Accommodating the Growing Demand for Higher Education in Brazil: A Role for the Federal Universities?

Arthur Hauptman

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PREFACE

Higher education in Brazil is approaching a crossroads. The old model, a publicly funded system for the few, is centered on an elite and will not serve the country’s needs in the 21st century. The Government of Brazil, with the World Bank’s cooperation, is exploring a range of alternatives that address the most critical issues in Brazilian higher education:

- **Increasing Coverage:** A demographic bulge of young Brazilians is reaching university age. They will have more high school diplomas and higher educational aspirations than any previous generation. The current system provides education for less than 10 percent of the age cohort and is ill-equipped to meet the growing demands. To respond to this challenge, the higher education system will have to become more diverse, higher quality, and less expensive.

- **Restructuring Funding Mechanisms to Support Institutional Autonomy and Incentives for Efficiency.** Rigidities throughout the higher education system have institutionalized a system whose costs are on par with those of OECD countries but whose quality is not. A reexamination of funding and regulation mechanisms, and the incentives they create, is critical to improving quality and efficiency.

- **The Role of the Federal Government: Provider, Funder, and Regulator of Higher Education.** The last major reform of higher education took place in 1968. Currently, federal support for higher education is channeled almost exclusively to federal universities (and overwhelmingly for salaries). Little consideration has been given to the appropriate roles of the federal government in a diversified higher education system.

- **Quality of Instruction.** Quality assurance system at the institutional and national levels are weak, rigid, and politicized. They do not encourage diversity or flexibility of the curriculum.

- **Stakeholders: The Political Realities of Change.** Many of the system problems are well known and widely discussed within Brazil. Opponents to change in the higher education community come from the country’s most capable and politically mobile/influential groups and are often fortified by strong legal (even constitutional) and bureaucratic protection. Any viable policy change must strategically deal with potentially strong and well-organized political opposition.

The eight papers in this series are a systematic examination of the problems and policy options for Brazilian education.

This paper, by Arthur M. Hauptman, focuses on the following three questions: a) How much of the growth in demand for higher education can the federal universities in Brazil accommodate within the constraint of existing public resources?, b) What could Brazil do to free up public resources currently provided to the federal universities to fund growth in other sectors of higher education? and, c) How can Brazil ensure that access to the federal universities is expanded for students with below average family income?
Two financing models for addressing these questions are examined in this report. One model would set tuition fees and allocate government funds on the basis of cost recovery. The other model is based on conforming higher education funding and tuition policies with labor market needs and national priorities. Using either financing model, Brazil should seek to coordinate its funding and tuition policies with the student aid programs, rather than have these various policies work at cross purposes as is often the case in other countries.

Donald Winkler
Lauritz Holm-Nielsen
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EXECUTIVE SUMMARY

Brazil, like many other countries in the world, will face a rapid growth in the demand for higher education over the next decade and beyond. This increase in demand will flow from increased numbers of secondary school graduates combined with economic and social pressures to increase the rate at which these graduates continue their education. At a minimum, demand for higher education in Brazil will grow by 500,000 students within the next decade, an increase of one-quarter over the current level of roughly 2 million students who now enroll in higher education. If college participation rates increase, however, demand for higher education could more than double over the next decade relative to current enrollments. It is predictable that students with lower family incomes will constitute a larger share of the new demand for higher education in Brazil than they do of current enrollments.

If the experience of other countries is any guide, the primary strategy for meeting this growth in demand in Brazil will and should be a diversification strategy that relies principally on the creation of distance learning programs and the expansion of enrollments at institutions that do not stress research in their mission. But Brazil should also consider the role of the federal universities in meeting some of this demand. In this regard, this report focuses on the following three questions:

What policies might be adopted so that some of the growth in demand is accommodated by the federal universities in Brazil within the constraint of existing public resources?

What could Brazil do to free up public resources currently provided to the federal universities to fund future growth in other sectors of higher education?

How can Brazil ensure that access to the federal universities is expanded for students with below average family incomes?

Two financing models for addressing these questions are examined in this report. One model would set tuitions and allocate government funds to public institutions on the basis of cost recovery. Tuitions would be based on a percentage of costs per student -- less than half --and government allocations would make up most or all of the difference.

