to secure financing for a program of increased social expenditure in low-income families. In addition, the minimum wage was increased and changes in labor legislation were passed in the parliament in order to redress the existing imbalance in the relative bargaining power between labor and capital, inherited from the military regime. Moderate redistribution was framed in macro policies of fiscal and monetary restraint in order to maintain macroeconomic stability.

Table 2 summarizes the main economic indicators of performance in the period 1960-92, for the five presidential periods. The 1960s were a period of moderate growth -- about 4 percent per year -- with an annual inflation rate of 26 percent per year. Unemployment hovered around 5-6 percent and real wages increased steadily. The Allende years, in the early 1970s, were of great dislocation at the macroeconomic level as fiscal deficits exploded (reaching nearly 25 percent of GDP in 1973) and inflation climbed to three digit levels. The redistributive impulse of the Unidad Popular Government

Table 2: Chile - Main Economic and Social Indicators, 1960-1992

	(1) GDP Growth (annual average, %)	(2) Rate of Inflation (Dec-Dec, %)	(3) Public Sector Deficit (% of GDP)	(4) Unemployment Rate (% of labor force)	(5) Average Real Wage (1970=100)	(6) Minimum Real Wage (1970=100)	(7) Public Sector Real Wage (1970=100)	(8) Social Expenditure (% of GDP)	(9) Price of Copper (US$/Pound)
Alessandri Govt. 1959-64	3.9	26.6	4.7[a/]	5.2[a/]	62.2[a/]	116.8[a/]	-	-	32.4[a/]
Frei Govt. 1965-70	4.1	26.3	2.1	5.9	84.2	101.8	81.4	-	61.0
Allende Govt. 1971-73	0.7	285.7	16.1	4.8	90.0	134.0	87.9	-	59.6
Pinochet Regime 1974-89	3.4	79.9	0.5	17.1	81.4	83.0	75.3	4.5	78.7
Aylwin Govt. 1990-92	5.9	19.6	-0.3	6.5	94.7	83.0	78.3[b/]	3.6	110.2

Sources: (1) (8) Indicadores Economicos y Sociales. Banco Central de Chile.
(2) Central Bank, Cortazar-Marshall (1980) and Yañez (1971-72).
(3) Corbo (1993).
(4) Universidad de Chile, Encuesta de Ocupación y Desocupación Gran - Santiago Dec-Dec. It includes emergency employment programs.
(5) (6) Jadresic (1990).
(7) Cabezas (1989) and Dirección de Presupuestos, Ministerio de Hacienda, Chile.

Notes: a/ 1960-64
b/ 1990-91

was reflected in massive increases in minimum and public sector wages. The acceleration of inflation in 1972 and 1973 eroded part of the initial increase in wages, though they still increased, on average, in real terms during the 1971-73 period. The minimum wage hike along with the decline in unemployment, is likely to account for much of the increase in the income share of the bottom 40 percent. The Pinochet period led, in a stop and go fashion, to a resumption of output growth, a slow decline in inflation and a rapid elimination of fiscal deficits. However, on aver , growth performance for the whole period does not look very imp ive. Of course, averages conceal considerable intra-period variat on in the data. Growth performance was very strong in 1976-81 and 198 -89, though the economy experienced two big recessions in 1975 and 1982-83. Inflation ran at an annual average rate of 248.7 percent between 1974-78, and declined slowly to an average annual rate of 23.6 percent per year between 1978 and 1989.

Labor market performance was bleak during most of the period, an important factor behind the deterioration of income distribution for low-income groups, detected during the Pinochet Regime (see next section). On average, for Metropolitan Santiago, the effective[8] unemployment rate was 17.1 percent during 1974-89, tripling the average rate of the period 1960-73. In addition, average real wages during 1974-89 were close to the level of the early 1960s and near 9 percentage points below that of the Allende

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[8] These figures include emergency employment programs that paid less than the national minimum wage (see Annex).

period. The minimum wage declined by 26 percent in real terms in 1974-89 with respect to the period 1960-73 and in almost 40 percent with respect to the Allende years. The fall in the income share of the middle-class (3rd and 4th quintils) can be associated to a decline in salaries in the public sector (the single most important employer of middle-income groups). In fact, on average the index of real wages in the public sector declined near 13 percentage points in 1974-89 compared to the average under Allende and 6 points compared to the level under Frei. Moreover, after 1974-75 the real price of goods and services intensive in the consumption basket of the middle-class went up. In fact, before the military government, public education from primary school to universities, public health and housing were provided free of charge, or highly subsidized to the middle-class. With the fiscal reform of the mid-seventies, most of these subsidies were either eliminated or reduced for middle-income groups. Interestingly, a large part of the resources taken away from the 3rd and 4th quintil went, in the end, to the top 20 percent.

The first three years of the Aylwin Administration continued and consolidated the strong performance of the Chilean economy registered in the second half of the 1980s, generating an impressive investment and growth momentum since 1991. Inflation declined (now in the annual range of 10-13 percent) in a context of fiscal balance and a very strong balance of payments position. In the labor market, unemployment declined to historical lows (the unemployment rate was 4.4 percent in 1992). In 1990-1992, the

average real wage was 7.2 percentage higher than its level in 1980-89 (the average real wage of 1992 was 10.4 percent higher than in 1980-89). In turn, the real minimum wage in 1990-92, is on average at the same level to that of the period 1974-89; however, the real minimum wage is around 5 percentage points higher in 1990-92 with respect to the period 1980-89. In turn, in 1992, the real minimum wage is near 15 percentage points higher than the average of 1980-89. Clearly, the combination of lower unemployment and higher minimum and average real wages in the period 1990-1992 with respect to the 1980s coincides with the improvement of near 1.0 percentage points in the income share of the bottom 40 percent.

SOCIAL POLICIES

Historically, the origin of social policies in Chile can be traced to the early 1920s when basic legislation concerning primary education, public health, labor regulations and social security was enacted[9]. The early development of the trade unions and the rapid urbanization of the country put social pressure upon the state for an expansion of social services. The financing of the newly created social services and the expansion of public employment came mainly from nitrate and copper industries which provided an important source of revenues to the government.

1960-73:"Extensive" Social Policies and Redistributive Policies

The government of Frei (and Allende later) expanded

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[9] See Arellano (1985).

considerably social expenditure in education, health and housing as part of their redistributive objectives.

The "welfare state" extended to satisfy the demands of traditionally well-organized groups of white and blue-collar workers. Entitlement grew substantially in several areas like housing, higher education and health insurance. On the other hand, emerging groups of the rural and urban poor were incorporated to be recipients of these policies.

