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FISCAL CRISIS AND ASSYMETRIES IN THE EDUCATIONAL SYSTEM IN BRAZIL

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1. Introduction

The balance between the different levels of education is essential for the development of an efficient educational system. The quality of the secondary and higher stages is intimately related to the quality of the primary level of education. By the same token, the number of students reaching higher states of education depends on the strength of the lower levels. High levels of repetition and drop-out at early stages imply lack of excellence at higher grades. The significance of the primary stage in establishing an educated population and an efficient labour force cannot be overated. The analytical skills of a technical or university student depends crucially on the quality of the primary education.

In Brazil, if by an act of God, the private primary and secondary schools evaporated, the universities would be left with a very small number of students. Drop-out and repetition rates in public schools are extremely high which implies that only a minority of university students attended public primary and secondary schools.

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The Brazilian education system is infested with assymetries amongst which distributional and regional are proeminent. The aim of this paper is threefold: to examine in detail such assymetries, to investigate the extent to which they have amplifyed over the 1980's, and to explore the reasons for their existence and to whatever happened to them in the recent past. In order to do so, section 2 provides an overview of the macroeconomic context of the 1980's; section 3 looks at the structure of social expenditures in Brazil; section 4 examines the major assymetries of the educational system; section 5 investigates the developments of such assymetries over the 1980's; section 6 analyse the behaviour of the technical education system, section 7 is an attempt to explain the figures presented in sections 4 and 5; and section 8 concludes.

2. The Evolution of the Fiscal Crisis in Brazil

Much as in the case of other Latin American countries, in Brazil, the current economic crisis is intimately associated with the fiscal dificulties of the State. In countries like Brazil, where the State played an important role in providing the infrastructure for the growth of the economy since the Second World War, the 1980's were marked by the stagnation in public investment. On the other hand, the provision of social goods and services has also declined in face of the remarkable reduction in the governments' disposable income thus increasing the already alarming negative consequences of poverty in the region. In this section we look at the origins and evolution of the fiscal crisis in Brazil.

Over the 1970's the Brazilian economy grew at an average rate of 7% per year. However, the environment based on which such a good performance occurred changed dramatically during the decade. Adverse terms of trade shocks

in 1974 and 1978-79 led to a fragile balance of payment situation considerably worsened in the early 1980's by the surge of international interest rates and the strategy of the Brazilian government to keep up with a bold investment program intended to reduce the dependency of the economy with respect to imports of capital and intermediary goods. Such program relied heavely on external borrowing by the private sector and state enterprises. Some would also argue that the growth-cum-debt strategy resulted from the necessity of the government of legitimizing the authoritarian bias of the militar regime.

In the early 1980's, the Mexicam moratorium led the private banks to interrupt the flow of voluntary funds to highly indebted countries which obviously meant a drastic change of regime for the Brazilian strategy. The recession of 1981-1983 together with the import substitution process of the late 1970's led to a strong trade balance position from 1984 onwards. However, important negative sequels of the structural adjustment developed in the late 1980's reducing the capacity of the government to continue investing in infrastructure and expanding the provision of social goods.

The fiscal crisis of the State in Brazil —the solution of which is rightly seen as one of the most pressing challenges of the 1990's— results, on the one hand, from the interrelation between the growth of the external debt and the fiscal debt, and on the other, from the development of clientelistic and corporatist practices within the State.

The government disposable income fell from 16.78% of GDP in 1970 to 5.43% in 1985. Over the same period, government saving went from 5.61% of GDP to 0.02%, becoming then negative in the 1987-89 period (complete data are on tables 1 and 2 in the apendix). These figures imply that after paying for wages and current goods & services (government consumption), the government was gradually left with a smaller share of GDP for infrastructure investment and social expenditures. In the last three years of the 1980's, the government had

to borrow from the private sector to pay for its payroll and current consumption. The same is true in the case of state and local governments which, in many cases, could not even cover payroll expenses with tax revenues, and had to borrow from the private sector to pay for current consumption expenditures.

The causes of the reduction in the government disposable income and saving are essentially the following:

(1) The surge in interests on the government domestic and external debts (table 1, columns 5 and 10)

(2) the reduction in gross tax revenues at the end of the 1980's (table 1, column 3);

(3) the increase in subsidies (table 1, column 4); and

(4) the increase in government employment at the federal, state & local levels which resulted in a rapid growth of payroll expenses (table 1, columns 7 and 8).

The increase in the external debt resulted, on the one hand, from the borrowing of the state enterprises and the state governmets\[2], and on the other, from the absorbtion of private debt by the Central Bank\[3]. Even more important than the amount of registred public debt and private debt absorbted by the Central Bank is the so-called "internal transfer problem" linking the service of the external debt to the growth of the domestic government debt. In

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[2] . The State enterprises played an important role in the adjustment effort of the late 1970's, and financed part of otheir investments with external funds.

[3] . The decision to absorb the private external debt was intended to protect private borrowers from the exchange rate and interest rate shocks. In reducing the risk of the private borrowers, the government implicitly socialized the debt.

order to service the external debt the government has to buy hard currency from the export sector thus leading to an increase of either the supply of money, the issuing of public debt or generating a superavit in the primary government budget. Hence, the increase in the government domestic debt is directly affected by the servicing of the external debt.

The other three causes for the fiscal difficulties of the Brazilian government are in some sense associated with the nature of the political process and the particular type of relationship established between the State and the society. Clientelism and corporatism have for a long time been pervasive characteristics of the Brazilian State. The structure of subsidies for instance has been designed to create incentives to expand exports and attenuate regional discrepancies. However, the distribution of subsidies is in many cases dictated by political kinship which obviously distorts the primary objectives of the programs. The reduction in indirect taxation is universally seen as an instrument to reduce distributive inequities if replaced by more direct taxation. The increase in direct taxation however hurts the interests of powerful groups with strong political representation in Congress, and this is probably the reason why it has been so difficult to enlarge the tax base in Brazil. Finally, the number of civil servants has been swelling and there are clear evidences that clientelistic practices (nepotism and favoritism for example) have dominated the recruitment process in the public sector.

All these reasons account for a fiscal crisis of the State in Brazil which has two direct consequences. On the one hand, it affects the dynamics of inflation and reduces the prospects of implementing a successful stabilization program. On the other, and more important for the objectives of this paper, it implies drastic budget cuts.

3. The Structure of Social Expenditures in Brazil

The social indicators presented in Table 3 provide ample evidence that Brazil has one of the poorest performances amongst middle income countries. Compared to the Latin American neighbors (Argentina and Chile), or small Central American countries (Cuba and Costa Rica) or to newly industrialized countries (such as Korea), Brazil has the lowest levels of life expectancy (71 and 72 years for Argentine and Chile, 75 and 74 years for Costa Rica and Cuba, respectivery and 70 years for Korea, as compared to 65 years for Brazil), adult literacy (96% for Argentine, 98% for Chile, 93% for Costa Rica, 96% for Cuba and 90% for Korea, as compared to 78% for Brazil), and the highest levels of infant mortality (Argentine 32/1000, Chile 19/1000, Costa Rica 18/1000, Cuba 15/1000 and Korea 24/1000, as compared to 63/1000 for Brazil). It has also the worse income distribution profile as evidenced by the figures on the income share of the poorest 40% of the population, the ratio between the average income of the richest 20% and the poorest 20%, and the Gini coefficient (table 3.b).

Albeit the poor social performance, the predominant view in Brazil is that the volume of social expenditure as a share of GDP or total government expenditure is not small. A recent report by the World Bank confirms such view by noting that "Brazil's poor social welfare performance does not stem from lower social spending than in other middle-income developing countries. On the contrary, Brazil for several decades has devoted a comparable or higher share of central government expenditure and national product to social sectors than have countries such as Korea and Mexico" (World Bank, 1988, p. 2). As shown by this report, total government expenditures on social sectors in Brazil was 17.6% of GNP in 1972 and 21.1% in 1986. In the same years, the corresponding figures for Mexico were 12.0% and 24.9% and for Korea 18.3% and 18.4% (table 4).

Another rather consensual view is that the poorness of the social record stems from an inefficient use of the resources associated with various factors. The most important is the so-called mistargeting of the resources or the fact that the resources in general do not reach the poor. The inefficiency of the programs and the burden of administrative costs due to a widespread lack of qualification of civil servants is also an important factor. Both factors result from the clientelistic and corporatist nature of the political process based on which recruitment procedures and the assignation of resources take place. Certain groups or individuals, because of their relations with state bureaucracies at the Federal, State or local levels, have priviledged access to jobs or social services. This obviously distorts the efficiency of the system. We will return to this discussion in section 7 where we discuss the political economy of social expenditures.

In Brazil, the share of the federal government in the total volume of social expenditures is aproximately 50%. The other half comes from states and local governments (municipalities). The private sector also provides social services, particularly in education (secondary and tertiary) and curative health. Within the public sphere, social security (including welfare programs, pensions and retirement benefits) accounts for 42.5% of total social expenditures. Education ranks second with a share of 22.9% of the expenditures. Within the public education system, the federal government participates with approximately one third of the budget, and state and local governments with the rest (table 5).

Within the federal sphere, total expenditure fell 7% between 1980 and 1985 whereas social expenditures increased 14% over the same period. The share of expenditures with health, education and social security increased from 25.6% to 30.3%. The shares of health and education in total expenditures increased from 2.4 to 3.1% and from 9.8% to 12.1%, respectively(table 6). These

figures indicate that even though the fiscal crunch was already severe in 1985, with a substantial reduction in total expenditures, social expenditures in general, and health and education expenditures in particular, increased in the first half of the 1980's. Over the second half, the shares of education and health expenses did not fall either. One possible reason in this connection is the increase in demands for greater social justice which came together with the first steps of the restoration of democracy.

