Introduction

The intended purpose for the development of the analysis in this paper is to provide information on the Brazilian higher education system in order to

"enhance the co-operation between countries with large higher education systems, to share experiences and strategies in order to support the improvement of higher education for global equity, stability, security and prosperity."¹

This statement follows the recommendations established during the BC's Going Global 2014 conference in Miami, which occurred in April/2014, when that participating countries agreed

"to work collaboratively in this project over the next 12 months to map the recent changes in governance, regulation, funding structures and the academic profession in our countries, that account for a bulk of higher education enrolment worldwide, in order to enhance cooperation to support the improvement of higher education for global equity, stability security and prosperity. This process aims to identify and explore similarities and differences and examine key trends, innovative policy interventions and developments in higher education, particularly in our countries, in order to share best practice in the development of national higher education systems which can effectively deliver success against the multitude of demands put on them."

In order to achieve those ends, and aligning themes as proposed in the Term of Reference, the paper is organized as follows:

- 1. Overview of the Brazilian system of higher education
- 2. Implications of massification of the higher education system
- 3. Governance, regulation and quality assurance
- 4. Financing higher education in Brazil: public and private sector
- 5. Academic profession: measuring performance in the different sectors

6. Recommendations

References

¹ Term of Reference, British Council, September 2014.

1. Overview of the Brazilian system of higher education (2000 words)

1.1. Brief historical overview (1800-1994)²

The Brazilian system of higher education had a very late starting, compared to European countries, the US and other New World countries, and it has developed very slowly until quite recently. Just like in other Portuguese colonies, higher education was not allowed to develop during colonial times, which, in the case of Brazil, extended over a period of more than three centuries, from 1500 to 1822. In 1808, fleeing the imminent invasion by Napoleon's French Army, the Portuguese crown was moved to Rio de Janeiro, the colony's capital. Upon arrival, the king, João VI, started to establish national institutions, among them a Military Engineering Academy, one School of Law and another of Medicine. At that time, there were already 26 universities distributed along Spanish America, and many colleges established in the United States and Canada.

The situation did not change much after the independence from Portugal was achieved in 1822; by 1889, when the political regime changed from monarchic to republican, Brazil had only a few HE institutions established in the very large country. It is important to observe that, meanwhile, as the science-based phase of the industrial revolution went underway, countries like the United States had expanded their HE systems at very fast paces. While Brazil, in 1889, had only three engineering schools to show, the US had already more than 80 (Carnegie Report, 1918). Just a few decades earlier, in 1860, there were only one HEI dedicated to engineering in Brazil and two in the US, thus showing how important the second half of the XIXth century was in that respect to differentiate countries all over the world.

Between 1889 and 1930, Brazilian HE underwent some expansion, but none comparable to what the US, Canada and European countries, especially Germany, had already achieved. By 1930, there were less than 20,000 students enrolled in HEIs in Brazil (Cunha 2007a). Graduate education, either in the form of a Master's or a Doctorate degree, was non-existent. Research restricted to a few Research Institutes, none related to a university.

After 1930, in the wake of political change (Schwartzman 2001, Pedrosa 2014), the whole educational system in Brazil was reformed, including higher education. In São Paulo, the moment of change brought about the founding of the University of São Paulo in 1934, still today the most important university in the country. Science and research were prominently present in its founding charter, and a new era started in Brazil for higher education (Schwartzman 2001, Brito Cruz and Pedrosa 2013).

In a series of decrees and laws of 1931, the federal government, under the rule of Getúlio Vargas, who would stay in power until the end of WWII, developed the rules that Brazilian universities should follow, a national system of accreditation and established the National Council of Education, which still exists today and continues to function as the main regulatory agency in the country, at all educational levels. Despite the institutional changes, the number of students grew from almost 20,000 in 1930 to only 27,000 in 1945, when Vargas left power (Cunha 2007a).

Between 1945 and 1960, many state or private HEIs were absorbed into a growing federal system, except the University of São Paulo, which followed a more liberal set of rules and had strong ties to the state's political establishment. Still, by 1960, undergraduate enrolment had grown to only about 80 thousand students, and just a few students were developing graduate studies.

From 1960 to 1980, education underwent its first wave of expansion, going from 80 thousand students enrolled in 1960 to 1.38 million at the end of that period. Graduate education also expanded and was subject to reforms, which included an assessment system that is still in place, under rules and criteria developed mainly by the scientific community, which helped establish a relatively organized and

² For more detail on the development of Brazilian HE system see Schwartzman (1991) and Brito Cruz & Pedrosa (2013).

stable system of post-graduate education in Brazil. Enrolment went from almost none in 1960 to 4,419 students in Doctorate and 34,550 in Master's programs, in 1980.

Between 1980 and 1994, Brazil underwent a period of enormous political e economic turbulence, moving from an authoritarian regime under military rule to a democratic system. Finally, in 1994, the country was able to reform its economic and monetary system, ending two decades of high inflation and a long period of economic stagnation. That period was also characterized by stagnation in undergraduate enrolment, which experienced a very small expansion to 1.66 million students (from 1.38 million in 1980). Graduate education, on the other hand, followed a relatively fast and diversified expansion. Enrolment grew from almost 39 thousand in 1980 to over 57 thousand in 1994, of which 17 thousand were enrolled in Doctorate programs (Martins 2000), in all areas.

As a rule, almost all graduate programs were developed in public universities, which include both federal and state institutions. On the other hand, undergraduate education had already developed a large private subsystem. By 1994, of the 1.66 million students enrolled, 970 thousand, or 58%, studied at private institutions. We will see below that there have been significant shifts in the last 20 years, with fast rates of expansion in enrolment figures and in diversification of types of institutions, including a recent growth in the private subsystem of for-profit HEIs.

1.2. Expansion of enrolment, number of institutions, institutional shifts and growth in complexity of organizational structures, public and private: 1994-2013

1.2.1. Overview of Brazilian HE system and general data³

Staring in 1994, when economic stabilization was achieved after several decades of economic (and political) turmoil, up to present time, Brazilian HE has experienced a period of fast and steady expansion. Undergraduate enrolment grew from 1.66 million in 1994 to 7.40 million in 2013. Almost 74% of them are enrolled in private institutions (from 58% in 1994), and a much larger fraction than before (about 50% of that group), is currently enrolled in for-profit HEIs. Figure 1 shows the evolution of undergraduate enrolment from 1994 to 2013, totals, public and private.

Figure 1 - Undergraduate enrolment, public, private and total, 1994-2013. Sources: Census of Higher Education, 1994-2012, and preliminary Census data for 2013, Ministry of Education, Brazil.



2008*: see Footnote 7 associated to Figure 2.

Total enrolment showed a yearly growth rate of 8.1%, totalizing 340% during the 19-year period from 1994 to 2013. The public system grew by 5.6% a year (total of 180%) and the private system at a rate of 9.4% a year (total of 454%). From making up 58% of the enrolment in 1994, the private sector enrolled 74% of all students in 2013.

For use in the rest of the report, we will need more detailed information, including number of institutions and enrolment, by institutional academic type (universities, colleges, faculties, etc.) and by administrative category (public and private). Tables 1 and 2 include information on number of HEIs and enrolment, according to those aspects, for selected years⁴.

³ We will describe in this report the development of the undergraduate system, which is the more relevant for the purposes of access analysis from an international perspective. For a description of the development of graduate education and scientific research, see Brito Cruz & Pedrosa (2013).

⁴ In order to keep the tables within reasonable sizes, we have selected years that have some relevance in terms of availability of information and/or of start of new policies. 1999 is the first year for which we have data for the different administrative types of private HEIs, 2004 is the year before a major change in policy towards the private sector was introduced (PROUNI), 2007 marks the announcement of a new expansion programme for

| 1999 | Federal | State | City | Private I | Private II | Public | Private | Total |
|---------------------------|---------|-------|------|----------------|----------------|--------|---------|-------|
| Universities | 39 | 30 | 3 | 26 | 57 | 72 | 83 | 155 |
| University Centres | 0 | 0 | 0 | 22 | 17 | 0 | 39 | 39 |
| Colleges/Faculties | 21 | 42 | 57 | 478 | 305 | 120 | 783 | 903 |
| All | 60 | 72 | 60 | 526 | 379 | 192 | 905 | 1,097 |
| 2004 | | | | | | | | |
| Universities | 46 | 32 | 5 | 26 | 60 | 83 | 86 | 169 |
| University Centres | 1 | 0 | 2 | 60 | 44 | 3 | 104 | 107 |
| Colleges/Faculties | 40 | 43 | 55 | 1,315 | 284 | 138 | 1,599 | 1,737 |
| All | 87 | 75 | 62 | 1,401 | 388 | 224 | 1,789 | 2,013 |
| 2007 | | | | | | | | |
| Universities | 55 | 35 | 6 | 28 | 59 | 96 | 87 | 183 |
| University Centres | 0 | 0 | 4 | 63 | 53 | 4 | 116 | 120 |
| Colleges/Faculties | 51 | 47 | 51 | 1,503 | 326 | 149 | 1,829 | 1,978 |
| All | 106 | 82 | 61 | 1,594 | 438 | 249 | 2,032 | 2,281 |
| | | | | | | | | |
| 2010 | Federal | State | City | For- profit | Non- profit | Public | Private | Total |
| Universities | 58 | 38 | 5 | 19 | 70 | 101 | 89 | 190 |
| University Centres | 0 | 1 | 6 | 27 | 92 | 7 | 119 | 126 |
| Colleges/Faculties | 41 | 69 | 60 | 905 | 987 | 170 | 1,892 | 2,062 |
| All | 99 | 108 | 71 | 951 | 1,149 | 278 | 2,100 | 2,378 |
| 2012 | | | | | | | | |
| Universities | 59 | 38 | 11 | 22 | 63 | 108 | 85 | 193 |
| University Centres | 0 | 1 | 9 | 39 | 90 | 10 | 129 | 139 |
| Colleges/Faculties | 44 | 77 | 65 | 928 | 970 | 186 | 1,898 | 2,084 |
| All | 103 | 116 | 85 | 989 | 1,123 | 304 | 2,112 | 2,416 |

Table 1 - Institutions by academic type and administrative category, selected years. Sources: Census of Higher Education: Synopsis 1999/2004/2007, Microdata for 2010/2012, INEP/MEC, Brazil. (See Footnote 5 on Private I and II categories.)