The other financing model would set tuitions at public institutions as a percentage of GDP per capita or other general economic measure. Government funds would be allocated to institutions on the basis of a number of factors including the extent to which institutions helped to achieve national policies such as expanding access for disadvantaged students.

Using either of these financing models, Brazil should seek to coordinate its funding and tuition policies with the student aid programs rather than have these various policies work at cross purposes, as is often the case in other countries. A program of need-based grants should be established to help the most disadvantaged students and student loans
should be expanded to help students at both public and private institutions pay the costs of tuition.

If Brazil is to be successful in meeting some of the growth in projected demand by expanding enrollments in the federal universities within the constraint of existing resources, it will have to be more strategic in addressing financing issues. This is the basic argument made in this report. A more strategic approach might include the following elements:

**Federal policies governing the distribution of public funds to institutions, the setting of public sector tuitions, and student aid should be tied together in a systematic way.** In many countries, financing policies often work at cross purposes with each other, with student aid intended to improve access while institutional funding reinforces existing inequities in the distribution of resources. The existing financing structure can also often work against the goal of greater diversification. Brazil will be well served by developing a coordinated approach.

**Funding for student aid should be expanded as a share of government funding for higher education.** Currently student aid plays an almost nonexistent role in the financing of higher education in Brazil. It would be helpful if policy makers in Brazil in the future explicitly consider the level of student aid relative to overall support for higher education.

**Student aid policies should be designed to provide a safety net for the most disadvantaged students if tuitions are imposed.** Policy makers in Brazil may be guided by the fact that in most countries, there is not a direct correspondence between the growth in tuitions and eligibility for student aid. As a result, increases in tuitions often lead to reduced affordability for students from families with low and moderate incomes.

**Overall tuition levels at public institutions should be set as a percentage of a general measure of ability to pay such as GDP per capita.** If tuitions were imposed at the federal universities and set at $1,500, roughly one-half of the GDP per capita in Brazil, the revenues generated would accommodate an additional 40,000 students, a 10 percent increase over current enrollments in the federal universities. The percentage of GDP per capita could vary to reflect institutional differences. Also, if tuitions vary by field of study, that variation should be a function of national priorities and labor force needs more than cost differentials.

**The mechanisms for the funding of institutions should be designed to encourage the achievement of cost efficiencies.** A 10 percent improvement in productivity in the form of heavier teaching loads, larger class sizes, or higher degree completion rates also would free up resources that would enable the federal universities to accommodate an additional 40,000 students within existing levels of public resources.

Institutions should be rewarded for addressing areas of high national priority rather than the government providing the most funding to institutions with the highest cost per student. In most countries, the funding of institutions is based on providing sufficient government funds in combination with student fees to pay for the costs of education.
A strategic model would have governments establishing funding formulas that reflect the setting of priorities based on national and regional needs. In this vein, Brazil could provide its institutions with more funds for the economically disadvantaged students they enroll than for higher income students as a way of emphasizing the goal of improving access.
I. PROJECTED GROWTH IN DEMAND FOR HIGHER EDUCATION IN BRAZIL

Brazil, like most other countries around the world, faces a rapid growth in demand for higher education over the next decade and beyond for the following two reasons:

First, the number of secondary school students increased by 70 percent between 1991 and 1997 and is currently increasing at the rate of 12 percent per year. Even with no increase in secondary school completion rates, the number of secondary school graduates will more than double over the next decade from the level of 1.1 million in the mid-1990s.

Second, less than 10 percent of 18-24 year olds in Brazil currently continue their education beyond secondary school. This rate of college participation is at least several times lower than that of many industrialized countries. However, the worldwide economic and social imperative to expand educational opportunities suggests that this figure will increase in Brazil over time. A recent survey, for example, indicates that as many as half of graduating Brazilian secondary school students aspire to higher education.

