Documento de Trabajo
FLACSO - Programa Chile
Serie: Educación y Cultura No. 20
Santiago, Marzo de 1992

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S E R I E
EDUCACION Y CULTURA

HIGHER EDUCATION IN CHILE: 1980-1990

José Joaquín Brunner

Esta serie de Documentos es editada por el Programa de la Facultad Latinoamericana de Ciencias Sociales (FLACSO), en Santiago de Chile. Las opiniones que en los documentos se presentan, así como los análisis e interpretaciones que en ellos se contienen, son de la exclusividad de sus autores y no refleja necesariamente los puntos de vista de la Facultad.

I N D E X

INTRODUCTION

Basic features of Chilean Higher Education (HE) were drastically altered by the 1980 Reform. This article reviews some major effects brought about by these changes, both at system and institutional level, and their impact on selected quality, efficiency and equity dimensions 1/.

1/ Based on a study prepared by the author and G.Briones with the support of the Ford Foundation, Grant N9890-0800

1. CHILE'S HE SYSTEM BEFORE 1980: OVERVIEW

Up to 1980, the Chilean HE system had the following characteristics: 2/

- It was a one tier, one sector system. It comprised 8 universities: 2 state and 6 private universities (3 Catholic and 3 non-confessional universities). All these establishments were funded by the public treasury 3/. Henceforth, these 8 institutions will be referred as the "traditional" or "old" universities, following the local convention. Within each institution, the undergraduate level was clearly predominant. In 1980, only 1% of total enrollment was located at the postgraduate level. Non-university, postsecondary institutions were not recognized as being part of the HE system.

- HE establishments were legally recognized as self-governing bodies with no administrative dependence from Government.

  Universities were entitled to freely initiate schools and careers and extend professional titles and academic degrees. But in 1973, shortly after coming to power, the Military Government decided the compulsory intervention of all universities, imposed a tight control over them and cancelled their self-governing powers. Faculty associations and student bodies were prohibited. Universities underwent what was euphemistically labelled as a "depuration" process.

- Financing of HE establishments was protected through public incremental funding based on previous budget allocations and a distribution formula loosely arranged according to institutional size, enrollments and additional costs originated by research and postgraduate programmes.

2/ For a more detailed overview see JOSE JOAQUIN BRUNNER (1986) Informe sobre la Educación Superior en Chile (Santiago de Chile, FLACSO) and JOSE JOAQUIN BRUNNER and GUILLERMO BRIONES (1992) Higher Education in Chile: Effects of the 1980 Reform (Santiago de Chile, FLACSO; manuscript)

3/ This peculiarity resulted in high system homogeneity. In fact, private universities created before 1980 can be considered, for all practical purposes, as public institutions. For a more elaborate discussion of this see DANIEL LEVY (1986) Higher Education and the State in Latin America. Private Challenges to Public Dominance (The University of Chicago Press), chapter 3

- No general HE law existed. But (new) universities had to be established with the Government's approval, thus securing public funding and the (legal) validity of their educational certificates.

- Free of charge HE was the norm but selective admission was enforced on the basis of the compound result of students scores in a national standardized academic test (*Prueba de Aptitud Académica, P.A.A.,* introduced in 1967) and their secondary school grades.

2. THE 1980 REFORM: AIMS AND MEANS

The 1980 Reform itself consisted of a package of policy and legislative measures adopted by the Military Government (1973-1990), starting in December 1980. Its primary objectives can be summarized as follows: 4/

- To open-up HE. Deregulation was announced as a way of promoting "private initiative" in the organization of new institutions. Only minimal requirements were established for the creation of private institutions. It was ascertained that from this moment on, expansion of HE enrollment should be taken care of by private institutions.

- To institutionally diversify the HE system. Three vertical tiers were established, based on a functional hierarchy of educational certificates:

  -- **Universities:**
  are expected to focus on long cycle undergraduate programmes leading to *licenciaturas* and to professional titles requiring a *licenciado* degree. Only universities can initiate postgraduate programmes.

  -- **Professional Institutes** (PIs):
  are restricted to four year careers leading to professional titles defined as not requiring the *licenciatura*.

  -- **Technical Training Centers** (TTCs):
  are restricted to short circle (two year) vocational careers leading to technical certificates.

- To reduce the institutional power of the two traditional state universities. Both the **Universidad de Chile** and the **Universidad Técnica del Estado** (later Universidad de Santiago de Chile) were forced to give up their regional centers. From the Government's point of view, the contraction of these two universities was justified as a way of rationalizing and making them manageable. Through a process of institutional amalgamation regional centers, in turn, gave birth to 12 new state universities and to two state PIs.