Table 2 - Undergraduate enrolment by academic type and administrative category, selected years. Sources: Census of Higher Education: CES Synopsis for 1999/20042007; CES Microdata for 2010/2012, INEP/MEC, Brazil. (See Footnote 5 on Private I and II categories.)

| 1999 | Federal | State | City | Private I | Private II | Public | Private | Total |
|--------------|---------|-------------|--------|--------------|---------------|---------|---------|---------------|
| Universities | 421,353 | 264,93 8 | 38,891 | 267,267 | 627,285 | 725,182 | 894,552 | 1,619,7 34 |
| University | 0 | 0 | 0 | 97,859 | 63,118 | 0 | 160,977 | 160,977 |

federal HEIs (REUNI), 2010 was the first year that data includes the split between for- and non-profit HEIs and the year before the expansion of the federal loan system (FIES), 2012 is the last year we have access to detailed data (as of October/2014).

| Centres | | | | | | | | |
|--|--|--|--|---|---|--|--|--|
| Colleges/Facult ies | 21,209 | 37,442 | 48,189 | 286,236 | 196,158 | 106,840 | 482,394 | 589,234 |
| All | 442,562 | 302,38 0 | 87,080 | 651,362 | 886,561 | 832,022 | 1,537,9 23 | 2,369,9 45 |
| 2004 | | | | | | | | |
| Universities | 552,013 | 447,69 1 | 59,208 | 411,407 | 948,961 | 1,058,9 12 | 1,360,3 68 | 2,419,2 80 |
| University Centres | 1,205 | | 12,678 | 340,599 | 261,914 | 13,883 | 602,513 | 616,396 |
| Colleges/Facult ies | 39,487 | 41,838 | 60,197 | 859,040 | 187,106 | 141,522 | 1,046,1 46 | 1,187,6 68 |
| All | 592,705 | 489,52 9 | 132,08 3 | 1,611,0 46 | 1,397,9 81 | 1,214,3 17 | 3,009,0 27 | 4,223,3 44 |
| 2007 | | | - | - | - | - | - | - |
| Universities | 604,088 | 506,86 0 | 65,945 | 789,673 | 964,551 | 1,176,8 93 | 1,754,2 24 | 2,931,1 17 |
| University Centres | 0 | 0 | 17,617 | 365,814 | 322,211 | 17,617 | 688,025 | 705,642 |
| Colleges/Facult ies | 37,006 | 43,229 | 60,432 | 1,239,6 12 | 233,109 | 140,667 | 1,472,7 21 | 1,613,3 88 |
| | | | | | | | | |
| All | 641,094 | 550,08 9 | 143,99 4 | 2,395,0 99 | 1,519,8 71 | 1,335,1 77 | 3,914,9 70 | 5,250,1 47 |
| All | 641,094 | 550,08 9 | 143,99 4 | 2,395,0 99 | 1,519,8 71 | 1,335,1 77 | 3,914,9 70 | 5,250,1 47 |
| All 2010 | 641,094 Federal | 550,08 9 State | 143,99 4 City | 2,395,0 99 For- profit | 1,519,8 71 Non- profit | 1,335,1 77 Public | 3,914,9 70 Private | 5,250,1 47 Total |
| All 2010 Universities | 641,094 Federal 849,727 | 550,08 9 State 547,87 8 | 143,99 4 City 38,277 | 2,395,0 99 For- profit 625,569 | 1,519,8 71 Non- profit 1,415,5 13 | 1,335,1 77 Public 1,435,8 82 | 3,914,9 70 Private 2,041,0 82 | 5,250,1 47 Total 3,476,9 64 |
| All 2010 Universities University Centres | 641,094 Federal 849,727 0 | 550,08 9 State 547,87 8 1,199 | 143,99 4 City 38,277 12,967 12,967 | 2,395,0 99 For- profit 625,569 290,453 | 1,519,8 71 Non- profit 1,415,5 13 536,697 | 1,335,1 77 Public 1,435,8 82 14,166 | 3,914,9 70 Private 2,041,0 82 827,150 | 5,250,1 47 Total 3,476,9 64 841,316 |
| All 2010 Universities University Centres Colleges/Facult ies | 641,094 Federal 849,727 0 88,977 | 550,08 9 State 547,87 8 1,199 52,230 | 143,99 4 City 38,277 12,967 52,416 | 2,395,0 99 For- profit 625,569 290,453 1,150,4 51 | 1,519,8 71 Non- profit 1,415,5 13 536,697 745,379 | 1,335,1 77 Public 1,435,8 82 14,166 193,623 | 3,914,9 70 Private 2,041,0 82 827,150 1,895,8 30 | 5,250,1 47 Total 3,476,9 64 841,316 2,089,4 53 |
| All 2010 Universities University Centres Colleges/Facult ies All | 641,094 Federal 849,727 0 88,977 938,704 | 550,08 9 State 547,87 8 1,199 52,230 601,30 7 | 143,99 4 City 38,277 12,967 52,416 103,66 0 | 2,395,0 99 For- profit 625,569 290,453 1,150,4 51 2,066,4 73 | 1,519,8 71 Non- profit 1,415,5 13 536,697 745,379 2,697,5 89 | 1,335,1 77 Public 1,435,8 82 14,166 193,623 1,643,6 71 | 3,914,9 70 Private 2,041,0 82 827,150 1,895,8 30 4,764,0 62 | 5,250,1 47 Total 3,476,9 64 841,316 2,089,4 53 6,407,7 33 |
| All 2010 Universities University Centres Colleges/Facult ies All 2012 | 641,094 Federal 849,727 0 88,977 938,704 | 550,08 9 State 547,87 8 1,199 52,230 601,30 7 | 143,99 4 City 38,277 12,967 52,416 103,66 0 | 2,395,0 99 For- profit 625,569 290,453 1,150,4 51 2,066,4 73 | 1,519,8 71 Non- profit 1,415,5 13 536,697 745,379 2,697,5 89 | 1,335,1 77 Public 1,435,8 82 14,166 193,623 1,643,6 71 | 3,914,9 70 Private 2,041,0 82 827,150 1,895,8 30 4,764,0 62 | 5,250,1 47 Total 3,476,9 64 841,316 2,089,4 53 6,407,7 33 |
| All 2010 Universities University Centres Colleges/Facult ies All 2012 Universities | 641,094 Federal 849,727 0 88,977 938,704 974,322 | 550,08 9 State 547,87 8 1,199 52,230 601,30 7 5554,18 8 | 143,99 4 City 38,277 12,967 52,416 103,66 0 109,26 5 | 2,395,0 99 For- profit 625,569 290,453 1,150,4 51 2,066,4 73 851,288 | 1,519,8 71 Non- profit 1,415,5 13 536,697 745,379 2,697,5 89 1,333,9 35 | 1,335,1 77 Public 1,435,8 82 14,166 193,623 1,643,6 71 1,637,7 75 | 3,914,9 70 Private 2,041,0 82 827,150 1,895,8 30 4,764,0 62 2,185,2 23 | 5,250,1 47 Total 3,476,9 64 841,316 2,089,4 53 6,407,7 33 3,822,9 98 |
| All 2010 Universities University Centres Colleges/Facult ies All 2012 Universities University | 641,094 Federal 849,727 0 88,977 938,704 974,322 | 550,08 9 State 547,87 8 1,199 52,230 601,30 7 5554,18 8 | 143,99 4 City 38,277 12,967 52,416 103,66 0 109,26 5 | 2,395,0 99 For- profit 625,569 290,453 1,150,4 51 2,066,4 73 851,288 | 1,519,8 71 Non- profit 1,415,5 13 536,697 745,379 2,697,5 89 1,333,9 35 | 1,335,1 77 Public 1,435,8 82 14,166 193,623 1,643,6 71 1,637,7 75 21,872 | 3,914,9 70 Private 2,041,0 82 827,150 1,895,8 30 4,764,0 62 2,185,2 23 1,064,9 | 5,250,1 47 Total 3,476,9 64 841,316 2,089,4 53 6,407,7 33 3,822,9 98 1,086,7 |
| All 2010 Universities University Centres Colleges/Facult ies All 2012 Universities University Centres | 641,094 Federal 849,727 0 88,977 938,704 974,322 0 | 550,08 9 State 547,87 8 1,199 52,230 601,30 7 554,18 8 1,689 | 143,99 4 City 38,277 12,967 52,416 103,66 0 109,26 5 20,183 | 2,395,0 99 For- profit 625,569 290,453 1,150,4 51 2,066,4 73 851,288 561,996 | 1,519,8 71 Non- profit 1,415,5 13 536,697 745,379 2,697,5 89 1,333,9 35 502,919 | 1,335,1 77 Public 1,435,8 82 14,166 193,623 1,643,6 71 1,637,7 75 21,872 | 3,914,9 70 Private 2,041,0 82 827,150 1,895,8 30 4,764,0 62 2,185,2 23 1,064,9 15 | 5,250,1 47 Total 3,476,9 64 841,316 2,089,4 53 6,407,7 33 3,822,9 98 1,086,7 87 |
| All 2010 Universities University Centres Colleges/Facult ies All 2012 Universities University Centres Colleges/Facult | 641,094 Federal 849,727 0 88,977 938,704 974,322 0 | 550,08 9 State 547,87 8 1,199 52,230 601,30 7 5554,18 8 1,689 | 143,99 4 City 38,277 12,967 52,416 103,66 0 109,26 5 20,183 55,288 | 2,395,0 99 For- profit 625,569 290,453 1,150,4 51 2,066,4 73 851,288 561,996 1,145,1 (1) | 1,519,8 71 Non- profit 1,415,5 13 536,697 745,379 2,697,5 89 1,333,9 35 502,919 | 1,335,1 77 Public 1,435,8 82 14,166 193,623 1,643,6 71 1,637,7 75 21,872 238,171 | 3,914,9 70 Private 2,041,0 82 827,150 1,895,8 30 4,764,0 62 2,185,2 23 1,064,9 15 1,910,1 28 | 5,250,1 47 Total 3,476,9 64 841,316 2,089,4 53 6,407,7 33 3,822,9 98 1,086,7 87 2,148,2 |
| All 2010 Universities University Centres Colleges/Facult ies All 2012 Universities University Centres Colleges/Facult ies | 641,094 Federal 849,727 0 88,977 938,704 974,322 0 113,186 1087 5 | 550,08 9 State 547,87 8 1,199 52,230 601,30 7 554,18 8 1,689 69,597 6 9,597 | 143,99 4 City 38,277 12,967 52,416 103,66 0 109,26 5 20,183 55,388 184.92 | 2,395,0 99 For- profit 625,569 290,453 1,150,4 51 2,066,4 73 851,288 561,996 1,145,1 61 2,559 4 | 1,519,8 71 Non- profit 1,415,5 13 536,697 745,379 2,697,5 89 1,333,9 35 502,919 764,967 2,601 8 | 1,335,1 77 Public 1,435,8 82 14,166 193,623 1,643,6 71 1,637,7 75 21,872 238,171 1,907,9 | 3,914,9 70 Private 2,041,0 82 827,150 1,895,8 30 4,764,0 62 2,185,2 23 1,064,9 15 1,910,1 28 5 160 2 | 5,250,1 47 Total 3,476,9 64 841,316 2,089,4 53 6,407,7 33 3,822,9 98 1,086,7 87 2,148,2 99 7,059,0 |

Tables 1,2 use the following administrative categories: *public*, which may be split into *Federal/State/City*, and *Private*, which may be split into two subgroups, *Private I and Private II*⁵ for years 1999/2004/2007 and into the more traditional *For-/Non-profit* categories, for years 2010/2012.

⁵ For the years before 2010, administrative category "Private I" includes all HEIs that were classified as "private in the strict sense" in the Census of Higher Education, and "Private II" includes those that were considered "beneficent" institutions, part of the "non-profit" group (but not all of them). Starting with the Census of 2010, the private subcategories were established as "for-profit" and "non-profit", respectively, so that the data for 2010 and 2012 follows the current methodology.

The institutional academic types are: *Universities, University Centres and Colleges/Faculties*. The latter group includes isolated specialized faculties (like small Law and Medical schools), smaller colleges, and also the *public technological colleges*.