The picture in the case of the states is different. There was, as in the case of the federal government, an increase in the share of social expenditure in total expenditure, from 47 to 49.3% between 1979 and 1984. However, the absolute values of social expenditures, as well as expenditures with education and health, fell over the period. The shares of education and health in total expenditure also fell. It is interesting to note that in most sectors the reduction in capital formation is greater than in consumption which can be seen as an indication that the expansion and conservation of equipments are the first to suffer with budget cuts. The day-to-day functioning of the system depends on the payment of salaries and wages and other variable costs which are harder to cut (table 7).

As for the structure of expenditures in local governments, Table 8 provides a picture for 1984. Social expenditures accounts for 60.9% of total expenses, and education expenditures is second only to housing and urban expenditures, absorbing 29.32% of total expenditures. It is also noticable that most expenditures are directed to consumption.

4. Assymetries in the Brazilian Educational System

Brazil is a country plagued by economic and social assymetries. It has the worse distribution of income and wealth amongst the middle-income countries as well as a very bad educational performance. While in Korea the gross enrolnment ratio in secondary education is 95% of the population on school age, in Chile it is 70% and in Mexico 55%, in Brazil this rate is only 38.9%. Only 58.9% of students reach the 4^{th} grade, as compared to 97.7% in Korea, 78.4% in Chile, 76.4% in Argentine and 74.2% in Mexico (table 9).

The educational system could play an important role in reducing the degree of assymetry. Table 10 lists a series of works in which education and other characteristics of workers (age, gender, region, etc) are used to explain wage diffenrentials in Brazil. It is quite clear that education has the greatest influence. The official discourse, particularly over the democratization process in the 1980's, has emphasized the importance of education in this connection. However, the fiscal crisis at all levels of government together with a long tradition of clientelistic and corporatist State/society relations have created obstacles for deeper reforms of the educational system.

In this section we look at the structure of the system emphasizing its central assymetries. There are different dimensions which we could explore in order to describe the structure and assymetries of the educational system in Brazil. A short list of the dimensions to explore would include the following:

1. Regional discrepancies;
2. Distributive assymetries;
3. The private/public dichotomy; and

4. Two important triads, namely, the one associated with the three levels of government — Federal/states/local — and the other which looks at the three levels of education — primary/secondary/higher education.

The distributive and regional dimensions are central to an understanding of the system in Brazil, but they cannot be seen independently of the other two.

First of all, let us look at the relation between the distribution of income and the second triad mentioned above, that is, the one associated with the levels of education (table 11). In 1982, the majority of students in public schools came from families with income smaller than 5 minimum wages. In primary public schools, the children of these families were 78.4% of the clientele of public schools. At the secondary level, this percentage was 51.6% and at the university level 23.6%. So, the share of poor students falls dramatically as we look at the figures for secondary and, most particularly, higher education (table 11).

The above figures imply that the majority of students coming from the richer families attend private primary and secondary schools which have much better quality than the public schools. The poor, when they reach the higher education level, if they arive there, go to private colleges which according to a research conducted by the World Bank are in general of mediocre standard. The rich, on the other hand, go to the high quality public colleges and universities, which are free, and of course, have much better opportunities in the labor market.

Drop out and repetition rates in the Brazilian education system is very high. During the 80's, the average drop out rate in the first year of school was 25.6%. For the Northeast, this rate was 39.3%. The average rate of repetition was 26.5% for the country and 24.8% for the Northeast. On the other hand, about 50% of students dropping out from secondary schools do it in order to work (table 12).

There are at least two explanations for such high percentages. One is poverty, or the low levels of family incomes, which means that the opportunity costs for the family of having their children in school and out of the labour market is very high and induce the parents to withdraw the children from schools and send them to the labor market. The other is the bad quality of schools and their inability to provide adequate education which create an incentive for precocious work.

The difference in quality between public and private secondary schools can be evidenced by the comparison of failures, repeates and graduate rates of the two types of schools. The percentage of failures and repeaters in public schools is almost twice the same figures in the case of private shcools. The percentage of graduates is 50% greater in private schools (table 13). If we recall that the majority of students attending public schools are also the poorest, we can infer that the educational system reinforces the distributive inequities.

Assuming that there exists a positive correlation between the performance of teachers and their salaries, then the figures presented above can at least in part be explained by the disparities in salary levels amongst teachers in secondary schools. More than three quarters of teachers in secondary public schools earned less than two minimum wages per month (or US $ 120) in 1988. In private schools, more than 60% earned more than four minimum wages. Regional disparities in teachers salaries are also important. In poor cities (Fortaleza and Salvador) the percentage of teachers earning less than two minimum wages is greater than in richer cities (Sao Paulo and Curitiba. Table 14).

When we look at enrollment figures (Tables 15 and 16), it is inevitable to conclude that distributive and regional disparities are really acute. Net primary enrollment has increased in Brazil from 54% in 1958 to 90%

in 1983. However, in 1980, only 76% of the population of age 7-14 entered primary schools in the Northeast, against 94% in the Southeast.

In secondary education, the average rate of enrollment in Brazil has increased from 16% (gross) and 9.6% (net) in 1970 to 37.4% and 25.4%, respectively, in 1987. In the Northeast, however, the rate was only 29% (gross) and 17% (net) in 1987. In the Southeast the respective rates were 45.5% and 33.1% in 1987. Even the rates in the Southeast are small in comparison to other middle-income countries. As we saw above, the gross enrollment rate in Chile is 70% whereas in Korea it is 90%.

There are also important disparities when we look at the expenditures with education in different levels of government. Expenditures per student in secondary schools run by state governments increased from US$ 224 per year in 1980 to US$ 257 in 1985. Over the same period, expenditures per student in local schools (municipios) fell from US$ 156 to US$ 136. The disparity, which was already significant in 1980, increased 30% over the period (table 17).

The assymetry becomes even more acute when we compare expenditures per pupil in the Northeast and the rest of Brazil. The ratio of expenditure per pupil in local and state schools in the rest of the country to that in the Northeast is 3.28 and 1.29, respectively (table 18). An average local school in the Northeast spends less than 25% per student than does an average state school in the rest of the country.

Based on the above information we are led to the following conclusions:

1. Poor students (a) are the majority in primary and secondary public schools, (b) have greater levels of drop-out, repetition, and failures compared to richer students attending private schools, and (c) rarely attend public universities.

2. Teachers are better paid in private schools which probably accounts for the better performance of students attending these schools.

3. The higher drop out rates in public schools are in part a result of poor quality of education and in part a result of the high opportunity costs for the poor families of leaving the children in the school and out of the labour market;

4. Enrollment rates in primary and secondary schools are greater in richer states in the Southeast region than in the poor Northeastern states. Even in the Southeast, enrollment rates are very small compared to other middle-income countries.

5. State governments spend more per pupil than local governments.

6. Governments in the rest of the country spend more per pupil than in the Northeast.

In a country plagued by distributive assymetries such as Brazil, the educational system should contribute to mitigate them. Distributive inequities would be reduced if primary and secondary public schools had better quality, the rate of enrollment was greater, and the rate of drop out much smaller. Two conditions are required however, namely, that teachers in public schools be better prepared and paid, and that the opportunity costs of maintaining the children of poor families in school be reduced. Over the 1980's both the purchasing power of salaries of teachers of public schools and the income of the poor have fallen, thus implying that the two basic conditions have not been satisfied. The prospects for the 1990's, so far, cannot be very optimistic.

5. The evolution of Expenditures with Formal Education over the 1980's

In this section we examine the evolution of public expenditures with education over the 1980's. Our central concern is with the capacity of the formal educational system to resist budget cuts, and most particularly with the distribution of expenditures within the educational system. We have in mind questions such as: Has there been cuts in government expenditures? Are there marked differences amongst different levels of government? Was there a reduction in education expenditures and in the share of education public expenditures? Was there a change in the distribution of education expenditures among primary, secondary and higher education, and among levels of government?

These are crucial questions for their answers will shed some light on the role of educational expenditures in mitigating the structural inequities of the Brazilian economic system which, incidently, have worsened over the 1980's. In line with the discussion of the introductory section, the contribution of the educational system for the attenuation of social and economic injustices depends on the destination of public resourses for the improvement of primary education. One would hope that over the crisis greater emphasis would be ascribed to the advancement of primary education even if this would require a reduction in resources for higher education.

In order to answer the questions mentioned above we will go through a detailed examination of the available data concerning the allocation of public resources in the 1980's. The data is somehow fragmented, but it seems fair to argue the accessible information is rather sufficient to convey responses to most of the questions.

First let us see the behaviour of the share of federal educational system in the federal government budget. As a percentage of GNP, the share of total federal expenditures in GNP increased from 9.6% to 18.4% between 1980 and

1988. Over the same period, federal expenditures in education as a proportion of GNP doubled (going from 0.8% to 1.9%), and as a percentage of total federal government expenditures went from 8.4% to 10.6%. The share of the Ministry of Education in total federal expenditures went from 6.1% to 8.2%. On average, 70% of federal expenditures in education go to the Ministry of Education. The other 30% go to the other Ministries (table 19).

Table 20 shows the evolution of federal expenditures and GNP in constant 1989 cruzeiros between 1986 and 1989. In face of a reduction in GNP, total federal expenditures and expenditures with education increased over the period. The figures displayed in above show very clearly that there was not a reduction in federal resouces for education nor a crowding out of education expenditures over the 1980's. The big increase in total federal expenditures in 1989 is a result of a change in accounting practices. Resources from others government budgets were, begining in this year, included in the consolidated federal government budget.