In spite that the excessive benefits were extending well beyond the most vulnerable groups of the population into the middle and even higher income groups, efforts at targeting of social expenditure were very limited during this period. The Governments were reluctant to engage in any major confrontation with the middle- class. Between 1961 and 1970, social expenditure nearly doubled in real terms demanding a growing share of GDP and of total government expenditure to that end. Education and social security were the most important items as they accounted for near two-thirds of social spending in that period (see figure 2). Nearly half the growth in these sectors was due to an increase in school enrollment and the number of pensioners which grew at an annual rate of 5.5 percent and 10.3 percent during the period. Therefore, this was a phase of extensive development of social services.

This trend of the 1960s was accentuated by the Allende Government but its actual effectiveness was increasingly constrained by the fiscal crisis generated at the time, and by the fact that the operative capacity of the public sector was

increasingly burdened by the needs to run the sector of newly nationalized enterprises, banks, farms and mining.

1974-89: Fiscal Austerity, Targeting and Redefinition of Social Policies

After the military coup of 1973, government priorities changed. The goals of macroeconomic adjustment and structural reforms and state retrenchment took their toll on social policies. Existing social programs not only represented a large share of government expenditure but were also subject to the inertia of the status-quo given by the expansion of entitlement throughout the previous 30 years. As a result of changes in policy - priorities and macroeconomic fluctuations, social expenditure followed a rather unstable pattern during this period.

Initially, during the stabilization program of 1975, part of the reduction in public expenditure concentrated in cutting social spending. In fact, social expenditure fell more than GDP and total government expenditure during the recession of 1975. This made the macroeconomic crisis of the mid 1970s particularly painful for low and middle-income groups, as social expenditure declined at the same time as unemployment increased. No wonder income distribution worsened at that time.

In contrast, in the recession of 1982-83 an effort was made to maintain and extend social spending, particularly to support the unemployed through subsidies, emergency employment programs and

money transfers targeted at low-income groups [10].

In the late 1970s, important institutional reforms were initiated in the social sectors reaching social security, education and the primary health system. The basic principles of these reforms were: (i) decentralization in the management of social programs that were transferred from the central government to local governments (municipalities); (ii) a shift from social spending of broad coverage to its targeting towards vulnerable and poor groups; (iii) a change in the financing mechanism of social services from direct provision to the subsidy of demand; and (iv) promotion of the private sector in the provision of social services[11] [12].

Social security was transformed from a pay-as-you-go scheme into a private capitalization system; public schools were transferred to municipalities and funded by a standard grant per student scheme, paving the way for further private provision of education; a two-tier system was created for health and nutrition in which coexisted privately provided health services through insurance health companies (ISAPRES) and a public health service

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[10] Meller (1991) documents that cost of the unemployment subsidy programs of 1982-83 represented about 1.5 percent of GDP and benefitted some 600,000 unemployed, the program of subsidies to debtors in dollars, around 2,COO people, cost near 3 percentage points of GDP.

[11] See Raczynski and Romaguera (1992).

[12] The decentralization-cum-privatization scheme had a convenient political side effect for the military government in the sense that it transferred to municipalities the dealing with near 120,000 employees, teachers, doctors and other health and education workers. This group was very active in the past both in terms of wage demands and capacity for political mobilization.

for low-income groups that cannot afford to pay for the pri - provision of health services[13].

Despite progress in some areas, the overall trend of social expenditure during the period was one of restraint. Social expenditure fell by 16 percent in 1975-76 and 12.7 percent between 1983 and 1987, and never recovered its 1970 level, either as a share of GDP or in real per capita terms (figure 2). The fall in social expenditure was particularly sharp in health, housing and non-targeted transfers, especially affecting the middle-class. When these figures are contrasted with the fact that the number of beneficiaries of broad social programs kept growing during this period, the effect of financial restraint look stronger as illustrated in table 3 for the 1980s.

The restraint of social expenditure impaired other major developments in social policy during the military government. On the one hand, progress in targeting did not necessarily improve the situation of lower-income groups. In 1990, the poorer 40% of the population captured nearly two thirds of government expenditure in health and half of the expenditure in public education (table 4). However, as both sectors were subject to deep budgetary cuts during the 1980s, most of the proceeds of lower expenditure in middle -and higher-income groups went to imprcve the financial stance of the government rather than to increase direct benefits for the poor.

On the other hand, financial pressure on social programs also

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[13] See Raczynski and Romaguera (1992) for a detailed discussion of the reforms in that area. See also Castañeda (1990).

threatened the success of structural reforms in social areas. The reduction in the real value of government transfers to decentralized schools and health centers left by the end of the 1980s, a scarcely sustainable system, rejected by important segments of the population.

This situation in the social sectors shaped the public mood in the direction of bringing the more socially and redistributive oriented parties of the center-left back to government in 1990.

1990-92: Social Debt and Social Investment

The Aylwin Government took office in 1990 with two main commitments in social policy. On the one hand it intended to restore some benefits for low-and middle-income groups that had been curtailed in the last years of the authoritarian government. On the other, it aimed at developing new social programs targeted at high risk groups in urban areas and at improving the quality of basic social services. The former was labelled as servicing the social debt and the latter, social investment. Accomplishing these objectives required a substantial amount of resources that would be funded by higher taxes, by then at a historic low relative to GDP.

Table 3: Government Expenditure in Three Major Social Programs 1980-91(a) Annual average rates of growth

	Overall Expenditure	Per capita Expend.(b)	Expend. per Beneficiary(c)
1980-85	2.5	0.8	-0.5
1985-89	0.5	-1.2	-0.4
1989-91	2.8	1.2	4.2