Universities are comprehensive HEIs that are expected to develop graduate education and research, besides undergraduate education. They enjoy, by law, academic autonomy. *University centres* are relatively large HEIs, of a comprehensive nature, but which are not expected to develop either graduate education or conduct research. They would be, in international terms, "teaching universities". They almost do not exist in the public sector, except for a few municipal units, localized in smaller cities. On the other hand, they make up for a large part of the private sector in terms of enrolment. *Colleges* and *faculties* comprise the largest group of HEIs in the private sector, and also enrol a large group of students. In the public sector they are mostly *technological colleges*⁶, typically small in size (between 500 and 2,000 students each), offering degrees of a *vocational* character (more about that below). Vocational programs are also offered by private HEIs, but not in dedicated institutions.

We collect in Table 3 undergraduate participation rates for years 2010 and 2012, derived from Table 2, which will help in the analysis along the report.

Table 3 - Participation* in number of HEIs and undergraduate enrolment, by academic type and administrative category, 2010/2012. Source: Derived from Table 2.

| | Federal | l | State | | City | | For-pro | fit | Non-pro | ofit | Public | | Private | |
|------------------------|---------|-------|-------|-------|------|-------|---------|-------|---------|-------|--------|-------|---------|-------|
| | HEIs | Enrol | HEIs | Enrol | HEIs | Enrol | HEIs | Enrol | HEIs | Enrol | HEIs | Enrol | HEIs | Enrol |
| 2010 | | | | | | | | | | | | | | |
| Universities | 30.5% | 24.4% | 20.0% | 15.8% | 2.6% | 1.1% | 10.0% | 18.0% | 36.8% | 40.7% | 53.2% | 41.3% | 46.8% | 58.7% |
| University Centres | 0.0% | 0.0% | 0.8% | 0.1% | 4.8% | 1.5% | 21.4% | 34.5% | 73.0% | 63.8% | 5.6% | 1.7% | 94.4% | 98.3% |
| Colleges/ Faculties | 2.0% | 4.3% | 3.3% | 2.5% | 2.9% | 2.5% | 43.9% | 55.1% | 47.9% | 35.7% | 8.2% | 9.3% | 91.8% | 90.7% |
| All | 4.2% | 14.6% | 4.5% | 9.4% | 3.0% | 1.6% | 40.0% | 32.2% | 48.3% | 42.1% | 11.7% | 25.7% | 88.3% | 74.3% |
| 2012 | | | | | | | | | | | | | | |
| Universities | 30.6% | 25.5% | 19.7% | 14.5% | 5.7% | 2.9% | 11.4% | 22.3% | 32.6% | 34.9% | 56.0% | 42.8% | 44.0% | 57.2% |
| University Centres | 0.0% | 0.0% | 0.7% | 0.2% | 6.5% | 1.9% | 28.1% | 51.7% | 64.7% | 46.3% | 7.2% | 2.0% | 92.8% | 98.0% |
| Colleges/ Faculties | 2.1% | 5.3% | 3.7% | 3.2% | 3.1% | 2.6% | 44.5% | 53.3% | 46.5% | 35.6% | 8.9% | 11.1% | 91.1% | 88.9% |
| All | 4.3% | 15.4% | 4.8% | 8.9% | 3.5% | 2.6% | 40.9% | 36.2% | 46.5% | 36.9% | 12.6% | 26.9% | 87.4% | 73.1% |

* - Participation is given in relation to total for each academic type, so that rows sum up to 100%, but columns do not.

A final general aspect to be considered is how academic degrees are classified in Brazilian HE. The most frequent degree type is that of the Bachelor degree ("Bacharelado"), which, in Brazil, has no subdivision, like in other countries, into Science and Arts alternatives. It is important to observe that undergraduate Bachelor degree program cover all areas in Brazilian HE, including professional degrees like Law and Medicine. Secondly, one has the Teaching License degree ("Licenciatura"), which, in Brazil, is a full degree in all areas that are present in basic education, starting with the general Pedagogy program that offers the first degree for those that will teach the early years of primary education, and other programs like Portuguese language, foreign languages (English and Spanish), Mathematics, Geography, History, Philosophy, Sociology and the natural sciences (Biology, Physics and Chemistry). Finally, one has the Technological degree ("Tecnológico"), which is granted to those following programs with a vocational content.

⁶ There are only federal and state public technological colleges. All federal colleges are of that type. Of the 77 state colleges in existence in 2012, 61 are in the same group. This means that most of the enrolment in federal and state colleges is of the vocational type.

Bachelor and Teaching License degree programs are expected to be completed within four years of study. The exceptions are Engineering and Medicine programs, which have expected graduation times of five and six years, respectively. They should be considered as Type 5A programs in the Unesco's ISCED classification. Technological degree programs are expected to be completed in 3 years and should be considered as ISCED Type 5B programs. Increasingly, all degree program types are being offered using distance-learning teaching models. All programs may be also offered in distance-learning modes, in principle (but of course some, like Medicine, have not been offered as such).

Table 4 includes enrolment figures for the three types of academic degrees, offered under regular and distance-learning modes, for public and private HEIs. We have included years used in Tables 1,2 and 2013, for which data have been made available.

| | All | | | Regular | (residenti | al) | Distance-learning | | | |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|------------|-------------|--|
| | | | | | | | | Publi | Priva | |
| | Total | Public | Private | Total | Public | Private | Total | с | te | |
| 2004 | 4,223,3 44 | 1,214,3 17 | 3,009,0 27 | 4,163,7 33 | 1,178,3 28 | 2,985,4 05 | 59,611 | 35,98 9 | 23,62 2 | |
| Bachelor | 2,788,4 06 | 582,17 7 | 2,206,2 29 | 2,785,8 63 | 582,17 7 | 2,203,6 86 | 2,543 | - | 2,543 | |
| Teach License | 928,59 9 | 427,26 5 | 501,33 4 | 877,14 0 | 391,27 6 | 485,86 4 | 51,459 | 35,98 9 | 15,47 0 | |
| Technolo gical | 158,91 6 | 45,573 | 113,34 3 | 153,30 7 | 45,573 | 107,73 4 | 5,609 | - | 5,609 | |
| Bach/Tea chLic | 344,57 0 | 157,26 9 | 187,30 1 | 344,57 0 | 157,26 9 | 187,30 1 | - | _ | _ | |
| Not informed | 2,853 | 2,033 | 820 | 2,853 | 2,033 | 820 | - | - | - | |
| 2007 | 5,250,1 47 | 1,335,1 77 | 3,914,9 70 | 4,880,3 81 | 1,240,9 68 | 3,639,4 13 | 369,76 6 | 94,20 9 | 275,5 57 | |
| Bachelor | 3,419,4 95 | 702,81 4 | 2,716,6 81 | 3,334,3 70 | 657,79 4 | 2,676,5 76 | 85,125 | 45,02 0 | 40,10 5 | |
| Teach License | 1,062,0 73 | 407,78 4 | 654,28 9 | 846,34 5 | 359,89 5 | 486,45 0 | 215,72 8 | 47,88 9 | 167,8 39 | |
| Technolo gical | 414,82 2 | 64,820 | 350,00 2 | 347,15 0 | 63,520 | 283,63 0 | 67,672 | 1,300 | 66,37 2 | |
| Bach/Tea | | · · · | | | | | 1,241 | - | 1,241 | |

Table 4 - Enrolment by degree type, instruction mode and administrative category, selected years⁷. Source: INEP/MEC 2014.

⁷ Regarding the data for 2010 and 2012, there are a few minor discrepancies in terms of enrolment figures between Tables 2 and 4, which are usually present when one uses microdata (Table 2) or aggregates furnished by the Ministry of Education (table 4). We have consulted with specialists and this is caused by the elimination of data from a few (private) HEIs that have shown inconsistencies, which are kept in the microdata files but removed from released aggregates. We do not have access to which HEIs have been eliminated from released aggregates. Differences are small and would not change trend and shift analysis that we pursue in the report.

| chLic | 345,77 | 156,39 | 189,38 | 344,53 | 156,39 | 188,14 | | | |
|-----------------|-------------|-----------|---------------|----------------|---------|---------------|-----------|-------|-------------|
| | 8 | 3 | 5 | 7 | 3 | 4 | | | |
| Not informed | 7.979 | 3.366 | 4.613 | 7,979 | 3.366 | 4.613 | - | - | - |
| | 6.379.2 | 1.643.2 | 4.736.0 | 5.449.1 | 1.461.6 | 3.987.4 | 930.17 | 181.6 | 748.5 |
| 2010 | 99 | <u>98</u> | 01 | 20 | 96 | 24 | 9 | 02 | 77 |
| | 4,226,7 | 949,92 | 3,276,7 | 3,958,5 | 893,88 | 3,064,6 | 268,17 | 56,04 | 212,1 |
| Bachelor | 17 | 5 | 92 | 44 | 5 | 59 | 3 | 0 | 33 |
| Teach | 1,354,9 | 561,72 | 793,26 | 928,74 | 458,73 | 470,01 | 426,24 | 102,9 | 323,2 |
| License | 89 | 1 | 8 | 8 | 7 | 1 | 1 | 84 | 57 |
| Technolo | 781,60 | 115,72 | 665,88 | 545,84 | | 452,69 | 235,76 | 22,57 | 213,1 |
| gical | 9 | 3 | 6 | 4 | 93,145 | 9 | 5 | 8 | 87 |
| Not | | | | | | | | | |
| informed | 15,984 | 15,929 | 55 | 15,984 | 15,929 | 55 | - | - | - |
| | | | | | | | | | |
| | 7,037,6 | 1,897,3 | 5,140,3 | 5,923,8 | 1,715,7 | 4,208,0 | 1,113,8 | 181,6 | 932,2 |
| 2012 | 88 | 76 | 12 | 38 | 52 | 86 | 50 | 24 | 26 |
| | | | | | | | | | |
| | 4,703,6 | 1,129,7 | 3,573,9 | 4,344,0 | 1,076,1 | 3,267,8 | 359,66 | 53,63 | 306,0 |
| Bachelor | 93 | 77 | 16 | 30 | 43 | 87 | 3 | 4 | 29 |
| | | | | | | | | | |
| Teach | 1,366,5 | 604,48 | 762,07 | 916,59 | 495,66 | 420,93 | 449,96 | 108,8 | 341,1 |
| License | 59 | 3 | 6 | 3 | 3 | 0 | 6 | 20 | 46 |
| T 1 1 | 044.00 | 140.02 | 002.07 | C 10 C 0 | 101.76 | 510.01 | 204.22 | 10.17 | 205.0 |
| Technolo | 944,90 | 140,93 | 803,96 | 640,68 | 121,76 | 518,91 | 304,22 | 19,17 | 285,0 |
| gical | 4 |) | 9 | 3 | 5 | 8 | 1 | 0 | 51 |
| Other | 22,532 | 22,181 | 351 | 22,532 | 22,181 | 351 | - | - | - |
| | 7 205 0 | 1 022 5 | E 252 A | (150 4 | 1 555 0 | 4 27 4 4 | 1 1 5 7 5 | 1545 | 000.0 |
| 2013 | 7,303,9 | 1,932,5 | 5,5/3,4 | 0,152,4 | 1,///,9 | 4,3/4,4 | 1,153,5 | 154,5 | 999,0 10 |
| 2013 | 11 | <u></u> | 50 | 05 | /4 | 51 | 14 | 55 | 19 |
| | 4 012 2 | 1 166 / | 27159 | 1 551 1 | 1 1 2 5 | 2 107 5 | 261 20 | 12.00 | 210.2 |
| Bachelor | 4,912,5 | 1,100,4 | 5,745,6 21 | 4,551,1 | 1,125,5 | 3,427,3 28 | 2 | 42,90 | 03 |
| Dacheloi | 10 | 07 | 21 | 00 | 80 | 20 | 2 | 2 | 95 |
| Teach | 37/ 17 | 500 71 | 774 45 | 922.98 | 501.92 | 421.05 | 151 10 | 97 79 | 353 3 |
| License | 374,17 Л | 8 | 6 | <i>922,9</i> 0 | 2 | 421,0J Q | 3 | 6 | 97 97 |
| | | 0 | 0 | 1 | | , | 5 | 0 | 71 |
| Technolo | 995 74 | 143 16 | 852 57 | 654 56 | 129 32 | 525 24 | 341 17 | 13.84 | 327.3 |
| vical | 6 | 9 | 7 | 9 | 1 | 8 | 7 | 8 | 29 |
| Other | 23 747 | 23 151 | , 596 | 23 747 | 23 151 | 596 | - | - | - |

From Table 4 we can see that technological programs and those using distance-learning education are expanding very rapidly in recent years. Up to 2008, some programs could be registered in the Census as leading to Bachelor and Teaching License degrees, at the same time.