Information on the structure of expenditures of the Ministry of Education which accounts for approximately 70% of total federal expenditures in education is also of importance. Between 1980 and 1989, after a rapid increase in the share of expenditures directed to primary education (from 7% in 1980 to 33% in 1986), it was cut down to less than 20% in 1988 and 1989. Meanwhile, the share of higher education went from 65% in 1980 to 50% in 1986, but then increased to reach 64% in 1989 (table 21).

When we look at the evolution of expenditures in constant 1989 cruzeiros, we note that total expenditures went up 24% between 1986 and 1989, but that the resources directed to primary education were reduced in 39% whereas those to higher education increased 59% over the period (table 22).

Finally, with the exception of 1986 and 1987, the share of the payroll in the Ministry's total expenditure showed a clear upward trend while

the shares of current expenditure and capital expenditure showed a downward trend (table 23).

The data also shows that the share of the Treasury's total expenditures with education going to the Ministry of Education and other federal agencies increased between 1986 and 1989, whereas the shares of transfers to states and local governments decreased (table 24). There was also an increase in resources directed to the federal agencies (17% between 1986 and 1989) and a 20% reduction between 1986 and 1988 in the resources transfered to states and local governments (table 25). This was a result of the regulamentation of the "emenda Calmon" which obliged the government to expend 18% of the budget with education. These figures imply an increase in the importance of the federal level of government in the financing of education in the period.

Also at the state level, the share of primary education in states' expenditures on education falls after 1986, going from 60% to 54% of total expenditures, while the share of higher education increased from 10% to 13% (table 26). Moreover, while total expenditures in 1986 constant cruzeiros fell 10% between 1986 and 1988, expenditures in primary and secondary education fell 28% and expenses with higher education increased 21% in 1987 going back to the same level of 1986 in 1988 (table 27).

Hence both at the federal and states levels, there was an increase in expenditures channeled to higher education and a reduction in expenses with primary and secondary education.

At the regional level, in the Southeast states the shares of primary, secondary, and higher education remained roughly constant between 1984 and 1986, but in the poor Northeastern states, whereas the share of primary education falls from 59% to 51%, the share of higher education increases from 1% to 4%. It is interesting to note that administrative expenses account for 5%

of total education expenditures in the Southeastern states and more than 14% in the Northeast. The latter figure provides evidences of the relative inefficiency of the system in the Northeast (table 28).

Finally, we can analyse the evolution of local government's expenditures on education. Between 1986 and 1988 this is the only government level in which albeit a reduction in total expenditures, and a small reduction in the share of education in total expenditures, the share of primary education increased (table 29). However, this was not enough to sustain the 1986 level of expenditure. Indeed, in two years there was a 15% reduction in primary education expenses (table 30).

As an exemple of the evolution and structure of education expenditure in a very poor and typical Northeastern state, we can analyse the case of the state of Alagoas. The first point to note is that between 1986 and 1989, there was a drastic reduction in total expenditures --a reduction of approximately 46% in three years. In 1990, probably as a result of the election of a President from this state, and as federal transfers of funds many times obey political reasons, total expenditures went up 70% in comparison with 1989 (table 32). Over the period, the share of education in total expenditures fell from 22% to 14% whereas the share of primary education in total education expenses fell from 46% to 41%. It is worth noting that the average share of primary education in total education expenditures in 1986 was 46% (table 31). In constant 1986 cruzeiros, education expenses fell 41% and primary education expenses fell 47% between 1986 and 1990. The share of higher education in total education expenses went from 2% to 3%, and in 1990, the level of expenditures had returned to the 1986 level (table 32).

During the period of stringent budget crunch, that is, between 1986 and 1989, the share of payroll expenses increased whereas the shares of current and capital expenditures fell. Payroll expenses fell 42% whereas capital

expenses fell 55% between 1986 and 1989. In 1990 there was an increase in expenses for reasons already analysed above (table 34).

The situation at the local level in Alagoas is not very different from what occurred at the state level. Total expenditures fell 27% between 1986 and 1988, whereas education expenditures fell 40%. However, the share of primary education in total education expenses increased from 36% to 48% over the period (tables 35 and 36).

The main conclusions to be drawn from the forgoing analysis are the following:

1. Over the 1980's, albeit the virtual stagnation of the Brazilian economy, there was an increase in the share of federal education expenses in GNP and total federal expenses. Indeed, over the most critical period —between 1986 and 1989-- federal educational expenditures increased 17% whereas the expenditures of the Ministry of Education increased 23%.

2. In 1988, 78% of the total amount of federal expenses in education were under the responsability of the Ministry of Education. The share of expenditures in primary education within the Ministry budget fell 39% between 1986 and 1989, whereas the share of higher education increased 60%.

3. Over the second half of the 1980's there was a substantial increase in the Treasury's transfers of funds to federal agencies and a reduction in funds directed to states and local governments.

4. Total state and local expenditures fell in the second half of the 1980's. Education expenditures fell more than total expenditures thus implying a reduction in the share of education.

5. At the state level, the share of primary education expenditures in total education expenditures fell whereas the share of higher education increased.

6. At the local level, notwithstanding the budget crunch, and the reduction in education expenditures, the reduction in primary education

expenditures was smaller than the average thus implying an increase in the share of primary education over education.

Conclusions 5. and 6. are confirmed in the case of the state of Alagoas.

6. Technical Education - Expenditures and Performance

Brazilian technical education system have two different branchs, one entirely public and the other financed through a compulsory tax on the firms payroll, exacted by the government, but entirely administered by the private sector.

Technical education in the Brazilian public education system has no clear administrative status. There is no administrative structure, secretary or division which is responsible for technical education. However, in many instances in the pass, technical education was turned into an important issue among politicians and people involved with the educational sector.

In the begining of the 1980's, the government tryed to implement two reforms. First, it reestablished the duality between technical and formal education in the Brazilian high schools. The objective of technical education was to introduce the students in a given occupation, while formal education maintained its more general and accademic character. The second reform was aimed at the creation of technical schools at junior high school level and were directed to introduce the students at a very early age (11 years old) in a given occupation. These changes were strongly criticized and resisted by the burocracy and in the end of the decade, very little had survived.

As a result, the technical public school system is today mainly composed of a set of technical schools, controled by the federal government, at the high school level. As the quality of education at these schools is very

high for the Brazilian public school standards, they attract good students with an aspiration level which goes much above that of becoming a technician. The main consequence is that the technical caracter of these schools are very much underplayed by the students, the teachers and the society in general.

Two programs were implemented by the federal government to improve the technical high school system in Brazil during the 1980's, both with little success. The first, in the mid 80's, had as its objective the reequipment of the technical schools and was financed by the World Bank. The program was badly managed and the resources pulverized to many different schools, determining its failure. In 1986 a new program was created to construct 200 new technical schools in the country. The high unemployment rates with the consequent reduction in the demand for technical graduates which was a characteristic of the Brazilian economy in the period 1981/1985 generated doubts about the importance of a project whose objective was to increase the supply of technical graduates. These doubts generated resistence in the bureaucracy and the program was redimensioned. Instead of constructing new schools it was mainly concentrated in the improvement of old technical schools and is still being implemented after 5 years.

At the state level, there is no system of technical schools at any level of education, only some states have isolated unities. Actually, we can say that technical education is in general given very little priority.

The semi-private system of technical education in Brazil is financed by resources exacted by the government and bounded to the system, but administered by the private sector. It is the most important technical education system in the country.

The system is composed by two institutions, one directed to the qualification of workers in occupations of the industrial sector (SENAI) and the other to occupations of the commecial and service sectors (SENAC). Untill

the end of the 1980's, a third system existed to qualify workers to agriculture, but was discontinued. From the remaining two, the SENAI is the most important and our attention will be directed to its evolution in the period under analysis.

The main source of resources of SENAI is a compulsory charge on payroll of all industrial enterprises in the country, wich is exacted by the government. The recession of the early 80's, with the reduction in the level of employment and payroll, mainly in some labour intensive sectors like construction and textiles, resulted in a reduction in the SENAI financial resources and important budget cuts.

Being a descentralized organization, administered on a regional basis, the reaction of SENAI was to implement labour demand researchs which could give the system a good idea of the types of occupations whose demand was being reduced and those which were increasing, regardless of the crisis. As a result the system was able to maintain a close contact with the evolution of labour demand in the industrial sector of the economy, which was of fundamental importance to help in the allocation of resources, and in the adjustment of the system to a crisis period, reducing enrollment in some courses and increasing or even reopening others which had been discontinued in the pass. Also, it gave information about the direction of the investment that should be made to maintain the system in line with the evolution of labour demand in the future. At the same time, investment in physical capital and buildings were reduced drastically, and a program to utilize the facilities available at the local level was implemented.

The system also profited from international cooperation programs to implement the utilization of new technologies mainly in the mechanic, eletronics, machine tools, numerical controls process and other important sectors of the industry.

The decline in financial resources induced SENAI to look for alternatives to reduce the financial crunch. So, agreements were signed with individual firms through which those with more than 500 workers, instead of paying the compulsory tax on its payroll, could invest up to 80% of the value of the tax directly on programs developed by SENAI for the firms themselves. Also, after 1988, a fiscal incentive allowed SENAI to charge for services given to firms of less than 500 workers, being the charges deducted from the tax bill of the firm.

