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Financial Models for Public Education in Chile and the Requirements for their Adjustment

Los modelos de financiamiento de la educación pública en Chile y sus requerimientos de adecuación

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Abstract

The article analyzes the public financing of primary and junior high school education in Chile, after twenty years' application of subsidy for the demand. Based on this, there was formulated a change to remedy or reduce the identified weaknesses, particularly those related to the need to take into account an uneven socio-economic reality and the existence of an imperfect education market.

Keywords: Educational economics, educational financing, financial policy, elementary education.

Resumen

El artículo analiza el financiamiento público de la educación primaria y secundaria en Chile, tras veinte años de aplicación del actual modelo de subsidio a la demanda. A partir de ello, se formula una propuesta de cambio destinada a subsanar o reducir las falencias detectadas, en particular las vinculadas a la necesidad de captar una realidad socioeconómica desigual y la existencia de un mercado educativo imperfecto

Palabras clave: Economía de la educación, financiamiento de la educación, política de financiamiento, educación básica.

Introduction

This work was born out of the authors' interest in analyzing the topic of public financing of elementary and high school education in Chile, with the conviction that the existing form of subsidy should be modified. Therefore, we propose correcting the shortcomings related to two key aspects. First, the extreme formalism of the model, based on financial contributions allocated according to students' daily attendance, presuming that this means an improvement of the quality of the school, an assertion that deserves further analysis of the possible theoretical and empirical support sustaining it. Second, the apparent neutral effect of students' socioeconomic status on school costs, and hence on the quality of education.

1. Financing Education in Chile

The funding of public education is a significant issue in the current political agenda of developing countries, owing to the direct implications of education in the society, and the kinds of resources involved. Often, discussion of this matter has been pushed aside either by reason of the specificity and aridity of the subject, or due to the biases that exist concerning their discussion. The latter can be characterized by two diametrically-opposed dominant approaches. The first, identified as "educentric", establishes that educational activities should be funded regardless of cost. Alternatively, the "efficientist" approach centers its concern on the relationship between revenues and costs of educational projects, bypassing the issue of quality in education. The perspective in between—still emerging—

associates financial resources with the quality of education and type of population served.

Certainly, financial resources are a major component of the public education system, especially when in many countries the government is the main source of income. On the other hand, education is an essential component of public policies and strategies for progress in the country, given its instrumental role in increasing productivity as well as its contribution to the improvement of its inhabitants' quality of life. Thus, education has significant implications for social equity, although its role in this dimension requires—as presently maintained—adaptations and adjustments necessary for the effective achievement of this.

The model for financing public education in Chile has changed since the beginning of the eighties, from subsidizing the offer to subsidizing the effective demand for education in each school. This transformation brought with it important implications in various fields, such as the emergence of new institutional actors, the reinforcement of some former agents and the deterioration of others. These changes intensified some of the system's traditional problems, for instance, the inequity of educational results and genuine opportunities to access a quality education, increasing the existing gaps, issues directly related to the resources associated with educational financing.

Finally, it is important to emphasize that, in the Chile of the nineties and on, the model of subsidizing the demand was accepted uncritically, almost without further discussion; however, we believe it deserves a careful analysis of the negative effects it entails.

2. Public funding of education

2.1. The role of the government and the change of regime in education funding

Free public education in Chile dates back to 1887 (Vial, 1987). Since then, the government has assumed a leading role in this area, which increased from early in the second quarter of the twentieth century with the rise of so-called "welfare government" (Nuñez, 1998).[1] Thereafter, the government has been the primary architect of the Chilean education system, consistent with the social model in force until the seventies, when education was assumed to be a public good that provided significant contributions, first, in growth , and later, in the country's development, a concept supported by the theory of "human capital" (Becker, 1993; Pedro and Puig, 1998). In this context, the explosive educational development which Chile experienced beginning with the middle of the nineteenth century is unthinkable without considering the role played by the government, including, of course, the area of funding.

The year 1980 is key to the subject under analysis, since until then the government subsidized the offer of public schools. On that date, the Ministry of the Interior handed down the rules for transferring the administration of a high percentage of elementary and high schools to the municipalities, until that moment in the hands of the central government, including in this act, the teaching, administrative, and service personnel, and changing the mode of allocating funds to schools.

This process of devolution and decentralization of powers settled people and material resources in different political and administrative levels, explicitly including the transfer of management skills to private entities, which significantly increased the participation of this sector (paid and subsidized) in national education. For example, in 1981 the enrollment of the urban sector accounted for 81% of the total; that of the subsidized private sector, 13%; and the paid private, 6%. In 1997 the urban sector covered 56% (losing 25 points); subsidized private, 33% (up 20%); paid private, 9.5% (up 3.5%), and corporations, 1.5%, stabilizing, to date, the participation of the sectors at these values (Ministry of Education [Ministry of Education], 1998).

For the government, this process meant applying three measures to implement the decentralization of the schools. First, the abovementioned transfer of school management from the Ministry of Education to the municipalities, with powers to manage their infrastructure, hire and fire teachers, and with the Ministry retaining regulatory functions, definition of the curriculum, monitoring and evaluation.

Second, change the allocation of resources from a modality based on the historical budgets for school costs (subsidy for the offer) to the payment of a per-pupil subsidy (subsidy for the demand), calculated as an incentive encourage the entry of private administrators willing to build new elementary and high schools. Third, the management of approximately 70 public institutions of technical-vocational education (middle schools) was transferred from the Ministry of Education to private corporations existing or created for this purpose (Ode, 1996).

The explicit objectives of government decentralization and privatization policies were: to achieve greater efficiency in the use of resources through competition for enrollment between institutions; to transfer functions from the Ministry of Education to local authorities represented by the municipality; and to achieve greater private-sector participation in providing education, which would lay the groundwork for more competition between institutions and more choices for the beneficiaries (Gonzalez, 1999).

As a result of these measures, the urban schools were subject to a double dependency: to the municipality in the administrative aspect, and to the Ministry of Education in pedagogy. Similarly, any private school, regardless of its source of funding, was subject to the curriculum and assessment systems established by the Ministry. This was intended to make schools or subsidized secondary schools, urban or private, submit to the same rules and compete on similar terms to attract students.[2]

2.2. The current model of funding for public education

The current model for financing public education, called subsidy for the demand, is a subsidy or payment per student based on compliance with certain requirements; in the case of Chile, for the school's monthly average attendance. This value is transferred to a coefficient called an "educational grant unit" (EGU), which is a weighting that operates on the amount of resources for the value *student served per month*. The variables considered are: a) student's daily school attendance/month; b) marker of scholastic level (elementary, middle, adult, etc.); c) marker of day type (conventional or full time), d) marker of rurality; and e) marker of work-performance conditions.

The formula for the subsidy is S = f (ASAM * TE *CR * PS) *MEGU

where:

ASAM = average number of school days student-attendance-month
TE = type of education
CR = condition of rurality
PS = performance status
MEGU = monthly educational grant unit

Initially, the "monthly educational grant unit" (MEGU) was determined by considering the total system costs minus those for the Ministry's administration, divided by the total number of students enrolled. This coefficient was corrected in 1995 with information from studies of the cost of different types of schools, to determine the subsidy values needed to cover them, given the number of students and their attendance. This did not alter the MEGU, but did alter the factors of the grant (markers) which multiply it.[3] However, the bulk of resources is determined by the type of school (93%), and marginally by the other markers. Since 1992, the MEGU has been readjusted by the same percentage and opportunity as the remunerations of the public sector.[4]

Besides the MEGU, other sources of public funding are:

- Shared financing: involves the government's contribution (via subsidies), and direct contributions from the pupil's guardian (cannot exceed 4 megu per month). The greater the parental contribution, the less the government subsidy. Subsidized private schools that provide elementary and high school education during the day can opt for this mode. The urban schools can do this only if they provide a half day of schooling, and have the approval of a majority of the school's ruling body.
- Marker for rural education: for schools located more than five miles from the nearest city limit.
- Marker for student boarding: for schools with students whose residence is at least 25 kilometers (15.5 miles) away from the school or who must travel for more than two hours daily using public transportation.