1.2.2. Public higher education: trends and major shifts

Public enrolment

Regarding the public system, enrolment occurs mostly in federal and state universities, at a rate of over 90% of those enrolled in public HEIs (2012), according to Table 2 figures. The remaining enrolment of the public student population is split between students in smaller 4-year colleges/isolated faculties and in technological colleges, which grant 3-year vocational degrees (ISCED Type 5B programs). There are only a few public university centres, most of them municipal HEIs. The latter are

not very relevant in the national context, but play an important local role, mostly in Southern states and in the state São Paulo. Most of the city HEIs are either university centres or smaller colleges/faculties.

We have seen, from data displayed in Figure 1, that the public enrolment grew by 180% from 1994 to 2013, but, as Figure 2 below shows, the rates of expansion have not been even among federal, state and city subsystems.





2008*: See footnote⁸.

The graph in Figure 2 shows that, between 1994 and 2007, federal and state HEIs had shown about similar rates of expansion, with a slight advantage in favour of state systems, and municipal systems stayed stagnant for the whole period covered in the graph. Starting in 2008, the federal subsystem has shown a much faster rate of growth than the group of state HEIs. The change in recent performance of federal HEIs can be traced to the expansion program called REUNI⁹, started by the federal government in 2007, which has, starting in 2008, provided funds for the establishment of new branch campuses of existing institutions, as well as for expanding admissions in the whole system. But there were different paces for state and city systems as well. We detail the changes next, first for universities and then for technical colleges. We analyse mostly federal and state systems, since city ones are relatively small and changes there have low impact in the overall picture.

⁸ The year 2008 shows a sharp increase in enrolments for state systems, which was caused by a large increase in distance learning enrolment, which did not repeat itself in later years. Checking the database for the 2008 Census of Higher Education (INEP 2008), the state that shows a divergent pattern is Tocantins, a Northern Region state, with a distance learning enrolment figure of over 200,000 students. A single state institution had started offering programs without authorization by the state's Council of Education, which were closed the following year. We follow federal databases, which have kept data unchanged since.

⁹ REUNI is the acronym for "Reestruturação e Expansão das Universidades Federais" or "Restructuring and Expansion of Federal Universities".

Public universities

The number of federal universities had started to grow between 1999 and 2004, from 39 to 46 units, then expanded at a faster pace to 55 in 2007, now they are 59 (2012), as Table 1 shows. Despite the expansion in the number of federal universities, enrolment in those HEIs increased at a slow pace from 1999 to 2007, at a yearly rate of 4.6%; then, from 2007 to 2012, the rate more than doubled to 10% a year (from Table 2 figures). In the case of state universities, we see trend changes in the other direction. Yearly rate of growth decreased from 8.4% between 1999 and 2007 to only 1.8% from 2007 and 2012. City universities show a similar pattern as federal ones, with yearly rates increasing from 6.8% in the first period to 10.6% in the second one.

Vocational education in public HEIs

Public Technological colleges have played a growing role in providing vocational programs, mostly in the federal system, which is present in all states. Only two states, São Paulo and, to a lesser degree, Rio de Janeiro, have developed a system technological colleges. There are now 41 federal units (called Federal Institutes of Technology or IFETs), enrolling about 60,000 students, 55 in the state of São Paulo, also enrolling over 60,000 students, (where they are called State Technology Faculties or FATECs), and 5 in the state of Rio de Janeiro. Other state and city public HEIs also offer such programs, totalling 143,000 students. The enrolment figures for the year 2003 (first one for which the complete data is available) totalled 39,000, showing that, despite being a relatively small component of the public system, vocational HE has also been experiencing a relatively fast rate of expansion. We will see that the change for that segment in the private system is much more intense.

Social inclusion and access

An important aspect of public HE policy in Brazil in the last decade has been the advent of affirmative action programs, about which we will discuss in the section on recent policies.

Public universities, graduate education and research

Coming back to institutional structure of public HEIs, the comprehensive universities are expected to follow a traditional research model, with high levels of graduate education and research activities, by law and regulation/evaluation rules. Of course that is not the case for all public universities, and only a few, actually, would qualify as research universities by international standards. Even some older federal universities still employ faculty without a doctorate degree. On average, for the federal system, about 60% of all faculty have doctorate degrees and many state and federal universities still develop little research and offer a small number of doctorate programs. Except for the systems in states like São Paulo and Rio de Janeiro, state universities have even lower participation, among the professoriate, of faculty with a doctoral degree.

1.2.3. Private higher education: resource allocation and major shifts

Enrolment expansion and growth of for-profit sector

We have seen that most of the undergraduate expansion from 1994 to 2013 has occurred in the private sector (Fig. 1). That process was also accompanied by an important institutional shift. Before the National Law of Education was approved in 1996, all private HEIs had a non-profit status (Sampaio 2000). Starting in 1997, gradually the system shifted from non-profit to a mixed model, which has reached, in 2012, almost a 50/50 proportion between for- and non-profit subsystems (Table 2). We do not have data, up to 2009, in terms of that split, since before 2010, the Census of HE used as administrative categories those related to another aspects (see Footnote 5). From Table 1 we get that, in 1999, the subgroup Private II, which was made-up of only non-profit HEIs, accounted for 58% of the private enrolment, a proportion that had dwindled to 47% in 2004 and to 39% in 2007 (we observe that there were non-profit HEIs in the other subgroup, Private II). In 2012, the for-profit subsystem had already reached parity with the non-profit one in terms of enrolments.

One of the main causes for the relative faster expansion rate of the for-profit system since 2004 is the federal program "University for All" (known by the acronym PROUNI), which is still in place and provides fiscal waiver benefits to for-profit HEIs, is they provide scholarships to low-income students. We will discuss this program in the next section.

This has been a major shift for the whole Brazilian HE system, since it is likely that, already in 2013, when data is made available, the for-profit subsystem will be the largest one in the country. This is a very recent development and it has not yet been assessed in a proper way.

Academic shifts

A second important aspect of the development of the private system is that distance-learning education and technological programs have become increasingly relevant in the composition of its academic structure. Table 4 data show that distance-learning programs in private HEIs enrol almost one million students, or 14% of all students enrolled in HE in Brazil. In the case of technological (vocational) programs, over 850 thousand students were enrolled in those programs, offered by private HEIs. In 2004, there were 113 thousand students enrolled in technological programs and only a little more than 23 thousand enrolments in distance-learning education, in private HEIs.

Quality assurance

We will discuss the issue of quality of the private system as a whole in the section of consequences of the recent expansion; the available information indicates that a good part of the programs offered by the private system have serious deficiencies in terms of the education they provide.

2. Role of state, key reforms and national priorities over last decades

We will present here a brief overview of the regulatory system of HE in Brazil, and describe the main legislation, policies and reforms that have occurred in recent decade. The presentation will include:

- basic legislation and educational regulatory institutions;
- National Plans of Education and enrolment goals;
- admission system;
- affirmative action and social inclusion;
- expansion programs;
- learning assessment and quality assurance;
- internationalization.

As we move along those aspects of Brazilian HE policy, it will become clear what the national priorities have been in recent decades towards

2.1. Basic legislation and institutions

Since the first national education law was approved, in 1931, the central (federal) government has had a very strong role in regulating, organizing and supporting HE in Brazil. The National Council of Education, first established in 1931 as well, is part of the Ministry of Education and its main function is to regulate all aspects of Brazilian education, at all levels, including HE, including accreditation procedures. The current national education law was approved in 1996, in the wake of a cycle of legislation updates related to the promulgation of the new Federal Constitution in 1998, following 24 years of rule under rules imposed by the military regime in Brazil, which lasted from 1964 to 1984. The new Constitution had already established parameters for the national educational system that represented a break with the past. But it also left open for private businesses to become more active in the offering of education, at all levels, and established, for the first time in Brazilian history, that public HE would be free of charge, a rule that is still in place. As we have seen, the results were that public HE developed much slower than the private sector, since there are obvious limits of how much government can invest in HE, especially in a situation where most of funds for education were being used to universalize basic education.

By constitutional and other legislation rules, educational levels have different spheres of government as main regulators and providers. Preschool and the first level of fundamental education (for students 6-10 years of age) are supposed to be developed mainly by the municipalities. The second level of fundamental education (11-14 years of age) may be developed by both cities and states and secondary education (15-17 years of age) is mainly a function of states. Higher education would be the level that the federal government would be responsible for, but states would also take part in its development.

From preschool to secondary education, the National Council grants regulatory rights and attributions to State Councils of Education. In the case of state and city HE, the National Council also grants State Councils with the responsibility of regulating and developing accreditation procedures. All private HE is regulated by the federal Ministry of Education, as is the federal system of HEIs.

2.2. National Plans of Education and enrolment goals

Regarding legislation and official policies affecting admissions and access, the new Brazilian Constitution of 1988 also established that Congress should develop a National Plan of Education. The first such plan, for 2000-2010, had established, as the basic goal for HE, to reach, by 2010, the level of 30% of participation of the college-age (18-24) population (known in the literature as the net enrolment ratio - NER). That level is usually considered the threshold of universalization of access in the literature (Trow 2007) and was also the average enrolment ratio of the member countries of the Organisation for Economic Co-operation and Development (OECD) in 2000 (OECD 2010).

That goal was not reached as of 2012, despite the growth of more than 230% in enrolments in the period 2000-2012. To fulfill the Plan's goals, the whole system would have needed to enroll 7 million college-age students in 2010. As we have mentioned above, the system has reached 7 million students enrolled in 2012, but only 55% of them are 18-24 years of age (IBGE 2012). As a consequence, the college-age participation reached about 15% in 2010 (Andrade 2012), and projections to current situation shows that it is at about 17% now. As the age stratification of the student population is not expected to change much in the coming years, it will be very hard to achieve the enrolment ratio goal of 33% of the college age population by 2024, which is the goal of the current Nation Plan for Education, recently approved by Congress. It is clear that Brazil sees expanding access to HE as a strategic national objective, despite the obvious difficulties the country has faced in meeting proposed goals in the past.