These two trends -- increased numbers of secondary school graduates combined with pressures to increase college participation rates -- are common to many countries around the world. They also serve to bracket the future demand for higher education in Brazil. At the low end of the range, with no increase in the rate of secondary school graduation or college participation, the projected increase in the number of high school graduates could result in an additional demand for higher education of roughly 500,000 students within a decade, an increase of 25 percent above the current levels of enrollment of about 2 million students. At the high end, if the college attendance of the new high school graduates were to rise closer to those in industrialized countries, the number of students aspiring to college a decade from now could easily more than double relative to current enrollment levels.

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1 The source for all of the statistics on Brazil included in this report is Brazil: Higher Education Sector Assessment, prepared by World Bank staff.

2 This comparison of college participation is deliberately written in approximate terms because of the imprecision in how these rates are calculated reported for different countries. These rates vary depending on a number of factors the relative levels of participation among traditional college age and older students, the extent to which vocational training occurs in the higher education sector, and whether the rates are reported on the basis of whether students ever attended or are currently attending a postsecondary program.
Table 1 - Projected Growth in Demand for Higher Education in Brazil

<table>
<thead>
<tr>
<th>Enrollment in 1998 (estimated)</th>
<th>1.9 million</th>
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</thead>
<tbody>
<tr>
<td><strong>Projected Demand in 2008</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Low Estimate</strong></td>
<td>2.4 million</td>
</tr>
<tr>
<td>(slowing in the growth of secondary school enrollments, no increase in the proportion of secondary school students who graduate, and no increase in college participation rates)</td>
<td></td>
</tr>
<tr>
<td><strong>High Estimate</strong></td>
<td>4.4 million</td>
</tr>
<tr>
<td><em>(continued rapid growth in secondary school enrollments, increase in rate of secondary school graduation, and a doubling in college participation rates for all age groups)</em></td>
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If the experience of other countries is any guide, it will also be the case that the characteristics of the students who will constitute the new demand for higher education in Brazil will be different from the characteristics of the students who currently enroll, at least with respect to their socioeconomic status. Of the students who recently graduated from Brazilian higher education institutions, almost half have family incomes that are at least twenty times the salary derived from the minimum wage. By contrast, one quarter of the finishing students have family incomes less than ten times the minimum wage salary.

The students who will constitute the new demand for higher education in Brazil are likely to have a lower income profile than those who are already enrolled for several reasons. Participation rates are already much higher for students from wealthier families so the growth in demand among these students is likely to be lower than for groups of students whose traditional college participation rates are lower. In addition, the growth in secondary school enrollments will be higher for students coming from families with lower incomes.

II. THE CAPACITY OF THE FEDERAL UNIVERSITIES TO ACCOMMODATE THIS GROWTH IN DEMAND

Whether adequate seats will be available to accommodate this projected growth in demand is a primary issue facing Brazil, as well as many other countries around the world. If the experience of other countries is any guide, much of the increase in demand in Brazil will and should be accommodated through a diversification strategy that entails increased reliance on distance learning programs, community colleges, and comprehensive institutions which place a relatively low premium on the research function. Many observers of international higher education persuasively argue that this kind of diversification strategy
makes a great deal of sense for countries that lack the resources and the traditions to establish and adequately maintain research universities.³

Nonetheless, Brazil should also consider how at least some of the increase in demand projected for the next decade could be accommodated in the federal universities. Of the 1.9 million students enrolled in Brazilian institutions of higher education in 1996, roughly 375 thousand were enrolled in one of 39 federal universities, representing about one-fifth of total enrollments. State universities enrolled 200,000 students in that year (one-tenth of all enrollments) while private universities enrolled nearly 600,000 students (one-third of enrollments). All private institutions enrolled more than 1.1 million students in 1996, nearly three-fifths of all students enrolled in Brazilian higher education in that year.

Another perspective is to examine where enrollments have grown fastest over time. (See Table 2.) Enrollments grew by roughly 500 thousand students between 1980 and 1996, an increase of more than one-third. Federal institutions (predominantly universities) account for more than one-fifth of all enrollments, but accommodated only 15 percent of the growth in enrollments between 1980 and 1996. State institutions accommodated more than twice the growth as federal institutions between 1980 and 1996 even though they enrolled only one third as many students in 1980. Municipal institutions accommodated half as much growth as federal institutions though they enrolled only one-fifth as many students in 1980. In contrast, private institutions accounted for half of the growth between 1980 and 1996.