- Annual maintenance subsidy: for school facilities (rent, depreciation, etc.).
- Basic education subsidy: for technical and vocational training, or for practical training in any branch of adult education.
- Subsidy for educational support: for pedagogical support activities for students with poor school performance, preferably for schools of greater social risk.
- Subsidy for excellence in performance: for educational professionals of subsidized schools rated as having "excellent performance."
- Full school day: To extend the hours of student activities. Schools providing a full day of classes will receive a 34% higher average megu value.
- Marker for difficulty in performance: for teachers working in schools of high vulnerability.

It should be noted that none of the sources described considers the educational achievements of students, nor variables that would take into account the students' socioeconomic status, except marginally. Consequently, the payment of the subsidy is not required to meet certain standards of quality in students' learning.

The measures introduced were carried out against a backdrop of the clear restriction of citizens' rights in every plane, so that there was no legal institution that would protect the interests and rights of citizens, much less those of the municipality, and even less those of teachers transferred *against their will* by the contracting regime.[5] It should be noted that the urban authorities were appointed by the military government. In a full democracy, the use of that method and the measure for changing the teachers' work regime could not have been adopted, or would have been imposed at a high political cost—reduced in this case by the existing repression.

The reasons the respective authorities put forth for adopting these changes were primarily economic:[6] number one, to introduce more competition into the educational system on the basis of market elements, and number two, to increase efficiency in using the resources the government had available.

3. Economic criteria underpinning the education subsidy

The subsidy (also called the grant) is the key economic concept for discussion approached from the perspective of educational funding. It is identified as any transfer of financial, physical or service resources—in this case by the government—to economic agents or production activities under certain conditions or situations. The grant reflects society's interest in the development of the market for a specific product or service, seeking to stimulate supply and demand.

The initial sense of the subsidy was to facilitate access to the subsidized product or service by a sector of the population; to encourage an increased supply at a lower price than it would have without the subsidy, providing it gives the producer an additional income not achievable under real market conditions. Therefore, it would

constitute an incentive to add new suppliers and to increase the quantity and quality produced by the current suppliers.

The Government's interest in subsidizing education is based on the conviction that education provides a social benefit greater than the private benefit, so that it is often in the public interest to develop the education market's reach beyond that which it could reach without subsidy.

Consequently, education is perceived as a significant contribution to economic development. Both the costs and the benefits expected of education can be analyzed from a private perspective and from a social point of view. The first involves a financial analysis in which direct costs and benefits are compared, valued at market price, seeking to maximize utility. The second involves an economic analysis in which are also considered indirect costs and benefits at shadow prices, and where the objective is to maximize profitability in the society. Thus, at present, it is understood that the *utilities or benefits* provided by educational services are both social and economic.

Until the eighties, public interest was focused on extending the coverage of the regular education system—that is, on reducing illiteracy and increasing the number of educated people and the population's average years of schooling. These objectives are still in force to some degree, since the illiteracy rate has not dropped to zero,[7] and the exigency of the population' average schooling has risen. However, current concern focuses on quality, an attribute that crosses the discussion of experts, politicians, educators, employers, workers and families, and whose net effect is its impact in both the private and the public dimensions.

We must emphasize that for a society, having people with more education implies a correlative increase in productivity and improvements in their levels of self-esteem. It also leads to savings in the fields of public health, government pensions and social networks—dimensions which, in general, report education. As a result, the profitability of most educational services is more social than private. However, this is not a "blank check" that guarantees that education should be invested to whatever extent may be "necessary", without measuring fundamentals (studies, pre and post assessments) that would allow us to define and quantify its social returns. This is because, under this same pattern of public profitability, it competes with other social services that generate similar benefits.

To date, it has not been possible to find studies or reliable records that would support the current level of subsidies provided for education, in order to determine their aggregate impact on other sectors such as health. Also, based on that, with better background information there could be estimated the impacts which the increases in educational quality would generate, and then there could be evaluated the return on the investments and the proper subsidy.

In the following sections we will use the following terminology:

B is the private benefit of the sponsor;[8]
C_f is the total fixed cost;
C_{uv} is the unit cost variable;
I_{mg} is the marginal income;[9]
C_{mg} is the marginal cost;[10]
I_T is the total income;
C_T is the total cost.

3.1. Subsidy for the offer

This model operated until 1980 on the basis of a fixed amount given to the school, regardless of the number of students served, based a minimum enrollment. The maximum number of students served by the school was limited primarily by the capacity of the available infrastructure and the restriction posed by that fact that a course has a maximum number of students it can handle. This subsidy is usually determined on the basis of previous years' budgets plus their corresponding inflation marker.

The total income received by a school is the subsidy (fixed amount) supplied by the treasury, while the total cost is given by the fixed cost (salaries of teachers and non-teaching personnel, infrastructure, etc.), and the cost per student served (textbooks, supplies, etc.). Consequently, the benefit (private) paid to the sponsors of the schools is expressed by the following formula:

$$B = S - (C_f + C_{uv} * (q_{min} + q_e))$$

Where: S is the total subsidy for the offer;

q_{min} is the minimum number of students to serve, as set by the government;
q_e is the additional number of students above the minimum, which the school can receive

Figure 1 shows the behavior of income and costs in terms of the economic rationale,[11] where:

q_{max} is the maximum number of students who can be served. $(q_{min} + q_e)$.
q^* is the number of students after which schools begin to realize losses.

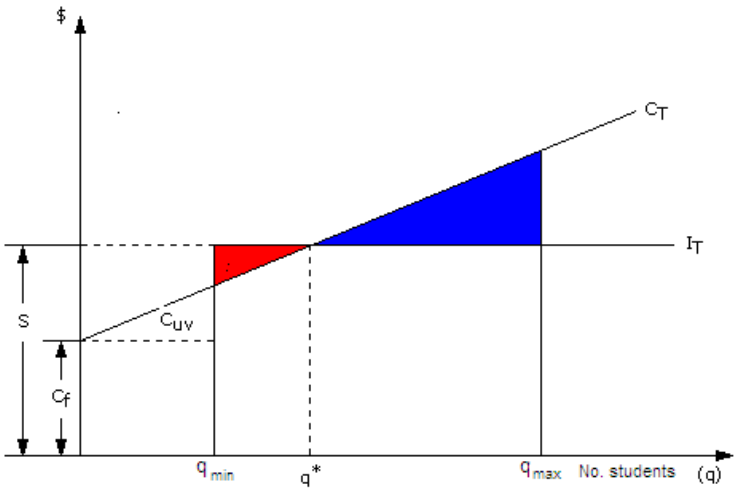


Figure 1. Subsidy for the offer

The graph gives an account of the paradox (at least theoretical) which contains the fact that the maximum economic benefit is obtained in terms of minimum enrollment (q_{min}) and not at maximum occupancy of the school (q_{max}), thus retaining an idle capacity $q_{max} - q_{min}$. The consequence would be the tendency of schools to enroll a minimum number of students, without needing to enroll a greater number of them.

Since in the schematic *subsidy for the offer* the total income is $I_T = S$ and $C_T = C_f + C_{uv} * q$, then it follows that the marginal income (I_{mg}) is 0; the marginal cost (C_{mg}) is C_{uv}.

The fact that the marginal income for serving an additional student is null is because what is received by the concept of subsidy is independent of the number of students served; in turn, the marginal cost is constant, since it is determined by the cost per pupil, which will always be very similar while the school's capacity is not exceeded.

Since the marginal cost ($C_{mg} = C_{uv}$) will always be greater than marginal income ($I_{mg} = 0$), then schools tend to serve a minimum number of students, so as to have no more students that the minimum needed to get the subsidy (q_{min}).