2.3. Admission system

Regarding the system of admission to HE, a major shift occurred when the Ministry of Education decided that the National Test of Secondary Education (Exame Nacional do Ensino Médio - ENEM) would be redesigned and adopted as the sole criterion of admission to the federal system of HEIs. The test had been started in 1997 by the Ministry of Education, with the purpose of assessing general skills of those finishing high school. It involved the graduating class only and averaged 1 to 2 million students a year until 2008; it was administered once a year and the test itself consisted of 68 items in all the typical subjects taught in high schools, to be responded in 4 hours. Many public universities used it as part of the admission process, but the exam was not considered long enough and with sufficient content depth to be used by the more selective ones. In early 2009, the Ministry of Education announced that the test would now be developed in two days, would cover four main areas taught in high schools (Language, Mathematics, Natural Sciences, Art/Humanities/Social Sciences) and would also include a written essay. The Ministry also announced that ENEM would become the only admission criterion on the new unified admission system for the federal HEIs. Most universities and the better university centers/colleges, up to that point, developed their own admission tests and would not share the pool of applicants; under the new centralized system, which was called Unified Selection System (Sistema Unificado de Seleção - SISU), one could apply to a number of programs of any of the participating HEIs, putting them in order of preference and the applicant's scores would determine where she would be admitted. Since then, SISU has incorporated most HEIs in the federal system and other HEIs, and most institutions have used ENEM as (at least partial) criterion of their admissions systems.

2.4. Affirmative action and social inclusion

Affirmative action (AA) programs have been a topic of new legislation and policies, since 2002, when the State Assembly of Rio de Janeiro passed legislation establishing a quota system in that state's system of universities, for both public school graduates and for blacks and native Brazilians. Since then, many HEIs developed AA programs, and states passed affirmative action legislation. The most important new development was the bill passed by Congress in 2012 establishing a quota system for the federal system of universities and technical colleges. The law requires that 50% of all vacancies be filled by graduates of public secondary schools, and that the proportions of blacks and native Brazilians in the state's population where the HEI is located are also to be kept in that group. Some Southern states show a proportion of less than 20% of blacks/Native Brazilians among their population; others, mainly in the Northeastern region, have proportions of more than 70%. The criterion for the race/ethnic quota is self-declaration by the applicant. The law took many years to be approved, debates included Supreme Court hearings, strong opposition from conservative groups, but also from academics and some black advocacy groups, which considered that the law would introduce race into the legal system in a way that had never happened since slavery ended in 1888 in Brazil. But the support from many universities that already had affirmative action programs, from the federal government and the fact that the Supreme Court declared affirmative action programs constitutional, including those that used quota systems, were determinant for the passing of the proposal. Many state and city HEIs also use affirmative action criteria in their admission systems. We will discuss this point further in the section on the implications of massification of HE in Brazil.

Affirmative action programs are also considered in the latest version of the National Plan (2010-2024). The Plan calls for widening, "by means of special programs, the policies of inclusion and support in the public HEIs, in order to expand the access rates of students coming from public secondary schools and improve their chances of success". It calls for widening "participation by historically disadvantaged groups, by means of affirmative actions, according to existing laws" (which include affirmative action programs with ethnic/racial criteria).

2.5. Expansion programs

We have already mentioned the program for federal HEIs to expand undergraduate programs, called REUNI (Programme for Restructuring and Expansion of Federal Universities), with the objective of doubling enrolment in the system by 2014. From 2003 to 2012, 14 new universities and over 100 branch campuses where created and the number of cities covered by at least a branch campus went from 114 to 237. REUNI provided new funds for that process, which has caused growth in enrollment, but it also required federal universities to start evening programs, which are known to be better suited to poorer students, since they may use their daytime for working (Nunes et al. 2003, Vargas and Paula 2013).

Another policy related to expanding admissions, which we have also mentioned in the section on the expansion of the private system, was the federal fiscal waiver program for private organizations that grant scholarships for students, PROUNI¹⁰. The academic admission criterion for this group of students is based solely on their performance on ENEM. PROUNI scholarships are restricted to students with family income up to three minimum sage salaries (about US\$900/month by the end of 2014) and who had attended public high schools during their secondary education or in private schools under a full scholarship program. Thus, PROUNI includes an affirmative action component, like the quota system for federal HEIs. As we have seen, PROUNI has had enormous impact on the recent development of the private HE system in Brazil.

Besides the fiscal-waiver system provided by PROUNI, financing students in the private system also includes FIES (*Financiamento Estudantil no Ensino Superior* - Student Financing in HE), a student loan system started in 1999. This system has had some of its provisions changed recently, like extending the time limits for reimbursement and the reduction of the interest rates. These measures will likely increase the demand for such loans, which have already shown strong growth during the past 3 years: by the end of 2013, 31% of all students enrolled in private HEIs (or 1,6 million out of 5.2 million, excluding those enrolled in distance learning programs) have some support from the Brazilian government, with more than 2/3 of which being recipients of these low-interest loans (Valor Econômico, 2014), the remaining students being supported by PROUNI scholarships. FIES recipients were just 75 thousand in 2010. This program does not treat for- and non-profit HEIs in different ways, like PROUNI.

2.6. Assessment and quality assurance

Assessment and quality assurance are also considered important themes in the recent expansion cycle of Brazilian HE. The National Evaluation System of Higher Education, SINAES¹¹, was established by Federal law in 2004. It has as central component a learning outcomes assessment test, ENADE¹², which includes both multiple choice and open items, covering general education aspects and specific area content. The legislation also established the National Higher Education Evaluation Committee

¹⁰ PROUNI is acronym for "Programa Universidade para Todos", or "University for All Programme", which was established by Federal Law N. 11096 in 2005.

¹¹ SINAES is acronym for "Sistema Nacional de Avaliação do Ensino Superior".

¹² ENADE is acronym for "Exame Nacional de Desempenho Estudantil", or "National Test of Student Performance".

(CONAES¹³), composed of ministry personnel and representatives of various HE organisations, including federal, state and private institutions, to oversee all SINAES activities. The National Institute for Educational and Pedagogical Research (INEP) is the Ministry's organ responsible for developing and applying ENADE.

SINAES is been based on three main components: institutional, programme and undergraduate student proficiency evaluation. ENADE, initially taken by both firstⁱ and last year students, assesses student proficiency on topics determined by the National Curricular Directives for undergraduate programmes. Institutional and programme evaluation are based on data collected by the Ministry of Education and on self-evaluations conducted by the institutions. Graduate programmes are evaluated by the Ministry of Education agency CAPES, a system that has a long (and successful) history in Brazilian HE, dating back from the mid-1970s (Castro & Soares (1984), Balbachevsky (2004); Balbachevsky & Schwartzma (2010). Results from ENADE are used, with other inputs, to compute value-added scores for each undergraduate program, which are then used, with ENADE scores themselves and institutional scores, to compute a final score, the Program Preliminary Score (CPC), for each undergraduate program. The input variables are weighted as follows: 40% from the ENADE score for graduating students, 30% for the value-added index and 30% from a score computed using program and institutional data. The CPC is scored on a scale from one to five, where five is the top score.

The main use of SINAES' results has been in regulatory and accreditation procedures regarding the private system. Despite all issues that may be raised in terms of validity of the system, its role in Brazilian higher education has increased with time. For more details and analysis of the system, including its obvious shortcomings, like issues related to student participation and engagement, see Pedrosa et al (2013).

2.7. Internationalization

A final item in recent HE policy that deserves mention has been the Science Without Borders Programme (SWB), which was started in 2011 by the federal government, with the purpose of sending about 100,000 students abroad, for a period from 6 months, until 2015. Of the total, 90,000 scholarships would be dedicated to undergraduate students, the remaining 10,000, to graduate education. The programme has faced some problems. For example, students can choose where they want to go, without much input from their original institutions in Brazil. Many have opted, without knowing, to go to colleges that do not, actually, offer equivalent degrees as the ones they have been pursuing in Brazil, which raise administrative and academic issues regarding equivalence of credits of courses they attend abroad. Another problem has been that many students go to English speaking countries without prior working knowledge of English. Because of that, many have returned without having completed their program of studies. Anyway, the programme has shown that there is need for Brazilian HE to become more internationalized. Not only few Brazilian students have gone abroad to study, compared to figures in other countries, but also we do not have the structure required for attracting students from abroad, except from neighbouring Latin American countries. Language is a major impediment to further expanding internationalization in Brazil.

2.8. National priorities

Summing up this section, we can see more clearly what the priorities have been along the recent two decades of HE development in Brazil:

- Expanding access.
- Developing affirmative action policies aiming at promoting social inclusion in HE.
- Developing quality assurance, which includes the assessment of learning outcomes, aiming at regulating the whole system, and especially the private sector.

¹³ CONAES is acronym for "Comissão Nacional de Avaliação do Ensino Superior".

- Expanding the federal system of universities.
- Financing a growing for-profit system.
- Promoting internationalization, both ways.

We will come back to some of these points in the next section.

3. Implications and analysis of massification of the HE system (1,500 words)

In the previous two sections, we presented, first, data with evidence regarding how HE has expanded in the last two decades in Brazil, and how that expansion was accompanied by various shifts, both in public and private subsystems. Secondly, we described the main reform and legislation changes and how those were related to national priorities, which gradually have included themes like social inclusion in HE and quality assurance of results of education that the system offers to the population. It is hard to choose which of these developments were more relevant. We think that the change in the character and composition of the private system and the development of affirmative action initiatives aiming at increasing access of disadvantaged groups to HE are the two most important and impacting aspects of the changes that have occurred during this period, closely related to the theme of massification of HE in the country. The other aspects of this process that we have presented are also relevant, and we will discuss them further, like the expansion of the federal system, the assessment system and some of its regulatory aspects. We also briefly discuss current internationalization initiatives.

3.1. Changes in the private sector

As already described, a major impact of recent expansion policies has been the changes that they have caused in the private sector, especially in recent years, mainly the fast rate of expansion of the forprofit subsystem, after the federal government started a massive fiscal waiver program benefitting forprofit HEIs, the University for All Programme (PROUNI). More recently, the federal loan system (FIES) has also been expanding very rapidly, helping the private system to keep expanding. Both programmes have as common denominator the issue of financing the private sector of HE in Brazil.

It is instructive to observe that the private system, between 1980 and 1994, before the recent wave of expansion started, did not show any expansion in terms of enrolment numbers, or any signs of major institutional shifts. One of the reasons for that was that the Brazilian economy was mired, during exactly that same period, in stagnation, in terms of GDP and job evolution, and in turmoil regarding inflation and other macroeconomic aspects. In Brazil, and we believe in most countries, it is true that, in the absence of major policy incentives, private HE enrolment tends to follow major macroeconomic trends, growing only when the population has increasing purchasing power and when they perceive that higher education puts them in relative advantage when looking for jobs. Neither was the case in Brazil form 1980 to 1994, nor there was any public policy to counteract those trends.