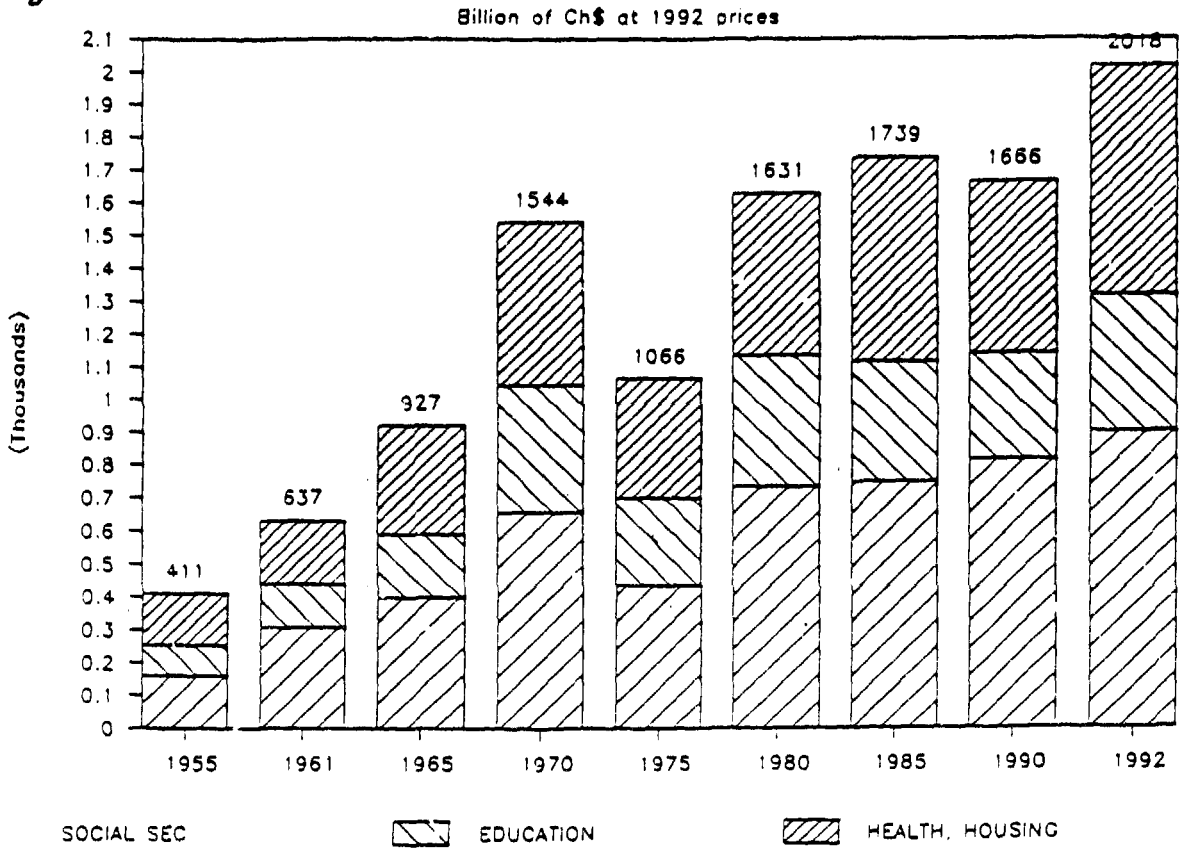
Source: Own estimates, based on official figures.
a) Includes primary and secondary education, health insurance and pensions.
b) Overall expenditure/total population.
c) Overall expenditure/beneficiaries of government programs.

Table 4: Chile - Distribution of Government Social Expenditure in 1990

	Share of National Income	SOCIAL EXPENDITURE			
		Monetary Subsidies	Education	Health	Housing
Lower 40%	13	52	46	67	48
Middle 40%	32	38	36	27	40
Upper 20%	55	10	18	6	12
Total	100	100	100	100	100

Source: Mujica and Larranaga (1992), based on the CASEN Survey

Figure 2, CHILE: SOCIAL EXPENDITURE 1955-92



Source: Arellano (1985) and Contraloría General de la República and Dirección de Presupuestos, Chile.

The broad political consensus that emerged in Chile during the transition to democracy on the need to increase the social effort facilitated an early agreement upon these issues and a tax reform was enacted in a record time by mid-1990. In a first stage, running from mid-1990 and 1991, social debt policies got priority: pensions and social subsidies were raised and debt-relief schemes (e.g. for debt of low-middle income groups on housing) were launched. By the end of this period, however, government policy started moving towards "social investment". At the end of 1991, some major programs in basic education, health infrastructure, youth training and project-funding for the poor were already in place, doubling their share of social expenditure in the next two years.

The Aylwin Government did not reverse the institutional changes in the social area of the 1980s. Social security remains as a private capitalization system and decentralization of education and health was endorsed. In fact, it can be argued that these institutions gained more legitimacy as further resources and democratic control softened the hard stance of teachers, medical staff, organized workers and the public who at different points in time have questioned the rationality of the new institutions and their lack of resources.

The tax reform of 1990 increased fiscal revenues associated with rapid growth and the reallocation of government resources allowed, social expenditure to experience a growth rate of 10

percent per annum in 1991, 1992[14] without undermining fiscal equilibrium. Particularly important was the rise in funding for health, housing and social investment programs, as the latter replaced social assistance as the third most important area of social policy after the funding of social security and basic social services. This effort at improving equity through social policies has been particularly fruitful as the inertial forces in social expenditure have finally eased as a result of a reversal of demographic trends and structural reforms that diverted the demand of high- and middle-income groups for social services towards the private sector. In the case of broad-based programs depicted in table 3, the growth of expenditure per beneficiary nearly doubled the rate of increase in overall pubic expenditure.

Regarding absolute poverty, the data shows a decline of 10-12 percentage points (from 45 percent to 33-35 percent) between 1988 and 1992 in the percentage of the population below the poverty line[15].

3. ECONOMETRIC ANALYSIS.

In this section we explore in a more systematic way the determinants of income distribution in Chile. The empirical analysis is based on the Survey of Household Incomes of University of Chile for Greater Santiago from 1960 to 1992.

Modeling the determinants of income distribution is a complex

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[14] A similar increase is programmed for 1993.

[15] See MIDEPLAN (1992).

issue that involves the interaction between factor markets, (primarily the labor market), macroeconomic variables and structural factors like education and ownership of assets, all this taking place in a historical context influenced by political developments. Early literature on the topic comes back to David Ricardo (1817), later on, a neat formalization of different theories of distribution was provided by Kaldor (1956). More recent contributions include several strands. The effects of macroeconomic fluctuations and inflation on income distribution are studied in Blinder and Esaki (1988), Cardoso, Paes de Barros and Urani (1992), Galor and Zeira (1993). The impact of structural adjustment policies on income distribution is developed in Bourgingon, de Melo and Suwa (1991) and the empirical papers in that volume. The interaction between growth and income distribution (and history) is surveyed by Lindert and Williamson (1985), and reexamined in Taylor (1992) and Person and Tabellini (1991). The interaction between politics and income distribution is developed, along relatively neo-classical lines, in Alesina and Rodrik (1991) and Peroti (1990).

The model to be estimated econometrically identifies four set of factors that are expected to affect income distribution in Chile in the period urder study: (1) Labor market variables, like the unemployment rate and the real minimum wage; (2) Macroeconomic variables including the rate of growth of GDP, the rate of capacity utilization and the inflation rate; (3) The ability to generate earnings, e.g. education; and (4) Some indicators of (changes in)

the economic structure due to structural reforms and changes in the political regime under which the distributive process takes place.

The general specification of the model can be written as:

$$(1)\ S_i(t) = a_i + b_i\ Z(t) + c_i\ MINWAGE(t) + d_i\ INF(t) + e_i\ EDUC(t) + f_i\ DUMMY + \epsilon(t)$$

where $S_i(t)$ is the income share of the quintil i (i= 1, 2..., 5) in total income in year t. The variable Z(t) is a generic indicator of the level of economic activity (as reflected in the goods or labor markets) in year t. We explore three alternative specifications for variable Z(t): (i) The aggregate rate of unemployment; (ii) The rate of capacity utilization ; (iii) The rate of growth of real GDP. Only one of these Z(t) variables is included in each regression at the time, to avoid multicollinearity problems[16].