Although favoring bigger firms and thus affecting the equity of the system, these alternatives were important to increase the financial resources of SENAI and to improve the relation between the institution and the firms, at the same time that increased the concern with efficiency. There was an important change in the product mix of SENAI during this period. The number of students/hour under the traditional system declined from 102,041 in 1980 to 83,682 in 1985, but was compensated by the increase in students under the new alternative programs. The number of students/hour under these new system increased from 29,068 in 1980 to 42,274 in 1985. After 1985, there was an increase in both types of programs and the total number of students/hour in 1989 was 24% higher than in 1980 (tables 37.a and 37.b). The percentage of students/hour generated under the alternative programs (what SENAI calls indirect action) increased from 22.2% to 34.2% of the total of students/hour generated by SENAI between 1980 and 1989 (table 38).

The average cost of the student/hour declined, in dollar terms, during the crisis period, from US$ 2.14 in 1980 to US$ 1,42 in 1984, and total revenues also declined from US$ 239,914 in 1980 to US$ 144,280 in 1984. After this year both, costs and revenues increased (table 39). These movements of costs and revenues are in large part a result of changes in real exchange rate and the growth of the economy but it is clear that revenues and costs show a similar evolution during the period.

The number of students/hour declined during the crisis period, the ratio between the number of students/hour to the number of SENAI employees also declined. In 1980, this ratio was 8,719 students/hour for each employee. In 1986 this number had declined to 7,204. The decline was a little higher for administrative personal than for teachers and technical personel. This suggests that also for SENAI, although the system have private administration, to fire personel is not an easy task. But, contrary to the public education system, the system was able to utilize the crisis period, with the reduction in the production of students/hour, to qualify its labour force, mainly at the technical level. Finally, it is important to note that the ratio of students/hour to administrative and to technical personal is basically the same, suggesting that the number of these two types of personal is similar in the institution (table 40). Finally, this suggests also that in SENAI, as in the case of the formal public education, capital expenses suffered more with the crisis than personal and current expenses.

SENAI reputation is Brazilian society as an efficient technical school system was of great importance in two circunstances which determined in large part the future of the system. First, its reputation, combined with its links to government, gave it political power to demand and obtain from Congress a change in legislation which increased the tax rate from 0.5% to 1.0% of payroll. This increase was of great importance when the resources were being reduced by the economic crisis. Second, and even more important for the future of the institution, occured during the discussions in the Nacional Constitutional Assembly, which drafted the new Brazilian Constitution in 1987/1988. During these discussions, SENAI was able to maintain its administrative independence from government, defeating a proposal to transform it into an entirely public agency.

SENAI offers different kinds of courses, being the most important the apprendiceship courses, for different occupations and for students between 14

and 18 years old, which takes at least two years and is responsible for more than half of SENAI student/hour production. The second important type of course is the qualification, which is directed to workers with more than 18 years of age. The third modality is the habilitation courses, which have the status of high school and is a small but important share of SENAI production. Finally, SENAI had a small production of engineers and technologists which was discontinued during the 1980's.

The production of apprendiceship and habilitation courses increase in relation to the others courses of the system and the engineers and technologists courses, which were much more sophysticated and expensive were discontinued. This shows a reduction in the degree of sophystication of courses, which can be seen as an adaptation to the reality of a period of crisis (table 41).

Finally, there was important changes in the regional distribution of students, with a decline in the Southeast and an increase in the share of the South region. The Northeast also increased its participation during the worst years of the crisis, but declined afterwords. Again, this is in agreement with the effects of the economic crisis in the different regions of the country.

As a result of the above analysis, we can conclude that the financial crisis of the 1980's was felt by the Brazilian technical education system, but the reaction was quite different, depending if we look at the public or the semi-private SENAI system.

During the period, technical education lost importance not only in the educational debate, but also inside the public administration. Programs were iniciated but, in general, were missdirected and failed to answer to the demands of society.

On the other hand, the semi-private system of technical education reacted very fast and in a very adequate way to the challenges of the crisis.

Due to its descentralized decision making structure, it was able to increase its links to the industrial sector, following the evolution of labour demand increasing the relative supply graduates of those courses whose demand was less hardly hit by the crisis and reducing the relative supply of the more expensive and less demanded courses.

Flexibility was important to allow the system to developed different sources of resources, besides the traditional tax over payroll which is its main resource base, increasing the supply of services to specific firms and, through this channel, created closer links with firms and developed new courses with new technologies.

At the same time that it reacted fast internally, its good reputation in society allowed SENAI to lobby in Congress to increase the tax rate on payroll, when the crisis was more acute generating more financial resources and to avoid its transformation into an entirely public system during the discussion of the new Constitution in 1987/1988.

As regards to equity, it is important to note that the reaction of SENAI favored the selling of services to bigger firms and the investment in highly sophysticated technology. In this sense, there was some equity loss in the procces. In terms of the regional distribution of resources, the South was favored as compared to the Sourtheas, but the poorest Northeastern region maintained its participation in the total number of students/hour produced by the institution.

The result of this quite successfull strategy is that, contrary to the formal public education system, SENAI is today the most respected technical educational institution in the country, dominating new technologies and highly prepared to the chalenges of the 1990's.

7. The Political Economy of Educational Expenditures\[4]

The distribution of education funds within the Ministry of Education sphere and at lower levels of the government (state and local levels) follows a myriad of criteria. In what follows we will explore some of them, providing examples in connection with the Brazilian experience. Here is a list of the themes to be treated:

1. The role of voicing demands for education funds and quality of educational services;

2. The relation between the centralization of expenditure decisions and the dispersion of producers and consumers of educational services;

3. The option between short sighted and electorally visible expenditures, on the one hand, and long sighted and less visible expenditures, on the other.

Other sub-themes which transpire in the discussion of all the mentioned themes are: the part played by kinship and electoral interests in the allocation of funds, the degree of organization of social groups affected by the distribution of educational funds, the workings of bureaucracies, and the role of inflation as an implicit distributor of gains and losses.

7.1 The importance of voice

The distribution of public funds results from the relative forces of consumers and suppliers of public services. In the educational system in Brazil, congressmen, bureaucrats of the Ministry of Education and state & local Secretaries, students, teachers and researchers at different levels of education are all involved in the political struggle for the distribution of educational funds. Political voice is certainly the most important element in this connection.

Each group affected by cuts in educational expenditure has a different capacity of response or resistence depending on their command over resources and their degree of organization. These are assets which individuals or groups can count on in order to face the threat of situations which may reduce their share in the distribution of funds.

Command over resourses results from the access to information due to privileged relations and kinship, educational background, or social extraction. On the other hand, agents with similar interests may organize in groups, and depending on the coherence of their goals and the costs of the means to come together with a solid strategy, fight effectively against decisions which might deteriorate the quality of their lives.

From the data explored in the preceding section, the most perverse effect of the fiscal crunch of the 1980's was the reduction of funds channeled to basic education, and the resulting deterioration of the public educational system. There are different reasons for such outcome, and we will explore them in the following sub-sections. But certainly an important cause is associated with the fact that the organization and command over resources of students and teachers at the primary level of education are rather low. In face of the deterioration in the quality of primary public schools, those who command financial resources, namely the rich families, abandoned the public system. The children of the poor had no other option but to stay in public schools.

Whereas primary school students, and in particular, rural students, have no means to effectively express their dissatisfaction with the deterioration of their education, university students in the most visible urban

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[4] . This section is based on analysis of documents and interviews with bureaucrats and politicians involved in the budgetary process during the 1980's.

centres are relatively organized and have the means to manifest their opposition. As for the faculty, primary and secondary teachers can go on strike for months even in major urban areas without any practical consequences since the children of the rich are not affected as they attend private schools and the poor have very little political voice in Brazil. University teachers and researchers have comparatively better means. They have more visibility, have ample access to information, were able to build powerfull unions, even at the nacional level and are tightly related to bureaucrats at different levels of the government.

With the democratization proccess and the decline in real wages, university professors and administrative personel organized themselves in powerfull unions. The growth of the unionization, with its demands for increasing autonomy of the universities and the implementation of the choice of rectors through elections where professors, students and administrative personel played, many times, equal role, created important leaderships which were able to voice the demands of the university constituency in a more powerfull position. The break of long and disruptive strikes generated a sense of dissatisfaction among the students and played an important role in increasing the voice of the universities, increasing its power and its share in the more scarce financial resources.

Over the last ten years, the discourse of both secretaries of education and congressmen has stressed the importance of basic education. However, there is some distance between the discourse and the practice. In 1990, 79.4% of the amendments to the federal budget sent to the congress by the administration refered to increases in funds to primary education. However, in value terms, they amounted to 4.8% of the changes proposed for the educational budget whereas the changes for the higher education system amounted to 92%. The figures for the Ministry of Education, indicating a reduction in the share of primary education, were already mentioned in the previous section.

7.2. The Decision Making Process

The figures presented in section 5 show quite clearly that the share of primary education in the distribution of funds at the federal and state levels fell over the 1980's, and only at the local level did the share of basic education increased. We would maintain the hypothesis that this is the outcome of an assymetry between the bargaining power of education constituencies in face of their differentiated access to decision makers.

The level of centralization of decisions plays a critical role here. Primary education constituencies have greater access to politicians and decision makers at the local level whereas have great difficulties in influencing decisions being taken at the state and federal levels. To these, the access is easier to those which have command over the mass midia, which is the population in the highest income strata whose demands are concentrated at the university level.

The decline of basic education at the federal level was in large part a result of the pressure of universities for better salaries. This pressure reached its highest level in 1987, when a legislation was passed in Congress which increased substancialy the salaries of all university professors in federal universities, based on a criterium of isonomy, regardless of the qualifications of the professors and of the university where they were located. As the federal government do not have its own basic schools, the natural solution was to attend the closest clientele.