4/ The 1980 Reform legislation is contained basically in: Decreto Ley Nº 3.541 de 1980; Decretos con Fuerza de Ley Nºs 1,2,3, de 1980; Decretos con Fuerza de Ley Nºs 4,5,22 y 24 de 1981. For this see JOSE JOAQUÍN BRUNNER (1990) "La Educación Superior en Chile: 1960-1990: Evolución y Políticas" (Santiago de Chile, FLACSO; manuscript)

- To partially transfer the cost of state-financed institutions to the students and/or their families (cost recovery) and to force these institutions to diversify their funding sources. Incremental funding as a means of allocating public resources to HE was discontinued. Institutional support was confined to the 8 traditional universities and the 14 new state-institutions. In all these establishments core funding would now have to be supplemented through institutional self-financing: tuition fees, competition for research funds, and contract funding. A small amount of public funding was linked to a "best-students formula", based on the number of the best 20.000 scorers in last years P.A.A. enrolled by each institution 5/. In addition, a Government financed student-loan scheme was introduced. Lastly, civil-servant status of academic personnel pertaining to state institutions was eliminated, thus enabling universities to differentiate salaries and compete for faculty staff. In turn, the funding of new private institutions was made dependant on resources obtained from tuition fees. (In fact, income derived from tuition fees covers most part of capital investment in these institutions also). No public funding was visualized for new private institutions, but for one exception: as of year 1989, they can compete for "subsidy-carrying students" (the 27.500 "best and brightest"). Students enrolled in (new) private institutions have no access to subsidized loans. In addition, a publicly financed National Research Fund (*Fondo Nacional de Desarrollo Cientifico y Tecnológico, FONDECYT*) was set up. Researchers were called upon to contend for funds in a yearly competition under peer-review control. Finally, private grants to both private and state universities were stimulated through specific tax deductions.

In short, using the Cerych & Sabattier model for analyzing HE reforms 6/, the following features of the Chilean case need to be mentioned:

a. The degree of system change envisaged by the Reform was high, affecting the boundaries of the system itself as well as all institutions.

b. The scope of intended changes was inclusive, affecting practically all individuals within each institution and potential actors outside the system.

5/ This figure was later broadened to include the best 27.500 scores

6/ See LADISLAV CERYCH & PAUL SABATTIER (1986), Great Expectations and Mixed Performance. The Implementation of Higher Education Reforms in Europe (European Institute of Education and Social Policy, Trentham Books)

c. The depth of the Reform led to the adoption of radical policies. Policy goals strongly diverged from existing values and practices of HE.

d. The goals of the Reform were clearly stated and had internal consistency as will be shown later.

e. Changes were brought about by central edict, from top to bottom and through bureaucratic enforcement. B.Clark's assertion on the feasibility of authoritarian reforms in HE perfectly apply to the Chilean case: "Of course, in systems under authoritarian or totalitarian rule, the centralization of authority and the central concentration of administration allow more manipulation from above and on a large scale" 7/. In fact, institutions had to endure the changes envisaged by the reformers without having the opportunity to intervene in the process nor to negotiate its outcomes. Authoritarian minded reformers will probably say that only because of this could system-wide changes be brought about and that reforms need not be assessed by the context in which they took place nor by the political conditions that lay behind or made them possible. Reforms, they will argue, should only be evaluated in terms of their actual outcomes and more general effects on society. In turn, those who experienced these changes without any possibility of resisting or discussing their aims and implementation procedures will probably have less confidence in the blessings of supposedly efficient-authoritarian rule. In short, one must not forget that under these special conditions, the cost of reforms must also include the repression suffered by those who would not yield.

7/ BURTON CLARK (1987), "The Organization Conception" in B.Clark (ed.), Perspectives on Higher Education. Eight Disciplinary and Comparative Views (University of California Press), p. 125

3. SYSTEM LEVEL EFFECTS OF THE 1980 REFORM

At the system level, the main outcomes of the policy and legislative measures adopted can be seen as a series of structural shifts that have taken place during the last 10 years.

3.1 From low to high system differentiation

A relatively small scale HE system, with a total enrollment of approximately 119.000 students distributed in 8 universities with a common funding mechanism and a similar development pattern --modelled according to the ideal of all becoming "comprehensive universities" covering a wide array of discipline and/or profession-based faculties (*facultades*) and both research and teaching functions, has developed into a system with a total enrollment of circa 250.000 students distributed in 310 different establishments. These wildly vary in their size, functions and core values, and each one adopts a development pattern adjusted to its mission-definition and market orientation. Thus institutional homogeneity has been replaced by system heterogeneity. In 1990, Chile's HE system includes two major sectors (i.e., a public sector which incorporates 20 universities and 2 PIs with public institutional funding and a private sector which incorporates new institutions with no public funding, distributed along the three vertical tiers). The growth in the number of establishments by tier and sector is shown in Table 1.

