Brazilian Higher Education: Characteristic and Challenges

Michael Crawford
Lauritz Holm-Nielsen

October 1998
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Introduction

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 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 attempts to provide both a descriptive and a policy assessment of the system as it is. Part I presents the essential features that characterize the system: size, enrollment coverage, costs, funding sources, oversight, quality, differentiation, and others. Part II broadly examines the principal policy challenges. Taken together the two parts give an initial answer to the question: What is higher education like in Brazil today and what should it be like a generation from now?

Donald Winkler

Lauritz Holm-Nielsen
Part I: Characteristic of the Higher Education System in Brazil

1. Institutions. According to the Ministry of Education (MEC), higher education (ensino superior) in Brazil comprises:

   - undergraduate programs (cursos de graduação: note the false cognate with English);
   - graduate master’s and doctoral programs;
   - extension courses and programs, sequential courses for different fields and levels, specialization, skills upgrading, and improvement courses (especialização, atualização, and aperfeiçoamento, respectively).

   In 1996, there was a total of 922 institutions of higher education in Brazil (according to data from the Educational Census, higher education section, of the Instituto Nacional de Estudos e Pesquisas Educacionais: data from this census hereafter cited as INEP CES). Of the 922 institutions, 57 are Federal, 74 are state, 80 are municipal, and 711 are private. 78 percent of these institutions (representing 74 percent of enrollment) are located in the South or Southeast region of the country, though the public institutions have more even regional distribution. MEC classifies higher education institutions as universities, university centers, multiple faculty facilities known as federações e integradas, and single faculty facilities classified as instituições isoladas. This last category actually includes several isolated facilities that are under the control of a single governing board. Counting all such facilities as single institutions would reduce the overall number of institutions by an estimated 50 percent (according to the World Bank 1993 sector study entitled Brazil: Higher Education Reform, hereafter referred to as “1993 ESW”). However, while the number of universities grew 110 percent from 1980 to 1996 (from 65 to 136), the overall number of higher education institutions grew by only 5 percent (from 882 to 922). This is because it is advantageous for an institution to gain legal status as a university; subsequently, many multiple or isolated facilities have successfully lobbied for conversion to university status. Many private institutions are de facto for profit organizations (known as entrepreneurial institutions), but de jure non-profit. The National Education Law now officially recognizes for-profit institutions, but, since inclusion in this category means the loss of tax-exempt status (a major factor in profitability), very few entrepreneurial institutions have chosen to categorize themselves as such. Problems related to quality tend to be much more severe in entrepreneurial universities.

\[\textsuperscript{1}\] Substantial sections of Part II of this paper were contributed by Elaine El-Khawas and Quentin Thompson.
Table 1: Higher Education Institutions by Type, 1996

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Number</th>
<th>Enrollment</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities</td>
<td>136</td>
<td>1,209,400</td>
<td>102,685</td>
</tr>
<tr>
<td>Federal</td>
<td>39</td>
<td>373,880</td>
<td>40,492</td>
</tr>
<tr>
<td>State</td>
<td>27</td>
<td>204,819</td>
<td>22,911</td>
</tr>
<tr>
<td>Municipal</td>
<td>6</td>
<td>47,432</td>
<td>3,135</td>
</tr>
<tr>
<td>Private</td>
<td>64</td>
<td>583,269</td>
<td>36,147</td>
</tr>
<tr>
<td>Multiple-Faculty Facilities</td>
<td>143</td>
<td>245,029</td>
<td>15,725</td>
</tr>
<tr>
<td>Public</td>
<td>11</td>
<td>8,681</td>
<td>821</td>
</tr>
<tr>
<td>Private</td>
<td>132</td>
<td>236,348</td>
<td>14,904</td>
</tr>
<tr>
<td>Single-Faculty Facilities</td>
<td>643</td>
<td>414,100</td>
<td>29,910</td>
</tr>
<tr>
<td>Public</td>
<td>128</td>
<td>100,615</td>
<td>7,307</td>
</tr>
<tr>
<td>Private</td>
<td>51</td>
<td>313,485</td>
<td>22,603</td>
</tr>
<tr>
<td>Total</td>
<td>922</td>
<td>1,868,529^2</td>
<td>148,320</td>
</tr>
</tbody>
</table>

Students. The INEP CES reported 1.86 million undergraduate students in 1996. University enrollment practically doubled from 1980 to 1996 (from 652,000 to 1,209,000 students). However, similar to growth in institutions, overall tertiary education enrollment increased by only 36 percent (from 1,377,000 to 1,868,000) during this period. Extrapolations from demographic data show that absolute increases in tertiary enrollment are scarcely keeping pace with the growth of age cohorts. Coverage in 1996 is almost identical to what it was in 1980: Between 9-10 percent of the 18- to 24-year-old cohort. Both enrollment and the size of the population group grew by about 37 percent in that time. Moreover, IBGE data indicate that one-third of enrolled undergraduates are 25 years or older, and only 12 percent of graduate students are under age 25. This means that only 5.9 percent of the population in the 18- to 24-year-old-age group is enrolled in tertiary education.

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^2 This figure does not include graduate students, who numbered approximately 67,000 in 1996 according to MEC. IBGE figures for enrollment in 1996, which are based on its national household survey, show 1,784,000 undergraduates and 131,393 graduate students. The discrepancy of 4.4% in undergraduates may be due to the difference between nominal and actual enrollment. The discrepancy of 97% in graduate figures may be due to survey respondents in short (specialization) courses reporting themselves as graduate students.

^3 In 1980 there were roughly 15.2 million 18- to 24-year olds and 1.38 million tertiary students (9.1 percent coverage). In 1996, there were roughly 19.5m 18-24 year olds and 1.8 million tertiary students (9.4 percent)
Table 2: University Enrollment Growth, 1980-1996

<table>
<thead>
<tr>
<th>Type of University</th>
<th>Enrollment Growth, 1980-96</th>
<th>1980 Enrollment</th>
<th>1996 Enrollment</th>
<th>% of Total Enrollment: 1980</th>
<th>% of Total Enrollment: 1996</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>23%</td>
<td>305,099</td>
<td>373,880</td>
<td>47</td>
<td>31</td>
</tr>
<tr>
<td>State</td>
<td>151%</td>
<td>81,723</td>
<td>204,819</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Municipal</td>
<td>179%</td>
<td>17,019</td>
<td>47,432</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Private</td>
<td>139%</td>
<td>248,359</td>
<td>583,269</td>
<td>38</td>
<td>48</td>
</tr>
<tr>
<td>Total</td>
<td>85%</td>
<td>652,200</td>
<td>1,209,400</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: INEP CES

Table 3: Tertiary Enrollment Growth, 1980-1996

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Enrollment Growth, 1980-96</th>
<th>1980 Enrollment</th>
<th>1996 Enrollment</th>
<th>% of Total Enrollment: 1980</th>
<th>% of Total Enrollment: 1996</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>23%</td>
<td>316,715</td>
<td>388,987</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td>State</td>
<td>123%</td>
<td>109,252</td>
<td>243,101</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Municipal</td>
<td>56%</td>
<td>66,265</td>
<td>103,339</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Private</td>
<td>28%</td>
<td>885,054</td>
<td>1,133,102</td>
<td>64</td>
<td>61</td>
</tr>
<tr>
<td>Total</td>
<td>36%</td>
<td>1,377,286</td>
<td>1,868,529</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: INEP CES