On the other hand, the Ministry of Education used the strategy of negociating separately with each state, reinforcing clientelistc relationships and the attendance of the demands based on political concessions. There was a reaction from the lower levels of government (state and municipalities) and a concil of Education Secretariats was created. But the divisionist policy of the

Ministry of Education continued to operate. This relation generated a fragmented policy and very little coordination of the general education policy in the period.

At the state level, the increased demand from the middle class for free public universities displaced resources from the basic and secondary school system. Basic education was only preserved in some degree by the descentralization of fiscal revenues at the expense of the states and, with the return to democratic rule, with direct elections and the growing importance of the political parties, by the increasing importance of the local politicians, attracting the attention of the federal agencies. The result was that the Ministry of Education became an important channel through which the party in power tryed to affect the election results at the municipal and state levels.

The effectiveness of voicing dissatisfactions is crucially conditioned by the sphere in which decisions are taken. In the case of primary and secondary education in Brazil (and in most countries for that matter), students and teachers are physically dispersed which obviously creates difficulties to establishing centralized organizations. In the case of universities, and in particular of the few important federal universities in Brazil, the capacity to organize is much greater. It seems clear therefore that if budget decisions concerning the distribution of funds are taken at the national congress in association with bureaucrats of the Ministry of Education, university representatives will be in a much better position than other constituencies.

The workings of federal and state bureaucracies also explains why primary education constituencies have difficulties in affecting the distribution of funds. There is a high degree of endogeneity between constituencies and the groups that represent them. Kinship and favoritism between constituencies and bureaucrats develop creating the conditions for

discriminatory treatment. Primary schools are represented in national and state governments by primary school teachers. University secretariats in Ministries have nothing but university professors in their staffs. Unavoidably, university professors and researchers are better fundraisers than primary school teachers. Higher education institutions are also more keenly aware of the need to send their best and more agressive staff to work at the central government agencies. The end result is that better organized, better staffed groups end up being better represented inside these agencies.

As a result, the internal competition for resources at the Ministry of Education tends to favor the universities. Their representants work for a smaller and less complex reality, a better informed and qualified clientele, able to quickly present projects when needed. This is particularly relevant in the case of the graduate and research areas which have important pressure groups with ramifications in the Ministry of Education and in the Congress.

As for the importance of kinship, it is worth refering to a research conducted by Moura Castro on the changes in federal university budgets in Brazil over the 1970's. It was found that the universities which got the greatest chunk of funds were those whose rectors were more active in raising funds within the Ministry.

The allocation of funds according to a budget approved by the congress is translated into a considerably different actual distribution of expenses when bureaucrats have discretionary power. In Brazil bureacrats do have discretionary power for although congressmen are keen in influencing the budget, their capacity to oversee the actual disbursement of funds is considerably smaller because the rate of inflation is high and volatile. With a 20% monthly rate of inflation, a two months delay of a disbursement implies a reduction of almost 50% in its purchasing power. In these circumstances, the capacity of constituencies to affect the disbursement of funds is even more

important than their ability to affect the budget. And in many cases the decision to delay the payment of budgetary expenses depends on the will of a civil servant. Conditions at the state level is basically the same, only with different persons.

With the democratization and the increase in inflation in the second half of the decade, the budgetary process became even more vulnerable to the burocrats power and to the actions of lobbies.

7.3 The Electoral Visibility of Expenditures and Cuts

In the absense of an effective system of quality control of the educational system, the decisions to allocate funds are strongly influenced by the goals of electorally oriented politicians. As noted by Moura Castro & Oliveira (1991) politicians prefer to spend public money with goods and sevices which are visible. Those expenses which would have an effect after five years do not satisfy the visibility criterion. This is probably why there is a lack of actions to improve the quality of the services (training of teachers for example) and an abundance of those which add to the accomplishments of the major or governor.

For similar reasons, payroll expenses suffer less from budget cuts than other consumption and capital expenses. The reduction in payroll expenses usually reflects a decline in the purchasing power of salaries not a reduction in the number of teachers. With the aid of inflation, it is not very difficult to reduce real wages. But the main consequence is a decline in quality.

There were many evidences on the enterviews and documents analysed that the critical questions of equity and productivity of the basic education system, administrative descentralization, diversification of the secondary education system and the incentive to the regionalization of the universities, although a target of many plans, were by-passed in practice because they were

not sufficiently visible to the ellectorate and had no effect on election results. At the same time, there is also abundand evidence of the importance of lobbies in the distribution of resources to different programs.

A good case here is the distribution of funds to the school lunch program. This program distributes food freely to children at public schools in Brazil. Although this is a very popular program, in the sense that it has large visibility and is in general favored by the politicians, the scarcity of resources resulted in a reduction in its budget. But, due to the powerfull lobby of the industrialized food producers, the budget cuts reduced the share of in natura food in the menu, leaving the share of industrialized food basically intact.

Instead of innovative programs, which could increase the quality of education, and reduce the inequities in the education system, more visible projects like new buildings and the provision of food to students were favored. As a result, the problems of quality, equity and productivity of the educational system were simply not taken into consideration by the government.

A very interesting example of how innovative programs which could be of great importance to transform Brazilian basic education and help to solve some of the problems discussed in this paper was turned into a electoral flag and, as a result, lost most of its effectiveness, is the case of the so called CIEP (Centros Integrados de Educação Popular) program. This is a program to build large and well equiped basic public schools in Rio de Janeiro, for full time students. The program was maybe the most important educational program ever started by a Brazilian government at any level of administration. The idea was to build 500 special schools for 1000 students each, which meant 500,000 students in steady state. A special building was designed by a famous arquitect, and as the idea was to maintain the children for 8 hours in school, the schools should have plainty of space for different activities, food four

times a day, showers, health services, etc. It was a very costy program. The construction cost of each school is US$ 2,6 million and new teachers would have to be trained, school materials developed, the maintainance cost is very high, etc. Being a very innovative and costy program, the inicial idea was to start as an experiment and then, solved the problems which could appear, extend the project to the entire basic schooll system in the state.

The proximity of elections changed completly this strategy. It was necessary to present the program as The governor realization and more than 200 buildings were started simultaneously. The choice of the location of the schools were mainly determined by its visibility to the population.

The result of this change in strategy was realy dramatic. Many buildings stayed halfway. Not enough teachers could be trained, which determined that the better prepared teachers from the tradicional school system were relocated to the CIEPs, reducing the already bad quality of the old schools. At the same time, a heated political dispute developed between those in favor and those against the program, with arguments ranging from the excessive costs of the project, the impossilibity to extend it to all students for financial reasons, the abandonement of the old school system, the importance of having children full time at school, etc... Those in favor and against were obviously divided on party lines.

After 5 years there is about 150 of these schools. Although it is still yearly to make a good avaliation, one of the things that calls attention of any researcher who studied this experience is that these schools are highly under-utilized. In 1987, the average rate of utilization of the buildings were 55%. In some places, under-utilization reachs 85%. Students and parents prefer to go to the old schools. It is a puzzle that is many times explained by the location of the school which, as we saw above, was in general decided on

political and visibility criteria, but it is probably not a sufficient reason. Also drop out rates do not seems to have reduced.\[5]

The lesson from this important project is that the decision to turn a possibly good program to increase the quality of the basic public education system into an electoral asset to a political party or a politician almost destroyed the project. It also shows clearly that better quality alone is not enough to reduce drop out and repetition rates. Actually, the preference of parents and students for tradicional school, where they stay only 3 to 4 hours a day, suggests that for very poor families, with very low family income, the opportunity cost of leaving the children 8 hours at school may be too high. So, reduction in poverty and better quality of education should come together.

The assistencialist caracter of the program was also a hindance. Many times it was presented by its defenders as a means to take street children from streets and not as an efficient means to put them at school. In this sense, some people considers it a program more to solve the problems of the middle class (violence in streets, etc.) coming from the high and increasing numbers of street children in the cities, than an education program directed for the poor. Up to now, the results suggests that assistencialism is not enough.

As a result of the above considerations, it is important to note that there is a conflict between stated and real goals in the discussion about the education system in Brazil\[6]. Although everyone is in favor of a better public education system, most of the times this goal do not coincide with those pursued by those in charge of the system. This group is more interested in the

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5 . This description of the CIEP program is based on L.Cademartori (ed.), 1991.

6 . For a good analysis of this issue see D.Plank, J.Amaral Sobrinho and A.C.R.Xavier, "Born Old: Why Brazil Lags Behind in Educational Development", paper presented at the Seminar on Education, Growth and Inequality in Brazil, Rio de Janeiro, 1991.

provision of jobs and financial benefits to their clients and the maximization of electoral support through the protection of particularistic interests, and defending its privileged position in society, and not with the quality of the system per se.

So, few publicly defend the performance of the schools, but those who benefit from present educational policies may well prefer them to the available alternatives. Among this last group we can count the private school owners, the middle and upper classes who send its children to better private basic and secondary schools, receive tax subsidies for doing so and then send them to free public universities, the politicians which utilize the system to electoral purpose and many others.

Thus, many of the failures of the Brazilian education system serve powerfull interests and this is maybe the most important reason why policies to solve the problem are not implemented.

8. Concluding Remarks

From the figures presented in sections 4 and 5, it seems reasonable to argue that over the 1980's there was a degeneration of the education system in Brazil. The basic distributional and regional assymetries, and the unbalanced distribution of resources among different levels of government and education, became more acute.

Much of what should change according to the diagnosis presented in the last section is beyond the reach of pure technical action. The distribution of public funds in a country in which the state has for a long time been invaded by clientelistic practices, in which favoritism and kinship are important elements of the relation between the government and the social groups and the there is a systematic subversion of public purposes in the services of

private interests, in which there is a complete lack of control over the efficient uses of public funds, there is very little to recommend from a technical point of view.