The variable MINWAGE(t) is the real minimum wage in year t [17]; INF(t) is the rate of change in the CPI (end of year) in period t; EDUC(t) is the share of the population over 14 years with more than

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[16] An alternative specification would be to use a Gini coefficient or a Theil-index as dependent variables in the regressions. However, the specification with income shares by quintil allows to obtain more information on changes in the relative income position of each group than an aggregative index.

[17] The average wage index in Chile comprises wages paid in national (private and public) and foreign-owned firms employing more than 50 workers. In that respect, the average wage index is not a very good proxy of the income of low-income groups (say 1st and 2nd quintils) that are often employed in small-scale enterprises (less than 50 workers), in the informal sector (self-employment) and in traditional agriculture, see Solimano (1988a and b).

primary schooling in year t. The DUMMY variable assumes the value 0 between 1960 and 1973 and 1 between 1974-92. It intends to capture changes in the economic structure of Chile associated to the reforms implemented after 1974. A dummy variable denoting the political regime, e.g. democracy and authoritarianism, could not be included in the estimation, since it would be very collinear with the dummy post-1974 denoting change in economic structure[18].

The model is estimated by OLS a technique that imposes the following cross-equations restrictions to the coefficients of the model (see Blinder and Esaki, 1988):

(2) $\Sigma_i\ a_i = 1$

(3) $\Sigma_i\ b_i = \Sigma_i\ c_i = \Sigma_i d_i = \Sigma_i e_i = \Sigma_i f_i = 0$

(4) $\Sigma_i\ \epsilon_i = 0$ for all t.

Given that all right-hand side variables are the same across-equations, estimating each equation by OLS is equivalent to estimating the complete system by SUR (Seemingly-Unrelated-Regressions, see Rao and Mitra, 1971).

Table 5 presents the results of the estimation for the period 1960-91 using the (aggregate) rate of unemployment as the Z(t) variable (Model I) for each of the five quintils, for the bottom 40 percent (1st and 2nd quintils) and the middle 40 percent (3rd and 4th quintils). The estimates show that the unemployment rate has a negative coefficient in all quintils except for the 5th quintil

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[18] Such political dummys would take values value 0 in 1960-73 and 1990-92 (periods of democracy) and 1 in 1974-89 (the period of authoritarianism).

(top 20 percent). The coefficient is significant at 95 percent confidence for the bottom 20 percent and 40 percent. This lends support to the hypothesis that aggregate unemployment hits more low-income groups and therefore has a regressive effect on income distribution[19].

The minimum real wage (lagged one period) has a positive and significant effect (at 90 percent significance) on the share of low-income groups (first and second quintils). It is interesting to note that a cut in the minimum real wage redistributes income towards the top 20 percent (its coefficient is negative in the equation of the 5th quintil).

The inflation variable fails to be significant for low-income groups (except in the second quintil) and has a significantly negative effect on the income share of the 5th quintil (top 20 percent)[20]. This variable has an insignificant effect on the bottom 40 percent. The education variable has no positive effect on the income share --it may have on the income levels though-- of all quintils, except the top 20 percent. This suggests that education levels above primary school in Chile have tended, on average, to benefit primarily high income groups in distributive terms, though Chile is still a country with an overall high level of education in terms of coverage. Finally, the post-1974 dummy is insignificant

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[19] This result also appears in Oyarzo (1990). His model explains the income share by aggregate unemployment, inflation and a time trend.

[20] Oyarzo (1990) also obtains a similar result for the inflation rate.

across all quintils groups in the specification with unemployment rates.

The results of the regressions using a capacity utilization variable, (Model II) instead of the unemployment rate gives slightly better fits (higher R^2s) for all quintils[19]. The variable of capacity utilization (ratio of current GDP to potential GDP) has a significantly positive effect on the income shares of the 1st, 2nd and 3rd quintils. This suggests that recessions (a decline in the rate of capacity utilization), affects more the poor and middle-income groups than the rich (see table 6). In this specification, the coefficient of the real minimum wage loses its significance for the share of low-income groups.

Inflation is significant but positive for low-income groups. This result might challenge conventional wisdom, though five observations are in order here: **First**, the relationship between inflation and income distribution may depend on the level of inflation e.g. the relationship would be non-linear. To explore this possibility we estimated the model adding an additional variable, the rate of inflation above 40 percent per year. The coefficient of this 'high' inflation variable turned negative for the 1st to the 4th quintils but statistically insignificant. **Second**, there may be indirect effects of inflation on income

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[19] This variable was constructed using the estimates of potential GDP of Marfan (1992).

Table 5

Model I: Income Distribution - Chile, 1960-1991

Dependent Variables --- Explanatory Variables	Income Share 1st Quintil	Income Share 2nd Quintil	Income Share Bottom 40% (1st & 2nd Quin.)	Income Share 3rd Quintil	Income Share 4th Quintil	Income Share Middle 40% (2nd & 3rd Quin.)	Income Share 5th Quintil
Constant (C)	2.31 (2.73)	6.83 (6.73)	9.14 (5.10)	11.29 (9.25)	18.10 (11.50)	29.40 (11.20)	61.45 (15.80)
Unemployment Rate, (UNEMP)	-0.044** (-3.12)	-0.027 (-1.58)	-0.071** (-2.37)	-0.022 (-1.098)	-0.008 (-0.33)	-0.031 (-0.71)	0.10 (1.57)
Real Minimum Wage, lagged (SALMIN-1)	0.007* (1.64)	0.009* (1.66)	0.017* (1.72)	0.013* (1.86)	0.027** (3.06)	0.040** (2.70)	-0.058** (-2.61)
Inflation Rate (INF)	-0.0002 (-0.30)	0.001** (2.33)	0.0015 (1.183)	0.003** (3.42)	0.002** (2.15)	0.005** (2.88)	-0.007** (-2.49)
Education (EDUC)	0.006 (0.43)	-0.01 (-0.81)	-0.007 (-0.26)	-0.024 (-1.25)	-0.025 (-1.01)	-0.049 (-1.19)	0.057 (0.92)
Dummy Post '74 (DUMMY)	0.137 (0.36)	-0.22 (-0.49)	-0.087 (-0.108)	-0.37 (-0.67)	-0.795 (-1.12)	-1.17 (-0.98)	1.25 (0.714)
R^2 No. of Observations D.W.	0.48 31 1.85	0.68 31 2.23	0.59 31 2.06	0.76 31 2.33	0.79 31 2.04	0.79 31 2.15	0.77 31 2.16

t - statistic under parenthesis
* - significant at 90%
** - significant at 95%

distribution. In a full structural model, inflation and the rate of capacity utilization are related through aggregate supply and aggregate demand. In our sample, the coefficient of correlation between the two variables for the whole sample period (1960-91) is -0.62 (this negative correlation may reflect the dominance of supply shocks in the period). In this case, we should expect a negative indirect effect of inflation on the shares of low-income groups through the capacity utilization variable. **Third**, from a public finance view, the inflation tax is a source of revenues for the government, that could have financed subsidies to low-income families. In that case there would be a positive relationship between inflation and the share of the low quintils. **Fourth**, the period under consideration includes the Allende years in which a redistribution of income towards low-income groups coincided with an acceleration of inflation and the Pinochet years in which a deterioration in income distribution coincided with a period of disinflation. Thus, income shares of the 1st and 2nd quintils coincidentally moved in the same direction as the inflation rate. **Fifth**, both the 1st and 5th quintils correspond to groups whose income tend to be positively tied to the price level as they generate their income from self-employment in the informal sector or from profits and high-salaries groups.