Brazil’s percentage of tertiary education enrollment for the age cohort of 18- to 24-year olds compares unfavorably with several Latin American countries and with a wider range of OECD countries. UNESCO data from 1995 show many comparator countries with much higher coverage than Brazil. Perhaps more important, these countries show a trend toward increased coverage over the last decade, while Brazil does not. Although the quality of this data is acknowledged by UNESCO itself to be less than perfect [note that UNESCO’s figure for coverage in Brazil is two percentage points higher than the IBGE and MEC figures], the trend toward increasing coverage is clear in many Latin American and OECD countries.
Table 4: Growth of Coverage of Tertiary Education in Latin America

<table>
<thead>
<tr>
<th>Country</th>
<th>% of Age Cohort 1980</th>
<th>-- in Tertiary Education 1980</th>
<th>% increase in 1980 coverage rate in 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>11</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Argentina</td>
<td>22</td>
<td>41</td>
<td>86</td>
</tr>
<tr>
<td>Chile</td>
<td>12</td>
<td>27</td>
<td>125</td>
</tr>
<tr>
<td>Colombia</td>
<td>9</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Costa</td>
<td>21</td>
<td>30</td>
<td>43</td>
</tr>
<tr>
<td>Mexico</td>
<td>14</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Peru</td>
<td>17</td>
<td>40</td>
<td>135</td>
</tr>
<tr>
<td>Uruguay</td>
<td>17</td>
<td>30</td>
<td>77</td>
</tr>
<tr>
<td>Venezuela</td>
<td>21</td>
<td>29</td>
<td>38</td>
</tr>
</tbody>
</table>

Source: UNESCO data (1995) as reported in World Development Indicators, 1997

The contrast with OECD countries is even starker.

Table 5: Growth of Coverage of Tertiary Education in OECD Countries, 1980-93

<table>
<thead>
<tr>
<th>Country</th>
<th>% Age Cohort 1980</th>
<th>-- in Tertiary Education 1993</th>
<th>% increase in 1980 coverage rate in 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>32</td>
<td>63</td>
<td>97</td>
</tr>
<tr>
<td>France</td>
<td>25</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Ireland</td>
<td>18</td>
<td>34</td>
<td>88</td>
</tr>
<tr>
<td>Italy</td>
<td>27</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>Korea</td>
<td>15</td>
<td>48</td>
<td>220</td>
</tr>
<tr>
<td>Netherlands</td>
<td>29</td>
<td>45</td>
<td>55</td>
</tr>
<tr>
<td>New Zealand</td>
<td>27</td>
<td>58</td>
<td>115</td>
</tr>
<tr>
<td>Norway</td>
<td>26</td>
<td>54</td>
<td>108</td>
</tr>
<tr>
<td>Portugal</td>
<td>11</td>
<td>23</td>
<td>109</td>
</tr>
<tr>
<td>Spain</td>
<td>21</td>
<td>41</td>
<td>95</td>
</tr>
<tr>
<td>Turkey</td>
<td>5</td>
<td>16</td>
<td>220</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>19</td>
<td>37</td>
<td>63</td>
</tr>
<tr>
<td>United States</td>
<td>56</td>
<td>81</td>
<td>47</td>
</tr>
</tbody>
</table>

Source: UNESCO data (1995) as reported in World Development Indicators, 1997

Enrollment is split almost evenly between institutions located in state capitals and those located in the interior. For university students, this is a 10 percent increase over 1991, when 37 percent were night students, 41 percent of university students, and 55 percent of all
the students in the system were attending night classes in 1994. Federal universities offer very limited night courses (only 17 percent of enrollment), while at other institutions of higher education (private and municipal universities, plus integrated and isolated institutions), the two-thirds of students are attending night classes. The system produced over 254,000 graduates in 1996, with 46,000 from federal, 49,000 from state and municipal, and 159,000 from private institutions. At the graduate level, there were 67,000 students in 1996, 10,356 Masters’ and 2,972 doctorates awarded.

<table>
<thead>
<tr>
<th>Field of Study</th>
<th>Enrollment</th>
<th>Graduates</th>
<th>% of Total Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exact and Earth Sciences</td>
<td>193,032</td>
<td>23,798</td>
<td>9%</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>29,031</td>
<td>3,553</td>
<td>1%</td>
</tr>
<tr>
<td>Engineering/Technology</td>
<td>161,471</td>
<td>17,279</td>
<td>7%</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>229,556</td>
<td>34,404</td>
<td>14%</td>
</tr>
<tr>
<td>Agricultural Sciences</td>
<td>50,704</td>
<td>5,603</td>
<td>2%</td>
</tr>
<tr>
<td>Applied Social Sciences</td>
<td>795,517</td>
<td>97,528</td>
<td>38%</td>
</tr>
<tr>
<td>Humanities</td>
<td>288,580</td>
<td>53,325</td>
<td>21%</td>
</tr>
<tr>
<td>Linguistics, Arts, &amp; Letters</td>
<td>119,686</td>
<td>18,911</td>
<td>7%</td>
</tr>
<tr>
<td>Total</td>
<td>1,868,000</td>
<td>254,401</td>
<td>100%</td>
</tr>
</tbody>
</table>

Few of the entrepreneurial private institutions offer degree programs in hard sciences or in medicine, because the cost of laboratory equipment is prohibitively expensive. Data on field of degree may slightly overstate the number of science graduates because it includes those who study to become high school science teachers. These graduates do not take the same rigorous courses as strict biology graduates, but rather a mixture of pedagogy and some fundamental science. The socio-economic profile of 1997 graduates is as follows: about 80 percent were ages 20-29; 58 percent were men; the majority lived with their parents or families while studying, with only a very small minority living in university-provided housing. Family income measured in terms of equivalent number of minimum wages salaries per month was the following: 0-3 for 3 percent; 3-10 for about 23 percent; 10-20 for 30 percent; 20-50 for 32 percent; and more than 50 for roughly 12 percent of finishing students. It was common for students to work at least part time, and a majority of graduates in administration (63 percent) reported having worked full-time while studying. [Data from MEC/INEP/DAES “Exame Nacional de Cursos: Relatório Síntese 1997].

3. Demand and access. In 1996, 1.16 million Brazilian students completed High School. A large survey by MEC of graduating students in 9 states showed that at least 38 percent plan to enroll in higher education in the immediate future (an additional 12 percent are undecided as to future plans). Admission to the free Federal universities is very competitive, but the current combination of private, state, and municipal institutions seems to be keeping pace with demand for the time being. To date, growth in the absolute demand for university placement has been accommodated by the expanding private system (where quality is a problem). However, demographic trends and government policy toward secondary education are likely to result in a sharp increase in demand for higher education in the very near future for four
reasons. First, a demographic bulge of young Brazilians is reaching secondary and university age.

Second, the rate of secondary school enrollment is increasing much faster than the corresponding rate of population growth: In 1997 enrollment was 70 percent higher than in 1991, and it continues to grow at about 12 percent per year. Third, Government policies aimed at improving quality and reducing drop out and repetition rates will likely cause the number of new graduates to rise at a still faster rate. Fourth, Brazil’s recently achieved economic stability may lead to accelerating growth of the middle class, which will further increase demand for higher education.

