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# Regional and International Challenges to Higher Education in Latin America

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Mobility of talented individuals, new providers of higher education, and participation in knowledge networks offer many possibilities for countries in Latin America to access state of the art knowledge, transfer technology, and exploit new business opportunities. In open, increasingly knowledge-based economies, advanced education and research are key to remaining competitive. Yet the international dimension of higher education is a double-edged sword for Latin America. Mobility of skilled individuals risks eroding the region's knowledge base and draining scarce resources. Every year emigration claims a significant portion of the region's better-educated population (Wodon 2003).

Countries in Latin America are becoming players in the global market for talent and higher education services. Between 1993 and 2002, the number of Latin American postsecondary students in the United States increased by 50 percent. Foreign providers have also entered the market for higher education in Latin America. European and U.S.-based institutions, such as the University of Bologna, the University of Heidelberg, and New York University, now offer programs or are establishing branches in the region. Within Latin America universities have also begun to operate across borders, such as Mexico's Technological Institute of Monterrey, which offers distance-learning programs over the Internet.

Evidence from Latin America and the OECD suggests that the best strategy for reaching the frontier of new knowledge is to engage in the exchange of people and ideas rather than turn inward. For countries in Latin America, the challenge is to provide learning, research, and job opportunities for talented individuals to ensure a sufficient supply of advanced skills to their national economies. Important steps have already been taken to increase the stock of highly skilled workers. Enrollment in higher education has more than doubled in the past decades and continues to expand, educational opportunities have diversified, and university management has been

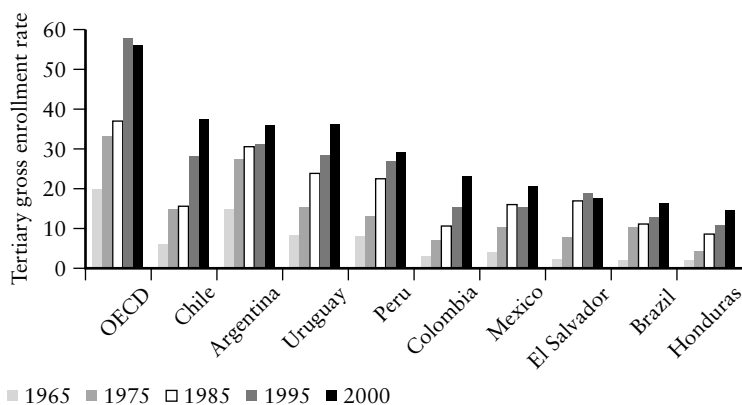
decentralized to increase responsiveness to students and industry. Nonetheless, the potential for higher education remains unrealized in Latin America. Graduation rates are low, higher education institutions face a multitude of quality problems, inequities are widespread, and there is a mismatch between many specialties offered and the needs of the labor market.

This chapter assesses the extent to which Latin American countries are prepared to meet the challenges and opportunities offered by the knowledge economy and the globalization of higher education. It examines recent trends and reviews the current status of key aspects of higher education in the region. The overview describes the context for the internationalization of higher education, the focus of the rest of this volume.

### Expansion and Diversification

Enrollment in higher education increased significantly in Latin America during the past four decades. In 2001, 23 percent of Latin Americans 18–24 were enrolled in postsecondary institutions. This represents an annual growth rate in enrollment of 2.3 percent since 1985. Argentina, Uruguay, and notably Chile are among the regional leaders, with enrollment rates of more than 30 percent (figure 2.1). Despite impressive growth, however, Latin America still lags behind leading economies. Among the OECD countries the average higher education enrollment rate is currently 56 percent (World Bank 2002d).

**Figure 2.1 Gross Higher Education Enrollment in Latin America and the OECD, 1965–2000**



Source: Task Force on Higher Education and Society (2000); World Bank (2002d).

Although less pronounced, expansion has also taken place in graduate education. In 1997 students in MA and PhD programs represented an estimated 2.4 percent of higher education enrollment in Latin America. This figure may understate the actual number, since it does not take into account growth in professions such as law and medicine, which in most Latin American countries do not lead to graduate degrees.

Despite the higher priority given to graduate education in recent years, Latin America produces a small number of PhDs. Every year the OECD countries produce 1 new PhD per 5,000 people (NSF 2002). In contrast, the ratio is 1 PhD per 70,000 people in Brazil, 1 per 140,000 in Chile, and 1 per 700,000 in Colombia (World Bank 2002b).

### *Approaches to Expansion*

Latin American countries have approached the expansion of higher education in different ways. In Argentina, Mexico, Uruguay, and Venezuela, public universities have expanded and diversified, and new public institutions have been created at the regional level to absorb some of the demand. In Brazil, Chile, and Colombia, public education has remained restricted, and private institutions have accounted for most of the increase in opportunities.

Differences notwithstanding, private provision of higher education has grown remarkably across the region in recent decades (table 2.1). Faced with rising demand for advanced learning opportunities, governments in several countries have deregulated the market for higher education, bringing an end to what had been a public sector monopoly. Except in Cuba, private institutions of higher education—for profit and nonprofit—are now found throughout the region, and in most countries the private sector has increased its coverage, complexity, and visibility. Currently, private institutions in Latin America account for more than 40 percent of higher education enrollment.