However, it does seem necessary to reinforce the conclusion that strengthening the basic education public system would in itself have substantial consequences. It would, on the one hand, reduce the levels of repetition and drop-outs and enhance the analytical skills of poor students thus improving their chances of reaching higher levels. This, on the other hand, would advance their position in the labor market thus reducing a basic source of economic inequality.

One important point is that although the scenario presented in this paper of the education system in Brazil is bleack, it is becoming a nacional consensus that only through the improvement of education at the basic level, mainly for the poor, the country will be able to return to a path of economic growth and, at the same time, reduce the levels of inequality and poverty that marked the 1980's. This is the first step to action in the direction of improving the basic education system in the country.

As for technical education, the reaction was different depending on the system. The public system reacted slowly and poorly to the crisis and lost quality and productivity. On the other hand, the semi-private system, represented by SENAI, reacted in a much better way to the crisis of the 1980's. During this period, SENAI was able to increase its links to its clientele, the industrial sector, redirect its actions to different programs and new technologies. Diversifying its sources of funds and utilizing its reputation regarding its efficiency, could avoid the threat of statization and increased its resource base. This is in clear contrast to the behaviour of the public education system and give some hope that something can be done in the near future to improve basic public education in Brazil.

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APPENDIX

Tables:

Table 1
Government Savings (as % of GDP)

Year	Government Savings	Gross Taxes	Subsidies	Interest on Government Domestic Debt	Other Transfers	Federal Government Payroll	State & Municipal Government Payroll	Other Government Consumption Expenditures	Interest on Government Foreign Debt
1970	5.61	26.29	0.52	0.52	8.25	4.18	4.07	3.09	0.05
1971	5.72	25.19	0.78	0.39	6.98	4.07	4.46	2.71	0.06
1972	7.03	25.93	0.58	0.29	7.20	3.46	4.32	2.88	0.17
1973	6.73	25.00	1.17	0.39	6.64	3.54	3.50	2.93	0.10
1974	7.04	25.11	2.15	0.40	6.04	2.95	3.49	2.95	0.09
1975	5.04	25.23	2.67	0.38	6.76	3.33	3.81	3.05	0.19
1976	5.21	25.09	1.53	0.49	7.22	3.43	3.73	3.30	0.18
1977	6.74	25.55	1.48	0.48	7.26	3.13	3.45	2.85	0.16
1978	5.34	25.68	1.88	0.47	8.13	3.12	3.79	2.76	0.19
1979	4.21	24.66	1.91	0.55	7.80	2.89	4.09	2.92	0.29
1980	2.74	24.70	3.86	0.76	7.77	2.76	3.55	2.89	0.37
1981	3.06	24.65	2.68	1.08	8.22	2.96	3.50	2.86	0.29
1982	1.88	25.26	2.48	1.17	8.58	3.02	4.03	2.96	1.14
1983	1.29	25.07	2.65	1.55	8.36	2.89	3.72	3.05	1.56
1984	0.35	21.82	1.59	2.08	7.76	2.47	3.18	2.63	1.76
1985	0.02	22.53	1.59	2.30	7.24	3.06	3.88	2.93	1.51
1986	2.70	25.35	1.47	1.19	7.97	2.40	4.90	3.37	1.35
1987	-0.38	23.34	1.59	1.01	7.54	2.78	4.99	4.39	1.42
1988	-2.42	21.89	1.23	1.58	7.18	3.21	4.71	4.68	1.72
1989	-5.28	21.94	1.93	1.44	7.50	4.11	5.61	4.60	2.03
1990	0.75	27.43	1.72	-1.09	8.29	3.63	6.86	5.15	2.12

Source: IBGE - National Accounts Department as reported in Carneiro & Werneck (1991).

Table 2
Public's Sector Net Debt, % of GDP

	1981	1982	1983	1984	1985
Domestic Debt					
- Central Fed. Government	2.72	2.81	4.01	5.39	7.25
- State and local Govrn.	3.12	3.60	4.85	4.14	4.22
- Public Enterprises & Desc Agencies	5.41	6.21	8.91	8.22	8.61
External Debt					
- Central Fed. Government	4.16	4.93	10.13	12.56	11.72
- State and local Govern.	0.81	0.95	1.47	1.54	1.81
- Public Enterprises & Desc Agencies	9.04	9.93	14.95	15.50	16.54

Source: Werneck (1987)

Table 3a
Social and Economic Indicators
Brazil Compared to Liddle and High Income Countries

	Human Development Index (Max.=1.00)	Life Expetany at birth (years) 1987	Adult Literacy Rate(%) 1985	Infant Mortability rate (per 1000 of live births 1988)	Under five Mortality rate (per 1000 of live births 1988)
Brazil	0.784	65	78	62	85
Argentina	0.910	71	96	32	37
Chile	0.931	72	98	19	26
Costa Rica	0.916	75	93	18	22
Cuba	0.877	74	96	15	18
Korea	0.789	70	90	24	33
Portugal	0.899	74	85	14	17
Austrália	0.978	76	99	09	10
Espanha	0.965	77	95	09	12
Itália	0.966	76	97	10	11

Table 3b
Social and Economic Indicators
Brazil Compared to Liddle and High Income Countries

	Income Share of lowest 40% (1975-86)	Ratio of highest 20% to lowest 20% (1975-86)	Gini Coefficient
Brazil	7	33.7	0.57
Argentina	14	11.3	....
Chile	..	....	0.46
Costa Rica	12	....	0.42
Cuba	..	....	....
Korea	..	....	....
Portugal	15	9.4	....
Austrália	15	8.7	....
Espanha	19	5.8	....
Itália	17	7.1	....

Source: PNUD (1990)

Table 4
Comparative Social Expenditure
(Central Government only)

	Education		Health		Housing/SSec		TOTAL,Social		Total Govern. Expendit.	
	1972	1985	1982	1985	1972	1985	1972	1985	1972	1985
					(% of GDP)					
Brazil	1.5	1.4	1.2	1.8	6.2	5.6	8.8	8.8	17.6	21.1
México	2.0	3.1	0.6	0.4	2.9	3.0	5.6	6.4	12.0	24.9
Korea	2.9	3.4	0.2	0.3	1.1	1.2	4.2	4.9	18.3	18.4
			(% of Total Central Government Budget)							
Brazil	8.3	6.6	6.7	8.5	35.0	26.5	50.0	41.7	100.0	100.0
México	16.4	12.4	5.1	1.5	25.0	11.9	46.5	25.8	100.0	100.0
Korea	15.9	18.4	1.2	1.4	5.8	6.7	22.9	26.5	100.0	100.0

Notes: Brazil data refers to 1986, not 1985.
Source: World Development Report, 1987, except for 1986 Brazil data, as reported in World Bank (1988)

Table 5
Federal, State and Local Social Expenditures by Program, 1986/a
(US$ millions)

Program	Federal	State and Local	Total	Percentage Distribution
Social Security/b	13,404	6,649	20,053	42.5
Education and culture	3,827	6,996	10,823	22.9
Housing, urbanization	890	6,986	7,876	16.7
Health /c	4,166	1,732	5,898	12.5
Water and Sanitation	676	463	1,139	2.4
Food and Nutrition /d	656		656	1.4
Urban Transport /e		584	584	1.2
Labor	173		173	.4
Total	23,792	23,410	47,202	100.0

Source: World Bank (1988)

Table 6
Consolidation of Federal Expenditures by Subsection
Brazil 1980-1988 (% of Total Federal Expenditures)

	Health	Education & Culture	Social Security	
1980	2.4	9.8	13.4	25.6
1981	2.8	11.4	16.8	31.0
1982	3.0	12.2	13.9	29.1
1983	2.7	10.0	14.2	26.9
1984	2.6	10.1	13.0	25.7
1985	3.1	12.1	15.1	30.3
1986	2.5	9.9	6.5	18.9
1987	3.5	11.5	8.0	23.0
1988	2.8	11.0	7.1	20.9
1989	1.7	4.6	8.2	

Source: Anuário Estatístico, IBGE, Various Issues.