In fact, things did not always happen that way, especially when there were applied educational criteria independent of the economic ones. However, one cannot rule out the possibility that, in certain situations, schools would opt for the logic described. If today we should return to that financing plan, educational administrators trained under the current structure would most probably stay with the economic rationale described.

3.2. Subsidy for the demand

For the specific case analysis, the benefit is due to a significant amount of variability doses. This is calculated from the monthly average attendance of students at educational school, which is the major component, followed by the type of education that is delivered, the location of accommodation and other secondary factors.

Analyzed are the various types of subsidies in force in the Chilean model: total, partial and, for purposes of contrast, the one called null, named according to the proportion of the government contribution to the financing of the school.

3.2.1. Total Subsidy

Refers to the case in which the government fully funds the educational service provided to students in order to make it free to them. With S_u as the subsidy the school received per student, it holds that:

$$I_T = S_u * q \qquad \text{then } I_{mg} = S_u$$

$$C_T = C_f + C_{uv} * q \qquad \text{then } C_{mg} = C_{uv}$$

$$\text{and therefore, } B = S_u * q - (C_f + C_{uv} * q).$$

Note that if an school were able to generate a marginal income $I_{mg} > C_{mg}$, then it would have a surplus; and if not ($I_{mg} < C_{mg}$), there would be a deficit produced. Since $I_{mg} = S_u$ y $C_{mg} = C_{uv}$ so that no deficit would be produced, the variable cost per student should be less than the subsidy per student.

The same conclusion reached by directly analyzing the benefit, which aspires to be greater than or equal to zero. Therefore,

$$B = S_u * q - (C_f + C_{uv} * q) > 0 \text{ then } q > C_f/(S_u - C_{uv} > 0$$

Since C_f is always greater than or equal to zero, then it must follow that $S_u > C_{uv}$. Therefore, the minimum number of students to attend in order to avoid deficit (q^*) must be $q^* = C_f/(S_u - C_{uv})$. It is desirable that this value be low enough to avoid deficits because of having fewer students. To this end, efforts should be made to see that:

- The fixed cost (C_f) be the minimum.
- The subsidy per student (S_u) be as high as possible.
- The variable cost per student (C_{uv}) be as low as possible.

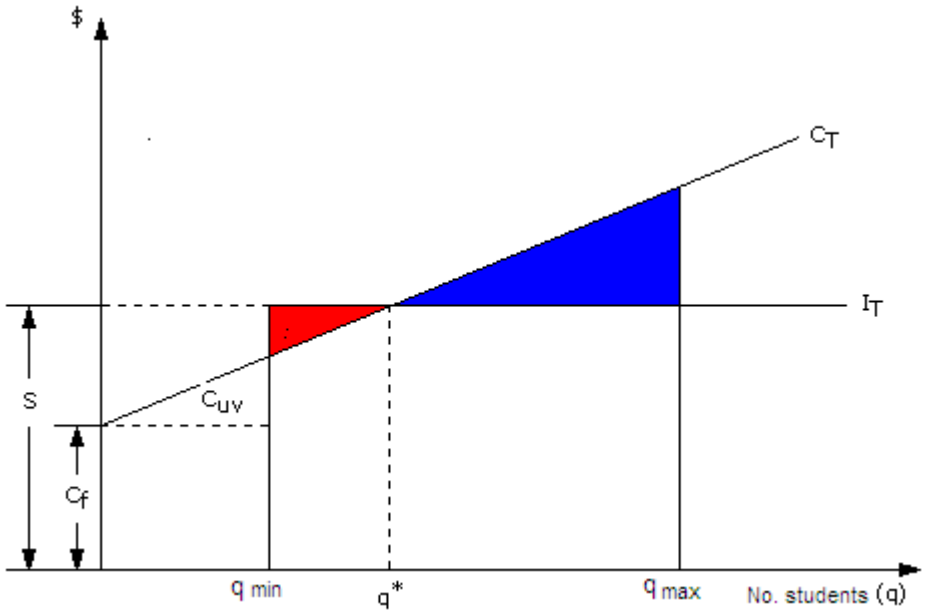


Figure 2. Total subsidy for the demand

In Figure 2, the angle formed by I_TOq (a) corresponds to the subsidy per student S_u, and it can be seen that the maximum economic benefit is obtained when the full capacity of the school is reached.

An analysis of the behavior of each of these elements, after the application of the financing plan of subsidy for the demand for the case of Chile, shows is that fixed costs have become more rigid since the enactment of the Teachers' Act (1991).[12]

The per-student subsidy is determined by both structural and contextual factors. Among the former, a freeze can be seen beginning in the mid-eighties because of the economic crisis in those years. Among the latter, the importance the relevance attached by society to education is conspicuous, beyond the speeches, in the events, and privately, in what people are willing to spend on the sector. This availability is usually related to the percentage of the GDP devoted to education, both public and private.

Currently, the basic monthly allowance per pupil ranges from $18 to $45 dollars. The latter figure was reached in the case of high school education multiplied by the most frequent weights; a value compared unfavorably with those in effect in the field of private education, whose average prices vary between $150 to $190 dollars per month.[13]

The per-student cost variable is influenced by two basic factors: the ability to manage the school and the students' socioeconomic characteristics.

Regarding the former, only in the last five years have there been, among competitions for heads of schools, some in which administrative ability was

considered. In recent years, thanks to postgraduate and graduate programs, these positions have been given to teachers with greater ability to administer the facilities under their care. However, in the urban area, the exercise of school management does not mean having greater authority over the financial aspect.

Concerning the socioeconomic characteristics of students, the gratuitous nature of education services explains that those enrolled, for the most part, come from low and lower-middle socioeconomic strata, with significant cultural and nutritional deficiencies. That is, from a vulnerable population—which reinforces the idea that the costs these schools incur in technology (computers and communications), educational materials (texts, notebooks), educational support, food, etc., are significantly higher than for the population not lacking these things.[14]

3.2.2. Partial Subsidy

This is the case that occurs when the government funds a portion of the educational service delivered to students, and this contribution is supplemented by the student's family (originally on a voluntary basis). In this case, the educational service is provided to students through two funding sources: the government and the family. The government gives a subsidy per student, and parents contribute a tuition in an amount which they define. In this classification can be found subsidized private institutions (elementary and high school education) and junior high urban schools.

With S_u as the government contribution per student, and avg(p) the average payment per student, we have:

$$I_T = S_u * q + avg(p) * q$$

$$C_T = C_f + C_{vu} * q$$

As $B = S_u * q + avg(p) * q - (C_f + C_{uv} * q)$

Accordingly, incomes and marginal costs are:

$$I_{mg} = S_u + avg(p)$$

$$C_{mg} = C_{uv}$$

In this case, the angle I_TOq (a) in Figure 2 takes the value S_u + prom(p). Therefore, to operate in conditions of surplus, the condition $S_u + avg(p) > C_{uv}$ must be met.

Because of this, schools operating with partial subsidization, also called “shared funding”, must do so on condition that the variable cost per student be less than the sum of the amount of subsidy per student, plus the average contribution made by the parents or guardians.

Operating on the basis of this plan are both some urban schools (high schools only) and subsidized private schools, so called to distinguish them from those of a private nature and financing[15] that do not receive government subsidy.

Private schools, by their very nature, cannot run a deficit, and if they have one, must be financed with their own resources, or must leave the market if they are not able to reduce their costs, augment the voluntary contributions of the parents or guardians, or increase enrollment. In compensation for this last reality, and because of it, it is striking that the cost structure of urban schools is significantly more rigid than those of private subsidized schools because of the Teachers' Act, which applies to the urban sector only.

3.2.3. Zero (or null) subsidy

Corresponds to the case in which the government does not provide financial support to the school, a reason why it should be financed in full by the tuition families pay. Those in this case are privately paid.