### *Nonuniversity Tertiary Education*

The growth in private provision has been accompanied by an increase in the number of nonuniversity tertiary institutions. Such institutions comprise technical schools, teacher colleges, and postsecondary vocational training facilities, generally offering programs of a shorter duration than universities. Currently, there are 3,000 nonuniversity tertiary institutions in Latin America, of which roughly 60 percent are private (Schwartzman 2002). A high proportion of postsecondary students in Latin America is enrolled in one of these institutions. The nonuniversity system accounts for 28 percent of total higher education enrollment in Venezuela, 30 percent in Chile, and 32 percent in Brazil (World Bank 2002a, 2002c).

**Table 2.1 Private Higher Education in Latin America, 1985–2002**

<i>Percent of total enrollment</i>					
<i>Year</i>	<i>40–75 percent</i>	<i>30–40 percent</i>	<i>20–30 percent</i>	<i>10–20 percent</i>	<i>Less than 10 percent</i>
1985	Brazil Colombia Dominican Rep.	Chile El Salvador Peru	Argentina Guatemala Paraguay	Costa Rica Ecuador Honduras Mexico Nicaragua Venezuela	Bolivia Cuba Panama Uruguay
2002	Brazil Chile Colombia Dominican Rep. El Salvador Nicaragua Paraguay Peru	Venezuela	Argentina Costa Rica Ecuador Guatemala Mexico	Honduras	Cuba Bolivia Panama Uruguay

*Source:* Schwartzman (2002); World Bank (2002a and 2003); OECD (2002a); García Guadilla (1998).

The differentiation of higher education has several positive implications. The region features far more learning opportunities today than it did a few decades ago. For this reason, the opportunity to accommodate a diverse student body with different backgrounds, skills, and aspirations has expanded. The impressive growth in higher education coverage could not have occurred had it relied solely on the existing, primarily public, higher education institutions. Diversification is crucial to the region's continual efforts to increase higher education enrollment and accommodate growing demand.

While positive developments in most respects, diversification and increased coverage have come at a price. Diversity of institutional ownership, autonomy, funding, and programs have contributed to a somewhat disjointed and fragmented system, made up of institutions that are only weakly linked. In Colombia, for example, the proliferation of a highly heterogeneous university sector has made it difficult to coordinate efforts and avoid internal inconsistencies (Brunner 2002a). A major difficulty throughout the region is the highly segmented character of nonuniversity tertiary education. These institutions often lack a clear educational policy and strategy, raising many questions about the quality and relevance of the learning offered. Problems are exacerbated by a lack of information on

educational content and labor market outcomes that could guide student choice (Brunner 2002a).

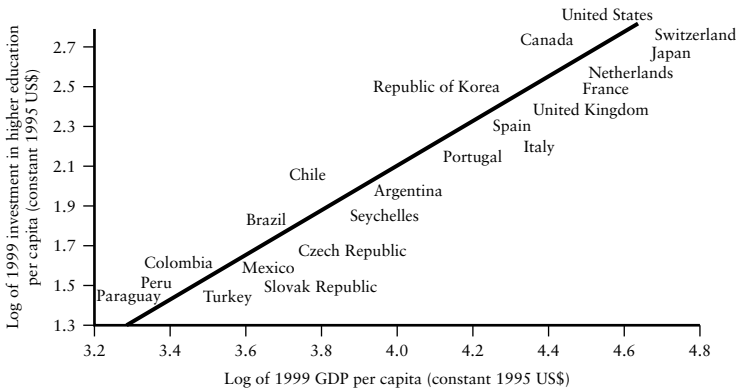
### Financing Higher Education

Expansion and improvement of higher education require adequate resources. To assess the relative size of investments in higher education in Latin America, figure 2.2 shows total public and private spending on higher education in 1999 relative to the level of income for a sample of 53 countries. The estimated trend line reflects the expected log of total (public and private) investment in higher education per capita when a linear regression is performed on the log of per capita GDP.

While tailing high-income OECD countries, Latin American countries invest close to what is expected based on their level of per capita income. Brazil, Paraguay, and Peru are positioned on the trend line, while Argentina and Mexico invest slightly less than predicted. Colombia and notably Chile perform above what is expected.

Chile and Colombia reveal the advantage of supplementing public subsidies with private contributions. Both are among the Latin American countries that allocate the least public funding to higher education relative to GDP (figure 2.3). But due to sizable private spending, they allocate the highest share of GDP to higher education in the sample. In addition to

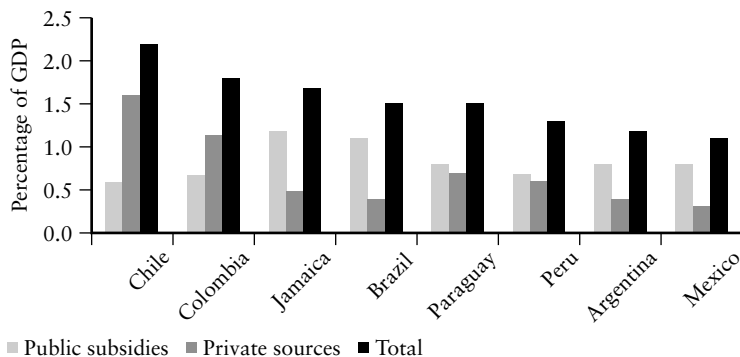
**Figure 2.2 Total Investment in Higher Education Relative to Income in Selected Countries, 1999**



*Note:* Some countries at the lower range were omitted to make the figure more legible. For the Sub-Saharan African countries in the sample, only 1996 data on public spending on higher education were available.