Table 7
State Governments Social Expenditures
by Social Programs Brazil 1974/1989
US$ milhões de 1984

Social Programs	Economic Classification of Expenses					
	total		Gross Capital Formation		Consumption	
	1979	1984	1979	1984	1979	1984
(1) Total of all programs	7779,4	7471,7	576,1	457,5	4582,7	4841,0
(2) Education	3302,0	2611,8	262,8	147,4	2978,0	2442,9
(3) Sports and Culture	160,8	118,6	38,7	19,4	112,9	95,0
(4) Housing and urgan develop.	339,6	243,4	109,1	109,8	115,0	86,6
(5) Health	1000,6	907,1	76,1	68,0	864,6	822,5
(6) Urban Infrastructure and Environment	534,0	332,6	53,9	68,6	46,1	27,5
(7) Welfare and Social Security	2417,7	3106,7	30,6	43,1	466,1	1366,3
(8) Urban Transportation	24,7	151,5	4,9	1,2	-	-
(9) Total Expenditures	16559,6	15163,8	2034,5	1648,4	9028,5	8030,0
(10)Percentage of Social Expenditures to total Expenditures	47,0	49,3	28,3	27,8	50,7	60,3

Table 8
Consolidated Social Expenditures(Centralized and Decentralized Administration), by Social Programas - Municipalities
Brazil 1984
(Cr$ bilhões of 1984)

Social Programs	Total		Social Expenditures by type or Function: Gross Capital Formation		Consumoption	
	ABS	%	ABS	%	ABS	%
(1) Total of Social Programs	14757,7	100,0	3521,2	100,0	8675,9	100,0
(2) Education	4309,5	29,32	170,3	4,84	4116,8	47,45
(3) Sports and Culture	376,2	2,55	45,2	1,28	290,9	3,35
(4) Housing and Urban Develop.	6205,0	42,05	3074,4	87,31	3023,5	34,85
(5) Health	910,2	6,17	27,5	0,78	878,7	10,13
(6) Urban Infrastructure and Environment	63,5	0,43	43,2	1,23	18,4	0,21
(7) Welfare and Social Security	2561,5	17,36	157,3	4,47	198,3	2,29
(8) Urban Transportation	311,8	2,12	3,3	0,09	149,3	1,72
(9) Total Expenditures	24195,5	-	4105,4	-	15960,0	-
(10)Social Expenditures as a percentage of total	60,9	-	85,8	-	54,4	-

Fonte: IBGE/DEASP (1984) preliminary dada. Deflator:IGP/DI.
Obs: Only state capitals, Metropolitan Regions and Federal District

Table 9

	Brazil	Korea	Chile	Argentina	Mexico
Gross Enrollment Ratios					
Primary	105.0	94.0	110.0	109.0	114
Secondary	38.9	95.0	70.0	74	55
Pupil-teacher ratio					
Primary	24.0	36	33	20.0	32
Pupils reaching grade 4					
(% of cohort)	58.9	97.7	78.4	76.4	74.2
Repeater rate-primary					
(%)of total enrollment	19.7	0.0	7.3	...	9.5

Table 10
Main Determinants of Wage Inequality in Brazil

Variable	No. of Groups	Period	Explanation power(%
Education			
Langoni 1973	5	1960-70	35-43
Almeida Reis e Barros(1989)	5	1976-86	35-50
Age			
Langoni (1973)	8	1960-70	7-10
Ramos (1990)	5	1977-85	8-9
Sector			
Langoni (1973)	3	1960-70	13-15
Ramos (1990)	9	1977-85	5-7
Gender			
Langoni (1973)	2	1960-70	2-3
Region			
Langoni (1973)	6	1960-70	13-14
Occupation			
Ramos (1990)	3	1977-85	8-11

Table 11
Income distribution and Enrollment Shares, 1982
(for children age 7 and above attending school)

	Distribution of students by income group in public education		
	Primary	Secondary	Higher
Income classification:			
1 minimum wage	15.3	3.4	1.1
1-2 minimum wages	24.6	10.2	4.5
2-5 minimum wages	38.5	38.0	18.0
5-10 minimum wages	15.3	31.0	26.1
10 minimum wages	4.9	16.2	48.3

Source: Anuário Estatístico do Brasil, 1983.

Table 12
Reasons for Dropping out of School

Region of Vacancy	Lack	To work	Did not want to continue	Other
Brazil	3.1	53.3	23.3	22.3
Southeast	2.0	55.2	24.8	17.9
South	5.5	53.3	22.7	18.47
Northeast	4.4	47.8	18.0	29.9

Source: Issues in Secondary Educat, Table 60.

Table 13
Percentage of Failures, Repeaters and Graduates
by Type of School Brazil

	Failures		Repeaters		Graduates	
	Public	Private	Public	Private	Public	Private
1970	19.15	12.44	...	0.00	20.28	25.23
1975	13.65	7.89	6.28	2.70	16.47	22.14
1980	20.42	10.41	10.42	4.08	15.85	23.06
1983	21.72	11.68	12.23	5.71	16.38	25.91
1985	19.23	9.93	12.82	7.31	15.96	26.01
1986	19.31	11.17	13.05	7.40	16.34	24.91

Source: Issues in Secondary Educat, Table 56.

Table 14
Average Teacher Salary by Type of School and city, 1988
Secondary Schools
(in number of minimum wages)

Type of School	Less than 1	From 1 to 2	From 2 to 4	From 4 to 8	More than 8	Omission
Public	...	10.6	66.0	10.6	10.6	2.1
Private	...	15.8	15.8	26.3	21.1	21.1
City						
Fortaleza	...	28.6	14.3	42.9	14.3	...
Salvador	...	16.7	33.3	...	33.	16.7
Sao Paulo	...	9.3	62.8	9.3	11.6	7.0
Curitiba	...	8.3	41.7	25.0	16.7	8.3

Source: Issues in Secondary Educati, Table 39

Table 15
Enrollment in Grades 1-8 (primary education)
as percentage of Population in Age 7-14, selected years 1958-1983

	1958	1962	1968	1970	1974	1980	1983
Brazil	54	63	77	80	85	88	90
N.East	34	42	53	62	67	76	...
Rest	65	74	87	88	94	94	...

Source: Finance of Brazilian Primary Education

Table 16
Secondary School Enrollment, 1970-1987

	Brazil		Northeast		Southeast	
	Gross	Net	Gross	Net	Gross	Net
1970	16.3	9.6	10.0	...	22.2	...
1975	27.6	17.5	17.0	...	35.52	...
1980	34.6	24.2	23.2	13.5	43.3	33.0
1983	35.1	23.6	26.9	15.2	42.0	30.0
1985	34.9	23.2	26.3	15.0	42.3	30.1
1987	37.4	25.4	29.6	17.0	45.5	33.1

Source: Issues in Secondary Education, vol I
Tables 5 and 7.
Net enrollment: enrollment of age 15-19 students in 16-18 population
Gross enrollment: total enrollment in 16-18 population.

Table 17
Expenditure per Student at the Secondary Level

	1980	1983	1985
Federal Technical Schools			
- Enrollments	65543	68857	67657
- Expenditures per student	...	...	6759
State Governments			
- Enrollments (in millions)	1.66	1.58	1.78
- Expenditures per student	224	192	257
Municipalities			
- Enrollments	98280	137716	132333
- Expenditures per student	153	131	136

Source: Issues in Secondary Educatio, Table 19.

Table 18
Educational Expenditures by Pupil, 1983
(in millions of 1983 cruzeiros)

	Brazil	Northeast	Rest of Brazil
(1) Município Schools	46.76	19.58	64.24
(2) State schools	74.03	62.32	80.72
Ratio: (2)/(1)	1.58	3.18	1.26

Source: Retrato do Brasil, 1970-1990 as reported in

Table 19
Federal Expenditures: Total, Education and Ministry of Education, 1986-89

	Total	Education		Min.of Education	
	% of GNP	% of GNP	% of Total	% of Total	% of Educ.
1980	9.6	0.8	8.4	6.1	72.0
1981	9.2	1.1	11.9	7.6	63.6
1982	9.1	1.1	12.4	8.4	67.9
1983	9.4	0.1	10.2	6.7	66.0
1984	8.7	0.1	10.3	6.9	67.2
1985	9.4	1.2	12.9	8.5	65.8
1986	14.9	1.6	10.5	7.2	68.5
1987	13.9	1.8	13.1	8.7	66.2
1988	18.4	1.9	10.6	8.2	77.6

Source: Balanços Gerais da União.

Table 20
Evolution of Federal Expenditures and GNP
(1986=100, Constant Cruzeiros of 1989)

	GNP	Total Fed Expendit.	Educat. Expendit.	Ministry of Education
1986	100	100	100	100
1987	97	91	113	109
1988	92	114	114	129
1989	96	267	117	123

Source: Balanços Gerais da União.

Table 21
Ministry of Education
Structure of Expenditures
(% of Total)

	Administration & Planning	Primary	Secondary	Higher	Other
1980	6	7	6	63	16
1981	4	17	7	64	11
1982	5	24	8	59	5
1983	7	21	6	61	6
1984	6	25	5	58	4
1985	7	27	6	56	4
1986	5	33	7	50	5
1987	6	23	7	57	6
1988	4	12	7	65	8
1989	4	16	8	65	7

Table 22
Evolution of Expenditures
Ministry of Education, 1986-89
(Constant Cruzeiros of 1989)

	1986	1987	1988	1989
Total	100	118	124	124
Administration	100	120	85	132
Planning	100	306	136	14
Basic Education	100	83	65	61
Secondary Education	100	112	130	145
Higher Education	100	135	156	159

Source: Quadro de Detalhamento de Despesas, MEC.

Table 23
Ministry of Education
Structure of Expenditures
(% of Total)

year	Payroll	Current Expendit.	Capital Expendit.
1980	54	27	15
1981	58	27	13
1982	56	33	10
1983	59	30	9
1984	54	32	11
1985	54	32	12
1986	43	45	10
1987	51	31	16
1988	58	27	14
1989	66	22	12

Table 24
Tresury Expenditures in Education
(% of Tresury Expenditures is Education)

	1986	1987	1988
Federal:	35.7	40.0	44.2
Min.of Education	24.5	26.5	34.4
Other	11.1	13.5	9.9
States	47.1	43.9	40.9
Local	17.2	16.1	14.9
Total	100	100	100

Source: Balanços Gerais da União, Estados e Municípios.

Table 25
Evolution of the Treasury's Expenditures in Education

	1986	1987	1988	1989
Federal:	100	113	114	117
Min.of Education	100	109	129	124
Other	100	123	82	101
State	100	94	80	...
Local	100	94	80	...
Total	100	101	92	...

Source: Balanços Gerais da União, Estados e Municípios.

Table 26
States Expenditures in Education

	Education Expendit.	Primary (As % of Educ. Expendit.)	Secondary	Higher
1984	...	60	8	9
1985	...	58	10	10
1986	20	60	9	11
1987	20	57	9	13
1988	18	54	8	13

Source: Balanços Gerais dos Estados e Distrito Federal.