Where p is the amount of tuition paid per student, it will hold that:

$$I_T = p * q$$

$$C_T = C_f + C_{uv} * q$$

So that: $B = p * q - (C_f + C_{uv} * q)$

$$I_{mg} = p$$

$$C_{mg} = C_{uv}$$

Consequently, these institutions must operate with a p value of the tuition that exceeds the variable cost per student, and under a minimum enrollment given by $q_{min} = C_f / (p - C_{uv})$. Figure 2 shows the behavior of income and total costs, where the angle $I_T Oq$ is the value of tuition to charge each student enrolled.

4. Analysis of the subsidy models

4.1. Considerations regarding analysis

This section discusses the models of subsidy for the supply and the demand, applied in Chile to the educational field. This is done based on the strengths and weaknesses observed for each model. These were then compared, which requires defining evaluatory criteria leading to the issuance of an opinion on the results achieved and the way they were achieved.[16]

Social functions of education are grouped into three dimensions. First, as a good in itself, so that its achievement (and increase) is a positive factor in any scenario. Second, from the operational perspective, as a tool for the social and economic

development of society. Finally, from a values perspective, for its role in the ideological-cultural field, where it socializes and legitimizes the social order. Because of this, education can be regarded as a complex social function.

The funding of education is related to the second of the functions described: the operational or instrumental, without losing because of it, its impact on the other dimensions presented. It is understood that the mode and magnitude of the financing has to help reduce some of the most important problems of education. Just as yesterday the political emphasis on educational funding was covered by the school system, resolved totally or partially today, the emphasis has been shifted to the quality of education, an issue closely related to inequalities under which the educational system operate, a mirror of the society's inequities.

The most persistent social inequalities are rooted in socioeconomic factors. Their incidence is key in education, since it is found among the primary factors explaining the educational performance of any area or level. Also, socioeconomic variables are associated with specific inequities not adequately compensated for by other variables, and they generate negative results. Thus, the link social inequality and socio-economic variables forms part of the conceptual nucleus of the theme: *the quality of educational results and the funding model that supports them.*

The focus on inequalities is a fundamental perspective of the current economic and social theories (Sen, 2000). It is understood that equity involves providing each person the opportunity and resources, according to the situation in which she finds herself, so that she can reduce the initial inequality.

In Chile, starting in the nineties, educational policies were based on the attainment of higher levels of equity. Towards this end, some theories postulated a more active role in the market to get more efficiency in the allocation and use of resources, and because of this, to attain higher pedagogical results. This affirmation is certainly open to debate,[17] since it has not been shown with enough empirical force that by this means better results would be generated, nor are there greater antecedents regarding its contribution to improving the redistribution of resources and opportunities.

In the case analyzed, changes and adaptations of approaches and methodologies applied to the financing of education effected beginning in the nineties, are still in the paradigm model of subsidy for the demand, seeking correctors directed toward its optimization without generating alternative principles outside its boundaries, much less postulate a return to the model of subsidy for the offer.

Based on the above, we analyzed the two models for financing public education in Chile applied in the past fifty years: subsidy for the offer subsidy and subsidy for the demand, to the demand, applied to the various existing types of education: urban and private.

4.2. The model of subsidy for the offer

The model of supply subsidy prevailing in Chile until 1981 operated on the basis of the past contribution from the government, updated by the annual change in prices, plus the contribution centralized in some larger specific items such as equipment and infrastructure, to which are added at times, projections of variables associated with the offer of other educational services: population birth rate, behavior of population factions, migration movements, etc. In practice, basically the grant allocated to each school is "explained" by the budgets of the years immediately preceding.

It is important to confirm that for this model of long-standing and widespread financing use, little history and few studies exist to enumerate its strengths and weaknesses (Jofre, 1988).

4.2.1. Strengths

A first feature of the model is its operational simplicity and ease of implementation in a centralized government like that of Chile. Under this model, the allocation of financial resources requires only a reduced apparatus of planning and control capable of sustaining it. In effect, programming the amount of resources for each of the schools for the relevant budgetary was exercise routine task, because its basis of calculation lay in historical projections with marginal markers that have slowly evolved over time.

From the perspective of the administrator, in this case the government, it means a low-demand technical plan, of information and evaluation requirements for the human resources necessary for its operations. In sum, it is a model that operates under a basic management plan, simple and reduced.

When the government assumed the responsibility for the planning and control of the educational offer regardless of how the demand behaved, at least over the short term, school personnel tended to conduct their activities without exerting great pressure to attract and win a greater portion of the student demand.

From the point of view of the system's direct beneficiaries, families could freely choose the school where they wanted to enroll their children. This freedom was limited at best, when the school was reaching its maximum enrollment capacity, either because of quality, location or other factors.[18] In practice, the variable with greatest impact on the family's decision was the *location of the school*; since the demand did not affect the level of funding, it was not necessary to attract a higher enrollment than in the past,[19] and therefore no families were informed about it in detail.

Furthermore, since the schools' funding was not directly associated with the behavior of enrollment, attendance, dropout, performance or other variables, they operated primarily on the basis of internal characteristics rather than the *market indicators*. As a result of this autonomy, schools arrive at more homogeneous

educational achievements, without demanding from the user more information to determine types and qualities of education, since the results were structurally more uniformly among different types of schools.[20]

Under this model, based on past budgetary history, it was possible to find schools that, with similar levels of enrollment, would perceive different subsidies supported by operating costs also different, a product of the attention to school populations of different socioeconomic strata. The model assumed the possibility that there are schools with greater cost requirements based on the socioeconomic conditions of their enrollment, as well as their location.[21]

From the point of view of the school's financial sponsor, this model ensured the provision of a stable short and medium-term income, since it operated independently of the any changes in the demand.

Finally, it was not possible to ignore that, under this modality of financing and operation, in Chile universal basic education was achieved in less than 50 years, with over 95% coverage (Nuñez, 1999).

4.2.2. Weaknesses

One of the weaknesses attributed to the model, from the users' perspective, is that they do not directly or knowingly participate in financing the schools where they have chosen to enroll their students, and it is the government which determines how much funding each facility receives, regardless of the population's preferences and interests—a situation that reduces the participation of the local citizenry.

Moreover, the low participation of the population in school financing reduces the chances of an adequate management control by users of the educational process and its related results, at least in the subject's classical format, which is different from the perspective in which they participate in the financing, and therefore, in the control of management and results.

The fact that the subsidy granted to schools is independent of the socioeconomic status of the students enrolled gives a regressive bias, in that it does not focus public resources on the poorest sectors, and allows access without pay to population sectors who are able to pay for—at least partially—the educational services received. Thus, scarce public funds, usually scarce, are taken away instead of being aimed at potentiating and extending education in those areas most in need.

Considering the educational purposes, the model of subsidy for the offer did not strongly encourage the improvement of the schools' educational quality, since the subsidy was allocated on the basis of past criteria rather than on results associated with the objectives the schools needed to meet. In this sense, it was argued that the model tended to perpetuate the efficiency/inefficiency achieved in each school without regularly, in any way, stimulating its improvement.

From the standpoint of economic efficiency, one of the strongest criticisms was centered on the fact that the plan operated independently of the demand, which made the assumption that it "pursued quality." The search for alternative models of subsidizing for the offer came from those who held the view that all funding not taking into account the behavior of the demand tends to create inefficiencies, whether they be goods, or public or private services.[22] This implies that the behavior of the educational market follows the patterns of other products and services: the logic of profit. However, there are precedents indicate that in education there are also other rationales as well, especially as related to religious or philosophical values.

Finally, from the standpoint of efficiency in meeting the objectives and their link with costs, the absence of formal, systematic and indexed ties between performance and the cost structure that supports it, produces no advantageous relationship between those who strive and achieve better results, and those who do not.

4.2.3. Analysis

This model sustained a large part of the educational development of Latin America, and Chile in particular, allowing the population generalized access to elementary education, and access for a number of middle and lower-middle-class social sectors to high school or even college education. We believe that these sectors could not have reached those levels of education under a more restrictive financing plan.

Notable as a contribution of the model is the stability it generates, principally because its calculation is based on past standards progressively and marginally adjusted without generating short-term uncertainties. It also allows scheduling a job with more extended time horizons, independently of the cost structure supporting it, since this is not compelled by sudden, unplanned changes.