Table 2 - Growth in Brazilian Tertiary Enrollments, 1980 to 1996

(in thousands)

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Federal</td>
<td>317</td>
<td>389</td>
<td>23%</td>
<td>21%</td>
<td>72</td>
<td>23%</td>
<td>15%</td>
</tr>
<tr>
<td>State</td>
<td>109</td>
<td>243</td>
<td>8%</td>
<td>13%</td>
<td>134</td>
<td>123%</td>
<td>27%</td>
</tr>
<tr>
<td>Municipal</td>
<td>66</td>
<td>103</td>
<td>5%</td>
<td>6%</td>
<td>37</td>
<td>56%</td>
<td>8%</td>
</tr>
<tr>
<td>Private</td>
<td>885</td>
<td>1133</td>
<td>64%</td>
<td>61%</td>
<td>248</td>
<td>28%</td>
<td>50%</td>
</tr>
<tr>
<td>Total</td>
<td>1377</td>
<td>1869</td>
<td>100%</td>
<td>100%</td>
<td>492</td>
<td>36%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The average cost per student at the federal universities was $14,500 in 1997, a figure that is high by international standards. The high cost per student at the federal universities helps to explain why most of the enrollment growth in Brazil over the past two decades has

occurred at private institutions and at non-university public facilities. At these per student expenditure levels, it has been difficult in Brazil to accommodate very much growth in enrollments at the federally funded universities since it is so expensive to educate each student who attends. This is true in most countries around the world as the high costs per student at the most prestigious institutions effectively limits access to these institutions.

Access to the federal university system also has been limited by virtue of the tradition that public institutions in Brazil do not charge tuition. While this statement may appear contradictory - after all, the absence of tuition lowers financial barriers for poor students - one must also consider the effect of charging no tuition on the supply of seats. Tuitions are a revenue source that increases the resources available to higher education. Not charging tuition means that the principal revenue source for institutions -- government resources -- cannot be spread more broadly because each student who does attend is fully subsidized.

III. STRATEGIES FOR EXPANDING ACCESS TO PUBLIC UNIVERSITIES IN BRAZIL

As is true around the world, Brazil has several policy options for increasing access to its federal universities to accommodate at least some of the projected increase in demand for higher education over the next decade and beyond. These options include: increasing government and private funding of public universities; reducing costs per student at public institutions through productivity improvements; and charging tuitions at public universities.  

*Increasing Public and Private Funding.* Total public spending for higher education equals 1.3 percent of GDP in Brazil, high by international standards especially when one considers how small a proportion of the population continues their education beyond the secondary level. This level of government commitment to funding higher education, in combination with the relatively high costs per students in the public university sector and the relatively low college participation rates, suggest a low level of productivity and/or high levels of quality of the education provided by the public universities. *Especially in light of the current economic situation in Brazil, these figures also suggest that it is unlikely to expect a large infusion of public funds for higher education.*

The private sector is another obvious potential revenue source that Brazil might rely on to increase resources for its public universities. Public colleges and universities around the world have come to rely increasingly on private resources as restrictions on government funding of higher education have become more pronounced. In most countries, these private resources often come in the form of more extensive entrepreneurship on the part of faculty and university-related commercial activities. In some countries, private resources are gained through philanthropic fundraising from alumni, foundations, and others. From whatever source, these private resources may lead to increased supply of seats to the extent that the

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*Although federal universities are the focus of this analysis, the same arguments could be made in the case of the state and municipal universities as well.*
additional revenues are devoted to the education and training of students rather than the conduct of research or paying for the administrative costs of the institution.

How many more students could be accommodated at the federal universities if public and private resources were increased? To the extent that the budget for the federal universities is $7 billion, resources would have to be increased by $700 million to allow enrollments to grow by 10 percent assuming no improvement in productivity. (See Table 3.)

Reducing Costs per Student and Improving Productivity. In the absence of the infusion of new public or private funds, another option for accommodating the future demand for higher education in Brazil is to reduce the costs per student at the federal universities. This reduction in unit costs (or an increase in productivity) could be achieved in a number of ways, and the issue of improving productivity ultimately is one which must be dealt with mostly at the institutional level.