Table 6

Model II: Income Distribution - Chile, 1960-1991

Dependent Variables / Explanatory Variables	Income Share 1st Quintil	Income Share 2nd Quintil	Income Share Bottom 40% (1st & 2nd Quin.)	Income Share 3rd Quintil	Income Share 4th Quintil	Income Share Middle 40% (2nd & 3rd Quin.)	Income Share 5th Quintil
Constant (C)	-2.34 (-1.70)	3.54 (2.08)	1.19 (0.40)	8.30 (3.99)	16.50 (6.02)	24.80 (5.48)	74.00 (11.34)
Capacity Utilization (UTIL)	5.71** (3.90)	4.07** (2.24)	9.77** (3.12)	3.71* (1.68)	2.02 (0.69)	5.74 (1.19)	-15.51** (-2.23)
Real Minimum Wage, lagged (SALMIN-1)	0.002 (0.57)	0.006 (1.14)	0.008 (0.92)	0.010 (1.52)	0.026** (3.01)	0.036** (2.52)	-0.045** (-2.16)
Inflation Rate (INF)	0.001** (2.06)	0.003** (3.25)	0.004** (2.83)	0.004** (3.76)	0.003** (2.11)	0.007** (3.01)	-0.011** (-3.37)
Education (EDUC)	-0.009 (-0.71)	-0.025 (-1.48)	-0.035 (-1.186)	-0.036 (-1.72)	-0.032 (-1.18)	-0.068 (-1.50)	0.104 (1.58)
Dummy Post '74 (DUMMY)	0.27 (0.76)	-0.048 (-0.11)	0.22 (0.29)	-0.173 (-0.32)	-0.62 (-0.88)	-0.79 (-0.68)	0.57 (0.34)
R^2	0.54	0.71	0.64	0.77	0.79	0.80	0.79
No. of Observations	31	31	31	31	31	31	31
D.W.	2.01	2.38	2.23	2.37	2.04	2.15	2.23

t - statistic under parenthesis
* - significant at 90%
** - significant at 95%

The third specification (model III) includes the rate of growth of real GDP as an explanatory variable. This variable has a positive and significant coefficient for the bottom 1st quintil and the bottom 40 percent, a smaller but still positive coefficient for the 3rd and 4th quintil and a negative coefficient for the 5th quintil. This is an interesting result suggesting that GDP growth, on average, was equalizing in Chile, e.g. it narrowed down income differentials by benefiting relatively more to low-income groups. Given, that the rate of GDP growth is (negatively) correlated with the rate of unemployment and (positively) associated with the rate of capacity utilization --variables that have a greater impact on the low quintils -- this result is in line with the findings of Model I and Model II. The dummy variable that appeared as insignificant in the previous specifications with unemployment and capacity utilization becomes negative and significant for all quintils, except the 5th quintil. This suggests that after 1974 a shift occurred in the Chilean economy that tilted income distribution in favor of the top 20 percent of the population, and therefore offsetting the 'equalizing' effect of growth which on average, was not very high either. In the other specifications, that regressive shift was captured, to a large extent, through the increase in the average unemployment rate after 1974 or the lower average rates of capacity utilization observed in that period. That shift, however, is not captured by the rate of GDP growth.

Table 7

Model III: Regressions Income Distribution - Chile, 1961-1991

Dependent Variable / Explanatory Variable	Income Share 1st Quintil	Income Share 2nd Quintil	Income Share Bottom 40% (1st & 2nd Quin.)	Income Share 3rd Quintil	Income Share 4th Quintil	Income Share Middle 40% (2nd & 3rd Quin.)	Income Share 5th Quintil
Constant (C)	1.766 (1.92)	6.511 (6.21)	8.278 (4.37)	11.05 (8.84)	18.03 (11.34)	29.08 (10.91)	62.63 (15.56)
GDP Growth (GROWTH)	0.036** (2.21)	0.020 (1.11)	0.056* (1.69)	0.015 (0.68)	0.003 (0.11)	0.018 (0.38)	-0.074 (-1.05)
Real Minimum Wage, lagged (SALMIN-1)	0.0053 (1.05)	0.008 (1.39)	0.013 (1.28)	0.011* (1.68)	0.027** (3.06)	0.038** (2.61)	-0.052** (-2.33)
Inflation Rate (INF)	0.0004 (0.63)	0.002** (2.47)	0.002* (1.67)	0.003** (3.26)	0.002* (1.95)	0.005** (2.69)	-0.008** (-2.57)
Education (EDUC)	0.015 (1.08)	-0.007 (-0.454)	0.008 (0.275)	-0.019 (-1.014)	-0.023 (-0.96)	-0.043 1.04)	0.035 (0.56)
Dummy Post '74 (DUMMY)	-0.587* (-1.90)	-0.668* (-1.899)	-1.25* (-1.97)	-0.74* (-1.78)	-0.94* (-1.76)	-1.69* (-1.88)	2.947** (2.18)
R^2	0.39	0.67	0.55	0.75	0.78	0.79	0.76
No. of Observations	31	31	31	31	31	31	31
D.W.	1.64	2.12	1.88	2.32	2.05	2.17	2.13

t - statistic under parenthesis
* - significant at 90%
** - significant at 95%

Finally, table 8 reports the estimates of model I (specification with the rate of unemployment) for the period 1974-91 including the ratio of social expenditure over GDP (unfortunately a comparable series for that variable is not available, continuously, for the period 1960-1973). It is interesting to note that the social expenditure to GDP ratio has a positive and significant impact on all quintils, except for the 5th quintil. This suggests that social expenditure benefitted both the relative income position of the middle-class and the bottom 40 percent in the period 1974-91 vis à vis the top 20 percent[20].

In addition, the coefficients of the unemployment variable and the real minimum wage are higher, in absolute value, in this sample than in the sample for the whole period.

Explaining Changes in Income Shares.

An interesting exercise is to use the estimates of the models to explain actual changes in income shares in Chile during some key sub-periods. Table 9, shows the actual changes in income shares of both the bottom 40 percent and the top 20 percent in the period 1974-89 vis à vis 1960-73 and 1990-92 vis à vis the period 1974-89 as explained by changes in the explanatory variables of model I (unemployment specification) and model III (growth specification). The decline in 1.4 percentage points of the bottom 40 percent in the period 1974-89 with respect to the period 1960-73 is explained in Model I, mainly by the average increase in the rate of

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[20] It is worth considering that social expenditure includes public spending in health, housing, subsidies to low-income groups besides education.