From a technical standpoint, its operational requirements have a low threshold together with reduced costs.

Its main weakness is that the incentive to improve processes and results do not respond to an economic logic charged with a tendency toward inefficiency in this area in the medium and long term. This absence of economic incentives in its regular operation would be explained by the financial factor's not being associated with the degree of fulfillment of the system's objectives at various levels. However, it should be noted that this weakness is valid only in cases where the prevailing logic is economic.

The Chilean educational development which took place up until 1980 operated under this plan—generally—detached from the materials of cost and also from the scholastic results. While the latter made possible a certain social mobility and had an impact on the reduction of inequities, as well as generating a quality education, according to the canons in force, the educational processes of massification

developed beginning with the second half of the twentieth century increasingly placed in evidence their limitations in meeting the objectives set. In particular, from the standpoint of social equity, in which its contribution was significant and important, it was not great enough to reduce the majority of the population's great social inequities.

4.3. The model of demand subsidy

This model assumes as a prerequisite for its proper functioning, the existence of a competitive education market, with freedom of entry and exit for those offering and those seeking, properly informed of the characteristics of the educational offer. The central criterion for the allocation of financial resources is the accounting of each student's daily average class attendance per month, multiplied by the MEGU, whose result determines the amount of subsidy per student that should be delivered to the respective school.

Those who ascribe to this model hold as a central argument for its justification, that there is found in the generation of funding and free access to it, independent of the school property, a system of full competition for the probity of the educational service (Gonzalez, 1999).

The method of allocating financial resources materializes "the demand for education," since it expresses, first, the number of students being educated in the school, and second, the average attendance per month is considered as the effective demand for education.

4.3.1. Strengths

Unlike countries such as the Netherlands and Israel (Shapira and Cookson, 1997) in which this model is also implemented, in the Chilean case, the central variable is the class attendance of students rather than their scholastic registration.

A school gains nothing by having a large student enrollment if it does not have a high class attendance. This concern is not inherent in the models based on subsidies for the supply, nor in those of other versions of funding for the demand, where attendance is not considered as a variable for the allocation of resources. Thus, financial dependence on the demand for education would be a stimulus to promote students' enrollment/attendance.

Greater daily attendance by students means more hours in the classroom, and therefore more time devoted to controlled learning. The model assumes, then, that increased classroom time goes along with greater learning. This would tend to generate, in schools, a greater concern for families' preferences and interests.

The aspiration to increase the enrollment and attendance of students should create a more competitive market, because different suppliers are interested in capturing the largest possible market. This "move toward the market" is perceived by the education seekers, who would "dynamize" the market, forcing the family to *get*

involved in education as well as in the concerns and requirements that may have an effect on the management of the school.

Moreover, an appropriate educational strategy may also increase the willingness of families to help supplement educational funding by increasing the volume of private resources invested in the system (shared financing).

Under this model, the resources allocated to the schools would be directly proportional to the service they provide, a situation which was not necessarily part of the model of subsidy for the offer. Therefore, with subsidy for the demand, the distribution of resources to a school is much *more sensitive* and varies monthly depending on the behavior of attendance. Consequently, provision is guided by the *market* rather than by the government, and is therefore more dependent on the behavior of the demand than on the political actors who control the government.

Assuming that there is symmetry of information in the education market,[23] freedom of choice in this model is identical to that in the model of subsidy for subsidizes the offer. There are restrictions in both when the school is operating at full capacity, in which case another model that would provide the service.

4.3.2. Weaknesses

From the operational point of view, the implementation of the model requires an important bureaucratic apparatus that would control the variable by which resources are allocated: attendance, which should be measured daily.

This monitoring is complex, given how decisive is this variable in school financing and because it is very sensitive to climatic variations, public safety, transportation, public health, etc. Monitoring attendance requires a large bureaucracy to prevent its distortion; this involves implies redoubling efforts in this area and fortifying the associated bureaucratic entities.

Similarly and indispensably, the model requires one to assume that the market is homogeneous and competitive market, when it is actually not, except with some exceptions. This is especially true when size does not warrant the existence of more than one school, as is the case of rural localities, towns and small villages where the option to choose is more fiction than fact. Unfortunately, the information available in the education sector is neither abundant nor easily understood by the user, so that the choice of education with full foundation, based on the rationale of *verifiable* quality, becomes a phenomenon difficult to attain for most middle-class, lower middle-class or lower-class families—the average population covered by the service. This makes debatable one of the model's basic principles: the "symmetry" of information between suppliers and users.

On the other hand, in contradiction to its indirect purpose, even though the model seeks to increase the quality of education, the allocation of resources through the subsidy has no direct relationship with that variable, since it assumes a formal process based on students' school attendance, without directly taking in what is

fundamental: the increase in student learning. This is not a minor, and presents an enormous gap in the model's design. Society pays for students to attend school, but not necessarily for them to learn.

Like every personnel-intensive process, in its cost structure the heftiest component is wages, so that the proportion of fixed costs is high. In contrast, the income structure has significant margins of variability in terms of student attendance. Having a rigid cost structure accompanied by variable income has led, on occasion, to negative financial effects, which have been usually been solved by destabilizing the faculty, and making wages flexible. Hence, this funding plan, from its inception, did not have the support of the teachers.

The "natural" results of the model lead schools to try to attract and retain students with a higher attendance level, since these generate the lowest possible costs. Thus, those who have the most absences are indirectly excluded. It also tends to marginalize those who have more learning problems, since they are often the ones who provoke higher costs. This ultimately brings about socio-economic discrimination toward the poor; tending to marginalize those who are different, and seeking to attract those who are different in a positive way. The application of this logic ends in segmenting the schools' market on the basis of socioeconomic criteria, with different facilities for the poor and for the rich, since when there are no factors to compensate for these characteristics, they discriminate more than homogenize.

4.3.3. Analysis

One of the main hypotheses for the application of the models the existence of a competitive market. This is not fulfilled, except in some sectors where the population has greater socioeconomic power; while for the lower-level socioeconomic sectors, the competitiveness of the market is more restrictive. On the other hand, a minimum number of schools is required to generate an educational market, which requires access to a market that operates with certain characteristics of homogeneity. This is not the case in most of the country's small communities (about 50% of the total), and even less if one considers the population's socioeconomic distribution and the test results of the System of Measurement of the Quality of Education (SIMCE).[24]

Complementarily, one of the key elements that reduces the positive effects of the demand model is the asymmetry of information between users and suppliers. The information available about quality to those who seek educational services has no relation to what they really should have in order to make decisions adhering to the rationale of "orientation toward quality" which the model claims. In practice, decisions are propelled by the locale of the school and how much it costs, which restricts its operational framework. This is more restrictive in that children are minors, and these variables were found to lie outside the model's quality rationale.

On the other hand, the model assumes—as an efficient cause of learning—that more attendance means more quality of training (including learning), thus endorsing the funding associated with that variable. However, to date there is no solid evidence to support this correlation. This factor reduces the funding of the educational process only to the student's presence in school, ruling out other avenues of training. It would seem that the purpose of the education system, which is to achieve students' learning, is confused with school attendance. While the latter may be instrumentally necessary to achieve the above objective, with the new tele-education processes which are developing with dizzying rapidity, learning is becoming increasing detached from the classroom. In fact, to insist on this plan rigidifies the use of learning time, confining it to a scholastic plane of daily attendance, rather than intensively using time in school and out of school to its fullest extent.

The model considers an insufficient number of categories or types of schools, or learning conditions, for the allocation of financial resources (level, type and condition of teaching), assuming that each presents a homogeneous interior reality in usually heterogeneous circumstances. For example, two schools with the same level of student attendance, the same modality and teaching condition, receive a similar subsidy amount, although one of them is geared to a population of extreme poverty and the other to a population of higher socioeconomic status. While the incomes of both institutions are similar, operating costs are different. This fact is not contemplated in the present model.