In many important respects, however, the issue of increasing productivity at public universities relates to matters of public policy in the following context: governments can influence costs per student and the degree of productivity through the various policies they implement. If, for example, governments fund institutions on the basis of costs per student, then institutional officials will have an incentive to increase their budgets or to limit their enrollments, also thereby increasing their costs per student. If public funds for the general operating support of institutions are provided on the basis of the number of students enrolled, then there is an incentive to increase enrollments and possibly reduce costs per student. If some portion of funds is provided on the basis of the number of students who graduate, then the rate at which students complete their academic program may rise and productivity in the form of higher completion rates would be improved.

Improvements in productivity also can yield benefits in the form of increased access to public universities. For example, a 10 percent increase in productivity achieved through more teaching by faculty, more students per course, higher completion rates and/or less time to degree would reduce costs per student at the federal universities from the current level of $14,500 to roughly $13,000 per student, as Table 3, below, indicates. At that level, the current federal budget outlay for federal universities could pay for an increase of 10 percent in enrollments -- an additional 40,000 students -- within current budget levels.

Charging Tuitions at Public Universities. A third option for increasing the resources available to public institutions is to institute or increase the tuitions charged by them. This option is increasingly being used in countries around the world as a means for maintaining or increasing institutional budgets in the face of constraints on the future growth in government revenue sources. Instituting or increasing tuitions most typically is justified on the basis that students should pay at least a portion of the economic benefits they derive from the education they receive in the form of enhanced incomes and expanded employment opportunities. A key component in deciding whether to charge or increase tuitions should be making sure that the student aid programs are designed to reflect the higher charges that students must pay. Too often, countries increase tuitions without sufficiently increasing student aid at the same
time, with the result that higher tuitions do lead to the feared result of reduced access for disadvantaged groups of students.

A decision to charge tuitions at the federal universities in Brazil could have a significant impact on how they are financed. For example, if tuitions at the federal universities were imposed and set at, say, $1,500 (roughly one-tenth of current costs per student and about one-half of GDP per capita), then federal universities could enroll another 40,000 students (a 10 percent increase over current levels) with no increase in government funding.

Table 3 – Policy Options for Increasing Enrollments at Federal Universities by 10 Percent (40,000 Students)

<table>
<thead>
<tr>
<th>Policy Options</th>
<th>Budget/Cost Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing Public and Private Resources by 10 percent with no change in productivity and no tuitions</td>
<td>$700 Million in New Resources</td>
</tr>
<tr>
<td>Setting Tuitions at Federal Universities at roughly one-half GDP per capita, with no change in productivity</td>
<td>Tuitions of Roughly $1,500</td>
</tr>
<tr>
<td>Achieving a 10 Percent Improvement in Productivity Through Heavier Teaching Loads, Larger Class Sizes, Or Higher Degree Completion Rates</td>
<td>Cost per Student Reduced from $14,500 to $13,000</td>
</tr>
</tbody>
</table>

IV. TWO MODELS FOR FINANCING FEDERAL UNIVERSITIES IN THE FUTURE

For the federal universities to accommodate at least a portion of growth in demand for higher education within the constraint of no additional public resources, policy makers in Brazil may wish to consider the following two financing models:

- One financing model would be based on the principle of cost recovery. The underlying premise in this model is that the combination of government allocations and student fees will cover all or nearly all of university budgets.

- The other financing model flows more from meeting national priorities. Government allocations to institutions would be based on strategic criteria such as responding to emerging labor market needs. Tuition fees would be set as a proportion of a general measure of people’s ability to pay such as GDP per capita, except in those cases where the government wants to encourage students to enter certain fields.
Either of these models would represent a significant improvement over the current financing structure in Brazil. Either would serve to rationalize the use of government funds and the setting of tuitions into a more coherent whole than what currently exists. Each could be implemented within a fairly short time frame once policy decisions were made.