4. The vestibular system and competition for admission. University candidates compete for places through competitive entrance exams known as the vestibular. Universities or, in some cases, consortia of universities design and administer their own exams for various fields of study, under very general guidance from the National Education Council (Conselho Nacional de Educação: CNE). Requirements for different departments and programs of study vary, but students will generally take exams in 3-5 subjects. High school graduates may take the vestibular immediately after graduation. They have up to a year of preparation, which they often take in expensive private preparation courses. The number of places offered through the vestibular system has been growing at about a 10 percent annual rate, but the number of entrance exams taken is growing faster. The National Education Law removed the requirement of the vestibular for university entrance, but as of yet few schools have experimented with accepting students outside of this traditional method. In 1996, roughly 1.2 million students completed high school, and 2.5 million vestibular exams were taken. About
600,000 students gained admission to universities, less than one for every exam taken. Despite expansion of gross enrollment figures, the ratio of exams taken to admitted students has more than doubled since 1975. In 1975, there were approximately 1 million matriculated students, and 780,000 exams taken for 348,000 places, a ratio of 2.2 exams taken per place. By 1996, there were 1.8 million matriculated students, and 2.5 million exams taken for 634,000 admissions offered, a ratio of 3.9 exams per place offered. No data was available on the average number of exams each candidate takes, so it is not clear whether these figures represent a large pool of candidates seeking admission, more applications per candidate, or a mixture of the two. While competition for admission to the elite federal universities is reported to be intense (some accept as few as 10 percent of the applicants), observers report that there is a lack of qualified candidates and that university places go unfilled. INEP CES data confirm that the ratio of admission offers to new enrollments is growing only slightly:

Table 7: Ratio of Admissions Offered to New Students Enrolled, 1981-1994

<table>
<thead>
<tr>
<th>Year</th>
<th>Admission Offered</th>
<th>Students Enrolled</th>
<th>Admissions/Enrollees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>417,348</td>
<td>357,043</td>
<td>1.16</td>
</tr>
<tr>
<td>1985</td>
<td>430,482</td>
<td>346,380</td>
<td>1.24</td>
</tr>
<tr>
<td>1988</td>
<td>463,739</td>
<td>395,189</td>
<td>1.17</td>
</tr>
<tr>
<td>1991</td>
<td>516,377</td>
<td>426,558</td>
<td>1.21</td>
</tr>
<tr>
<td>1994</td>
<td>574,135</td>
<td>463,240</td>
<td>1.24</td>
</tr>
</tbody>
</table>

5. Dropout and time to completion. INEP CES show that approximately 40 percent of new entrants will dropout rather than obtain a degree. Terminal efficiency for the system as a whole was 56 percent for 1990-93, during which period 1.68 million new students entered and 940,000 graduated. This figure is slightly higher than that of Mexico (50 percent). Nominal or double enrollment in degree programs by first year students may be exaggerating this statistic. The problem of excessive time to completion is also reported, but official figures on this are not available. Again, however, interpretation of the data is open to question. A study of university dropouts in Paraná reportedly finds that 75 percent of dropouts have actually transferred to other programs and will eventually complete their degrees while not appearing in the statistics.

6. Faculty. In 1996, the system employed approximately 148,000 teaching faculty, or roughly one faculty member for every twelve students. The public system has one faculty per 10 students, while the private has one per 15. The size of the faculty is five times its 1963 level, while student population has increased more than thirteen-fold in the same period. In 1996, 16 percent of all faculty had doctorates, 25 percent had Master's, 36 percent had completed specialization (short) courses, and 23 percent did not hold graduate degrees. The percent of faculty without graduate degree is declining, with Ph.D. up 42 percent in 1996 over 1990 levels, Master's up 33 percent, and the number of faculty without advanced degrees is down by 26 percent.

7. Salary cost and retirees. Salaries traditionally account for 80 percent to 90 percent of the costs of higher education. In the federal system professors and technical and administrative personnel are paid directly by the federal government. These individuals are civil servants with full benefits: teaching staff can retire after 25 (women) and 30 (men) years
respectively, at 100 percent of their last salary. In some cases, years spent as a teaching assistant/doctoral student count toward total length of service. Retirees are entitled to all benefits that active faculty enjoy, including pay raises. Pension costs may account for up to a third of total payroll at some universities. According to the World Bank's 1993 sector study (1993 ESW), federal universities have no personnel policy. Universities could not establish plans of positions, salaries, and criteria for promotion for either teaching faculty or technical/administrative personnel. [See also the "Legal Framework" section of this document].

8. Institutional autonomy. Federal universities are governed by rectors, who are chosen through a consultative process involving faculty plus staff and students. University Councils generate lists of candidates; the requirement that 70 percent of the vote regarding candidates be from teaching faculty is not always respected in practice. In some cases, the process of selecting a rector has become a controversial and polarizing experience for universities. The different types of institutions are regulated in different ways. According to at least one observer (Schwartzmann), the organization of faculties and departments carries the influence of the system's origins in the Napoleonic tradition of professional schools. These schools were chaired by practicing professionals (in law and medicine, for example) who set uniform national criteria for curricula and diplomas, the latter normally being the sole legal requirement to practice a given profession. Several reforms have sought to introduce aspects of the North American model of academic departments staffed with full-time professors who teach and conduct research. Tension between the two models of organization still exists within the system, although a majority of students now study in what could be called applied social sciences fields (administration, economics, and law). A general trend in Federal oversight has increased the autonomy of institutions on paper, but de facto it may not be politically possible to exercise this authority, or the institution itself may not want autonomy. This is especially true among public universities, where departmental budget tend to be fixed in a rigid system of central control. The recent legislation has given universities flexibility to offer shorter degree programs and course of study leading to certificates, but as of yet the response to this autonomy has been minimal. Private institutions, on the other hand, seek to be recognized as universities by the government so they will enjoy the autonomy to create courses without permission of the National Council of Education. Entrepreneurial institutions are also eager to provide graduate distance education, which they see as potentially lucrative, while the regulating agencies have concerns about the quality of what would be offered.

9. Technical and administrative personnel. The system has over 222,000 technical and administrative personnel, or 1.5 per faculty member. Technical and administrative personnel are concentrated, however, in the public system; it employs 73 percent, but only employs 50 percent of faculty. The public system has 2.2 technical and administrative employees per faculty, while the private system has 0.8. The number of technical and administrative personnel increased 20 percent between 1990 and 1996.

10. The private system. Private institutions of higher education run the gamut from top-quality universities engaged in research and teaching (PUC Rio and PUC São Paulo) to single facility, profit-oriented organizations churning out credentials needed by certain segments of the white collar work force for career advancement. Of the 711 private institutions, only 64 (9 percent) are universities. The vast majority (72 percent) are single or isolated facilities. 80
percent of enrollment in non-university private institutions is in night courses (often in buildings that serve as secondary schools during the day). Humanities and social science courses prevail, they require less expensive equipment than hard sciences. 68 percent of the private institutions are in the Southeast region, with an especially heavy concentration in São Paulo and Rio de Janeiro. Tuition will typically account for 80 percent of the budget, while student loans and fees account for the other 20 percent. The private system accounted for 65 percent of total graduates in 1993. Full-time faculty are very rare. Most instructors are paid hourly according to the number of classes they teach. Salaries account for 60-70 percent of budgets, and the annual cost per student (US$3,500) was reported to be about 30 percent of the cost at the federal universities (1993 ESW). Laws designed to prevent these institutions from operating for profit is widely ignored or evaded. The strong pontifical universities are classified as community institutions. Whether or not they are religiously affiliated, community institutions have a reputation for taking their educational mission very seriously, in contrast to the entrepreneurial privates. Community universities probably most closely approximate the American concept of a private university; they are heavily concentrated in the South of Brazil.