In sum, it could be affirmed that the benefits of demand subsidy are to increase competency, reduce costs and create greater transparency in the allocation of resources. This would lead to greater competition by delivering higher quality among schools.

Among the most obvious disadvantages is the assumption that the market is homogeneous when it is not. Second, the great asymmetry of information does not allow parents to make decisions based on a solid rationale concerning quality. Third, it does not create competition in the areas most dependent on government support, which are the neediest socio-economic levels of the population, with lower education options in other ways. Finally, it creates uncertainty in the calculation base on which the subsidy operates.

Table I summarizes the strengths and weaknesses associated with each model:

Table I. Summary of strengths and weaknesses mentioned for the models analyzed

	Model of subsidy for the offer	Model of subsidy for the demand
Strengths	Requires little bureaucracy because of its simplicity and ease of control. Ensures the provision of stable income independent of the demand. Allow working without greater pressure or exigencies. Schools with similar numbers of students can operate with different income levels, which facilitates the adaptation of costs on the basis of where students live and their socioeconomic levels. Tends to generate more homogeneous achievement.	Fosters the generation of a more competitive educational offer. Stimulates families' interest in education through their involvement in the funding of one school or another. Relates the scale of the service with the funding: more service, the product of more attendance, produces more financial resources. Encourages learning by increasing attendance because this is a determining factor in the funding.
Weaknesses	Under control of the families based on their having no influence on funding. There are no financial incentives to attract enrollment or to improve the quality of education. The subsidy is granted for reasons of the school's budgetary history, and not for results. It makes access to subsidized education available to sectors able to pay for it.	Monitoring attendance require a large bureaucratic apparatus. Tends to exclude students of high cost or low attendance. Generates tense work environments because of uncertainty concerning variable incomes in a context of fixed costs. The subsidy is based on a formal variable (attendance), and not on results. It makes possible the access to subsidized education in sectors able to pay for it. Some of the basic assumptions, the competitive market, its homogeneity and symmetry of information, are fully debatable.

4.4. The Chilean experience since 1980

The change of the model for educational financing experienced since 1981 involved the transfer of full responsibility for public education from the government's Ministry of Education,[25] to a factor shared with urbanities and private sponsors. Then, the contribution of government to subsidized private education was significantly lower than that established by the new legislation, since it was expressly designed in this way to encourage private citizens and organizations to be incorporated into the education market (ODE, 1996; Gonzalez, 1999).

From that year on, this funding modality was replaced by the subsidy for the demand, drastically decentralizing the management of all resources, and retaining only what concerned the definition of curriculums and educational programs, the control of enrollment and attendance, and the supervision of their implementation. These continued in the hands of the Ministry of Education.

The new model and the decentralization led to a stratification of the schools into the categories of urban, private subsidized and paid private, of which the first two qualified to receive public funding.

In Tables II and III, it can be seen that when the model of demand subsidy was first implemented in 1980, the total school population was 3.1 million students, of whom 80% were cared for in public schools, and the remaining 20% in private schools. Of the latter, 13% were covered by subsidized private schools and 7% by paid schools. Twenty years later, the school population bordered on 3.5 million students, of whom 54% attended urban schools, 35% went to subsidized private schools, and 9% to paid schools.

Table II. Distribution of the country's total enrollment (preschool education, elementary education and junior high school) according to the department of the school

	Department		
Year	Public	Private subsidized	Private paid
1979	2,551.014	377.928	220.458
1980	2,470.097	406.457	214.932
1981	2,215.973	430.232	195.521
1982	2,120.597	553.600	144.063
1983	2,041.692	643.888	183.785
1984	1,968.962	758.842	158.748
1985	1,936.295	832.455	194.660
1986	1,871.644	913.925	209.788
1987	1,797.953	910.968	217.737
1988	1,781.413	939.445	256.700
1989	1,745.598	954.642	282.659
1993	1,725.620	973.515	311.483
1995	1,777.750	1,050.131	302.957
1997	1,839.124	1,104.650	311.483
1999	1,866.991	1,202.327	306.591

Sources: Department of Education (1979), Ministry de Education (1988, 1989, 1994, 1996, 1998, 1999).

Table III shows that in 1980, while enrollment covered by the government—either directly or via the urbanity—accounted for 80% of the school population; today it has dropped to 55%, declining by 700,000 enrollments. As for enrollment in private schools, this has increased from 20% to 45%, which is reflected in service provided to an enrollment of 900,000 more over two decades.

Enrollment in the private sector has evolved together with private per capita income, and has been sensitive to the economic crises. Its incidence has increased from 7% to 9%, and this trend is observed as punctually altered by the junctures.[26]

On the other hand, regardless of crisis periods, enrollment in subsidized private institutions shows an upward trend, either coming from the growth element in school population, or from the transfer of students to urban schools; and in times of crisis from the paid private schools.

Table III. Percentage distribution of the country's total enrollment (preschool education, elementary education and junior high school) according to the department of the school

	Department		
Year	Public	Private subsidized	Private paid
1979	81.0	12.0	7.0
1980	79.9	13.2	6.9
1981	77.9	15.1	7.0
1982	75.2	19.6	5.2
1983	71.1	22.4	6.5
1984	68.2	26.3	5.5
1985	65.3	28.1	6.6
1986	63.1	30.8	6.1
1987	60.1	30.7	9.2
1988	59.6	31.4	9.0
1989	58.7	32.1	9.2
1993	57.3	32.4	9.3
1995	57.1	32.3	9.2
1997	55.6	33.4	9.4
1999	54.4	35.1	8.9

Sources: Department of Education (1979), Ministry de Education (1988, 1989, 1994, 1996, 1998, 1999).

The increase in the private sector has been concentrated in the area subsidized. In 1980, for each registration in paid schools there were fewer than two in subsidized schools. In 1999 this went up to four registrations. These last (subsidized) showed, in 1980, an enrollment of nearly six urban schools. Today it is less than two registrations.

Table IV shows that in 20 years, enrollment in local schools has declined by 25%, while private schools recorded significant increases. Paid schools have seen their enrollment increased by 50%; during the same period, the subsidized schools almost tripled their enrollment.

Table IV. Percentage evolution of the country's total enrollment (preschool education, elementary education and junior high school) according to the department of the school

	Department		
Year	Public	Private subsidized	Private paid
1980	100	100	100
1981	90	106	91
1982	86	136	67
1983	83	158	86
1984	80	187	74
1985	78	205	91
1986	76	225	98
1987	73	224	101
1988	72	231	119
1989	71	235	132
1993	70	240	145
1995	72	258	141
1997	74	272	145
1999	76	296	143

Sources: Department of Education (1979), Ministry de Education (1988, 1989, 1994, 1996, 1998, 1999).

Changes in enrollment have been uneven in the number of schools by sector. In reviewing the records of 17 years of process, we concluded that of the urban schools (Tables V and VI), after minor changes, their number remains practically the same (Figure 3). Consequently, the rate of students per school has decreased (on an average, 85 students per school). Therefore, urban schools have fewer students, partly because their coverage in sectors of low population density is almost 100%, and also because some schools have been relocated due to migrations, with small and community schools with the same features closing, and schools in urban areas and larger communities opening.

Certainly, the expansion of the subsidized private sector is the most explosive. The index of schools grew by 80% (paid private, by 40%), and the average number of students per school increased by 50%, while the paid sector maintained its average rate of students.