*Source:* OECD (2002a); World Bank (2002d); ADEA (1999).

**Figure 2.3 Investments in Higher Education in Selected Latin American and Caribbean Countries, 1999 (Percentage of GDP)**



Source: OECD (2002a); World Bank (2002c, 2002d, 2003).

increasing investment, private contributions have the potential to make the higher education system less vulnerable to fluctuations in the public sector's ability to invest in education.

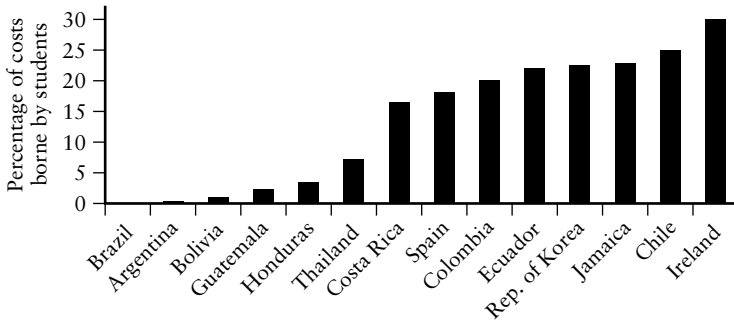
Public universities in Latin America are financed primarily through taxes. Reforms to increase reliance on cost recovery through student payment in one form or another are often politically contentious and are in many cases met with resistance. In 1999, for example, a move to raise tuition at Mexico's largest university, the National Autonomous University of Mexico, was abandoned following a student strike that closed down the university for several months.

Nonetheless, the tendency in recent years has been to rely increasingly on cost sharing in Latin America. Charging tuition to students who can afford to pay or have access to credit may be beneficial, since it provides additional resources for higher education and eases the strain on state budgets. In addition, it ensures that the costs of higher education are borne by those who reap the benefits.

The fraction of costs borne by students at public universities varies across countries (figure 2.4). In Chile, Colombia, Costa Rica, Ecuador, and Jamaica, the level of student financing is similar to that in Ireland, the Republic of Korea, and Spain. In other countries in the region, such as Bolivia, Guatemala, and Honduras, cost recovery is very low. In Argentina and Brazil, which charge no tuition for undergraduate studies at public universities, financial contributions from students are insignificant.

To prevent reducing quality as higher education expands, increasing reliance on cost recovery may be a viable option. Since charging tuition shifts

**Figure 2.4 Cost Recovery at Public Universities in Selected Countries in Latin America and the Caribbean**



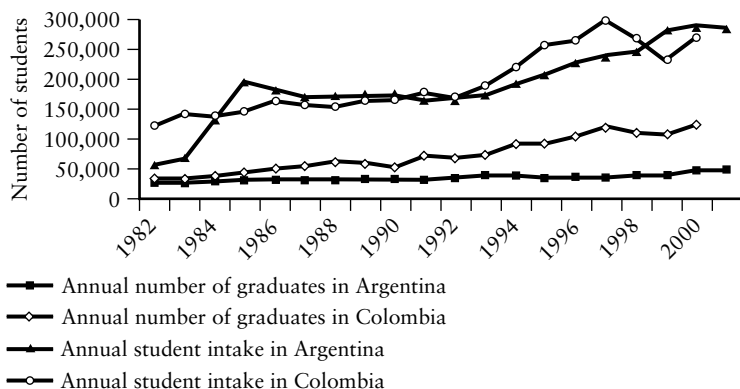
*Source:* Schwartzman (2002); World Bank (2002b); De Ferranti and others (2003).

influence from the institution and the government to the student and the family, such a measure would pave the way for a more demand-driven system. However, cost recovery is no panacea. Tuition-financed higher education may imply greater inequities. In Argentina, for example, students from the richest 20 percent of the population constitute 29 percent of the student body in free public higher education institutions, whereas the corresponding ratio in fee-charging private institutions is more than 60 percent (Del Bello 2002). The composition of the student body in Brazilian universities is similar (Schwartzman 2002). Consequently, reliance on cost recovery must be tied closely to financial assistance to needy students to maintain accessibility for low-income families.

In several Latin American countries, public universities are developing new ways of raising revenue. Many universities recognize that public subsidies will not grow in the near future. For that reason, they must be entrepreneurial. Some universities have begun generating income by selling services, contracting research, and renting out facilities. In Argentina, for example, resources generated by universities increased from 7 percent of the total budget in 1991 to 11 percent in 2001 (Becerra and others 2003). Exploring new sources of revenue can increase the universities' ability to be innovative and improve quality. It may also increase their relevance, since the sale of services requires universities to be responsive to the needs of society.