Table 8

Model IV: Regressions Income Distribution - Chile, 1974-1991

Explanatory Variable	Income Share 1st Quintil	Income Share 2nd Quintil	Income Share Bottom 40% (1st & 2nd Quin.)	Income Share 3rd Quintil	Income Share 4th Quintil	Income Share Middle 40% (2nd & 3rd Quin.)	Income Share 5th Quintil
Constant (C)	-3.560 (-1.82)	-3.540 (-0.89)	-7.10 (-1.23)	-3.150 (-0.48)	-1.410 (-0.16)	-4.570 (-0.31)	111.67 (5.70)
Unemployment Rate (UNEMP)	-0.101** (-6.02)	-0.113** (-3.28)	-0.214** (-4.32)	-0.137 (-2.46)	-0.173** (-2.37)	-0.311** (-2.48)	0.525** (3.11)
Real Minimum Wage, lagged (SALMIN-1)	0.023** (3.97)	0.037** (3.19)	0.060** (3.56)	0.050 (2.62)	0.077** (3.11)	0.127** (2.98)	-0.188** (-3.26)
Inflation Rate (INF)	0.0017 (1.34)	0.007 (2.55)	0.008 (2.22)	0.011 (2.649)	0.014 (2.59)	0.026 (2.69)	-0.034** (-2.65)
Education (EDUC)	0.042** (2.61)	0.055 (1.69)	0.098 (2.06)	0.071 (1.32)	0.094 (1.33)	0.165 (1.37)	-0.263 (-1.62)
Social Expenditure, lagged (SOCIAL-1)	0.766** (3.71)	1.086** (2.59)	1.852** (3.055)	1.504** (2.20)	2.112** (2.36)	3.617** (2.36)	-5.469** (-2.65)
R^2	0.88	0.58	0.69	0.57	0.63	0.62	0.595
No. of Observations	17	17	17	17	17	17	17
D.W.	2.35	2.38	2.35	2.59	2.80	2.72	2.59

t - statistic under parenthesis
* - significant at 90%
** - significant at 95%

unemployment -0.83 percentage points and by the decline in the real minimum wage, -0.44 percentage points. The contribution of changes in inflation and education over the relevant sub-periods are of second-order importance. In contrast, the change in rate of GDP growth (which was of small magnitude between 1974-89 and 1960-73, see table 1) has a small explanatory power to account for the decline in the share of the bottom 40 percent in the period 1974-89. The dummy variable accounts for most of the decline in the share of the bottom 40 percent between the two sub-periods.

The increase of 4.7 percentage points in the share of the top 20 percent in the period 1974-89 is explained at around 60 percent (2.72) by the increase in unemployment and the decline in the real minimum wage that squeezed the relative share of the bottom 40 percent (and also part of the income share of the middle 40 percent). The beneficiary of that redistributive shift was the top 20 percent. Once again, the explanatory power of the model with the rate of growth of GDP was rather low, to account for the shift in income distribution towards the top 20 percent[21].

Finally, the improvement in the income share of the bottom 40 percent by 1 percentage point during 1990-92 is explained to a large extent by the improvement in labor market performance as reflected by the decline in unemployment and increase in minimum wages in this period.

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[21] Other factors that probably explain the regressive shift in income distribution during the years of Pinochet is the decline in public sector wages in real terms that affected, mainly, the middle class and the assets redistributions associated to the privatization and the rescue operations of main financial intermediaries after the crisis of 1982-83 (see Meller, 1991).

4. CONCLUSIONS.

After a relatively stable pattern of income distribution throughout the 1960s and a redistribution towards low income groups during the Allende Government, income distribution worsened for the bottom and middle 40 percent during the Pinochet Regime. The top 20 percent income group of the population was the great beneficiary of these redistributive shifts against low-income groups and the middle class. The Aylwin Administration reverted most of the deterioration of the income share of the bottom 40 percent, though still the top 20 percent capture a greater percentage of national income than its historical average of before 1973.

Our empirical analysis shows that the deterioration of income distribution for the poor in Chile in the initial years of the market-oriented reform process is, to a large extent, due to the weak performance of the labor market after 1974, reflecting in high and persistent unemployment and a squeeze on the real minimum wage and other wages categories. Inflation and education have low explanatory power to account for the post-1974 deterioration in income distribution for low-income groups.

The middle-class (3rd and 4th quintils) declined its share of national income by near 3 percentage points, on average, during 1974-89. The reform of the public sector, through reduction of employment and a prolonged decline in public sector wages, seems to account for an important part of the decline in the share of this group. A post-1974 dummy is important in "explaining" the increase

Table 9

Explaining Changes in Income Shares of Bottom 40 Percent and Top 20 Percent

	BOTTOM 40%				TOP 20%			
	1974-1989 w/r 1960-1973		1990-1992 w/r 1974-1989		1974-1989 w/r 1960-1973		1990-1992 w/r 1974-1989	
Actual Change in Income Share (Percentage Points)	-1.4	-1.4	1.0	1.0	4.7	4.7	-0.5	-0.5
Explained by (Percentage Points) Change in:	Model I	Model III	Model I	Model III	Model I	Model III	Model I	Model III
Unemployment Rate	-0.83		0.75		1.20		-1.06	
GDP Growth		-0.006		0.14		0.007		-0.18
Real Minimum Wage	-0.44	-0.341	-0.024	-0.019	1.52	1.36	0.08	0.07
Inflation	-0.003	-0.003	-0.09	-0.12	0.01	0.014	0.42	0.48
Education	-0.113	0.129	-0.113	0.10	0.92	0.56	0.72	0.44
Dummy	-0.087	-1.25	-0.087	-1.25	-1.25	2.95	1.25	2.95
Residual	-0.07	-0.07	0.56	2.1	-0.2	-0.19	1.91	4.3

in the share of the top 20 percent suggesting a sort of permanent regressive shift in income distribution against the middle-class in Chile.

The empirical analysis shows that recessions with high unemployment are socially regressive, concentrating a disproportionate burden of the adjustment on the poor, who lower their share of income[22]. Growth, on the other hand, is rather weak as an equalizing force[23] unless accompanied by a major impact upon labor markets. This might explain why trickle down was so sluggish during 1976-81. Only when the Chilean economy approached full capacity, real wages increased and unemployment dropped to a historical low in the early 1990s, income distribution started to improve.

The latter justifies some moderate optimism about the prospects of income distribution in Chile in the next few years. If the economy keeps growing and investment grows even faster --as in the last two years-- the labor market will remain tighter than in any period in the last 30 years and distributive conditions may well improve.