3.2 From a state subsidized selective system to "open access" according to achievement and income

Chile is the first Latin American country to have introduced a comprehensive and stringent cost recovery scheme for all HE students thorough tuition fees or the deferred payment of state subsidized loans. Whereas before 1980 students were admitted without charge to one of the 8 old universities according to their school performance and achievement in the P.A.A., after the 1980 Reform all HE establishments, both public and private, charge fees that are expected to cover the approximate direct cost of the given career adjusted according to market reputation of each institution. In practical terms, the 22 publicly supported institutions continue to sustain selective admission procedures. In addition, students are asked to pay tuition fees but those who can prove economic

incapacity have access to state subsidized loans 8/. Students enrolled in the private sector will be admitted regardless of their school performance and achievement in the standardized academic test so long as they pay the full price charged by each institution 9/. The Government does not control the amount of fees charged by the institutions nor does it intervene in the process of fixing yearly adjustments.

TABLE 1
CHILE: GROWTH OF HE INSTITUTIONS, 1980-1990

INSTITUTIONS	1980	1985	1990
UNIVERSITIES	8	21	60
With public funding	8	18	20
New private no public funding	-	3	40
PROFESSIONAL INSTITUTES	-	25	82
With public funding	-	6	2
New private, n.p.f.	-	19	80
TECHNICAL TRAINING CENTERS	-	102	168
With public funding	-	-	-
New private, n.p.f.	-	102	168
TOTAL	8	148	310

Source: División de Educación Superior, MINEDUC, 1991.

3.3 From a State financed system to mixed public/private funding

Until 1980, practically the full cost of HE was disbursed by the Government on a yearly basis through budgetary allocations to the 8 old universities. Traditionally, Government allocations followed the path of incremental funding. Thus the total amount assigned to the 8 old universities, expressed as a share of GNP, rose from 0,72% in 1960 to 1,28%

8/ Of course only a fraction of those students who demand loans will get them. See ANDRES SANFUENTES (1990), "Comportamiento Universitario y Políticas de Financiamiento", in C.Lehmann (ed.), Financiamiento de la Educación Superior: Antecedentes y Desafíos (Santiago de Chile, Foro de la Educacion Superior, Centro de Estudios Públicos)

9/ But a few of the new private institutions are now becoming more selective as a consequence of increasing demand and the competition for market reputation

in 1970 and to 2,11% in 1972. After the advent of the Military Government and up to 1980, the same allocation mechanism was maintained, but with decreasing amounts. In 1980, HE funding totalled 1,05% of GNP. After the 1980 Reform, Government allocations continued to fall and were drastically rearranged. In fact, from that moment on, institutional core funding was restricted to the 22 public sector establishments. Moreover, a portion of public resources was linked to a "best-students formula", based on the number of the 20.000 (later 27.500) best scorers in last years P.A.A. enrolled by each establishment. In addition, a Government financed student-loan scheme was introduced. A proportion of research funds going to HE was separated from institutional core funding and made available on the basis of a yearly project competition decided thorough peer review. The funding of new private institutions was made dependant on resources obtained from tuition fees. Lastly, HE institutions were encouraged to seek supplementary funding both from public and private sources through various means such as contractual funding, income for services and from private philanthropy.

3.4 From state-corporative system coordination to market-policy regulations

Traditionally, system coordination was provided by state authority and institutional oligarchies. In fact, as has been stated by B.Clark, "national systems not strictly organized as state systems are likely to depend heavily on the many ways that academic oligarchy can link persons, groups, and institutions. When institutions are funded mainly by Government, academics normally seek the privileged autonomy of a direct and unfettered lump-sum grant from the national treasury to the individual institution (...) with past commitments and budgets guaranteeing and adequate sum" 10/. This was precisely the way Chilean HE worked and produced system coordination until the 1980 Reform. The 8 old universities benefited from "privileged autonomy" --which came to an end in its self-governing features after the military intervention; received permanent Government support through yearly lump-sum grants, and produced their own self-administered ways and means of coordination, the most important being the Rectors Council (**Consejo de Rectores de las Universidades Chilenas**) chaired by the Rector of the oldest institution.

10/ BURTON CLARK, op.cit, p.140-41

The 1980 Reform radically altered these arrangements. From now on, system coordination was to be provided mainly by a social choice context "in which there are no inclusive goals, and decisions are made independently by autonomous organizations" 11/ which were called upon to compete for students, faculty and resources. Market-orientation become the catch word that was presumed to best capture the practical philosophy of the 1980 Reform, both for friends and foes alike. Additionally, system coordination was to come from regulations provided by policy orientations and the allocation of public money. Thus institutional leverage and academic-oligarchic power of professors, deans and rectors were both curtailed by the Reform, with the expectation of changing the system's self-centerdness (its monopolistic features, as was claimed by the Military Government) and forcing its opening to society's demands as expressed through markets and diversified funding opportunities.