Since 1994, as the economic outlook of the country started to improve, and rules became more stable, following more traditional market rules, the private sector began to expand in terms of enrolment. But the institutional shift, which had the growth of the for-profit system as the most evident aspect, accelerated after the fiscal waiver program (PROUNI) started. More recently, the expansion of the federal student loan program, called FIES, has also been very effective in keeping the private sector expanding. One of the articles of the PROUNI law (Art. 13) has a provision for change of administrative status that includes a very advantageous rule for HEIs that use it to move from non-profit to a for-profit status. Some HEIs, of which a few very large universities, used that provision to move from non- to for-profit status.

We now make a summary of main reasons that we as see as responsible for the expansion in the forprofit subsystem during the period under analysis:

- (1) the more flexible regulatory system that was put in place after the approval of the new National Law of Education in 1996, making opening new HEIs easier than before and allowing for for-profit HEIs to be established;
- (2) the growth in demand, coming from larger number of students that were finishing secondary education;

- (3) the ability of a larger part of the population to afford HE, given the economic growth in the period (which had not been the case before stabilization of the economy in 1994);
- (4) the non-profit subsystem followed, mostly, a similar model as the public system, which made expansion more difficult;
- (5) the lack of expansion of the public system at a pace that would be able to absorb the growing demand;
- (6) PROUNI legislation and the expansion of federal loan program.

This last point is an important one, since there was growth in the public system, but the main educational policies (federal and state) of the period from 1994 to 2002 were clearly dedicated to expanding basic education, and also establishing assessment systems at all levels, including HE. After 2007 the federal system had incentives to expand and it did it, but still, at much lower levels as needed to accommodate the growing demand

We see this trend reaching a limit now, since the ability of both government and the population to keep funding the private system seems to have reached saturation (Pedrosa et al 2014), and high school demographics, which we discuss briefly next, is having impact on that as well.

3.2. Implications for secondary education

The number of youngsters graduating from secondary schools has been stagnant since about 2002, when it reached the maximum at 1.89 million students, after rising very quickly in second half or the 1990s, as the graph in Figure 4 shows. Since then, that number has been hovering around 1.8-1.9 million people. The same graph shows how the number of students admitted to all types of higher education has evolved in the last two decades. It is notable that, since 2005, the number of admissions has surpassed that of graduates from secondary education, up to 2013. In 2012 and 2013, the number of students admitted to HE was 50% higher than that of high school graduates the year before. Since actually not all high school graduates are admitted to HE in the year after graduation, the number of older students in Brazilian HE is likely to go up in the coming years.





One would expect, from observing the trend presented in this graph, that Brazil has reached universalization of secondary education. Actually, that is not the case, since only about 50% of the youngsters of high-school age (15-17 years of age) are enrolled in secondary schools in Brazil, and about the same proportion of the college-age population (18-24 years of age) have completed their secondary degree (Pedrosa et al 2014). This indicates that there is space for increasing the pool of those of college age that would be eligible for admission to HEIs. But the trend during the past decade does not indicate we will be seeing higher graduation numbers in the coming years. This is a major blocking stone to further expansion of HE in Brazil, according to Pedrosa et al (2014), but it also indicates that, if Brazil is able to expand secondary education enrolment and graduation rates, there could be a second wave of growing demand for HE in the next decades, at least as strong as the one Brazil enjoyed at the beginning of the century, after the cycle of expansion of secondary education in Brazil in the 1990s.

3.3. Affirmative action and social inclusion

The second major implication of the current massification process in Brazil has been that the expansion seemed to cause a major shift in perception of the role of higher education in Brazil. The whole logic behind policies that were put in place to intensify the expansion process, that it would make people better prepared for life in general and for getting better jobs, and also help the economic development of the country, also implied that it could be an instrument for social inclusion. That led, together with calls from historically disadvantaged groups like Brazilians with African origins for affirmative action programs, to the development of legislation and initiatives aimed at reducing inequalities in the process of access to HE. As we have mentioned, these policies started to be developed in 2003 in just a few HEIs and state systems, but rapidly evolved into encompassing legislative initiatives, culminating, recently (2012), in the passing, by Congress, of a law requiring federal HEIs to develop quota systems for students graduating from the public secondary education system, with ethnic/race clauses as well. This report is not the place to delve too deeply into the nuances of these policies and their consequences, but we may say that affirmative action programmes will likely stay in place for some time in Brazil, given the huge inequalities we still see in previous levels of education in the country. Despite that only about 15% of those graduating from secondary schools have attended private high schools, one finds that most of the positions in the most selective public universities and programmes are taken by those graduating from elite schools. For a more detailed analysis of this aspect of the recent period of development of HE in Brazil, see Pedrosa et al (2014). The main conclusions of that analysis is that, despite its limitations, there is evidence that affirmative action initiatives can help reduce inequalities in the access to HE in Brazil.

3.4. Social inclusion and private HE

Another aspect of the expansion is that, despite the fact that affirmative action programmes were developed in public HEIs, many of the students enrolled in private HEIs, and all of those benefitting from PROUNI, are from low-income families (it is a criterion of PROUNI that those participating are from that group). It is also true that most of the enrolment in private HEIs is in evening shift programmes, since most of those enrolled also work (and are older than the typical public HEI student). Thus, in terms of social inclusion prospects, it is important to make sure that public regulatory organs assess and assure the quality of the education that private HEIs provide.

This brings us to the third point that we would like to emphasize regarding the implications of the recent expansion cycle of Brazilian HE. Since most of the expansion of HE in Brazil has occurred in the private system, an important issue is to make sure that the quality of education provided by private HEIs achieves some established minimum. Since evaluation scores are made public for all programs, gradually the issue has reached the general public, and authorities have tried to use the results for regulation purposes. In some cases, programs have had to reduce the number of admitted students and, in some isolated cases, have lost accreditation to keep granting degrees. For more detail on that aspect, see Pedrosa et al (2013).

3.5. The expansion of the federal system

We have already discussed the recent expansion of the federal system since 2007, due to the REUNI programme. One impact that has been evident from available data is that the efficiency of the federal system seems to have been decreasing recently, if measured by the ratio between the number of graduating students and the number of admitted students (from 5 years before). The figures show a decreasing trend, from a peak of 64% for the class 2009/2005 to only 48% for the class 2013/2009¹⁴ (INEP 2014). There are also some indication that the expansion has caused some decline in the performance of graduating students in the assessment system (for more detail regarding this point, see Pedrosa et al (2014).

We think that there is need for reassessing that policy, and likely slowing further expansion to a more moderate rate, so that changes that are required in the system in order for it to go back to former efficiency levels are put in place. Most of them are related to support of incoming students and infrastructure development, some of which were not completed as planned at the start of the programme.

3.6. Academic aspects

We now present information on shifts happening in academic aspects of HE that deserve attention, since they are related to institutional shifts as well. There are three developments that we find relevant. First, we have to mention the theme of general education, which was a central motivation for the REUNI program, already discussed in terms of the expansion of the federal system. The program had an academic restructuring part that proposed the adoption of what was called the Interdisciplinary Bachelor degree. It was roughly modelled on the Bologna idea of having a 3-year initial degree with low level of disciplinary specialization, followed by 2 years of more specialized studies, either academically or professionally oriented. Since this models was not actually adopted by the majority of federal universities and there is still a relatively small number of curricula structured under the new model, we will treat the issue in the last section, when we present some recommendations and new ideas for the development of HE in Brazil.

The academic changes we see as already playing a relevant role in the country's HE system are related to distance-learning and vocational education. Both have shown intensive growth in the past decade and have become important components of the expansion of the private system, but also in the public one. Starting with distance learning, Figure 3 shows the recent evolution of enrolment in such programs in public and in private HEIs.

Figure 4 - Enrolment in distance-learning programs, 2003-2013, by administrative category. Source: Census of HE, 2003-2012 and preliminary data for 2013, Ministry of Education, Brazil.

¹⁴ We have used a 5-year delay from admission to graduation to compute systems' efficiency, but similar figures may be obtained for either 4-year or 6-year delays. In Brazil, most programs are 4-year B.Sc. degree programs, but there are some 5-year programs (engineering) and medical students need at least 6 years of study to complete their degrees. Given that many students take longer than 4 years to graduate, a 5-year delay scheme between admission and graduation for computing average efficiency rates seems adequate.



2008*: see Footnote 6.

We can see that distance learning was almost non-existent at the start of the century. Starting in 2006, growth in the private system has been very intensive, and now one has over a million students enrolled in such programmes, one million in the private system and almost 200 thousand in the public one. A major concern about this teaching/learning mode, in the case of HE, is that it has a relatively lower efficiency rate, from experience in other countries with a longer history in that activity, meaning the ratio between number of graduating students and number of admitted students (from a few years before). In the case of Brazil, we have tried to compute the efficiency for distance learning programmes, but numbers vary wildly form year to year, especially if we try to use the aggregate figures. Anyway, Figure 5 shows those figures, using for 4 and 5-year delays.

We treat briefly the theme of vocational education in Brazil. Such programs are called "technological", despite being offered in all areas, from services to health care, to management and technology properly. Figure 5 shows how that academic modality has developed in the last decade.

Figure 5 - Enrolment in technological (vocational) programs, 2003-2013, by administrative category. Source: Census of HE, 2003-2012 and preliminary data for 2013, Ministry of Education, Brazil.



It is evident that vocational education in Brazil follows the same pattern as all other academic degrees, with a much larger participation of the private system. And, as for other aspects, the for-profit subsystem is again becoming the major provider of those programs.

There is much concern in Brazil among specialists regarding where this shift from a more balanced system as one had in the end of the previous century is leading the HE system in Brazil, and if the education that newer private HEIs have been providing has an acceptable level of quality. Results from the national HE assessment system developed by the Ministry of Education (SINAES) indicate that students graduating from most of those HEIs show very poor levels of proficiency in the their degree areas (Pedrosa et al (2013) and Pedrosa et al (2014)).

3.7. Universities' mission, research and graduate education

As we have already mentioned, universities are supposed, by law, to provide, besides undergraduate education, graduate education and also to develop research. In reality, that is not the case at all in the private system, since most for-profit universities do not include either graduate education or research as part of their main activities. Just as an indication of that, as the above table shows, despite the fact that about 30% of all undergraduate enrolment occurs in private universities, the whole private system enrols only 16% of the almost 204,000 graduate (MSc/PhD) students. And most of them were attending the relatively large network of Catholic universities and a few specialized schools, almost all of them from the non-profit group.

Concluding this section, all public universities are expected to gradually increase their research output, as well as develop their graduate education areas. The quality assessment system that the federal Ministry of Education has in place has research and graduate education, as well as qualification of faculty, considered as relevant points. This makes it obligatory for public universities, since all graduate and research funding allocation is based on competitive grants, to keep their efforts to develop graduate programs and ask faculty to dedicate some time to research activities. Despite that, the career ladder in the federal system is not actually linked to graduate and research activities as they are, for example, in the São Paulo system of universities. But one may see the evaluation system as implicitly assuming that the "academic shift" towards the research university model is actually not an issue, as in many other countries, but expected, from public HEIs (even some federal technological colleges are moving in that direction). The national HE evaluation system will be discussed further in the section on policy.

4. Strengths and weaknesses of governance and regulatory mechanisms (2,000 words):

4.1. How higher education institutions are adapting to changing market demands

It is clear, from the contents of previous sections, that there are many different market forces acting in the development of HE in Brazil. Private institutions are, usually, faster in adapting to changes, like, for example, the growing demand for distance learning and for vocational training (and, it seems, for both from the same group of people). They also have help in that from the fact that public HEIs, which tend to concentrate efforts in traditional academic programmes and keep many resources involved in graduate education and the development of scientific research, are not very quick in responding to demands that require a change in attitude from their academic staff, or administrative flexibility for developing, approving and implementing new models of teaching and learning or of curricular structures.