11. Legal framework. Higher education is regulated by various legislation. The Constitution guarantees free public education, but not with specific reference to higher education. The World Bank's 1993 sector study emphasized the role of the 1987 Law of Isonomy, which governs the hiring of civil servants. That law, which has recently been repealed de jure but still defines the de facto practice, covers both teaching and administrative positions. It establishes uniform salaries throughout the country for a list of 354 job categories, and defines promotion policies that favor length of service over academic qualifications, production, or performance. In December of 1996, new legislation affecting universities—part of the National Education Law (Lei de Diretrizes e Bases da Educação: Law 9.394)—was passed. The law defines a university as an institution dedicated to the production and advancement of knowledge, having at least one-third its faculty holding advanced degrees (Ph.D. or master's), and at least one-third its faculty being full-time. The law confers autonomy, within the confines of existing legislation, on universities to: (i) establish course and set curricula; (ii) increase or diminish enrollment according to capacity; (iii) establish research programs; (iv) enter into contracts as legal entities; (v) administer public and private revenues; (vi) receive gifts and inheritances; and, (vii) accept students who have not taken the vestibular. Faculties at public universities are given autonomy over hiring, firing, and career path decision of teaching faculty. This is in apparent contradiction to the Law of Isonomy, and information on the current de facto ability of universities to set personnel policy was not immediately available. However, additional proposed legislation—part of the government's administrative reform—is being debated in Congress, which would firmly establish the autonomy of higher education institutions to hire, fire, and set promotion standards. In addition:

- Law 9.131 of Nov. 1995 establishes the National Education Council (Conselho Nacional de Educação: CNE), with a subcommittee on higher education. This law gives the CNE broad powers to regulate higher education. Among these are responsibilities to:
  - Evaluate higher education and accredit institutions;
  - Create curricular guidelines for undergraduate courses;
  - Authorize the creation of new courses or the elimination of existing ones;
Propose and/or authorize statutes and rules pertaining to the federal system of higher education;

Analyze and/or authorize the re-accreditation of graduate courses through the existing evaluation system.

- Law 9.192 of Dec. 1995 establishes procedures for the selection of rectors at federal universities. Candidates must be from the two highest academic levels (Ph.D. and Master's, or from the top rank of seniority). The President chooses rectors from triplicate lists. The lists are compiled with broad input from the university community; this input must include at least 70 percent of the faculty. The votes from the faculty will be weighted to account for at least 70 percent of the voting outcome. Rectors serve a four-year, which may be renewed once. The Rector following the same consultative process with the community names directors of unidades federais individuais.

A 1997 legislative decree regulates private institutions and clearly distinguishes between proprietary, profit-oriented private institutions, and nonprofit ones. According to Schwartzman, (Higher Education in Brazil: First Moves. International Higher Education, Fall 1997), "Under the [at that time proposed] legislation for-profit schools would have to pay taxes as any other business, but would be allowed more freedom to run their institutions as they see fit. Nonprofit schools, on the other hand, would be held to a stricter set of educational controls within the communities that they are supposed to serve. To date, there are no takers for the first alternative, and the control mechanisms for the second one are still not fully implemented. The idea that education can be a legitimate business is a completely new and revolutionary one in the Brazilian context."

12. Student loans and student support. The Bank 1993 sector study reported that the government’s subsidized loan program for students attending private institutions was the main source of public support to private higher education. The report also found the program to be poorly managed and undercapitalized. Originally intended for needy students, no means tests were applied to applicants. The meager capitalization that was provided by an earmark from a federal lottery was diverted to another program. However, the federal treasury agreed to its continuation, due largely to the strong political support and influence of the representatives of the private universities who benefited from the program. Between its inception in 1976 and 1989, nearly 750,000 loans were made. No provisions were made to guard the real value of the credits, so inflation eroded the debt during periods of macroeconomic instability and repayment became moot. The Caixa Economica Federal, a federal bank, was given the responsibility to administer the program, by default, it has managed and set policy as well. The program remains popular, and has political support reportedly in part because of close relationship between the rectors of the private institutions (for whom the loans are income) and politicians. It is currently too small for its purported target population, non-transparent, and subject to political manipulation.

13. Quality assurance and accreditation. Accreditation of institutions and assurance of the quality of courses and curricula is the responsibility of the National System of Higher Education Evaluation, coordinated by the Secretaria de Ensino Superior (SESU) of the Ministry of Education. The CNE receives an accreditation report prepared by SESU and recommends (or not) its approval by the Minister. Despite guarantees of institutional
autonomy in the National Education Law, the CNE (in coordination with SESU) has a legal mandate to set curriculum guidelines (which are reportedly broad), the creation of new and the elimination of old degree courses, and regulate hiring and career advancement policy. Expert evaluation committees, institutional self-evaluation, and the continuous collection of data by INEP are also part of the evaluation system. Evaluation of higher education, especially at the undergraduate level, has become the focus of much greater attention since the mid-1990s. In 1995, a National Evaluation of Undergraduate Programs (O Exame Nacional do Cursos or Provão) was inaugurated. The National Education Law requires the exam as a continuous evaluation for quality improvement in higher education. It is designed to gauge the performance of the institutions more than of the students, but students must take the exam to have their degrees recognized by the government. The institutional results are made public, and their publication has attracted considerable media attention. Individual scores are not publicized, although employers are said to be interested in a potential employee's scores. The Provão is given in the subject areas of administration, law, civil engineering, chemical engineering, veterinary medicine, and dentistry. It is the first instance in Brazil of higher education institutions having been subjected to a nation-wide, systematic evaluation. The Provão also provides a means for collecting in-depth data on the profile of graduating students, and their evaluation of the quality of the education they received. CAPES, the graduate education council maintains an evaluation system for individual graduate programs. The system is well known and credible, but it does not rely on large-scale examination of graduating students.

14. Costs. The budget of the federal university system is about US$ 7 billion per year, with the latest MEC estimated per-student cost at US$ 14,500 in 1997. (Calculations of per-student cost vary greatly depending on whether retirement benefits and the cost of university hospitals are included.) In 1993, about 23 percent of all public spending on education (1.3 percent of GDP) went for higher education, although higher education comprised only 2 percent of educational enrollment. Individuals and the private sector spent an additional 0.4 percent of GDP on higher education. In 1997, all education absorbed 15.3 percent of all public spending, with 3.9 percent of all spending for higher education. Public universities (federal, state, and municipal) do not charge tuition. A limited student loans scheme provides credit for tuition at private universities for some students. The vast majority of cost for the federal universities is salaries. These account for an estimated 80-90 percent of all expenditure and are paid directly by the federal government through the civil service system. As of 1993, MEC had no developed criteria for determining university budgets. Allocations were based on the previous year's budget plus an increment. The method contained no incentives for efficiency. Discretionary funds are allocated on an ad hoc basis and are subject to diminution during a given fiscal year, making rational planning of expenditures very difficult.