In this context, "competition is seen as leading to value for money for the consumer and a diversity of products to suit individual demands. In broad terms, the public sector is seen as wasteful, inefficient, and unproductive, while the private sector is seen as efficient, effective and responsive to the rapid changes that are needed in the modern world" 12/.

11/ BURTON CLARK, op.cit., p.137

12/ GEOFFREY WALFORD (1991) "Changing Relationship between Government and Higher Education in Britain", in G.NEAVE AND F.VAN VUGHT (eds.), Prometheus Bound. The Changing Relationship Between Government and Higher Education in Western Europe (Oxford, Pergamon Press, 1991), p.169

4. INSTITUTIONAL AND OPERATIONAL EFFECTS OF THE 1980 REFORM

In this section changes occurred in the main functional variables of the Chilean HE system during the last decade will be addressed.

a. The rapid increase in the number of HE institutions over a relatively short period of time has resulted in four major effects. **First,** Chilean HE has become private-dominant in the non-university levels and is now characterized by its dual public/private nature at the university level. In turn, post-secondary, non-university HE has taken the form of a (private) market-concern with a wide supply of different study opportunities. **Second,** establishments have grown more regionally dispersed thus enlarging access opportunities over the whole of the country, particularly in the non-university levels. Nonetheless, overall distribution of enrollment has changed in the direction of a still higher concentration in the capital city. **Third,** supply of HE is now provided by a large number of small size private institutions and a short number of medium-size establishments. **Fourth,** supply of new entrance opportunities shows an increasing over-extension with respect to enrollment demand. The latter phenomenon is most intense at the non-university levels but can also be perceived in the private university sector.

TABLE 2
CHILE: HE SUPPLY AND DEMAND, 1983-1990

Variable	1983	1985	1990
Terminal enrollment at the secondary level	122.210	137.795	132.018
Number of students who take the PAA(1)	119.245	121.168	114.343
New openings supplied by the HE system	72.765	116.564	162.794
1st year enrollments	64.037	71.766	96.089
Ratio of 1st year enrolls./ new openings	88,0	61,6	59,0
Total HE enrollment	175.250	201.140	249.482

Source: División de Educación Superior, MINEDUC, 1991
NOTE : Considers both High School graduates from last years cohort and school leavers from previous years who take the PAA

b. The founding of new private institutions was encouraged through a permissive licensing system. In fact, private universities could now be established having to meet only one condition, i.e., to offer at least three professional careers leading to professional certificates selected out of twelve

defined by law as previously requiring the obtention of a *licenciatura* 13/. In the case of private universities and PIs, a special examination procedure was established. Once officially authorized by the Ministry of Education, the new private institution must sign an examination agreement with either one of the traditional universities or one of the new state institutions. This agreement takes the form of a private contract without intervention by any public body nor further Government control. In accordance with the examination agreement new private institutions must submit their teaching programmes for approval by the examining institution. During a period of 5 to 10 years their students must take their yearly examinations, and final graduation exam, with a committee composed by faculty members from both the new and the examining institution. After satisfactory completion of the examination period, the new institution will automatically obtain the status of a full autonomous university or PI. No additional accreditation and/or evaluation procedures were established, the underlying idea being that quality and efficiency were to follow from competition for students, teachers and researchers, and for

13/ Later this specification was made still weaker, allowing private institutions to be created [illegible] of conferring just one professional certificate out of a list of 15 defined by law as requiring a *licenciatura*. These correspond to the following careers: law, economics, psychology, medicine, odontology, engineering, forestry engineering, agronomy, chemistry and pharmacy, veterinary, biochemistry, architecture, primary education teacher, secondary education teacher, special education teacher.

public and private funds 14/. As a result, new private establishments mushroomed.

c. HE enrollment has increased more than twofold during the last decade. The whole expansion has been provided by private sector institutions, mostly through the non-university tiers. University enrollment increased by 12.6% during the decade, expansion being produced also exclusively by new private universities. As a result, 52,4% of total enrollment is being provided now by private institutions. But at the university level, enrollment in publicly funded institutions clearly outweighs private sector enrollment, the latter contributing with only 14,8% of the total share at this level. From a comparative point of view, Chilean HE --with a gross enrollment ratio of 18,6%, gives only fair participation to the corresponding age group (20-24 years). In the case of

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14/ In March 1990, four days before the installation of a newly elected Government a law for the whole educational system was passed by the Military Government. The larger part of the law refers to the HE system. Under the new law, a public, autonomous body --the Higher Council of Education -- was set up, with two major functions: (i) to accredit new private universities and PIs, and (ii) to approve the core national curriculum for primary and secondary education.