Addressing problems of low internal efficiency could ease budgetary constraints and provide the basis for improving quality and increasing coverage. Throughout the region, graduation rates are very low, and they have deteriorated in recent decades. Internal inefficiencies are particularly

**Figure 2.5 Annual Number of Students Admitted to and Graduated from Universities in Argentina and Colombia, 1982–2001**



*Note:* Figures for Argentina are for national universities, which account for about 85 percent of enrollment in higher education.

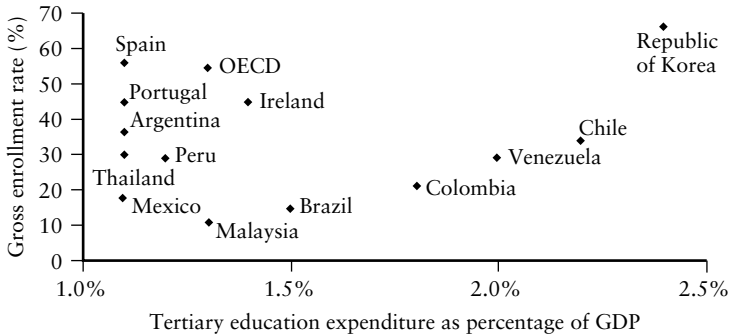
*Source:* Ministerio de Educación, Ciencia y Tecnología de Argentina (2002); ICFES (2000).

prevalent in countries with open access to universities. In Argentina, for example, 40 percent of university students drop out the first year (Marquis 2003). Assuming that it takes five years to complete higher education, only one in four admitted students graduates in Argentina; the figure is one in three in Chile and one in two in Colombia (figure 2.5).

The efficiency of higher education institutions varies across countries. While figure 2.6 arguably does not reflect differences in quality, it is noteworthy that Brazil, Colombia, and Venezuela have similar levels of enrollment as Malaysia, Mexico, Peru, and Thailand but spend a much higher percentage of GDP on higher education. Similarly, Argentina, Portugal, and Spain have higher enrollment rates than Chile but spend 1 percentage point of GDP less on higher education.

Low student-teacher ratios are a source of inefficiency in several Latin American countries. In federal universities in Brazil, for example, there are only 9 students per teacher, compared with 15.9 in Spain, 16.7 in the OECD, and 17.4 in Ireland (OECD 2002a). Combined expenditures on current and retired faculty members represent 80 of the total budget in Argentina and 90 percent in Brazil, leaving only limited resources for nonsalary expenditures (Marquis 2003). In comparison, the Republic of Korea spends less than half of its budget on teacher compensation (OECD 2002a).

**Figure 2.6 Gross Higher Education Enrollment Rate and Expenditure on Higher Education as a Percentage of GDP in Selected**



Source: OECD (2002a); World Bank (2002d).

## Teaching, Quality, and Relevance

The quality and relevance of human capital and knowledge generated by higher education institutions is critical to Latin America's social and economic development. While high-income countries are raising the stakes, Latin America is still dealing with longstanding problems, such as underdeveloped curricula, lack of teaching materials, underqualified faculty, and labor market imbalances.

### *Adopting New Pedagogical Approaches*

The significant expansion of higher education in Latin America has increased the diversity of interests, skills, and aspirations of admitted students. However, universities have not made sufficient provisions to accommodate such diversity by developing curricula that include a mix of teaching methods, learning content, and programs. High regional dropout rates and delays in graduation are testimony to this fact.

Most Latin American countries have yet to fully adopt a pedagogical model that involves student participation and an emphasis on "learning to learn" methodologies. Reproduction of content and sole reliance on classroom instruction are still widespread, and inadequate focus is often placed on cultivating skills such as creativity, reflection, and entrepreneurship. Adoption of a more problem-based mode of knowledge formation is made difficult by weak ties between university departments and the lack of a

multidisciplinary approach among instructors (Altbach 2003). In addition, students are usually required to specialize at the beginning of their studies. This system generates rigidities in the learning process. It goes against the international tendency of more general and module-based undergraduate education and specialization at the graduate level, and it complicates the delivery of short-term courses to an international audience.

A reason for concern is the loose ties between scholars and universities in Latin America. Roughly 60 percent of teachers at public and 86 percent of teachers at private universities work part time, and many of them hold more than one job (World Bank 2002b). While mobility brings some benefits, part-time employment often goes against attempts to establish a critical mass of professional instructors and researchers and efforts to create attractive learning environments in which teachers and students have time to interact.