It is also the case that the models can be mixed to produce better results. Priority-based principles can be combined with cost recovery techniques in a variety of ways. Fees could be set as a percentage of median family income or GDP per capita within the framework of how these figures relate to the costs per student. Government allocations to institutions could entail an assessment of costs per student, as well as reflecting labor force needs and national priorities. The following discussion further examines the specifics of each of these two financing models, and identifies the strengths and weaknesses of both approaches.

Cost Recovery. Over the past quarter century, most developed and developing countries around the world have moved toward a system of financing higher education that is based on the principle of cost recovery. Under a cost recovery approach, tuition fees are set as a proportion—typically less than half – of the educational cost per student. Most or all of the remaining costs per student then are covered by government funding.

Cost recovery represents a significant improvement over the process it replaced in most countries where government allocations are largely based on the relative political strength of institutions. Low or zero fees reflect the philosophy that higher education is a public good and therefore fails to reflect the private benefits college students receive in the form of higher incomes by virtue of their college attendance and graduation. Low fees may also lead to restricted access if they are combined with low levels of government support. Cost recovery is designed to address these problems by increasing tuition and fees to more nearly reflect the private benefits which students receive and by increasing the levels of resources devoted to higher education.

For all of its advantages over the more traditional financing approach to public higher education, however, cost recovery creates its own set of problems. For instance, cost recovery procedures tend to encourage institutions to raise funds privately and build these funds into their expenditure base as a means for increasing the revenues they receive from student fees. As a result, cost recovery creates incentives for institutions to increase their costs rather than moderate them. Similarly, setting fees as a percentage of costs per student may encourage institutions to restrict their enrollments - thereby increasing their costs per student – and thus possibly augmenting the public revenues they receive. In short, cost recovery procedures can lead to higher costs per student and less access.

Another criticism of cost recovery is that it tends to reinforce the inequities that already exist in a country’s higher education structure. Under cost recovery, institutions with high levels of resources per student tend to receive the most funds, while traditionally under-resourced institutions continue to get shortchanged in the funding process. In that regard, cost
recovery is more reactive than strategic in that it accepts financing vehicles as they are rather than providing strategic direction of where they should go.

**A Priority-Based System.** An alternative to cost recovery is a system that would allocate funds and set tuitions on the basis of market needs and national priorities. Under such a system, government funds would be provided to universities on the basis of number of students enrolled weighted by their field of study according to national priorities such as labor market demand and other factors including priority student characteristics. For example, if the government places a high priority on increasing the number of economically disadvantaged students attending the best universities, then it could provide all institutions with more funds for the students they enroll with those characteristics. A portion of government funds might also be distributed to universities on basis of the number of students they graduate, as long as adequate quality control procedures are instituted.

Under this model, tuitions would be set as a matter of policy in relation to people’s ability to pay for college based on available economic indices such as median family income or GDP per capita. This would move away for the cost recovery concept of using tuitions as a vehicle for financing institutions and toward a philosophy that tuitions should reflect the ability of a nation’s or region’s population to pay for higher education. An option under this model would allow individual universities periodically to negotiate with governments on how much they could charge per credit by field of study based on a combination of factors including costs by field of study, changing labor force needs, and student demand by field of study.

Setting tuitions largely on the basis of the general ability of the population to pay addresses one of the principal difficulties with setting tuitions on the basis of cost recovery, namely, that the costs of educating students may or may not correspond to students’ and families’ ability to pay a portion of those costs. The growth in salaries and the costs of maintaining facilities at universities may not correspond to other economic trends, with the result that these costs -- and tuitions if they are set as a proportion of those costs -- may increase at a different rate over time than people’s ability to pay those tuitions.

Regardless of what procedure is used to establish tuitions, it is important that public policies for financing for higher education be flexible enough to adapt to changing economic conditions. In the United States, the tendency has been for public sector tuitions to increase most rapidly during economic recessions. This trend occurs because government revenues tend to fall during a recession. Tuitions then increase more rapidly to help keep institutional budgets whole during these economic downturns. This means that tuitions rise the fastest when students and their families can least afford to pay these increases. Countries should therefore consider building modest reserves during economic good times to relieve pressures to raise tuitions during economic hard times. In the alternative, funds might be borrowed during bad times to moderate the need for tuitions. These debts could then be repaid once economic conditions improve, financed in part by higher tuitions.
The kind of arrangement described above would help ensure that tuitions in the future would stay in line with the average ability of students and their families to pay for higher education, rather than growing along with the expense of providing that education, a figure which might or might not correspond to future students' ability to pay or being used to plug the gap created by bad economic conditions. Setting tuitions as a percentage of GDP per capita or median family income also might facilitate efforts to link the imposition of tuitions with student aid. Students with incomes below the average or median might be eligible for grant assistance while better off students would borrow to meet their education costs.