Table 27
Evolution of States Expenditures
(1986=100)

	Total	Education	Primary	Secondary	Higher
1986	100	100	100	100	100
1987	92	94	89	92	121
1988	90	80	72	72	101

Source: Balanços Gerais dos Estados e Distrito Federal.

Table 28
Distribution of Education Expenditure: Federal and State Levels
1984-1986

	1984	1985	1986	1987	1988
States					
Brazil (total)	100	100	100	100	100
- Administration	11	14	14	...	...
- Primary educ.	60	58	60	57	54
- Secondary educ.	8	10	9	9	8
- Higher educ.	9	10	11	13	13
Northeast	100	100	100	...	...
- Administration	14	20	19	...	...
- Primary educ.	59	52	51	...	...
- Secondary educ.	5	14	15	...	...
- Higher educ.	1	3	4	...	...
Southeast	100	100	100	...	...
- Administration	5	6	6	...	...
- Primary educ.	69	65	68	...	...
- Secondary educ.	5	7	5	...	...
- Higher educ.	15	15	16	...	...

Source: Anuário Estatístico, IBGE, various numbers.

Table 29
Local (Município) Expenditures in Education

	Education Expendit. (% of Total)	Primary (% of Education Expendit.)	Secondary	Higher
1986	20.5	52.8	1.3	0.3
1987	20.6	54.1	1.2	0.3
1988	18.4	56.6	1.4	0.2

Source: Balanços Gerais dos Estados e D.F.

Table 30
Evolution of Local Expenditures
(1986=100

	Total	Education	Primary	Secondary	Higher
1986	100	100	100	100	100
1987	93.8	94.4	96.6	87.8	75.7
1988	88.5	79.5	85.3	81.8	57.5

Source: Balanços Gerais dos Estados e D.F.

Table 31
Alagoas: Structure of Expenditures (I)
(State Level)

	Education % of Total	Primary (% of Education	Secondary Expenditures)	Higher
1986	22	46	12	2
1987	23	44	12	2
1988	21	36	12	1
1989	20	45	10	3
1990	14	41	10	3

Source: Balanços Gerais dos Estudos e D.F.

Table 32
Alagoas: Evolution of Expenditures (State Level)
(1986=100)

	Total	Education	Primary	Secondary	Higher
	AL	AL	AL	AL	AL
1986	100	100	100	100	100
1987	96	98	94	95	86
1988	60	57	45	57	28
1989	54	48	47	40	88
1990	92	59	53	50	99

Source: Balanços Gerais dos Estados e D.F.

Table 33
Alagoas: Structure of Expenditures (II)
(State Level)
Percentage of Total Expenditures

	Payroll	Current Expenditures	Capital Expenditures
1986	53	36	11
1987	54	35	11
1988	54	34	12
1989	57	34	9
1990	48	29	24

Source: Balanços Gerais dos Estados e D.F.

Table 34
Alagoas: Evolution of Expenditures
(State level)

	Payroll Expenditures	Current Expenditures	Capital Expenditures	Total
1986	100	100	100	100
1987	97	93	99	96
1988	60	56	67	60
1989	58	50	45	54
1990	82	73	204	92

Source: Balanços Gerais dos Estados e D.F.

Table 35
Alagoas: Structure of Expenditures
(Local Level)

	Education % of Total	Primary (% of Education Expenditures)	Secondary	Higher
1986	25	36	1	0
1987	23	42	0	0
1988	20	48	1	0

Source: Balanços Gerais dos Municípios.

Table 36
Alagoas: Evolution of Expenditures
(Local Level)

	Total	Education	Primary	Secondary	Higher
1986	100	100	100	100	100
1987	77	73	85	15	76
1988	73	60	80	60	9

Source: Balanços Gerais dos Municípios.

Table 37.a
SENAI
Students/hour by Type of Program
and Origin of Resources
1980/1984

(1000)

programs	1980	1981	1982	1983	1984
Direct Action					
own resources	97,079	94,728	92,533	93,110	86,613
transfers	4,962	2,701	2,181	1,052	3,332
Sub-total	102,041	97,429	94,714	94,162	89,945
Indirect Action					
tax exemptions					
agreements	19,417	16,297	19,615	22,252	22,238
cooperation					
with firms	9,651	10,508	8,593	9,562	10,319
Sub-total	29,068	26,805	28,208	31,814	32,557
Total	131,109	124,234	122,922	125,976	122,502

Source: Annual Reports, SENAI/DN.

Table 37.b
Students/hour by Type of Program
and Origin of Resources
1985/1989

(1000)

Programs	1985	1986	1987	1988	1989
Direct Action					
own resources	82,614	83,609	91,768	101,362	95,718
transfers	1,068	991	860	548	11,338
Sub-total	83,682	84,600	92,628	101,910	107,056
Indirect Action					
tax exemptions					
agreements	27,452	22,948	28,878	24,298	37,521
cooperation					
with firms	14,822	14,249	12,674	16,232	18,092
Sub-total	42,274	37,197	41,552	40,530	55,613
Total	125,956	121,797	134,180	142,440	162,669

Source: Annual Reports, SENAI/DN.

Table 38
SENAI
Students/hour by Programs
and Origin of Resources
1980/1989(%)

programs	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Direct Action										
own resources	74.0	76.2	75.3	73.9	70.7	65.6	68.7	68.4	71.2	58.8
transfers	3.8	2.2	1.8	0.8	2.7	0.8	0.6	0.6	0.4	7.1
Sub-total	77.8	78.4	77.1	74.7	73.4	66.4	69.5	69.0	71.6	65.9
Indirect Action										
tax exemptions										
agreements	14.8	13.1	15.9	17.7	18.2	21.8	18.8	21.5	17.0	23.1
cooperation										
with firms	7.4	8.5	6.7	7.6	8.4	11.8	11.7	9.5	11.4	11.1
Sub-total	22.2	21.6	22.9	25.3	26.6	33.6	30.5	31.0	28.4	34.2
Total	100	100	100	100	100	100	100	100	100	100

Source: Annual Reports, SENAI/DN.

Table 39
SENAI
Revenues and Expences by Student/hour
1980/1989

year	Revenues (US$1000)	rate of change	Average Expend. (student/hour) (US$)	rate of change
1980	239,914		2.14	
1981	239,290	- 0.3	2.29	0.7
1982	248,363	3.8	2.72	18.8
1983	168,597	-32.1	1.60	-41.2
1984	144,280	-14.4	1.42	-11.2
1985	151,613	5.1	1.75	23.2
1986	186,295	22.9	3.38	93.1
1987	363,143	94.9	2.70	-20.1
1988	459,136	26.4	2.97	10.0
1989	651,895	42.0	2.57	-13.5

Source: Annual Reports, SENAI/DN

Table 40
SENAI
Ratio of Students/hour to Personel
(Direct Action Programs)

year	teachers	technicians	Students/hour to administrative	total
1980	20,631	60,703	20,103	8,719
1981	18,672	62,096	19,370	8,245
1982	19,672	58,610	18,571	8,259
1983	18,866	61,025	18,391	8,080
1984	19,435	59,370	19,199	8,016
1985	18,473	56,389	17,448	7,406
1986	17,841	55,805	16,923	7,204
1987	17,281	55,433	18,191	7,299
1988	17,782	62,752	18,088	7,464
1989	18,493	58,725	17,140	7,365

Source: Annual Reports, SENAI/DN.

Table 41
SENAI
Students/hour by Type of Course
1980/1987
(1000)

Courses	1980	1981	1982	1983	1984
Apprendiceship	54,821	56,311	55,939	55,102	53,580
%	56.47	59.45	60.45	59.18	61.86
Qualificaton	17,774	15,917	14,429	16,322	14,114
%	18.31	16.80	15.59	17.53	16.30
Supplimentation	17,334	14,862	14,739	14,371	11,613
%	17.85	15.69	15.93	15.43	13.41
Habilitation	7,132	7,635	7,403	7,291	7,278
%	7.35	8.06	8.00	7.83	8.40
Engineers and Technicians	18	3	23	24	28
%	0,02	0,00	0,03	0,03	0,03
Total	97,079	94,728	92,533	93,110	86,613
Courses					
Apprendiceship	50,513	50,666	51,903	57,904	55,444
%	61.14	60.60	56.56	57.13	57.92
Qualification	12,202	10,904	13,520	14,195	14,130
%	14.77	13.04	14.73	14.00	14.76
Supplimentation	12,589	14,727	17,471	20,758	17,204
%	15.24	17.61	19.04	20.48	17.97
Habilitation	7,311	7,312	8,873	8,506	8,940
%	8.85	8.75	9.67	8.39	9.34
Engineers and Technicians	0	0	0	0	0
Total	82,650	83,609	91,767	101,363	95,718

Source: Annual Reports, SENAI/DN

Table 42
SENAI
Students/hour by Region
1980/1989
%

Region	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
North	2.0	2.3	2.9	3.1	3.3	3.2	3.0	2.7	2.5	2.2
Northeast	8.3	10.0	11.2	11.0	12.7	12.4	10.5	9.7	9.2	8.7
Sourtheast	69.7	64.1	61.1	60.7	56.1	57.7	57.8	57.6	61.4	56.3
South	16.5	18.7	19.8	19.6	22.2	21.1	23.5	23.5	20.6	27.8
Center-west	3.5	4.9	5.0	5.6	5.7	5.6	5.2	6.5	6.3	5.0

Source: annual Reports, SENAI/DN

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269. Garcia, M., "The Formation of Inflation Expectations in Brazil: A Study of the Futures Market for the Price Level".

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