The accreditation procedures that were introduced have the following characteristics:

* They provide a licensing system for the establishment of new private universities and PIs centred around the approval of both an institutional project and the career-programmes that will be offered. Once the institutional project and career-programmes have been approved by the Council, the institution is officially recognized by the State and can initiate its activities.

* They also provide a temporary institutional assessment system whereby the development of each approved institutional project is periodically reviewed (once a year) and closely monitored, during a minimum period of six years, after which the Council can declare the full autonomy of a private institution.

* Under the regulations of the 1990 law, all universities and PIs that were created after 1981 and have not been granted full autonomy are free to choose between remaining within the examination system or submitting to the newly established accreditation procedures. These procedures are therefore optional for already existing private HE institutions.

* Moreover, under these regulations, institutions that might be created before March 1992 can decide between being accredited by the HCE or employ the 1980 examination procedures. New private universities and PIs created after March 1992 will have to be accredited by the Council. Henceforth accreditation becomes mandatory.

As a result of the newly established procedures, out of the 40 existing private universities, 21 have chosen to be accredited by the Higher Council of Education. They comprise 71% of all students enrolled in the private university sector. Of the 80 existing private PIs, 15 of which have already gained their full autonomy under the examination regime, 18 have chosen to be accredited by the Council. They comprise 33% of all students enrolled in private PIs.

public sector institutions, enrollments cover all fields of study, their major concentrations being in engineering and related technologies, education and teacher training, the social sciences, and commercial & business administration. Private institutions present a very different distribution-profile of its enrollment. In Tier I institutions, law, social sciences and commercial and business administration careers account for more than 80% of total enrollments. In the case of PIs, social sciences and teacher training accounts for more than half of enrollments and in the case of TTCs, almost 50 per cent of enrollment is in the social sciences and a third in the technological field.

d. Total number of academic staff in the public sector institutions is estimated around 17.700. Faculty holding a postgraduate degree within these institutions has grown from 849 to 1306 in the case of PHD holders and from 1152 to 2223 in the case of MA holders. Little is known about the academic and non-academic personnel of private institutions. 90% or more of the academic staff in these institutions is contracted on a part-time basis. But their academic qualifications do not differ substantially form those held by their peers in the public subsector.

TABLE 3
CHILE: HE ENROLLMENT BY TIERS AND SECTORS

	1980	1985	1990
UNIVERSITIES	116.962	118.079	131.702
W.p.f.	116.962	113.128	112.193
New private	--	4.951	19.509
P. INSTITUTES	--	32.636	40.006
W.p.f.	--	18.071	6.472
New private	--	14.565	33.534
T. T. CENTERS	--	50.425	77.774
W.p.f.	--	--	--
New private	--	50.425	77.774
TOTAL	116.962	201.140	249.482

Source: División de Educación Superior, MINEDUC, 1991.

e. Historically, Chile's research capacity has evolved within its HE system around the 8 old universities and a group of (non-university) public research institutes 15/. Total number of scientists and engineers is estimated, in the late 80's, around 5.000; representing 1,18 per one thousand in the active population and 420 per million population. In 1988, 71% of them worked in the HE system, 15% in state-run research institutes, 6% in the productive sector and nearly 8% in hospitals. Total public expenditure in R & D has slightly increased during the period 1980 to 1988, but still represents less than 0.50% of GNP. Research productivity shows a smooth increase during the latest comparable years and puts Chile firmly amongst the 5 more productive Latin American countries. In 1988, 82,3% of Chilean internationally registered scientific publications originated within the HE system. The 2 oldest universities, that is, the **Universidad de Chile** and the **Pontificia Universidad Catolica de Chile,** contributed respectively with 45,6% and 24,4% of all HE institutions originated publications. In turn, the 8 traditional state supported universities account in 1988 for 94,2% of the scientific publications produced by the HE system.

f. Probably the single most far reaching effect of the 1980 Reform has been its impact on the financing of Chilean HE. The Reform envisaged a new funding system consisting mainly in the combined contributions coming from the state and private beneficiaries or consumers of HE, both students and others, like firms, buyers of institutional services, etc. But the funding of new private institutions was made dependant on resources obtained from tuition fees only. In the case of publicly financed institutions, incremental funding as the single source of funding was replaced by a diversified system which contemplates the employment of four different funding mechanisms. **First,** public institutional core funding, confined to the traditional universities and to new state institutions. Incremental funding as a way of allocating these funds was substituted by a formula consisting in diminishing public resources during a set period of time and, after that, the levelling of that amount. **Second,** an increasing amount of public resources was tied to a "best-students formula", thus rewarding institutions who enroll them. **Third,** a Government financed student-loan scheme was introduced to support cost-recovery and publicly funded institutions were asked to charge tuition fees. **Fourth,** a special fund was established to finance research projects chosen after a peer review process on the basis of a yearly competition open to all researchers. Moreover, various legal reforms were introduced during the

15/ In the case of the social sciences, research is also located in private, autonomous, non-university research centers that were established after the 1973 intervention of the universities.