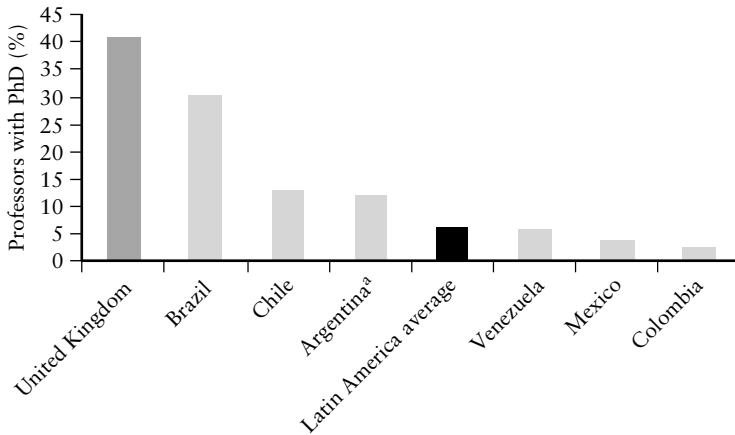
Processes to adjust pedagogical methods to changing circumstances in Latin America are slowed by deep-rooted practices and compensation structures that emphasize seniority rather than performance (Altbach 2003). To overcome such obstacles, teaching awards have been established in a number of countries to increase the visibility of good practices and encourage excellence in teaching and research. Mexico, for example, has a program that gives national recognition to outstanding members of academia. In addition to improving the quality of teaching, the program has been successful in reducing brain drain by providing opportunities and higher salaries to talented scholars (El-Khawas 1998).

### *Improving the Quality of Higher Education*

Latin American countries face a multitude of quality problems in higher education. These include overcrowded universities, deteriorating physical facilities, lack of equipment, obsolete instruction material, and outdated curricula. Provision of high-quality education is also hampered by weak learning outcomes in primary and secondary education. Universities in Latin America must often devote significant time and resources to upgrading the skills of secondary graduates who are ill-prepared for higher education (Brunner 2002a).

Insufficient qualifications of teaching staff are another concern. Few university professors in the region hold doctoral degrees (figure 2.7). Less than 4 percent of professors in Colombia and Mexico have PhDs; among the regional leaders in higher education, only 1 in 10 professors has a PhD, except in Brazil, where 30 percent of professors hold doctorates. For Latin America as a whole, less than 26 percent of professors hold master's degrees (García Guadilla 1998).

**Figure 2.7 Percentage of Professors with Doctoral Degrees in Selected Countries, 2001**



a. Includes public universities only.

Source: World Bank (2002a)

### *Assuring Quality*

Concerns about quality, deregulation of higher education, and growth in private provision have sharpened the focus on academic standards and quality assurance mechanisms throughout Latin America. Governments increasingly want to make sure that students receive value when investing time and resources in higher education (Balán 1996). Quality assurance is also recognized as a vital element in ensuring that the entrance of foreign providers does not reduce quality.

A tangible sign of the priority given to upholding quality standards is the establishment of independent national accreditation agencies and committees. Such systematic modes of quality control generally involve the certification of new higher education institutions and the accreditation of existing programs based on established standards and expectations.

In recent years accreditation agencies for undergraduate programs have been created in Argentina, Belize, Bolivia, Chile, Colombia, Costa Rica, El Salvador, Mexico, and Nicaragua. One example is Argentina's National Commission for Evaluation and University Accreditation (CONEAU). Created in 1995, CONEAU represents an attempt to establish a centralized and uniform system for monitoring the quality of universities (Hansen and Holm-Nielsen 2002). CONEAU plays a key role in

granting legal status to new institutions, both public and private, and it monitors private institutions for a number of years. While the most common arrangement is a single national agency, countries such as Colombia and Mexico have taken a more pluralist approach by establishing separate agencies for different regions, purposes, and types of undergraduate programs.

Accreditation of graduate education is also expanding in the region. The prime example is Brazil, which has a long-standing tradition of quality assurance of its graduate programs through the Coordination for the Improvement of Higher Education Personnel (CAPES) (Balbachevsky and Quinteiro 2003).

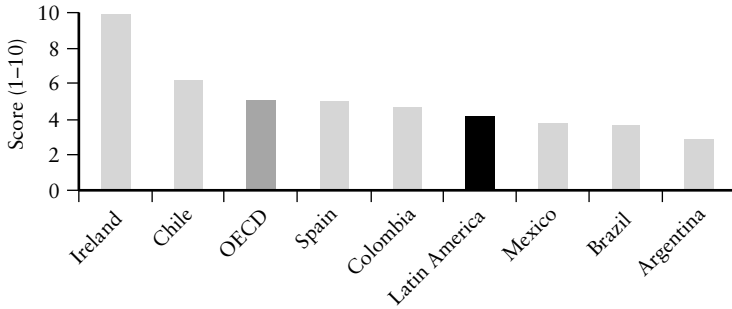
Methods of quality assurance used throughout the region include external peer review, quantitative performance indicators, and student assessment. In addition, institutional self-assessment focusing on strengths and weaknesses is a key ingredient in efforts to improve quality (DePietro-Jurand and Lemaitre 2002). There is also a trend toward emphasizing learning outcomes and acquired competencies of students rather than inputs and process aspects of education. Making good use of collected information and self-assessment processes requires universities to have the skills and resources to examine their programs critically and know how to improve them. For some institutions in Latin America, this entails strengthening the administrative capacity and nurturing a culture of improvement to ensure that quality assurance initiatives result in the desired change (El-Khawas, DePietro-Jurand, and Holm-Nielsen 1998).