Further progress in the welfare of lower-income groups can be sought through social policies. Social programs demand a high share of government resources in Chile, and these are directed in a fairly large proportion towards the poorer 40% of the population.

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[22] A drop in the rate of capacity utilization reduce relatively more the income share of low-income groups.

[23] GDP growth appears as "equalizing", say its coefficient is greater for the lower quintils)

The scope for improving the **quality** of social services is higher today than in the past, as most of the pressures upon social expenditure coming from entitlement and demographic pressures have eased during the late 1980s and early 1990s.

Further targeting, on the other hand, should be studied cautiously, to avoid the risk of a "poverty trap" in which incentives are weaken for "self-empowerment" to operate and pull the poor out of poverty by its own means after a critical threshold of basic needs are met. Also social policies should not alienate middle income groups already affected by adverse distributive trends in the past.

The analysis indicates that the effect of inflation and income distribution is a complex one, subject to potential non-linearities and several effects of opposite sign.

We posed at the beginning the question to which extent a liberal policy regime (e.g. a liberalized economy) is compatible with social equity. The experience of Chile in this matter indicates that income distribution deteriorated, on average, during the program of reforms. An important part of the story is due to macroeconomic crises and its sequels of high unemployment and depressed real wages. In fact, it is not clear that more structural reforms like trade liberalization and deregulation are socially regressive. However, our conclusion from the Chilean experience is that market outcomes --that dominate in a liberalized economy -- may generate regressive results through for example high and persistent unemployment (e.g. a market failure). In this case,

there is an important role for social policy to correct regressive shifts in income distribution outcomes from market processes. Finally, a sort of Kuznets relationship between economic reform and income distribution could be assumed. In this case, income distribution would tend to worsen in the initial phase of a process of reform when real wages fall and unemployment increases to then improve latter on as medium-term growth takes-off and labor market conditions improve. Of course, more empirical analysis of the evolution of income distribution in other reforming economies is needed to explore more fully this relationship.

REFERENCES

Alesina, A. and D. Rodrik (1991) "Distributive Politics and Economic Growth" NBER Working Paper # 3668 March.

Arellano, J.P. (1985), Políticas Sociales y Desarrollo. Chile 1924-1984, CIEPLAN, Santiago.

Banco Central de Chile, (1990) Indicadores Económico y Sociales, 1960-1989, Santiago.

---------- Boletín Mensual, Various Issues.

Bitar, S. (1979) Transición, Socialismo y Democracia Mexico City, Siglo XXI.

Bourgingnon, F., J. de Melo and A. Suwa (1991) " Modeling the Effects of Adjustment Programs on Income Distribution " World Development Vol. 19, #11.

Blinder, A. and H. Esaki (1988) "Macroeconomic Activity and Income Distribution in the Postwar United States" The Review of Economic and Statistics.

Cardoso, E. and A. Helwege (1992) Latin America's Economy. Diversity, Trends, and Conflicts The MIT Press.

Cardoso, E., R. Paes de Barros and A. Urani (1992) "Inflation and Unemployment as Determinants of Inequality in Brazil: The 1980s". Paper presented at the NBER-IDB Conference "Stabilization, Economic Reform and Growth", December 17-18, 1992

Cabezas, M. (1988), Revisión Metodológica y Estadística del Gasto Social en Chile 1970-86, Notas Técnicas Nº 114, CIEPLAN, Santiago.

Castañeda, T. (1990), Para Combatir la Pobreza. Política Social y Descentralización en Chile durante los '80, Centro de Estudios Públicos, Santiago.

Corbo, V. (1993) "Economic Reforms in the Last Twenty Years in Chile: An Overview" Paper presented at the Annual Meeting of the Eastern Economic Association, Washington DC; March 19, 1993.

------and A. Solimano (1991), "Chile's Experience with Stabilization Revisited", in M. Bruno, S. Fischer, E. Helpman, N. Liviatan and L. Meridor (eds): Lessons of Economic Stabilization and its Aftermath. The M.I.T. Press.

Cortázar, R. and J. Marshall (1980) "Indice de Precios al Consumidor en Chile: 1970-1978" Colección de Estudios CIEPLAN #4 Noviembre.

Cortazár, R. (1982), Desempleo, Pobreza y Distribución: Chile 1970-81, Apuntes CIEPLAN Nº 34, CIEPLAN, Santiago.

ECLAC (1987), Antecedentes Estadísticos de la Distribución del Ingreso. Chile, 1940-1982, Serie Distribución del Ingreso, 3, Santiago.

Edwards, S. and A. Edwards (1987) Monetarism and Liberalization: The Chilean Experiment Ballinguer Press.

Fontaine, J.A. (1989) "The Chilean Economy in the 1980s: Adjustment and Recovery", in S. Edwards and F. Larraín (eds): Debt, Adjustment and Recovery. Latin America's Prospects for Growth and Development. Basil Blackwell.

FFrench-Davies, R. (1973) Políticas Económicas en Chile: 1952-1970 CIEPLAN, Ediciones Nueva Universidad.

Galor, O. and J. Zeira (1993) "Income Distribution and Macroeconomics" The Review of Economic Studies 60.

Heskia, I. (1979), Distribución del Ingreso en el Gran Santiago, Documento de Investigación Nº 41, Departamento de Economia, Universidad de Chile, Santiago.

Jadresic, E. (1990), " Salarios en el Largo Plazo: Chile 1960-1989" Colección de Estudios Cieplan # 29, Septiembre.

Kaldor, N. (1956) "Alternative Theories of Distribution" Review of Economic Studies, 23.

Larraín, F. and R. Vergara (1992 "Distribución del Ingreso, Inversión y Crecimiento" Cuadernos de Economia, # 87 , August.

----- and P. Meller (1991) "The Socialist-Populist Chilean Experience: 1970-1973", in R.Dornbusch and S. Edwards (eds.) The Macroeconomics of Populism in Latin America NBER, The University of Chicago Press.

Lindert, P. and J. Williamson (1985) "Growth, Equality and History" Explorations in Economic History 22. Academic Press.

Marfán, M. (1992), "Reestimación Del Crecimiento Potencial en Chile: Implicancias para el Crecimiento",Cuadernos de Economía #87, August.

Marcel, M. (1984), Gasto Social del Sector Publico 1979-83, Notas Técnicas Nº 66, CIEPLAN, Santiago.

Marshall, J. (1981), "El Gasto Publico en Chile: 1969-1979", Colección Estudios CIEPLAN Nº 5, Santiago.

Meller, P. (1990) "Chile" in J. Williamson (ed.) Latin American Adjustment. Institute of International Economics, Washington DC.

---- (1991) "Adjustment and Social Costs in Chile During the 1980s" Special Issue: Adjustment with Growth and Equity. World Development Vol. 19; #11, November.

MIDEPLAN (1992), Población, Educación, Vivienda, Salud, Empleo y Pobreza. CASEN 1990, Ministerio de Planificación y Cooperación, Santiago.