80's to facilitate private philanthropy in favour of HE establishments.

As a result of the aforementioned changes, public allocations --both direct institutional support and indirect or student related subsidies plus student loans, now constitute an average of around 34% of total income, while direct student payment of fees accounts for 22% of the latter. The remaining 44% comes from specific or targeted public allocations, contract funding, the marketing of services, research grants, private donations, etc. (See Table 4) Only four universities out of the 22 institutions depend in half or more of their total budgets from direct state allocations. The two main universities obtain 30% or less of their yearly budget from direct public treasury allocations. Both these universities, and two regional universities, have also the highest share of income originating from other mixed sources. In brief, a fundamental change has occurred with regards to the composition of income at the system level (public sector institutions). In effect, in 1981, 68% of the sector's income was produced by direct state support, 15% derived from present or deferred payment of tuition fees, and the balance was reached from various other sources.

TABLE 4
CHILE: ESTIMATED EXPENDITURE IN HE BY SOURCES, 1990

Source	US$* (million)
PUBLIC SOURCES Public treasury allocations a. to public sector institutions b. to new private institutions FONDECYT (assigned to HE)	 125.6 2.6 11.8
Subtotal	140.0
PRIVATE SOURCES Private philanthropy a. going to public institutions b. going to new private institutions Tuition fees a. Paid in public institutions b. Paid in private institutions	 4.9 1.5 81.6 77.4
Subtotal	165.4
PUBLIC/PRIVATE SOURCES Various other incomes	159.4
Subtotal	159.4
TOTAL	**464.8**

Source: Ministerio de Hacienda, Dirección de Presupuesto, Balances Presupuestarios, and MINEDUC, Dirección de Educación Superior, 1991

* 1 US$= 304,90 pesos

5. QUALITY EFFECTS

As regards to quality effects that can be related to the 1980 Reform, the following are the most relevant.

- On the whole, the 1980 Reform does not seem to have negatively affected public institutions in terms of the qualitative aspects of their performance. Moreover, it might be argued that the policies adopted prevented these institutions from experiencing the more common negative effects of enrollment massification. On the other hand, nothing seems to indicate that dramatic improvements in quality resulted from the 1980 Reform.

- The evidence shows the existence of a core group of "better-quality-universities", all of them pertaining to the sector of older public institutions. These universities, amongst which the Universidades de Chile, Católica de Chile, de Concepción and Austral de Chile preeminently qualify, offer a wide range of career programmes, grant most of the more prestigious professional and postgraduate degrees, and posses a well established reputation based on their capacity to attract the best students, successfully compete for research funds, produce most part of all nationally originated scientific publications, and on their ability to maintain and increase over time the number of postgraduates holders within a predominantly full-time body of faculty. Universities in this group can probably be considered as reasonably good institutions within the Latin American context. But a more detailed analysis of these institutions would probably show a very unequal development of its different sections and levels. In all of them, also, postgraduate studies are still in need of development, both quantitative and qualitative. Lastly, there are significant differences amongst them in terms of their internal efficiency and still a wide range of opportunities to improve in this realm.

- The remaining group of public institutions, involving 4 old universities (one state university and 3 private state-funded universities) and 14 (new) state establishments constitutes a much more heterogeneous assembly of institutions. Together they account for 60% of 1990's public sector undergraduate enrollment.

- The 4 old universities that do not qualify in the top division tend to develop along similar patterns as the quality-institutions, particularly so in the case of the Universidad

Católica de Valparaíso. Two of them are technological-oriented establishments and the remaining one, the Universidad Católica del Norte, presents a slower and more difficult development, in part due to its location in a far away and traditionally postponed northern region of the country, possessing a limited student and faculty pool.

- The sub-sector of new state establishments, those derived from the reorganization of the two old state-universities, contains at least four different institutional groupings: (i) a group of larger, more complex regional universities, like those comprising various knowledge areas and the training of medical doctors (Universidad de Valparaiso and Universidad de la Frontera), and those embracing other knowledge-area combinations like the Universidades de Tarapacá, del Bio Bío, de La Serena, and the Universidad de Talca; (ii) a group of smaller regional universities like the Universidades de Magallanes, Arturo Prat and de Atacama; (iii) two teacher training universities and (iv) two PIs, that expect to change their legal status and become full blown universities.