We do not see that as a big problem, as it is quite an expected outcome of how private and public systems organize themselves around the world, but there is cause of concern in one aspect: one does not have, so far, any evidence that the quality of the education that private HEIs provide, especially regarding these new modes of teaching and new curriculum options, is at an acceptable level. The government assessment systems does not seem able, at this point, to be very useful for those types of education/programmes, since it was developed with the traditional BSc degree in mind, as offered by the better public universities in Brazil.

Of course, one may say that, eventually, market forces will filter the system and only those offering and providing better products will survive. This could be the case for vocational education, since those looking for such programmes are more likely to be paying attention to the rate of success of previous generations of graduates. But much less so in the case of distance learning, which is known, in most countries, to be a very inefficient mode of education for obtaining first degrees, in particular BSc degrees, which have been part of the degree programmes offered via that mode of education in Brazil, even engineering degrees.

4.2. The role of state - owner or a regulator of higher education institutions?

In Brazil we may say that the answer to the above question is pretty straightforward: it plays both roles. It regulates the whole system and "owns" a large part of it.

The public system is, in a very strict sense, part of the public structure. Faculty and administrative staff are hired under the same system as in any public enterprise, with open competitions based on a set of rules that are not necessarily linked to academic attributes. Of course, in the case of the professorial career, academic training and previous academic production are part of the required minimum for competing for a position, but they are not the sole criteria and, moreover, there are many cases of cronyism and inbreeding in academia in Brazil. And there are relatively few incentives to increase productivity, since once one is admitted under a public competition, one may keep that position under very low levels of academic productivity. There are incentives, mostly external, to increase scientific productivity, like federal and state grants for research, and, in some institutions, a faster path along the academic career, but most public HEIs only require a minimum of 8 hours of undergraduate class activity per week from faculty. The state university system in São Paulo has the tradition of requiring scientific research activities as part of a regular faculty assessment system, but that is not the case either in most federal universities or in most other state systems.

More importantly, from the point of view of this section, is that budgets are determined by government and are not associated to performance, in general. Mostly, undergraduate enrolment has been the only relevant criterion for budget allocation and for extra budget allocations, as in the case of

the federal REUNI program (which has a clause for graduate education activity, but which not a required item). The National Council of Education, part of the Ministry of Education, regulates the federal system, while state and city HEIs are regulated by state Councils (see Section 2).

The whole private system, whose 2,112 HEIs correspond to 87% of the whole system (Table 1) and enrol 73% of the more than 7 million students in HE in Brazil, is also regulated by the federal National Council of Education, a Ministry of Education organ. As we have seen, the regulatory system uses a national evaluation system (SINAES), which attributes scores to every program (undergraduate and graduate) and, by combining those scores, ends up with an institutional score, which is used for regulatory and accreditation purposes (see more about that in Section 2 and below).

In conclusion, we may say that the state has a very strong presence in Brazilian HE, in all aspects, and there are no signs that that role is going to change in the foreseeable future. On the contrary, it seems to be current policy to strengthen the role of government in HE education in Brazil, as is clear from all programs and incentives that the federal government has provided for both public and private systems.

4.3. Frameworks, structures, roles, relationships, decision making processes

The basic structures and decision-making models of Brazilian HEIs depend on their administrative status. Most public HEIs follow a relatively simple model, which is very weak in ties with external stakeholders. For example, selecting a new president (called rector in Brazilian HE) is usually an internal affair, following some sort of general community voting system, including faculty, administrative/technical staff and students. The weight for each category varies from HEI to HEI, but usually faculty vote has a prominent role. The voting results are then used by Academic Senates (usually called University Councils in Brazil) to compose a 3-name list that is sent to government officials (Minister of Education in the case of federal universities, Governor in the case of most states), who should choose one of the names for a fixed term (usually four years). That is the formal structure of the selection system, but it has become a tradition that the Senates put the winner of the vote in first place and that that person is chosen as president. This model has, increasingly, turned the selection a new president into a very politicized affair, with internal interests playing a prominent role, and even bringing external party politics into what should have been an academic and administrative decision with some external control, motivated by strategic needs and clear policy goals. There are no equivalent, in Brazilian public system, of the Board of Regents, or something similar, that one sees in many countries, and which serve as some sort of buffer between the university and external public interest.

As consequence, for example, in some institutions, the same people that will make use the budget money, like deans, directors of schools and institutes, also make strategic decisions on funds allocation, and other budgetary decisions, even about long-term strategic goals. That system has shown, even in cases of more mature institutions, like the best-known Brazilian university, the University of São Paulo, to be vulnerable to short-term decisions that have led to a deficitary financial situation, with unknown long-term consequences.

We may say that, currently, public universities have its decision-making processes centred in the professorial group, but other staff have shown growing power and, in some cases, have been the decisive group, especially when faculty split their support among competing options. Government decides how much money universities will get (in the federal and most state systems), but it has little control over internal fund allocation. They do not follow the traditional research university model originated in Germany and which has had academics as the decisive group inside institutions and autonomy as its structural model. The exception is the São Paulo system, which has an autonomy model based on fixed participation in the state's tax revenues. But, as mentioned above regarding the University of São Paulo recent financial crisis, that system seems to need some sort of reform, to include external stakeholders interests into account.

In the case of the private sector, non-profit HEIs follow many different structures and decision-making systems. The major catholic universities, some of which are among the best HEIs in the country, have strong participation of the Catholic Church leadership of the municipality where they are located in their decision-making processes, as expected. Faculty have some saying in academic affairs, but not as in the case of public universities. Other staff have even less saying in institutional matters. Other non-profit HEIs are mostly teaching institutions, which hire part-time instructors to teach classes, without any established faculty structure. The same may be said of for-profit HEIs, for which decision-making processes are related to usual business criteria, like investor return, revenues and profits, and made under the same structure of any private enterprise.

4.4. Quality standards and assessment

We have seen in Section 2 and also discussed in Section 3 how quality assessment and evaluation are part of the regulatory structure of Brazilian HE. They are fully developed and operated by government agencies and have little relationship to market interests, for example, or how private HEIs see their role. The quality assessment model is based on typical research-oriented criteria, which are derived from the basic public university model that has been established by Brazilian legislation since the early years of the past century.

As such, the current quality and assurance system is not very flexible and cannot cope with the very differentiated institutional system currently in place in Brazil. It also has difficulties to evaluate new modes of instruction, like distance-learning education, and new academic models, like technological (vocational) programs. Different institutional missions are not acknowledged by the used criteria. The validity of the whole system is very difficult to assess and discuss. The federal agency responsible for its development has not made public any thorough validation of assessment tools, of interpretation of results or of uses of such results.

Even when the system detects obvious problems in a program or institution, it may take a long time before action is taken by government agencies. Nonetheless, there have been cases of programs that have been put into a probation status and asked to make changes, when the assessment results fall below a certain level for a sequence of evaluation reports.

A relatively successful case of quality assurance procedure is the assessment system of graduate programs, developed by CAPES (Coordination for the Advancement of Higher Education Personnel), which scores each graduate program in the country under a system developed since the mid-1970s. It is based on simple indicators of academic productivity, like quality of publications of the programs' faculty, index of thesis published internationally, time to graduate, etc. Brazilian graduate education, which is an activity concentrated in public universities, may be considered the most successful sector of the whole Brazilian educational system, and its success has been attributed, in large part, to its very effective assessment system. Productivity indicators like internationally published scientific papers and number of doctorate degrees granted have risen steadily in the last three decades. Figure 4 displays that evolution since 1982. Brazil is now responsible for about 2.7% of all scientific papers published in the world, according to Web of Science data (Thomson Reuters), about same as the weight of its population in the world's total (see more on that in Brito Cruz & Pedrosa (2013)).

Figure 4 - PhD degrees granted, internationally published papers, Brazil, 1982-2012. Sources: CAPES/Ministry of Education and Fapesp ST&I Indicators (PhD degrees), Web of Science, Thomson Reuters (Published papers).



For more detail and description of the Brazilian HE evaluation system, including its limitations and positive aspects, see Pedrosa et al (2013).

5. National financial structures (2,000 words)

5.1. Financing and operational practices of higher education

Public HEIs get most of its funds from public sources. They cannot charge tuition and other fees from students, by law. In the case of federal HEIs, salaries of faculty and other staff come directly from central government administrative offices and are also determined centrally. Current expenditures are also financed centrally and are allocated yearly in the federal budgetary law. Research projects and graduate education are supported via federal and state research funding agencies, which also collect money from public funds. Universities have difficulties to raise funds from other sources, since there are restrictions in how they can manage such funds.

For a while, many federal and other public universities developed public foundations that were responsible for collecting and managing funds that originated in private contracts, but the ways those funds were allowed to be used, eventually, have fallen into the same restrictions that public funds follow. For example, in contracting services, universities must follow a relatively restrictive tender legislation. Also, public HEIs cannot use other fund sources to hire faculty, they must follow the general public service rules, which we have mentioned, are very restrictive.

In some states, like in São Paulo, the university system's budget is established by a governor's decree that sets a fixed percentage of the state's tax revenues, yearly, to generate the main universities funds. The percentage has been kept fixed for a couple of decades already, making long-term planning much more viable than in other systems or in the federal universities. Accordingly, the São Paulo universities are the most productive in the country in terms of research and graduate education, and among the best in terms of quality of undergraduate education provided, which make them the most selective HEIs in the country

Private HEIs, both for- and non-profit ones, get almost all of their funding from tuition charges and fees. The exceptions are those that have developed graduate education at some level also collect funds

from research funding agencies, but those make up for a small fraction of the private sector, and all are in the non-profit group. In the case of the for-profit HEIs, they have fiscal incentives to provide scholarships to low-income students (from PROUNI, as already described), and that has been very effective in making attendance by students possible. About 600,000 students are supported under that program yearly. The federal loan system (FIES) now supports about one million students, in both for-and non-profit HEIs, so it is another important piece in the funding scheme of private HEIs.

A few for-profit companies have launched IPOs and have now stocks traded in the Brazilian stock exchange market.

Finally, research oriented HEIs get, as in any country, research contracts from industry, but, also like in most countries, those funds make up only a small fraction of HEIs revenues.

5.2. Plurality in funding mechanisms, flows of capital for investment and changes in budgetary priorities

As we have described above, funding mechanisms for HE in Brazil are:

- Direct public funds for public HEIs
- Tuition/fees in the private system
- Scholarships via fiscal incentives in the for-profit system
- Student loans in private HEIs
- Research grants for projects and graduate education scholarships
- Private research funds

In the for-profit system, there is growing use of IPOs to get funds, as any publicly owned private enterprise would do, and that has become a very relevant aspect of the Brazilian HE private system. Merges and acquisitions have also become a common event in the last years. Estimates put the value of publicly owned HE sector in Brazil at about US\$10 billion, currently. There are four such companies, all very large, accounting for about of which the one originating from a merge of the Kroton and Anhanguera groups is considered the largest educational company in the world, with almost one million students enrolled in HE and market value of about US\$5 billion. They have recently reported¹⁵ that, in the second semester of 2014, they have 426,065 students enrolled in residential programs, and 534,531, in distance-learning ones, attending over 800 residential units and 940 learning-distance poles. They have also reported¹⁶ that 59% of their residential program students have support from the federal loan system (FIES). That means that 251,000 students, enrolled in just one private, for-profit conglomerate, are recipient of federal loans.