Mujica, P. and O. Larrañaga (1992), Políticas sociales y de distribución del ingreso en Chile, Documentos de Trabajo 106, Inter American Development Bank, Washington D.C.

Oyarzo, C. (1990) "Ciclo Económico y Distribución Del Ingreso: Chile, 1960-90" Serie de Investigación # 28, Ilades-Georgetown.

Person, T. and G. Tabellini (1991) "Is Inequality Harmful for Growth? Theory and Evidence". NBER Working Paper 3599, January.

Peroti, R. (1990) " Political Equilibrium, Income Distribution and Growth" mimeo M.I.T

Pollack, M. and A. Uthoff (1986), "Pobreza y Mercado del Trabajo: Aspectos Conceptuales y Metodología", Documento de Trabajo Prealc, Santiago, Chile.

Raczynski, D. and P. Romaguera (1992), "Chile: Poverty, Adjustment and Social Policies in the 1980s", Paper Prepared for the Conference "Confronting the Challenges of Poverty and Inequality in Latin America", The Brookings Institution and the Interamerican Dialogue, Washington DC, July 16-17.

Rao C. and S. Mitra (1971) Generalized Inverse of Matrices New York, John and Wiley.

Rodríguez, J. (1985), La Distribución del Ingreso y el Gasto Social en Chile, Ilades, Santiago, Chile.

Ricardo, David (1817) Principles of Political Economy and Taxation Penguin Books (1971).

Riveros, L. and F.J. Labbe (1986), Situación Distributiva y el Impacto del Desempleo: un Análisis de Largo Plazo, Revista Economía y Administración, Universidad de Chile, Santiago.

Solimano, A. (1992) "Economic Growth and Income Distribution in Chile: Macroeconomic Trade-Offs Revisited" Revista de Análisis Económico Vol. 7, # 2, November.

----- (1988a) " El Impacto Macroeconómico de lcs Salarios Mínimos en Chile" Revista de Análisis Económico, Vol.3, #1, June.

----- (1988) " Política de Remuneraciones en Chile: Experiencia Pasada, Instrumentos y Opciones a Futuro" Colección de Estudios CIEPLAN #25, Diciembre.

-------- (1993), "Growth, Equity and Stability: The Chilean Economy in the 1990s", in L. Taylor (ed): The Rocky Road to Reform. Income Distribution, Economy Growth and Politics in the Third World. (forthcoming) M.I.T. Press.

Taylor, L. (1991), Income Distribution, Inflation and Growth: Lectures on Structuralist Macroeconomic Theory. The M.I.T. Press.

Torche, A. (1987) "Distribuir el Ingreso Para satisfacer las necesidades Básicas" in F. Larraín (ed.) Desarrollo Económico en Democracia Ediciones Universidad Católica de Chile.

Yañez, J. (1979) "Una Corrección al Indice de Precios al Consumidor durante el Período 1971-1973" Departamento de Economía, Universidad de Chile.

----- (1984), El Gasto Público en los Sectores Sociales 1970-1980. Determinación y Análisis, Facultad de Ciencias Económicas y Administrativas, Universidad de Chile, Santiago.

APPENDIX

BASIC DATA

Income Distribution

The series used in this paper come from the University of Chile Employment and Income Surveys for Greater Santiago. These surveys have been carried continuously on a quarterly basis since 1956, including an earnings block in the June survey. The collected data has been classified per quintiles of income earners (instead of households).

The University of Chile data on income distribution was subject to some controversy in the early 1980s, after the publication of the study of I.Heskia (1979), which produced the first annual series of income distribution over a relatively long period (up to 1978). The basic criticism was that actual incomes were underestimated in these surveys, but also that the degree of underestimation changed over income groups and time[24]. This criticism is valid though it is also applicable to other income surveys.

Table A-1 compares the series used in this paper with income distribution data from three alternative sources for the years in which information for the latter is available. These alternative sources are: (i) household budget surveys for Santiago, carried out by the National Institute of Statistics (INE); (ii) the CASEN national survey, commissioned by MIDEPLAN, and (iii) INE's National Employment Survey, which once a year collects earnings data at a national level very much like the University of Chile does in Santiago. From this table it appears that although there are differences in the levels of income shares for the different groups[25] in some years, the changes in the available subperiods are broadly consistent between the different sources (see table A-1).

Unemployment

Unemployment rates are obtained from the University of Chile quarterly surveys for Greater Santiago. The basic data has been adjusted to include workers enrolled in emergency employment programs as unemployed. This procedure was customarily used in

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[24] See Cortazar (1982), Riveros and Labbe (1985) and ECLA (1987).

[25] This difference may well arise from the fact that the alternative series are based on incomes data for households rather than income earners and poorer households tend to be larger than richer ones.

TABLE A-1

CHILE: ALTERNATIVE ESTIMATES OF INCOME DISTRIBUTION 1969-91

	U OF CHILE (a)	INE EPF G Stgo (b)	INE ENE National (c)	CASEN National (d)
Poorer 40%				
1969	11.7	19.4		
1978	9.7	14.5	14.1	
1987	7.5			12.3
1988	8.9	12.6	11.8	
1989	9.5		12.6	
1990	9.0		13.3	13.6
1991	9.6		14.7	
Intermediate 40%				
1969	31.3	36.2		
1978	29.5	34.6	34.0	
1987	24.0			31.2
1988	26.4	32.8	27.8	
1989	27.7		27.9	
1990	26.7		28.7	32.1
1991	28.2		30.6	
Richer 20%				
1969	57.0	44.4		
1978	60.8	50.9	51.9	
1987	68.5			56.5
1988	64.7	54.6	60.4	
1989	62.8		59.5	
1990	64.3		58.0	54.3
1991	62.2		54.7	

a) University of Chile, Employment Survey for Greater Santiago.
b) Households Budget Survey, INE. Distribution of spending.
c) National Employment Survey, INE.
d) CASEN Survey, MIDEPLAN

the 1980s in Chile to keep a closer track of the actual conditions of the labor market. Such an adjustment is also relevant for our analysis in this paper as these workers were paid a subsidy which used to be only a fraction of the national minimum wage.

Capacity Utilization

Capacity utilization ratios are taken from Marfan (1992), updated for 1992. These ratios are calculated upon National Account figures, which also provide the figures for GDP growth.

Inflation and Real Wages

Inflation rates are calculated as the annual rates of change in the Consumer Price Index, published by INE. This index has been reestimated for the high inflation periods of 1970-73 and 1970-78 by Yañez (1984) and Cortazar and Marshall (1980) with substantially different results. For 1970-78, therefore, annual inflation rates have been taken form these latter sources.

The adjusted CPI is also applied to deflate the annual change in money wages. The latter is obtained from the National Wages Index, published by INE.

Education

An indicator for education is also included in the equations estimated above. This is given by the share of population with complete basic education or more on total adult population, provided by employment surveys.

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