- Lack of reliable information makes it much more difficult to generate qualitative assessments of the new private institutions which in 1990 comprise 40 universities, 82 PIs and 168 TTCs. Furthermore, no systematic evaluation studies have been carried out on these institutions. Their short period of existence also inhibits quality assessments.

- Up to now, private universities can be seen to have adopted a very different development pattern as state-supported institutions, in part precisely because of their different funding. New private universities are solely teaching-establishments, with a high enrollment concentration in a few cost-convenient careers, practically no full-time teachers, with "open access" tight to students family income, and are submitted to minimal regulations in terms of public assurance of their quality performance, though this has been partially corrected through the introduction, in 1990, of a public accreditation system. (See Note 13)

6. INTERNAL EFFICIENCY

With regards to internal efficiency, the following are the major conclusion to be drawn from the analysis of the available information.

- As a result of the changes brought about by the 1980 Reform, a twofold increase of enrollment was obtained while at the same time direct (institutional) public allocations to HE were cut short by half. The entire cost of HE expansion during the 80's was thus carried by students entering private sector institutions. If the public sector institutions were to provide enrollment for the 130.817 students presently enrolled in the private sector, at the mean per student expenditure of 1990, total public expenditure would have to rise by more than US$ 134 million, that is, it would have to practically double the 1990 public treasury allocations to the public sector institutions 16/. Moreover students entering public sector institutions also share the cost of their training, contributing in 1990 with US$65 for each US$100 awarded by the Government to support teaching in the various public sector establishments. Overall efficiency in the use of public resources allocated to HE therefore dramatically improved, without severely affecting the quality of public sector institutions.

- Student teacher and student administrative personnel ratios greatly differ between public sector HE institutions. Considering nominal ratios first, differences amounting to almost three times can be seen to exist between the two universities with the lower and the highest student teacher ratios. Not considering the Universidad de Chile, the average nominal student teacher ratio is 11:1. If the Universidad de Chile is included, the average ratio drops to around 7:1. In terms of FTE teachers, ratios differ by four between the lowest and highest, with an average of 11:1 (this time including the Universidad de Chile). Overstaffing therefore exists in a similar degree commonly supposed to abound in other Latin American universities. Also, Chile's average student teacher ratio for public sector institutions compares unfavourably with other non-Latin American country's public sector ratios. In brief, although similar to the nominal ratios found in other Latin American countries, the Chilean average ratio is significantly lower than ratios found in North American, European, Asian and Oceanic countries, with the exception of Norway, Portugal and Japan.

16/ Private institutions, in turn, provide the same number of enrollments at an annual cost of US$ 79 millions

- As regards to public sector institution's productivity, a study carried out in 1984 shows on time graduation rates in 12 university-only based career programmes to fluctuate between 23% and 74% percent. 9 out of the 12 careers had less than 50% of on time graduation rate. The overall graduate productivity of the public establishments was analyzed in similar terms. Taking new entrants for years 1983, 1984 and 1985, graduate output 6 years later was computed to be on time in a proportion of only 39% .

- Taking year 1990 as base, a comparative efficiency index for public sector institutions was computed so as to allow for comparisons between these institutions. Results show that graduate output is lower than expected in the case of 13 institutions, 5 of which pertain to the group of the 8 old universities. The Pontificia Universidad Católica de Chile has the highest efficiency index across the old universities and the Universidad de Talca (new regional state-university) in the case of state institutions.

- One additional finding are the high input-output ratios that can be observed in the public sector, which tend to confirm the meagre levels of internal efficiency amongst these institutions. In theory, most university based programmes take 5 years. But computed input-output ratios show that on average the figure per graduate is 9.2 years. Although this figure indicates a relatively high level of inefficiency, when compared to the still higher input-output ratios in other Latin American countries, the Chilean public sector institutions stand out --in comparative terms-- as "fair performers". The university with the lowest input-output ratio is the Universidad Católica de Chile, where this figure is 5,93 years. 7 more universities show figures below average. At the high end are the Universidad Católica del Norte (19,92) the two PIs (de Santiago 18,77 and de Osorno 15,49,) the Universidad del Bío Bío (14,66) and the Universidad Arturo Prat (13,07). In addition, 5 institutions show figures of more than 10 student-years per graduate, to which the Universidad de Chile can be added (9,74).