Many analysts show concern with this trend, since these huge numbers of students will be coming into a stagnating job market in coming years, as the economy shows very low growth rates, and there are no signs of a recovery coming any time soon. Thus, they may be getting underpaid jobs, or no jobs, after having contracted large debts. The situation is similar in all of the private system, since latest government figures available account for more than one million recipients of loans. Up to now, FIES loans cannot be used of distance-learning education (but PROUNI scholarships are available for that educational modality).

Regarding change in budgetary priorities, it is very becoming increasingly clear that distance-learning education is getting more and more attention, from (for-profit) private HEIs, as are vocational programs, as we saw before in the report.

¹⁵ http://exame.abril.com.br/negocios/noticias/kroton-eleva-captacao-de-alunos-presenciais-em-27

¹⁶ http://exame.abril.com.br/negocios/noticias/kroton-diz-nao-estar-no-limite-de-exposicao-ao-fies-2

In public HEIs, the system is very slow in recognizing trends, and governance and financial decisions, as we have mentioned, are taken under some pre-established public service rules, with little leeway for innovation and changes. Even in the state of São Paulo, its universities, despite the relatively ample autonomy enjoyed, follow traditional academic traditions, and there have been no major shifts, either academically or in administrative terms. Despite that, as we have seen, the public system of universities is responsible for a growing system of graduate education and impressive scientific research results, so calls for changes are usually countered with arguments in favour of keeping the system in the same path that it has followed since its gradual inception since the early 20th century.

5.3. Selective investment in future growth areas and cost cutting

As mentioned above, the private sector has directed resources to distance-learning education and/or to technological programs in recent years. The reasons for that are relatively obvious: those programs tend to be cheaper for students and also for institutions, making the pool of prospective students much larger than traditional academic degrees taught in residential programs.

In the public sector, the last decade or so saw a large increase in funding coming from the federal government to federal HEIs, especially to the pool of universities, fuelled by a period of steady economic growth and revenue increases. Thus, so far, budget cutting has not become an issue. One saw expansion into new geographic areas, with branch campuses opening away from the state capitals, where the federal universities used to be concentrated, with evening shift programs in many areas being started. We believe those trends are likely going to be interrupted, for the simple reason that the economy has stopped growing and we cannot see much more room for HE budget increases in the coming years. It is even possible that budgets, corrected for inflation, may be ready for some reductions, and then we will see how the federal HEIs will respond.

In the case of state HEIs, the situation in São Paulo, as the University of São Paulo (USP), the most prestigious university in the country, shows, with all of its public revenue already being used for faculty and staff salaries, since 2013 (meaning that USP has been tapping, for almost two years now, its financial reserves to keep going), has already reached a situation where cuts are being implemented. Most investment in infrastructure and expansion has stopped, and there is no room for any new initiatives involving expansion into new areas or of those already in existence. The other two universities are in better shape financially, due to more careful use of funds. Anyway, the case of USP represents a serious breach of the autonomy "social contract" that has been in place since the late 1980s between the state and its universities, with consequences that we cannot, at the moment, foresee.

6. Recommendations and strategies for your country to develop academic profession and measure performance (1,500 words)

6.1. Rethinking the purpose and content of general education, interdisciplinary majors, curriculum redesign, distance learning, new teaching/learning paradigms

General education or, better said, interdisciplinary majors, as already mentioned, have been gaining more attention since 2007, as it was one of the motivating points for the federal program REUNI. Various federal universities have developed "Interdisciplinary Bachelor" (IB) programs since the program started in 2007. These IB programs do not follow the typical general education component that one has in the US system, for example. They form the initial part of structure that is are closer to the Bologna idea of splitting HE sequence into an initial general education component (3 years), followed by either a professional or academic specialization (2 years), finishing up in a post-graduate program (3 years). The first two parts would form the typical undergraduate education; the last could follow a typical doctorate course of studies.

The main objectives put forward by proposers of the IB system were: 1) to renew the Brazilian HE curriculum structure and content, still caught in the professional and disciplinary model that has been

in place since its origins; 2) to make it possible to expand enrolment in the public system without stressing the existing infrastructure and available faculty; 3) to make choice of program more flexible for students (in Brazil, students choose their majors when they apply to HEIs, and changing that is usually impossible without reapplying for admission again).

Most of the federal and state universities still follow the more traditional disciplinary/professional curriculum model, from beginning to end. Most of those that have incorporated IBs into their curriculum structure have adopted a mixed model, with new and traditional curricula working in parallel systems, allowing for those graduating from BIs to move into the final years of traditional programs. A few have remodelled the whole curriculum, and at least one, the Federal University of ABC, a new university (2006), has structured the whole system around the IB model.

The main difficulties the proposal has faced are related to the conservatism of faculty, of administrative/academic structures and, even, from students, since they are afraid that the BI degree will not be very helpful in getting a job, as the degree system in Brazil has long be closely linked to regulated professions.

We think that the BI is a great idea, but one that requires a longer period of development and adoption, for the reasons just mentioned. It is not an easy task to start a complete reform of curriculum structure and content in a large system as the one in place in Brazil. Anyway, we see increasing signs that employers may eventually see the advantages of having non-specialized graduates who are able to adapt more quickly to a changing job market. Likely, the mixed model described above is the one that has more chances to prosper.

Another interesting experience has been that of the University of Campinas, where another type of interdisciplinary program has been developed, with social inclusion as an important aspect. It is called "Interdisciplinary Higher Education Program", and has as an important feature a new admissions system. It admits, from each public HS in the city of Campinas, at least one student, whoever gets the highest score in the National HS Exit Test (ENEM). The motivation of that model was the Texas 10% system, developed after affirmative action based on race was banned from the admission system of Texas universities, and the fact that, historically, more than 50% of the city's schools had never had a single student admitted at the university. The system is in its 4th year, and is being evaluated in terms of academic and social inclusion results. A preliminary analysis of results may be found in Andrade et al (2013)

We have seen above that general education is gradually coming into play in Brazilian HE and certainly will be subject of further innovative initiatives. We have also seen that distance learning is already a very large component of the (private) HE system. What is newer and has been discussed and developed by public universities is the MOOC (massive open online course) concept. There are already many such courses available in Brazil, many of them produced and developed by the main public universities, like University of São Paulo, The University of Campinas and others. The state of São Paulo has created a "Virtual University", actually an institution to develop and organize such courses, as well as help develop and publicize full online programs via the state universities.

6.2. New planning processes and innovative initiatives

(To be developed, or left out, since some of its aspects have been discussed elsewhere)

6.3. Consultation and cooperation with business and industry

This is one area which Brazilian public universities have not been very active in, given their restrictive public character and also the history of industry development in Brazil. The Brazilian path to industrialization, started in the 1930s but intensified in the 1950s, followed a very strong protectionist model, based on bringing foreign companies to be established there, but closing markets and

restricting imports, with the intent of developing a nationally-based industry system to support the major foreign companies, like those in the automobile industry and others (called "imports substitution policy"). This low competition system that prevailed during most of the past century has not allowed the development of competitive technology by companies located in Brazil, either of international or national origin (Fishlow 1972, 2013).

Thus, despite the increasing scientific capability of Brazilian universities, only very few companies ever came to look for knowledge that they had been producing in order to that into technological innovation. Only in the past decade or so we see Innovation Agencies and Offices have been established in the major universities. Again, the University of Campinas was a pioneer in that endeavour, since it already had developed a strong innovative profile, with many of its researcher producing patents and projects in interaction with industry.

New legislation has been put in place, in the last decade, to provide incentives for industry and universities to cooperate in research and innovative work, but the relatively low level of innovation in industry itself is a major roadblock to further development in that direction. Only if Brazilian international trade practices, going beyond the commodities-centred profile they now show, help to include Brazilian companies in the international manufacturing flow that is increasingly the way industry has developed in the world recently, we do not see how the present situation, of very low levels of technological innovation occurring in industry (and, as a consequence, at universities), will change in a foreseeable future. For more detail on this theme, see Pedrosa and Queiroz (2013).

6.4. National, regional and international cooperation, institutional partnering and capacity building efforts

Internationalization, in the form of the Science without Borders program, has been one of the major items in recent HE policy in Brazil. But it has shown limitations that could be resolved by a more careful system of selecting and preparing students, before they go abroad. Firstly, universities and other HEIs where the student is originally enrolled should have a more decisive role in selecting students and choosing where to send them. The original plan would allow for students to just apply to centralized system, in some cases working in the destination country, and then select the HEI and program they would be attending abroad. No language skills were required at that point, and some students would just go forward, get admitted in a program, travel to the destination country and, obviously, fail miserably in their course of studies. In some cases the destination institution was not a university, maybe a community college, so that the courses taken there would not qualify for credit equivalence back in Brazil. And so on. In this case, the recipe for a revision of the whole program is not too difficult to devise: let the Brazilian HEI of origin select students and recommend which HEIs they should try to be admitted for the temporary stay. Many Brazilian universities already have agreements with foreign universities, which would be very useful for developing SWB activities.

A second aspect, regional in character, would be for public universities to develop strategies to receive transfer students from smaller local colleges and faculties, including students from the public technological colleges. They could play the role of community colleges in the US, preparing students for further studies at universities and other colleges offering 4-year programs (or just to complete vocational programs at the colleges themselves). This could make the Brazilian public system much more inclusive.

Nationally, one initiative that could be intensified, as it already happens frequently, is to have partnerships between the more senior and productive public universities and those that are starting their graduate programs now. This is needed to qualify faculty at those newer institutions or campuses.

6.5. Governance and greater accountability, resource reallocation, administrative reengineering

Brazilian public universities are in urgent need for governance restructuring. They follow a traditional, inadequate and outdate public service model, which was developed in the early 1930s and has never been actually reformed. There is no intermediate institutional organ, like a Board of Regents, which is independent from both government and the HEI, politically, and which could play a strategic role in various situations. For example: long-term strategic planning, choosing presidents (rectors), establishing general budget priorities and limits, deciding on new areas to be developed, where to allocate resource, major campus development, and so on.

Closely related to that issue is that of how faculty is hired. Presently, public HEIs follow a strict public competition system that does not allow for any differentiation is salaries, or in academic roles of faculty. The academic ladder has been reduced to a relatively smooth track that the young professor follows until he/she reaches the highest level, after a fixed number of years, with prescribed salary levels (there are exceptions, like in universities in the state of São Paulo, in terms of progression, but not in terms of salary levels, which are also prescribed). This makes impossible for a Brazilian university to compete internationally for the best academic prospects, like we are seeing happening in some Asian countries.

Regarding accountability, the issue is also related to governance, since, in a system that is based on very restrictive public service rules, there is almost no room for innovation or experimentation; thus, accountability is basically identified to accounting reports about where and how public funds were spent. Why have any performance goals, if those reading the reports are Public Accounting officials whose only interest is to check if money was spent according to a fixed set or rules?

Again, we see need for a major reform in terms of the institutional status of public universities, if the system is going to compete internationally and serve the nation.

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