15. Policy goals. The 1997 National Education Plan (Plano Nacional de Educação: PNE) recognizes the challenges facing higher education. First, it notes that access and coverage are the lowest in the region, and significantly lower than the other Latin American countries whose economies do not approach the size and complexity of Brazil's. Consideration is given to the need for balanced growth among the various federal, state, municipal, and private components of the system; the need to reduce cost-per-graduate; decrease bureaucratic rigidities; and increase collaboration with institutions that promote research. Most especially, there is concern to prepare the system to absorb the increasing numbers of university
candidates as improvements in basic education bear fruit. The PNE contains a list of 25 goals, some of which are extremely ambitious. Among them are the intention to:

- Provide post-basic education to 30 percent of the population age 19-24;
- Diminish regional inequity of opportunity in higher education;
- Institute a formula funding for the public system based on the institution's ability to respond to student demand and develop research;
- Establish a broad distance education-based system for continuing education;
- Insure effective autonomy for institutions in research, teaching, and administration;
- Diversify the evaluation system and promote the improvement of the quality of instruction;
- Encourage the development of an effective accreditation systems;
- Stimulate graduate research and double the number of researchers within 10 years;
- Diversify access and augment the participation of students with special needs (handicapped, from traditionally underrepresented or excluded groups;
- Integrate the goals for higher education with the goals for other educational subsectors;

Part II: Challenges for Brazilian Higher Education

16. The Perspective: Brazilian Higher Education in the 21st Century. For the 21st century, Brazil will need a higher education system significantly larger than its current one and with more diversity and flexibility. This is not in dispute. But what are the issues which need to be considered when attempting to determine what an expanded system should look like? And what are the further issues which arise in the context of attempting to map the path from here to there? This note starts from considering volume per se and then examines the issues of the various forms of diversity needing to underpin the volume increase.

17. Volume increase and system diversity. The current system provides higher education to about 12 percent of the age cohort, with about 4 percent attending some form of public institution. No one disputes that this is inadequate for the future. It can be debated whether the system needs to be doubled or tripled in size, but as far as current policy is concerned, it is sufficient to note that the system needs to be at least twice as large. The need for the increase stems from two sources: the need of an advancing economy for a more qualified workforce, and the demands from an increasingly educated and developed society for more of its children to have the benefits of a higher education.

18. There are two student-related issues connected with such an increase. The first is whether there will be an adequate supply of suitably qualified students. A doubling of numbers would naturally raise the question of whether it would lead to a lowering of standards. There are three related points: first, the demographic increase about to reach higher education age will, presumably, be across the ability range; second, the recent significant improvements in the secondary school system should produce a higher proportion of better qualified school graduates; third, an increased diversity of provision should, in any case, ensure that a wider ability range of students will be able to be handled. The appropriate approach would appear to be to expand (and diversify) the system in parallel with the increases in suitably qualified students.
19. The second issue concerns the socio-economic and income levels of the expanded cohort. The present cohort has an imbalance of students from richer families, any expansion will move the mix down the income scale. There are two points: the effect may be mitigated to some extent as the society becomes more wealthy, so although an expansion will move down the income scale in relative terms, it may not be so significant in absolute terms; nevertheless even with relative differences, there are implications for funding support for students if equity is to be maintained or enhanced. The second point raises policy questions for government about what it means by equity in this context and how it is to respond to such concerns (see section VI on funding).

20. But it is far too simplistic to refer merely to the need for an expanded system. The requirements of the 21st century will also need a more diverse system – which will need to have flexibility built into it. There are (at least) eight aspects of diversity which need to be considered, each of which raises issues for the future. The eight are the following:

- diversity of types of institutions;
- regional diversity;
- diversity of ownership on the public–private spectrum;
- diversity within the curriculum;
- diverse mechanisms for quality assurance;
- diversity of research;
- diverse levels of autonomy;
- diverse funding mechanisms.

21. Diversity of types of institutions. The current system is heavily dominated by the classical tradition of full undergraduate degree programs, all of which, in theory, follow the same core curriculum (within any one course). The choice for potential students is thus very limited—and further restricted by the nature of control over the curriculum (see section II). The recent moves to define three types of higher education institutions (Universities, University Colleges, Faculties) is a step towards greater diversity.

22. There are three main issues needing consideration. The first concerns the extent to which there should be higher education institutions which provide something less than degree level: The two-year community colleges of the US offer one model. It might be possible to upgrade some of the existing technical schools for such provision. However it were done, it would be important to ensure that such provision led to some form of certificate which had a value in its own, and also that those holding such certificates should, if interested and qualified, be able to transfer to complete a full degree (see also the section on curriculum).

23. The second issue concerns the role of distance education within the system. While it is now generally accepted that this is rarely less expensive than traditional modes of delivery, it has at least two potential advantages—of being able to provide access to those who, for whatever reason, cannot physically attend a traditional institution, and also of being able to make courses and material available of a higher quality than may be available locally. A distance education network focusing on the more geographically dispersed areas could be part of a regional policy. (see next subsection).
The third issue concerned with the types of institutions is that of the relative balance of research effort to be made in different institutions (compared with the teaching effort). There is no doubt that any higher education institution needs to ensure that its academic staff keep up to date with developments in their own field—work which is sometimes referred to as scholarship; but research work is more focused and specialized and probably appropriate only for a relatively few institutions. Further, the type of research (e.g. issue-focused or academic discipline based) should be a function of the role of the institution—again the regional aspect will be important (see next subsection and also the section on research).

Regional diversity. Brazil is not only a huge country, but also, one which is extremely diverse in terms of economic development and socio-economic position. It is probably appropriate (from an education policy perspective) to consider the country as comprising three regions: North, Central and South. The higher education requirements in each of these regions are quite different, and no uniform strategic approach is likely to be appropriate for all three.

There are two main issues. The first is how any form of regional strategy for higher education is to be developed. This issue starts from the question of whose responsibility it is to develop such regional strategies, and in particular the balance of responsibilities between the federal and state governments. For example, federal funding could be available to support State universities (or the States themselves) as part of a policy to even out regional disparities and/or as one part of a strategy to expand the system. The next question concerns the factors to be taken into account in producing such strategies. Clearly, these factors include the stage and level of economic and social development of the region, the priorities for the region within the education sector as a whole, the likely responses of private providers of higher education to provision in the region, and the role which public provision (including public funding) is to play in the future of the region.

In each of the three regions, these factors—and others—are likely to be very different. The second issue thus concerns the likely content of the regional higher education strategies—particularly for the roles both of public funding and of public ownership of provision. It is premature to judge the possible content, but, for example in the North and North East, it seems likely that priority in higher education should be given to finding ways of improving education at basic and secondary levels, that there will need to be a concerted effort to train the backlog of unqualified school teachers, that some form of distance education is likely to be appropriate, that the private sector's contribution is likely to be limited unless it receives some form of government support, and that any research effort should be focused on practical issues of real concern to the economic and social development of the region.