Table V. Number of Schools according to Department

Year	Public		Private subsidized		Private paid	
	N°	Índex	N°	Índex	N°	Índex
1980	6370	100	1627	100	802	100
1985	6426	101	2643	162	862	108
1988	6308	99	2663	164	698	87
1990	6288	99	2694	166	759	95
1991	6274	99	2689	165	786	98
1992	6269	98	2650	163	784	98
1993	6252	98	2654	163	832	104
1994	6221	99	2637	162	860	107
1995	6422	101	2822	173	1058	132
1996	6536	103	2996	184	1166	145
1997	6351	100	2921	180	1128	141

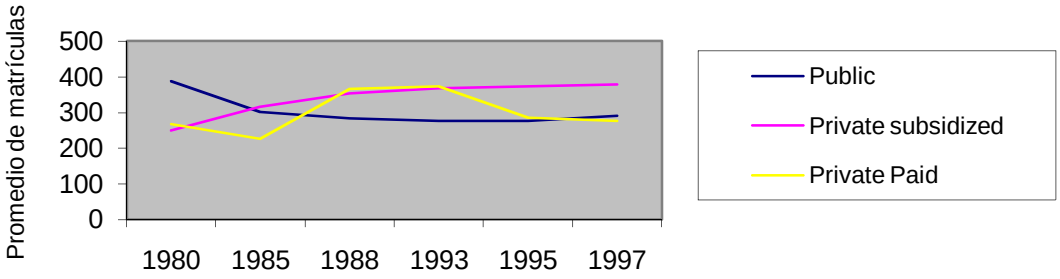
Sources: Department of Education (1979), Ministry de Education (1998)

Table VI. Average student enrollment by schools according to department

	Public		Private subsidized		Private paid	
Year	Average	Índex	Average	Índex	Average	Índex
1980	384	100	250	100	268	100
1985	301	78	315	126	224	84
1988	282	73	353	141	381	137
1993	276	71	367	147	374	140
1995	277	71	372	149	286	107
1997	290	75	378	151	276	103

Sources: Department of Education (1979), Ministry of Education (1998).

Figure 3. Evolution of average student enrollment according to department



It could be said that the fundamental aspects of the detailed process are have been duly consolidated. Consequently, changes experienced in future should be of lesser magnitude, establishing a subsidized private sector competitive with the urban, at least in attracting students.

From the standpoint of the number of schools and the distribution of enrollment, changes in the educational financing system strengthened the subsidized private sector. The specific economic crisis have made possible the growth of the subsidized private sector.

The urban sector has been impoverished by maintaining a stable number of schools (although in different locations), but with a much lower enrollment rate per school; which would allow us to assume that, although they would have been very cost-effective, their incomes have fallen.

As to what happened, there can be formulated certain questions whose answers require more background. Is the quality of education the variable that explains the changes? What information have families considered in making these decisions? What are the sociocultural characteristics of the population that has changed schools? Those who change, what kind of education is it that they are seeking?

5. Proposed mechanisms and instruments for financing public education in Chile

After nearly two decades of applying the model of subsidy for the demand in education, we believe it appropriate to make relevant changes, aimed at overcoming the main shortcomings analyzed, to address the weaknesses of the prevailing model, particularly in terms of educational equity and quality, essential elements of public education policy in Chile, and in the rest of Latin America as well.

Replacing the current funding model with one that would drastically reduce educational inequalities seems a short-term goal unattainable, although debatable, because basically we share the approach of Yunus (1997), who says that the issue is more a factor of the political will of the agents in power, than of the resources needed to achieve that goal.

That is why we consider it important that, in the future, this topic be discussed at two levels: one, relating to the improvement of criteria for the allocation of economic resources, following the principles of fairness essential in this task; and the other, concerning the revision of the conceptual bases and societal projects, in order to propose a funding system that would be consistent with these objectives.

In this section, based on the explanations already given, and paying attention to the dimensions of equity and quality which under the current funding system have not been duly considered, given evidence that the socioeconomic context is blatantly unfair, proposals to correct some of the weaknesses identified are presented and discussed.

5.1. Provision of funding according to the average socioeconomic level of the school population

First, it is essential to create a system of financing that would consider, in its basic structure, the socioeconomic status of the school population it serves, since this has decisive impact on the costs favoring a model that would seek similar equity and quality. Currently, this mechanism, called an "educational grant unit" (EGU) operates as a fixed value independent of the socioeconomic status of the students who attend a certain school, in circumstances where it is known that the cost of education for the most vulnerable sectors is significantly higher than that associated with higher-income social groups. Consequently, it is appropriate to apply a positive discrimination towards the population having higher costs for education, establishing an EGU with a broad empirical basis,[27] clearly sensitive to the socio-economic variables of the population of students and families it serves.

It is proposed to differentiate the MEGU by socioeconomic status, according to the average income of the families, grouped into deciles,[28] generating a structure more sensitive to economic reality, where their values would be significantly higher for the most vulnerable socio-economic levels; which would allow it, in that way, to be adjusted to actual costs, produce positive effects on learning and reduce the inequality the current system generates. The resulting MEGU vector would form the basis for the function of calculation, establishing 10 levels, which would be complemented by the weights detailed in the following points.

5.2. Replace the variable "average daily attendance" with the effective quarterly enrollment of students

Currently, the key variable for the allocation of resources is the monthly average daily attendance of the school's students. The objection has been made that it is a variable of high cost control for the system, whose impact on scholastic performance is less significant than believed, since the margins of variance for the variable are reduced.[29] Therefore, it loses significance as a criterion for estimating quality, and hence for the efficient allocation of resources in a role as crucial as the allocation of funds.

Consequently, we propose replacing the variable "average attendance of students" with "effective quarterly enrollment for each school," since the existing international experience recognizes that the latter behaves properly when there are mechanisms for controlling it. Moreover, this option demands significantly lower costs than the current modality.

Carrying out the proposed change of the basic variable involves recognizing that the educational process goes beyond attendance, and that since this is a very important factor, the allocation of economic resources cannot be based on a variable so sensitive to changes, thereby generating—as mentioned above uncertainty in revenues, with consequent negative impacts.

On the other hand, this form of resource allocation contradicts the purposes of non-presenciality of the current learning models which invade the proposals of the area's learning models, which rigidify the allocation of financial resources, thereby giving certain clues that the processes must be presencial. Another thing different is to discuss the issue of the full school day (which means the extension of scholastic activities throughout the day), and relates to the cost/opportunity of access and exposure to training experiences for the most vulnerable social sectors.

Modifying the basis for calculation considering the quarterly enrollment of students of each institution is not complex, since, at present, schools now report it twice a year: at the end of the second month and on the next-to-last month of classes; consequently, it would mean introducing an interim measurement. Therefore, its implementation is easy, fast, and much less costly than the current system of control. Also, it tends to stabilize earnings, making them independent of attendance; this is obviously fairer, because most of the costs of a school are fixed, whereas variable costs per number of students attending are marginal.

5.3. Incorporate indicators associated with the quality of schools' educational results

It was established earlier that the current funding model neglects a fundamental aspect of the process: scholastic results. It is therefore necessary to incorporate markers aimed at encouraging schools to improve teaching, with the ultimate aim of increasing the quality of the educational product delivered.

Initially, these markers should be associated with the test results of the System of Measurement of the Quality of Education (SIMCE), since it is the only existing evaluation instrument in the field of comparative achievements (subject to certain limitations). However, regarding this, it should be executed with extreme caution to avoid producing an effect contrary to that desired. Later, incorporating other indicators of the National System of Performance Evaluation (SNED) associated with the qualification of teachers could also be considered.

Because of the use of SIMCE we propose two complementary markers: the first, generated from the comparison of the results of the educational school with itself, which would correspond to a value attributable to the scale of the advance/reversal of the results of the school regarding itself, considering the final result of SIMCE as opposed to the previous measurement. The second marker comes from the comparison of the school's results with those of its peers in the same decile; that is, with those that serve students of the same socioeconomic level, type of teaching, and location. Based on this comparison, assign a financial marker that would reward those who in a better relative situation would be assigned.

The first marker proposed is relevant for every school, since it measures it in respect to its previous state. The second complements the vision by comparing the school with its group of peer institutions.

Both editors are suitable for measuring quality achievements. The first might have more weight when the school is *below the average of the group to which it belongs.* In this way, there could even be considered a more flexible marker, which could be adjusted (decrease its weight in the role of resource allocation) to the extent that the school approaches the confidence interval of average SIMCE achievements in the group of schools to which it belongs.