A main argument for the priority-based model is that it provides the government with a policy mechanism to set policies strategically rather than reacting to what already exists and accepting existing financing patterns as a given. For example, if there is a high national priority to increase the number of teachers, then under this financing model the government can express that priority through financing mechanisms such as charging no tuition for students in education fields of study, allocating more government funds to education faculties, or providing loan forgiveness for students who become teachers. It is more difficult to achieve these priorities if one adheres strictly to a cost recovery format where costs per student are the dominant statistic. The priority-based approach also more easily allows market forces to operate within the framework of government policies than cost recovery.

A principal drawback of a priority-based approach is the difficulty that most governments have in setting priorities in a systematic way. The tendency in most countries is to list a series of worthy goals such as improving quality or expanding access without a plan for achieving these objectives. Countries typically are unwilling to prioritize among these often conflicting objectives – for example, should access be expanded if that entails a reduction in quality? Maintaining priorities once they are set is complicated by the fact that political power changes. The priorities established by one government will often be different from those of its successors. From the point of view of higher education, these political shifts can be detrimental to prudent planning. The other problem attached to a priority-based approach is the difficulty of predicting how economic and social conditions will change over time. For example, let's say that a country has a teacher shortage. That shortage condition may change by the time that policies for increasing the supply of teachers are put in place.

V. MOVING TOWARD A MORE SYSTEMATIC APPROACH: THE ROLE OF STUDENT FINANCIAL AID

In most countries, policies for allocating funds to institutions and setting tuitions at public institutions are not linked systematically and often work at cross purposes to the student aid programs. For example, if the aid that students receive is not related to increases in the tuitions they pay, then increases in tuition are likely to lead to reduced rates of college participation by students who require assistance. Similarly, if the government allocation process favors those institutions with a high cost structure and if an adequate student aid program is not in place, the likely result is less participation of lower income students at higher cost institutions. For these reasons, it is critical to link the student aid programs with whatever procedure is used for setting tuitions and allocating funds to institutions.
Brazil currently has a relatively modest commitment to student aid. Apparently there is no national program of grant assistance and loans are available to small numbers of students attending private institutions. This financing pattern is at least in part a function of the fact that public institutions in Brazil do not charge tuition, thereby reducing the perceived need for student aid. If public institutions begin charging tuitions, however, the perceived and real need for an expanded commitment to student aid will dramatically increase.

To avoid the shortcomings with traditional higher education funding mechanisms, Brazil should consider moving to a more strategic model of financing higher education, one that seeks to link funding, tuition fees, and student aid policies with overall economic trends. Under this kind of approach, government policies for the funding of institutions, the setting of tuition fees at public institutions, and the provision of student aid would work in tandem rather than at cross purposes as is so often the case. To do this, the following issues should be considered as Brazil considers whether to charge tuitions at public institutions and whether to expand its commitment to student aid.

**Increasing Student Aid's Share of Government Funding for Higher Education.** One means for ensuring that student aid, tuition, and allocation policies are linked is to have an explicit policy for the share of higher education funding to be devoted to student aid. Again, this is a discussion that typically does not occur in most countries as the proportion of government funds for higher education devoted to student aid is the residual result of a number of other decisions. Having such a discussion can help ensure greater coordination of policies. For example, a decision might be made to reduce government funds to universities as tuitions are imposed, and that every time tuition levels are increased, a portion of the tuition increase could be devoted to student aid as a way of protecting the most disadvantaged students from the effects of the higher prices. The result of this set of policies would be that a greater share of government funding for higher education would be provided in the form of student aid.