Diversity of ownership. Currently, the basic split of ownership is between publicly owned institutions and privately owned ones; each is further split, the former into federal and state (and some municipal) institutions, and the latter into genuine not-for-profit and entrepreneurial institutions. On the whole, the private institutions focus on provision in course areas that are relatively cheap to provide and often their provision is in the evenings. Those students studying in public institutions have their higher education heavily subsidized as opposed to those in private institutions. Brazilian law currently forbids the direct subsidy of private institutions with public money. In practice, however, a small subsidy element comes to private universities via the student loan program, overhead expenses (bench fees) associated
with federal scholarships for graduate students, and federal grants for research. The latter two sources are quite small because private universities generally focus on undergraduate education rather than graduate education and/or research.

29. There are two fundamental issues. The first concerns the relative roles which the government looks to be undertaken by the different ownership of provision. The reason this is an issue needing resolution is because government needs to have a policy basis on which to decide which students it wishes to support, and the method of support, and the extent to which such support should be linked to the ownership of the institution within which the student is studying. For example, private provision currently tends to be in subjects which are cheap to provide, but that is because the government provides no support for students in private institutions—apart from a loan scheme for some of them. There is also some public (and thus free) provision in these same subject areas. The policy issue thus concerns the intended roles of both public provision and public funding of provision.

30. This leads to the second issue which is whether, and if so to what extent, public funding of higher education should be linked to the ownership of the institution offering the education or to the student undertaking the education. This is primarily a funding issue (see section VI), but to the extent that the answer is other than that public funding could be available to support students in privately owned institutions. There are various forms of possible partnership between the public and private sectors which would increase the diversity of provision. [It may be worth noting in this context that the British system is basically a private system which is publicly funded.]

31. Diversity and flexibility of curriculum. Apart from external and structural factors that constrain the ability of Brazilian universities to take new directions, there appear to be numerous internal constraints as well, particularly with respect to the organization of the curriculum. This section refers to the provision of undergraduate education and not to graduate study, which accounts for only 3 percent of enrollment (about 67,000 students) and is subject to close monitoring by a federally supervised system of external peer review (CAPES). It refers mostly to the organization of studies in large universities, public and private; although many points are undoubtedly pertinent to private institutions. Specific information on private institutions was not available during this study visit.

32. To position Brazilian higher education to meet the needs of the 21st century, a major redirection is needed in the curriculum structure that is now in place. Undergraduate study is dominated by a traditional approach in which curricula are developed nationally and closely tied to established professions. General education of undergraduates is occurring largely in areas that could be called applied social sciences, where students are studying law, administration, or economics without the intention of pursuing careers in these areas. Compared to other countries with systems serving a million or more students, curricular choices are narrow: undergraduate students in Brazil must choose among a restricted range of traditional study fields and must follow overly specific course requirements. Curricular adaptation appears to be sharply constrained, taking place within the confines of the existing, nationally approved study courses. Even such relatively minor adjustments as offering interdisciplinary study or allowing for dual study fields have generally not been introduced. Other forms of adaptation—for example, to improve relevance to workforce needs by blending
classroom study with research projects or practical work experience—receive little attention. Nor are there regular ways to consider issues of teaching effectiveness, despite the fact that instructional staff vary widely in their training and experience. The problem is deep—there is a lack of mechanisms within the universities for developing new curriculum directions and, more generally, a lack of systematic attention to such issues as curriculum relevance and effectiveness. We are told that, within the university, no one owns a study course and thus no one cares enough about it to attend to its effectiveness. This may be due to the fact that universities are organized according to discipline-based department while courses of study are generally multi-disciplinary. Such structural flaws in the organization of universities deserves much more in-depth analysis.

33. Indirect signs indicate that the curriculum is not adequately targeted to student needs. There is evidence of high cost per graduate at public universities, and of a low proportion of graduates compared to enrolled students. There are also reports of lengthy time to completion, as well as statistical evidence that drop out rates are 40 percent and more. The fact that a large number of students attend night courses while working may be another sign that university offerings on a day basis are not adequate to student needs. Several policy initiatives to improve the responsiveness of the curriculum are needed, with the objectives of (1) improving the relevance of curricular options; (2) increasing the flexibility of study courses and paths; and (3) building a capacity for curricular review and adaptation within universities. Although national action is needed to set new directions, the greatest priority is to establish new mechanisms for curricular responsiveness at the institutional level.

34. With respect to improving relevance, attention is needed, first, to the updating of existing courses of study, an area that is now receiving attention by national commissions charged with developing new curricular guidelines. It is not clear, however, whether these processes are taking a long-term perspective or hearing from a wide range of stakeholder groups in making changes. Initiatives are also needed to create new courses of study relevant to a changing economy, possibly in such emerging areas as telecommunications or computer systems, and to introduce options for different lengths of study. Options for two- or three-year study courses should be considered, both in traditional study fields and in technical subjects likely to grow in importance.

35. The universities also need to create substantial elements of curricular flexibility into their course provision. A primary requirement is for the universities to be more responsive; to expand study provision where there is clear evidence of employer need as well as strong demand by qualified students. Examples were heard several times during our visit of situations where there was clear evidence of program need but the public university was not able to respond. Efforts are also needed to reduce the overly specified sequence of courses that students must follow in order to receive a degree. Students would benefit from more options to take electives, or to combine study areas according to their career interests. Mechanisms to allow student transfer between study fields and between institutions are urgently needed. As participation rates increase, most countries have witnessed increasing pressures for such mechanisms to give students recognition for work completed even as their study plans and locations change.
36. Initiatives are needed at both the national and institutional level to improve the capacity for curriculum review and improvement. Limited mechanisms exist for university staff to organize a review of current curricula, learn about alternatives, and consider how changes might be introduced. There also is a limited capacity within the universities to identify problems with student achievement and to use them as the basis for making program changes that might remedy those problems. Dropout rates may be inevitable but, instead, there may be a systematic problem (e.g., low pass rates in calculus courses) that, if remedied, could reduce the dropout problem. Such internal processes of investigation and remedy are greatly needed.

37. Brazilian universities will face new curricular challenges as enrollment expands further in the years ahead. The increased number of students entering the university are also likely to bring with them a wider range of preparation in upper secondary schools. The experience of other countries suggests that, as student populations expand, there is inevitably a greater problem of uneven academic preparation among entering students. Student intake will be from more diverse geographic areas and from differing secondary preparation systems. Students may pass entrance exams but still have specific gaps in their abilities. To respond to this prospect of wider variability in the preparation of entering students, it is increasingly important that universities have well-established processes to identify the specific learning difficulties that students face in meeting course requirements. Closer monitoring will be needed of student progress and of patterns of course completion, accompanied by an enhanced ability of academic departments to address the problems that arise.

38. Building the capacity for ongoing curricular improvement will call for the development of new mechanisms for curriculum review, particularly within universities. Curriculum committees or councils might be established, possibly on a standing basis. Needed too are staff development opportunities, designed to help academics and administrators to learn about and give attention to the possibilities for curriculum innovation. Mechanisms are also needed to ensure that teaching staff become more attentive to issues of curriculum relevance. Whatever the formal mechanisms a university puts in place, it is the academic staff that are the key agents of curricular change and vitality. Through a variety of means—seminars on curriculum change, workshops on innovative teaching approaches, engagement in innovative projects—large numbers of academic staff should have opportunities to consider the importance of continually evaluating and improving the curriculum to meet changing needs. For some staff, direct experience with curriculum committees or with innovation projects will allow them to develop new awareness and new habits of mind regarding the importance of continuing concern for the effectiveness of the curriculum. For others, formal participation in workshops or seminars will be especially helpful. For those who do not have advanced degrees, it may be appropriate to encourage them to have further studies that add to their teaching skills. For many academics, the growing use of information technology will offer other opportunities for incorporating new methods of teaching.