Where governments in Latin America have neither the resources nor the means to manage the higher education system from above, indirect measures of quality assurance are sometimes used. One possibility is making public and private higher education institutions compete for high-scoring students with access to information on the quality and relevance of programs offered. In Chile, for example, incentives for quality improvement have been created by tying a fraction of public subsidies to each student admitted whose score in the national university entrance exam is among the top 27,000 (Araneda and Marín 2002). Another, not yet very widespread, option is limiting public financial aid to students attending accredited institutions (Hauptman 2002).

### *Improving Information on Labor Market Responses*

Effective labor market feedback systems, such as tracer surveys and regular consultations with employers and recent graduates, are indispensable for adjusting curricula and programs to meet the needs of society. Yet few governments or institutions in Latin America collect such information on a regular basis. Very few data are available on career paths of

**Figure 2.8 Degree to Which University Education Is Perceived to Meet the Needs of a Competitive Economy**



Note: Variables are normalized on a scale of 0 (lowest) to 10 (highest).

Source: IMD (2002).

higher education graduates, making it difficult to uncover potential discrepancies between supply and demand of highly skilled labor. Despite increased labor market responsiveness due to the rise of private higher education, programs in Latin America are still offered primarily on the basis of tradition or scholar preferences (Levy 2002).

### *Increasing the Relevance of Higher Education*

Higher education is not perceived as meeting the needs of a competitive economy in Latin America. Surveys conducted in 49 countries by the Institute for Management Development show that—with the exception of Chile—every country in the region falls short of the OECD average (figure 2.8). Mexico, Argentina, and Venezuela fare worst, while Colombia and Brazil receive marginally better evaluations. While cross-national surveys should be interpreted with caution, the data suggest that higher education in Latin America lags behind high-income nations in terms of relevance for industry.

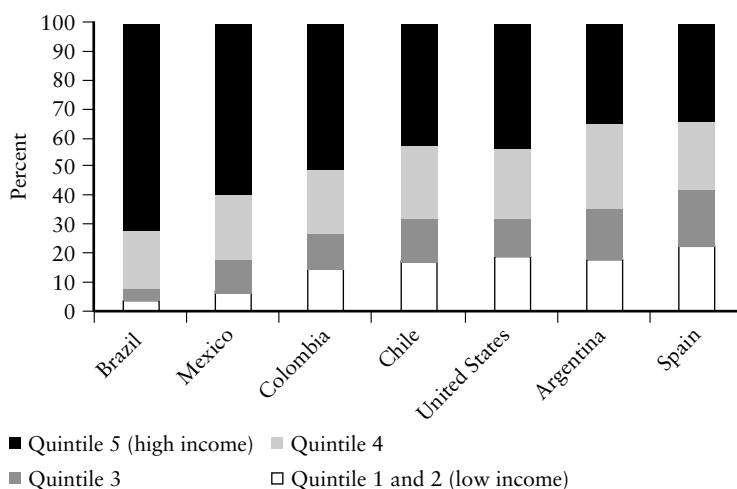
The relative wages of higher education graduates are on the rise in Latin America (see figure 2.12). Still, clear evidence of labor market imbalances remains. In Argentina, for example, the proportion of highly educated people among the pool of unemployed workers rose from 29 percent in 1990 to 38 percent in 1999 (EIU 2001). Some fields turn out large numbers of graduates despite the lack of demand in the economy. Argentina has more physicians per 1,000 people than the United States. By contrast, other careers, such as engineering, are undersupplied (Hansen and Holm-Nielsen 2002).

Recognizing the need to improve the relevance of higher education and to address imbalances, some countries have established labor market monitoring programs. Chile and Colombia recently set up labor market “observatories” to monitor and analyze the occupational performance of university graduates (Brunner and Meller 2004). Better information on labor market responses and experiences of graduates in their early careers can guide human resource policy, curricular adjustments, and investments in higher education. Across the region, countries are also trying to boost labor mobility between higher education institutions and the productive sector.

### Equity and Financial Aid

Expansion of higher education in Latin America has paved the way for better access to advanced training for less privileged groups. However, as enrollment of students from low-income families has increased, so has enrollment of groups already overrepresented in the system. The end result appears to be a distribution of students that is very much the same as before the expansion. Higher education in Latin America remains largely elitist, with the majority of students coming from the wealthier segments of society (figure 2.9).

**Figure 2.9 Distribution of University Students in Selected Countries, by Income Quintile, 2001**



*Note:* Data for the United States are based on first-year students at four-year colleges in fall 2002.

*Source:* World Bank (2002b); U.S. Census Bureau (2002); Chronicle of Higher Education (2003).

In Brazil students from the richest 20 percent of the population make up more than 70 percent of enrolled students, whereas the poorest 40 percent make up just 3 percent of the student body. In Mexico the least affluent 60 percent of the population accounts for only 18 percent of enrollment in higher education. Colombia, Chile, and particularly Argentina fare somewhat better, but access to higher education remains highly unequal.