The second spell placed the comparison with the group of peers, adapting it to the fairness criterion assumed to have the allocation of resources.

6. Conclusions

In this work, allusion has been made to the fact that the norms for the matter are not equivalent for urban and subsidized private schools. Consequently, this proactive framework, to be successful, requires additional measures (recommendations) designed to even up both markets positively.

The preceding involves establishing the same rules for allocating resources, for both urban and private sponsors, so that they adopt the channel defined in the law. This point is very significant because since the monies are transferred to the sponsors, sometimes left to their discretion is the spending of the largest amounts collected on improvements in wages, equipment or infrastructure, to name a few. It should therefore be expected that the proposed function should have the legal instruments that not only would allow its calculation, but the proper allocation of the revenues generated.[30]

The same thing happens in terms of the practices schools use for selecting their students, since many subsidized private schools now *choose* students under plans that urban schools are not authorized to use. Therefore, these often recruit students who habitually bring together learning problems and the costs associated with them.

It is also necessary to devise mechanisms that would allow the urban patron, subject to the Teacher Act, to adapt teaching resources to the real needs demanded by the community under the same conditions as those of the subsidized private schools. This process is complex because the labor market should not be protected. Recent announcements by educational authorities and the College of the Order in favor of applying an evaluation system for teachers should be aimed in that direction.

Since the central criterion for the operation of the financing system demands in its origin a market in which families have a real choice of schools, the availability of adequate information regarding educational projects offered and their results to date is essential. That is, it is required to reduce the level of information asymmetry, which requires that the Ministry of Education, or a bureau of education, have powers aimed in that direction, periodically report the results recorded by the educational establishments in various fields (SIMCE, promotion, repetition and

dropout of students, appropriate success rate, rate of teachers' attendance, and other indicators such as "value added per monetary unit invested"), which would consider the results obtained in relation to knowledge *input* and resources invested.

Concerning the subject, it is essential to evaluate regularly the system of funding public education based on the fulfillment of the objectives to be achieved in various spheres and fields of activity: pedagogical results, management of facilities, correction of social inequalities, etc.

A new formula for calculating funding is proposed as follows:

$$f = [EGU_{ns} \text{ value} * ((\text{enrollment}_{tm}) * (\text{quality factor}_{d1+d2}) * (T_s))]$$

where:

EGU_{ns} value = base amount of the unit of subsidy according to the average socioeconomic decile of the students served by the school

enrollment_{tm} = represents the number of students enrolled in the school during the quarter

$\text{quality factor}_{d1+d2}$ = the relationship that should be established between the comparisons of the school's SIMCE results regarding itself, and then, with respect to peer institutions according to socio-economic decile and condition of the school's location.

T_s= type of school according to the education provided (pre-school, special, elementary, junior high school and its specialties)

Finally, we cannot fail to mention that the politics of educational funding, as a public policy, must be synchronized with the objectives of any reform it is desired to develop. At least two elements must be analyzed further in this regard. The first, already mentioned briefly, consists in making the funding system more flexible to allow the application of this reform in its pedagogical sense, by making room for educational options that would combine presencial modalities with self-learning processes, that might be non-presencial or gradually moving toward that condition. The second aspect is that funding policies should support educational decentralization processes, which are a key component of the administrative and curricular reforms through flexible systems that respect the differential characterizations, avoiding plants producing uniform processes as the current plan.

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1 During the colonial period up to the end of the second third of the nineteenth century, the embryonic Chilean education system was essentially private, with little input from the public sector. The demands of the early twentieth century aimed to improve its financing and quality, bringing about the contribution of the State, which, although from that moment it brought increasing financial resources, has always been lagging behind the demands. This situation has had several stages, but it is the dominant feature of public funding for education.

2 However, this competition is not the same, since private institutions are allowed to select their students on the basis of applicants' qualifications, and other variables (ability to pay, etc.). In contrast, urban institutions are obliged to provide education to anyone who requests it, without discrimination or selection by means of any variable.

3 For example, it was determined that any school with fewer than 35 students would receive a grant for 35 students attending regularly. An interview with Pablo Gonzalez, a former director of the Division of Planning and Budget of the Ministry of Education, currently director of the Fund for the Study of Public Policy and of the Bureau of Management Public Policy at the University of Chile (2000).

4 The base value of the EGU for 2000 is $20 per student per month, the maximum monthly subsidy per student of on the order of $45 when it meets all the requirements affecting it (depending on the value of the dollar in June, 2001).

5 The transfer of the package (teachers + infrastructure + equipment) could not be avoided and was non-reversible.

6 In passing, it also was able to pulverize one of the most powerful unions opposing the military government.

7 In addition to the fact that the very concept of literacy has changed over time, and is more demanding now.

8 The director of the school receiving the subsidy.

9 Marginal revenue is the increase or decrease in income generated in income by the variation in the number of students attending a school.

10 Marginal cost is the increase or decrease in the cost is generated in a unit by varying the number of students served.

11 In all the graphs, blue represents utilities and red represents shortfall.

12 Which was intended to stabilize the teaching staff of the urbanities; its main component corresponds to the salaries of the teaching and non-teaching staff.

13 Value of the dollar in June 2001, obtained from a selective sampling of establishments.

14 This phenomenon is more complex in secondary schools where the socioeconomic level of the school population in the municipal schools is more heterogeneous.

15 Usually this type of school serves—as is common in many countries—the medium-high and high socioeconomic strata.

16 The criteria used for this process must be grounded and related to the goals, objectives, functions and procedures of the respective disciplinary field.

17 Efficiency does not imply that achieving it generates redistributive equity of the goods or service in question.

18 In those cases where the demand was greater than school's capacity, the law forced the preferment of the resident of the sector.

19 However, because of the deficit in scholastic coverage, up until the eighties in Chile the demand for enrollment was greater than the offer, which inplied schools operating at full capacity.

20 These features were an "expected effect" of the so-called Teacher State, and therefore, strategically similar processes were sought to generate homogeneous results.

21 The above notwithstanding, it should also be noted that the original amounts allocated to the establishments could answer to reasons not so plausible as these: namely, political, religious or other.

22 This criticism was the rationale that prompted its replacement with the model of demand subsidies. To this must be added quota policy variables whose analysis is beyond the point of this paper.

23 A condition the public education market found very difficult to satisfy, given the requirements for comprehension demanded by users, and the exigencies of information transparency which had to be met by educational institutions.

24 The SIMCE was proposed because it is a test based on the measurement of the official curriculum, common to all schools; equally, because it is legitimized—criticized, but accepted; and third, because it is systematic in its application; fourth, because its results cannot be handled directly by a school, as might be the scores for passing grades, grade point average, etc.; fifth, although it requires corrections for the purpose of improving the comparisons of results, it is working on it; six, because it is applied every year to elementary school Grades 4 and 8, and Level 2 of junior high school in most of the country's educational institutions.

25 Until that time the administration of physical, administrative, curricular and human resources of the fiscal establishment were centralized in the Ministry of Education.

26 In our case, during the 20 years under study there have been two periods of economic crisis: that of 1982-1983, because of the effects of oil, and the current one, which began in 1998 in consequence of the Asiatic crisis.

27 That is, based on studies of actual costs incurred at various locations for different types of educational establishments.

28 Employing the index used in Chile by the Ministry of National Planning, "Socio-economic Survey of the Population" (CASEN, its acronym in Spanish).

29 This is because there are doubts about the veracity of certain records of average attendance of pupils at the school; should this be true, it would reflect that there is no relation to the quality of the product, since its variance is much lower than that recorded by the variable students' scores. Consequently, their inclusion in the model would not be justified by that means.

30 This aspect is insisted upon, since the imperfect functioning of the education market, which requires protections like these, due in part to the high surplus level of unemployed education

professionals, as well as to the asymmetry of information that enables users to audit the holders, to find out whether they hire good teachers, or less experienced ones, who represent lower costs.