39. Mechanisms of quality assurance in a diverse system. The federal government has taken steps recently to establish a number of mechanisms for external quality assurance, including requirements for institutional evaluation and self-evaluation, strengthened procedures for accreditation and re-accreditation, and exit examinations that will be used to
measure program effectiveness. Taken together, these mechanisms comprise a potentially robust approach to quality control, affording a review of institutional inputs and procedures as well as offering public disclosure of program results. Most of these elements are new, however, and a number of issues must be faced if Brazil is to gain an effective and fully functioning system of quality assurance. Several implementation issues are particularly urgent and require attention at the national level. Equally as important is the need to balance the “control” mechanisms now in place with effective follow-up mechanisms within the universities to address deficiencies and make improvements that respond to what is learned by the external reviews.

40. Full implementation of a system of external quality assurance requires careful refinement and specification of procedures so that they are seen as fair, relevant and objectively applied. The new requirements for re-accreditation will provide a test of the extent to which the new system is able to build its own reputation for objectivity. There is every prospect that, as institutions that won accreditation under earlier procedures are now subjected to new reviews, there will be situations in which negative evidence emerges and where continued accreditation should thus be denied. Experience in other countries also suggests that the national agencies responsible for quality assurance must conduct multiple roles: even as they evaluate and judge institutions, they must also gain institutional cooperation and assist them in carrying out evaluation and change within the institution. There appears to be limited ability, at present, for Brazilian universities to conduct needed self-evaluations or to make good use of results they may receive from external evaluations. Consequently, it will be important for the national agencies responsible for quality assurance to consider ways to help build institutional capacity for internal review and response. A priority need is to help develop information systems that lend themselves to both institutional and national uses. Each university should be able to monitor key elements of student progress, for example, while a fully functioning system would also allow comparisons to be made among institutions.

41. To achieve a balanced approach to quality assurance, Brazil needs to support the development of a greater capacity for planning and program improvement within the universities. The periodic visits of outside evaluations need to be buttressed by ongoing planning and monitoring within the institution. As problems are identified, the universities need to be able to direct appropriate resources toward remedying them. Yet, it appears that Brazilian universities have limited ability to purchase new learning materials, equip laboratories or otherwise respond to identified needs. In part this is also a human resource problem: as other countries have learned, the long-term success of quality assurance systems depends vitally on the development of a culture of evaluation within universities, in which academics and administrators become sensitized to whether programs and courses are achieving their objectives and actively use available information as a mechanism for improvement. Special initiatives could be designed to assist academic departments, or ad hoc groups of instructional staff, to conduct small-scale studies that evaluate aspects of their programs and identify needed areas of weakness. A cycle of department-level self-evaluations has proved to be useful in many countries, both for providing quality improvement and for helping academic staff to develop familiarity and comfort with methods of evaluating their course offerings.
42. Diversity of research in a knowledge-based economy. One of the most important challenges faced by Brazil is the need for greater economic competitiveness due to the globalization of markets. Knowledge is becoming global, the distance between science and technology is diminishing, and the electronic technology revolution has radically transformed the storage, transmission, and use of information. Economic development is becoming more a process of accumulating knowledge than of accumulating capital. The Brazilian economy has tremendous opportunities for catching up with the industrialized nations. Brazil has the potential for following East Asian countries' positive experience with respect to technological development. Such a development appears to be linked to the ability to acquire and apply new knowledge. The basic components of these capabilities are skilled people, knowledge institutions, knowledge networks, and well-developed information and communication infrastructures. Higher education institutions, as knowledge institutions, play a critical role in the creation and transmission of knowledge, the training of a competitive workforce and of political and business leaders.

43. University research and development (R&D) activities play a critical role in translating knowledge into technical support and product innovation for the private and public sectors. The main output from university research is the trained young brains not the research results per se. It seems like the existing research base in Brazilian universities could support further graduation from advanced study programs. The low level of development of postgraduate education in Brazil, relative to the OECD countries, is problematic in an era in which growth industries, such as biotechnology, recruit from the doctoral level. This represents a serious constraint to building up research capacities, training university professors, and producing graduates with advanced technical and managerial skills for an advancing economy. It would be important to reevaluate CAPES' role in quality assurance and funding of graduate programs. Brazil has, nevertheless, a growing scientific community and recent studies show a growing impact in international science. There are however widespread problems for university research: absence of academic rigor and systematic evaluation of research performance, obsolete libraries and insufficient scientific equipment. Most research in higher education institutions functions at the periphery of the international scientific community, unable to participate in the knowledge production and adaptation necessary to confront the most important economic and social problems.

44. The challenge for Brazil is to find ways and means to concentrate its university research effort in a select tier of research universities, public and private, and support these with performance based institutional support in addition to the competitive funding programs already in place under CNPq, FINEP, and PADCT. The response to this challenge should be sought within a strategy for further differentiating the provision of higher learning through a variety of institutions: research based institutions and institutions that sustain scholarship, provide quality undergraduate or short programs, and others.

45. Diverse autonomy and its management implications. The greater flexibility required of the system discussed above (particularly in section II on curriculum) will only be able to be delivered if individual institutions are able to be flexible in their organization and management. Responding to the needs of a more flexible curriculum and to the developing demand (from students and from the economy) will require an institution to be able to move resources between areas, to reduce resources in some areas and to increase them in others –
and to enable resources to follow effort, for example for service teaching. This would often require decisions to be made at the institution level rather than at the lower faculty or departmental levels.

46. Further, there are significant inefficiencies within the current public sector institutions in terms of the use of their human and other resources. The historical explanation for this lies not with the institutions themselves, but with the set of rules and funding arrangements within which they have had to operate: for example even if it were possible to close a course for which there was very limited demand, resulting savings would not accrue to the institution so there is no incentive to do so. Further, staff are employed directly by the Ministry and student numbers are also set by the Ministry. Again, there is no incentive (and no simple mechanism) for increasing the efficiency with which staff are used—although there would appear to be no reason why the MEC could not progressively increase student numbers (by reference to demand) year on year. In addition there is no penalty (either on the institution or on the student) if a student drops out or extends his period of study, so there is no reason for an institution to try to reduce drop outs.

An initial view would suggest that there is scope, within the overall envelope of existing resources, to expand the public sector by something between 30 percent and 100 percent. Such inefficiencies are best addressed at the level of the individual institution by allowing and then encouraging better internal management. Coupled with the need for greater flexibility, this produces a powerful set of reasons for increasing the managerial autonomy of public sector institutions of higher education. However this raises two sets of issues, the first concerned with the appropriate level of autonomy and how to achieve it, the second concerned with the internal management implications.

47. Increasing autonomy. Although increased autonomy is a desirable goal for the reasons outlined above, it may not be seen as desirable by all those concerned. The 'promise' of greater autonomy may be perceived as a 'threat' by many—and especially by those in weaker institutions and/or by those less secure about their own position. The first issue is thus how to devise a program of increased autonomy in ways which are sufficiently attractive to be acceptable to the main constituents. This may well vary in different institutions (and in different regions); incentives to encourage a welcome for increased autonomy will depend on the nature and expected future of the institution itself. For some, it might be enhanced access to research funding; for others, it might be enhanced access to funds for equipment and for staff retraining. A uniform program would be inappropriate; it would be better to proceed on an experimental basis.