In many cases regressive patterns in higher education stem from inequities in basic education. Students who can afford to pay for high-quality private primary and secondary education are often much better prepared for university entrance exams. Quality differences in basic education and tough admission policies lead to the situation in which affluent students are overrepresented in free public higher education institutions. Ill-prepared students from poor families are left with fewer choices, usually involving paying for education in private institutions that place less emphasis on test scores or forgoing higher education altogether. In countries where tuition is charged in public as well as private higher education institutions, less privileged students generally have few options for paying for schooling, let alone living expenses. As rates of return of higher education have risen relative to primary and secondary education, regressive enrollment patterns in higher education translate into higher returns on educational investment for richer families—a recipe for mounting inequalities in already unequal societies.

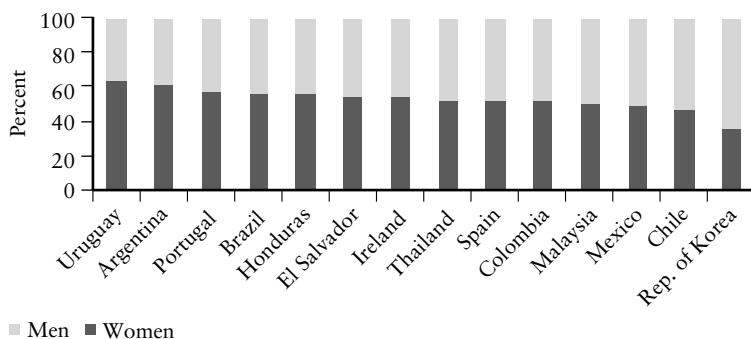
An effective response to income inequities is targeting financial aid to the most vulnerable. Such aid can be provided in the form of loans or scholarships. Experience from Latin America shows that a financial aid system that relies exclusively on loans can be an obstacle to increasing access to the neediest students (Schwartzman 2002). Poor families are often incapable of providing collateral and are generally reluctant to put themselves in debt. An approach that has proven effective is to make grants available to students with high need and merit and to provide loans to students with some need and excellent academic records (Hauptman 2002). Another option, applied with success in Australia, is providing loans with income-contingent repayment (Chapman 1997).

Despite its positive implications, the supply of financial assistance for higher education does not come close to meeting demand in Latin America. Student aid is generally scarce, and the availability of scholarships remains low. In Venezuela, for example, only 8 percent of students in higher education receive some form of aid. Financial assistance has a value of about one-fifth of the minimum wage, and no aid is available for nonuniversity institutions, where most needy students are enrolled (World Bank 2002a). Moreover, the little financial aid available in Latin America is not always targeted to students from low-income families. In Mexico, for instance, the likelihood of receiving a scholarship for university studies rises with the level of income (De Ferranti and others 2003).

Expanding access to higher education for academically qualified but financially needy students is critical to realizing the full potential of talented individuals in Latin America. Financial aid can, however, be a serious drain on public resources, since real interest and repayment rates are usually low (Hauptman 2002). A promising example of a financially sustainable student aid program is Mexico's Society for the Promotion of Higher Education (SOFES). Participating private universities buy shares in the designated student loan company, which is capitalized by the government and the World Bank. Interaction with students is the responsibility of universities that on-lend funds to students on unsubsidized terms. To date, the program has had single-digit default rates (Canton and Blom 2004). This is partly due to a provision under which a university has to replenish SOFES or become ineligible for additional funds if more than 10 percent of its portfolio is nonperforming. Although this and other initiatives in the region hold considerable promise, they operate on a relatively small scale. Much more remains to be done.

Income inequality does not translate into gender differences in higher education enrollment: in the region as a whole, there are few differences in enrollment rates between men and women, and in Argentina, Brazil, Colombia, El Salvador, Honduras, and Uruguay, women students are in the majority (figure 2.10). This is in contrast to the Republic of Korea, which enrolls a higher percentage of men. Not only do women in Latin America enroll in large numbers, they also perform better than their male counterparts and graduate at higher rates. In Colombia, for example, of the cohort that matriculated in 1995, 53 percent of the women and just 43 percent of the men graduated (World Bank 2003).

**Figure 2.10 Gender Distribution of University Enrollment in Selected Countries, 2001**



Source: UNESCO (2003); World Bank (2002a, 2002b, 2003).

The majority of Latin American women—like their counterparts around the globe—study traditional fields. Women are overrepresented in education, social sciences, and fine arts and underrepresented in engineering and the hard sciences. They make up a significant proportion of students in law and medicine.

The proportion of women among higher education faculty is generally high throughout Latin America. In Argentina, for example, women outnumber men in full-time university positions (Marquis 2003).

## Management of Higher Education

Historically, central and federal governments in Latin America played a significant role in planning and controlling higher education. Regulations and systemwide procedures left limited room for institutional innovation and differentiation. In many Latin American countries, the Ministry of Education determined budget allocations, student admission policies, and the content of offered programs. Institutions had little influence on the number of staff positions, the level of salaries, or promotions (Schwartzman 2002).

As educational opportunities and private sector provision of higher education expand, the rising complexity of the sector has made the model of top-down state control difficult to uphold. Most central and federal governments in Latin America have responded by transferring some powers to the regional or state level. Provinces now manage nonuniversity tertiary education in Argentina, states have a central role in university education in Mexico, and municipalities and states provide a significant part of postsecondary education in Brazil. As a result, funding for higher education has become more geographically dispersed, and the number of postsecondary institutions outside major metropolitan areas is on the rise.