- Still more striking is the rise in input-output ratios over the last two decades. In effect, at the end of the 1970's, average input-output ratio for the 8 existing HE institutions was 7,1 years. To day, this figure is 9.2 student-years per graduate at system level and it stands at 10,1 years for the old universities. There is no easy way of explaining this loss in internal efficiency on the part of public sector institutions. Further studies will have to propose explanatory hypothesis.

- Average public expenditure per student is US$ 1.030. Leaving PIs aside, it is highest in the case of the Universidad de Chile (US$ 1.668) and lowest in the case of the Universidad Arturo Prat (US$ 575). In turn, per student unit costs vary in the case of public universities between a maximum of US$2.435,6 (Universidad de Chile) and a minimum of US$1.027,8 (Universidad de La Serena), the average being US$ 1.700.

- High input-output ratios translate into higher public expenditure per graduate. In effect, at the actual levels of student unit costs, expenditure per graduate should normally be less than US$10.000. Presently, the cost of graduating a student in the public sector institutions is on average US$ 15.637. The uppermost limit is approximately US$ 32.000 and the bottom limit is near US$ 8.000. Average graduate cost is highest in the case of the Universidad del Norte and lowest in the case of the Universidad de la Serena. Looked at from the point of view of public treasury disbursements, it takes 50% more than would be normal to graduate a student.

- In short, the effects of the 1980 Reform on efficiency are mixed. On the hand, overall efficiency in the allocation of resources has improved, and now more students are getting HE with less public resources. On the other hand, internal efficiency of public institutions does not seem to have improved. On the contrary, input-output ratios in the old universities have deteriorated and unit costs per graduate are well above the level that could be achieved if efficiency could be enhanced.

7. EQUITY ISSUES

Finally, the impact of the 1980 Reform on equity dimensions of HE can be assessed as not having dramatically altered the traditional pattern of social discrimination that prevails in Chilean HE.

- Enrollment participation of the top income group is around 8 times that of the bottom group. While the overall gross enrollment ratio for the 18-24 years group is 12%, it is only 4.2% for the bottom group and 32% for the top group. Thus, young adults pertaining to the poorest group represent one fifth of the total 18-24 age population but only less than 5% of HE enrollments. At the other end, young adults in the upper income group represent a mere 13,5% of the age population and approximately one third of total enrollments.

- In the case of public sector institutions, representation of the income groups in the total sector enrollment is the following: first quintile, 9%, second 12,5%, third 17,5%, forth 24,4% and fifth quintile 36,6%.

- To allow for international comparisons, the 5 income groups used this far can be reduced to three comparable status groups. Chile's position is then shown to be similar to the rest of Latin America, but with a more pronounced inequality index in the case of the low status group and a slightly better index with respect to the high status group 17/.

- Additional studies show that a clear difference exists between public sector institutions and new private institutions in terms of students socio-economic background. Whereas in the first type of institutions students coming from families where father's education is below the complete secondary level represent more than 40% of total first year enrollment, in private sector institutions the same group represents less than 15% in the case of universities and less than one third in the case of PIs. An examination of 1990 data on students accepted by public and private universities show that while in the fist type of institutions 16,6% comes from families in the top two occupational groups, in the latter one third of incoming students show the same social origin.

17/ For this see DONALD R. WINKLER (1990) Higher Education in Latin America (Washington, World Bank Discussion Papers Nº 77), p.53

- The socio-economic profile of students in the TTCs (expected to come mostly from low income groups) is on the whole not very different from the profile of students in the public universities. The latter finding confirms the overall strong selective character of the Chilean HE system. In fact, public universities over-represent the top group (with university education, complete or not) by a factor of six, private universities by a factor of 14, PIs with public funding 4 times, private PIs 10 times, and TTCs 5 times. On the contrary, the 2 bottom groups (illiterates and with incomplete primary education) are sub-represented by a factor of 5 in the public universities, of 54 in the case of private universities, of 2 in the case of public PIs, of 13 in private PIs, and of 4,5 in the case of TTCs.

- Also the allocation of public resources to HE has been found to adversely affect the poorer groups within society. Results of one study show that while in the case of direct institutional allocations only 25% of state expenditure favours the poorer 60% within society, in the case of money allocated to student loans 51,4% does. Two additional studies corroborate these results. In effect, they show the top 20% income group obtaining around 53% of public expenditure allocated to HE, while the bottom 20% group only captures 6%. A more recent study shows that while 79% of the bottom income group students enrolled in public sector institutions obtain a loan, still 24% of the highest income group students attains the same benefit.

- In short, equity shortcomings adversely affect Chilean HE which now is composed of a highly selective public sector and a more open but family income dependent private sector. At the same time, across the board (partial) cost recovery policies play, in this context, a compensating effect, although more forceful grant and student loan schemes need to be implemented to diminish social discrimination.