Expanding this student aid commitment requires either increasing government funding for higher education or increasing the share of that funding devoted to student aid. In the current economic environment, however, expanding overall funding for higher education seems unlikely. Therefore, the best approach for expanding the commitment to student aid would be to increase the student aid share of government funding for higher education.

It is important to recognize that altering the proportion of government funds devoted to student aid does not necessarily mean that institutions will receive any less funding from the government than is now the case. If student aid may only be used for tuition expenses, then each dollar of student aid ultimately will find its way to an institution. To be sure, these funds probably will be distributed differently than how funds are distributed presently to institutions since student aid recipients are unlikely to attend in the same pattern as the existing distribution of government funds to institutions. But the same amount of funds will flow into institutional coffers. (Two exceptions to this rule occur if aid is provided to
students attending private institutions and when aid is available to pay for living expenses. In those cases, the total amount of government funds flowing directly or indirectly to public institutions will be less than is currently the case.)

_Vouchers versus Government Allocations to Universities for Student Aid._ Governments can structure student aid programs in one of two basic ways. Under one aid mechanism, the government allocates funds to colleges and universities which in turn provide awards to students based on criteria established by the government. The degree of autonomy institutions have in making awards varies from country to country under this kind of arrangement. Vouchers, the other basic form of student aid program structure, give students the power to choose where they go to school by allowing them to purchase a certain amount of higher education.

Administrative simplicity is the fundamental advantage of having an institution-based student aid structure. Having universities assume responsibility (and some of the administrative costs) for determining student eligibility according to government criteria is often simpler and cheaper than having the government assume major responsibility for determining an individual student's eligibility for aid. University officials also may be better prepared to judge the financial need of students than government officials who are more remote.

A fundamental drawback to administering student aid through university allocations, however, is that this structure provides little in the way of market-based incentives. By definition, universities under this structure provide aid to the students who enroll at that institution. In addition, a system of university-based allocations for student aid may be ill suited for providing student aid based on meeting national priorities. It is difficult to ensure that institutions will follow the priorities established by the government. Also, if the objective is to ensure an equitable distribution of aid to students from all regions of the country, university-based allocations are the wrong mechanism for doing so.

A voucher system is superior to institution-based ones in providing market-based incentives and in ensuring that national priorities are met. Vouchers also provide a degree of competition that university-based allocations do not provide. By the same token, the value of vouchers is limited when students have limited or no choice in where they go to school. That is, the more that students are instructed where to enroll, the less that a voucher system makes sense. Vouchers really only make sense in an environment where students can freely choose among institutions which have admitted them. In addition, vouchers typically entail much higher administrative costs than a university-based allocation approach.

Given the relative strengths and weaknesses of both university-based allocations and vouchers, Brazil may wish to consider a student aid structure that combines university allocations with vouchers to meet multiple national goals. Under this mixed approach, the primary funding of student aid could be provided through allocations to public institutions. At the same time, some aid could be provided in the form of vouchers to meet certain national needs. For example, if there is a desire to reward the best secondary school
graduates, funds could be set aside for vouchers awarded to the top students in each region of the country to pay for tuition (and perhaps living costs as well) at whatever institution they attend. Similarly, if there is a goal to have more students enter the field of teaching, a voucher for full tuition might be provided to good students who agree to become teachers.

The Possible Role of Loans. Loans increasingly have come to play a significant role in the financing of higher education in many countries around the world. Borrowing is particularly important in those instances where tuition is charged since it allows students to amortize the often high costs of instruction over an extended period of time. If Brazil decides to charge tuition at its federal universities, therefore, the role of loans in Brazil should become more pronounced. In the process of formulating an expanded role for loans, a number of issues will have to be addressed including: the source of capital, the administrative structure, the level of subsidy, and the method of repayment. Each of these important issues require discussion and answers that go beyond the scope of this brief report.

VI. CONCLUSION

This report is intended to provide policy makers in Brazil with an overview of some of the issues involved in considering how to accommodate some of the growing demand for higher education at the federal universities within the limits of available public resources. The basic thrust of the argument made here is that Brazil should be more strategic in approaching this task than most countries have been.
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