48. One way of doing this would be to take advantage of the current national program of administrative reform, one of the purposes of which is to increase the autonomy of various parts of the government operations. The autonomy operates at two levels—the basic difference between them being essentially the employment status of the staff (continuing as civil servants in one case, or not doing so in the other). The issue would be whether it would be possible for a small number of universities to be considered within this administrative reform program. They would need to be chosen because they were keen and able, as institutions, to take advantage of the increased autonomy which such reform would produce. It would seem sensible to start with the more prestigious universities as their gain would be the more obvious; there would appear to be four candidates. Any such pilots would require some
technical assistance to develop their managerial capacity to cope with the greater autonomy, and would probably need an injection of external management expertise to sustain the change.

49. Managerial capacity. This leads to the second set of issues which is concerned with the managerial capacity of universities to operate under a system of greater autonomy. At present, public sector higher education institutions have little need for much management as so many of their actions are circumscribed. Management capacity would need to be developed. There are three associated issues. The first concerns the role of the center of the institution with respect to the faculties and departments—and in particular the role, powers, responsibilities, and accountability of the Rector and the senior management team, including the question of the process of selection for the senior managers themselves, including the Rector. The center will need to be able to make decisions, or at least ensure that decisions are made, about priorities for the institution, about the internal allocation of resources, and about the efficient use of resources. The center will also need a mechanism for holding the constituent faculties (or departments) to account for their use of resources, and to ensure that there are clear responsibilities for each whole course (which there would appear not to be at present). This is a very different role from anything undertaken at the center at present and would be both difficult and, at least initially, contentious.

50. The second issue concerns the development and operation of a planning and budgeting process as the means by which an institution responds to demand, exercises flexibility and implements change. Such planning, both for teaching and for research activities (if any), needs to be based on various forms of self evaluation, an analysis of the external contexts within which the institution operates, an analysis of the real cost of activities and their alternatives. In addition, it also needs to use a decision making process which brings all this together and agrees priorities and hence budgets—not least for staff. Again little of this is done at present and nor is there yet adequate management information for these purposes. It would seem desirable for such a planning process to be operated by all institutions, not simply by those preparing for greater autonomy. This might constitute a valuable program of development across all public sector institutions.

51. The third issue concerns the arrangements for and development of staff, both academic and non-academic. One of the main problems with the current system concerns the deployment of staff and the lack of accountability for the use of their time; further, the categorization of staff (e.g. the 354 categories of non-teaching staff) is in itself a guarantee of inflexibility and inefficiency. The benefits available to staff, and especially the right to consolidate responsibility allowances into salary even after the responsibility has ended, would put a heavy burden on any institution which had to meet its own staff cost. It must be assumed that the cost of retirees would continue to be met by government directly rather than from the budget of the institution from which they happened to retire.

52. Funding diversity. This section is concerned with the public funding of higher education. Of course private institutions will continue to rely on various forms of private funding—mainly fees. Public institutions, even at present, also have access to funds other than public ones, for example from charges for peripheral activities such as catering, car parking, or hiring out accommodation for conferences or other uses. There may be scope for such income earning activities to be more actively pursued. A further important source of income for many
institutions will be from short courses and from research or consultancy activities—although research funding and the payment for research infrastructure costs is in itself an issue. Public funding is currently provided only to public institutions (with the exception of student loans—see below) and consists almost entirely of the payment of the staff of institutions directly by the MEC, comprising over 90 percent of public funds made available to institutions. The MEC also determines staff number and, through its rules, staff grades. Pay is uniform across the entire federal public system - which is a significant contributor to staff mobility. Such input-based funding is one of the major causes of the rigidity and of the inefficiencies within the current system.

53. Public funding. Public funding of higher education is one of the most significant ways of influencing the higher education system. There are four fundamental issues. The first concerns the basis by which public funds are made available to support higher education. There are several options which can be considered; the current arrangement funds inputs (by paying staff) with only limited reference to the expected resulting activities of the institution concerned. Other options include funding the process of education in the institution, funding the outputs achieved, or funding the students and allowing them to choose their institution. The current arrangement is probably the worst in terms of achieving flexibility, responsiveness and efficiency in the education system, but the best if the primary aim is to provide secure employment for those who work in the system. Any method other than funding staff directly has some risks for staff (although there are always risks for staff with any form of public funding).

54. The second, related issue is whether public funds, by whatever route, should be restricted to publicly owned institutions. At present they are (apart from funds for loans), but there is no intrinsic reason for this if, for example, a private provider were to offer better value for money for the public funds. Public funding does not need to be linked to public ownership (nor vice versa). A subsidiary issue is whether federal funds might be spent at State or Municipal institutions—for example as part of a regional policy.

55. The third issue concerns the blocks into which any public funds should be divided. The simplest arrangement from a government perspective would be to have a single block (however calculated) which institutions could use as they thought fit—but subject to accountability for its use. Such an arrangement requires the highest level of managerial skills within the institution—it is always easier to blame someone else for the distribution of resources than it is to take responsibility for it.

56. The fourth issue concerns the total level of public funding to be made available to higher education—by whatever route. Government needs, at least in theory, some way of linking its policies on higher education to the funding it is prepared to make available to deliver them. Of course the amount depends on the nature of the policies themselves and in particular on the intended participation rate of students and on the extent to which government expects some students to meet some or all of their own costs (e.g. in the private universities). This is therefore the ultimate issue in that it can only be properly addressed once government is clear of its position on all the others. Of course many governments operate in the reverse direction: deciding the total amount that they are prepared to spend on higher education and
then developing policies consistent with that total. Neither approach is clearly superior to the other; what is unacceptable is for the funding to be inconsistent with the policies.

57. Student loans. Loans are currently available to some students at private institutions to help defray some of the costs of their tuition. They are a device to encourage access and to help reduce inequity—although of course while some students receive free higher education, inequity will be inevitable. There are three issues. The first concerns the coverage of student loans. Students in private institutions have their tuition and other living costs to meet; students in public institutions only have their living costs to meet. The policy issue is whether the maximum level of loan should be set at an expected maximum student expenditure, or whether all students, no matter how poor, should be expected to meet some of their costs directly. As the cohort increases, so the more poorer students will enter the system and hence this question becomes more pertinent.

58. The second issue concerns the design of the scheme. At present a student seeking a loan is either eligible or not and if eligible is entitled to its full amount; it would be possible to graduate this. Also at present all students with loans are required to repay them at the same rate irrespective of their personal circumstances; some form of income contingent basis would be more equitable. No loan scheme will ever be self-financing, so another design question concerns the extent of public funding for the scheme—this is clearly related to the first issue. Finally on design, the very existence of the scheme can be used as a lever on institutions as most will wish to have the students on their programs be eligible for loans.

59. The third issue is the administration of the loan scheme. There have been recent significant improvements to its administration, but there are still aspects, which could be considered for improvement. For example, it would be worth considering whether it is cost effective to use the institutions themselves to help administer the scheme and/or whether the tax system might be a better source of information about family income—and a better repayment collection agent.
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