In parallel with the process of decentralization, higher education institutions have been granted greater autonomy. In Venezuela the 1999 constitution guarantees the largest universities autonomy, giving universities there greater freedom to plan and organize programs, appoint their own authorities, designate personnel, and administer the budget (World Bank 2002a). Behind this and similar reforms in the region is the general assumption that those closest to the daily management of higher education institutions are in the best position to make and carry out decisions. In line with international trends in higher education, governing boards and managers are therefore given more leeway to make changes and transform institutions.

### *Improving Accountability and Incentives*

Autonomy, deregulation, privatization, and the arrival of foreign providers of education are not incompatible with continuing quality control

and maintaining a steering role for government. In parallel with deregulation and the delegation of authority, supervising ministries in Latin America increasingly rely on establishing a framework that provides incentives for desirable behavior in all areas of the higher education system (Thompson 1998). Such efforts entail holding institutions accountable for their use of public resources and creating systems that reward efficiency and quality. The aforementioned accreditation agencies are testimony to the importance attributed to performance and learning outcomes by governments in the region.

In keeping with these trends, the budget reform agenda in Latin America has moved away from negotiated budgets in which resources are allocated in accordance with tradition or political influence. Such allocation principles are deemed undesirable, since they do not reward high-performing institutions or foster efficiency. Instead, a number of Latin American countries are attempting to establish a direct link between performance and the disbursement of public subsidies. Some of the mechanisms used or being considered are competitive funds, performance-based funding formulas, and institutional performance contracts (Thorn, Holm-Nielsen, and Jeppesen 2004). The competitive fund under the Higher Education Improvement Project in Chile is an example of an innovative approach to university funding. Designed to accelerate processes of institutional modernization, the fund supports projects developed and proposed by higher education institutions. Committees of peers review and select proposals based on transparent procedures and criteria. To date, selected projects have targeted the need for reforming curricula, updating equipment, and strengthening graduate programs (Marquis 2000).

### *Improving Governance Structures*

Important differences exist between public and private universities with regard to internal management. Most private institutions have a centralized, profit-oriented management structure similar to that of a private enterprise. There are generally few mechanisms for internal consultation, and faculties often have limited influence on overall planning and management. While such arrangements are efficient and simplify processes of change, they do little to nurture a feeling of ownership among scholars, and they tend to reduce the flow of information and ideas from below.

By contrast, most public higher education institutions are governed by internally elected academic leaders represented in academic councils. In Brazil, for example, federal universities rely on collegial decisionmaking processes and elected leadership in each department or institution (Schwartzman 1998). Such an arrangement is a central component of a vital and creative academic community. It does, however, run the risk of

politicizing and decelerating necessary management decisions. In addition, internal elections do not provide a solid basis for professional leadership, as academic leaders are rarely trained in the management of large, complex institutions (Altbach 2003). For these reasons, public higher education institutions are generally in a weak position to take advantage of the opportunities arising from decentralization.

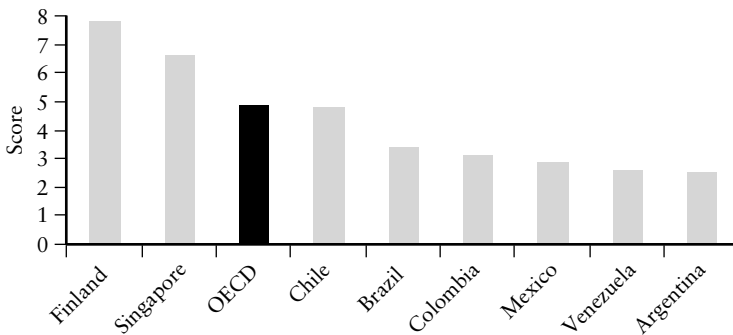
Strong links between universities and society in the management of higher education institutions can be an effective way to improve the relevance of programs and strengthen national innovation systems. However, universities in Latin America do not have strong traditions of involving and consulting stakeholders. In contrast to OECD countries, few higher education institutions in the region have a governance structure allowing for participation by representatives of industry and civil society (World Bank 2002b). This inward orientation of faculty and management is reflected in the perception of knowledge transfer between universities and industry (figure 2.11). With the exception of Chile, every sampled country in Latin America falls below the OECD average and significantly behind the best performers.

The lack of openness of higher education institutions comes at the expense of taking account of broad societal interests and realizing the full potential of cross-sector synergies and cooperation.

### *Increasing Flexibility*

An issue of rising importance in the management of higher education institutions is the ease with which students can move between different

**Figure 2.11 Perception of Knowledge Transfer between Universities and Industry in Selected Countries, 2001**



Source: IMD (2002).

learning settings. In most Latin American countries it is difficult to transfer credits from one program to another, let alone between institutions or between programs in different countries. In Venezuela, for instance, almost no agreements exist between universities to allow for the transfer of students or exchange of professors. Students who transfer rarely receive credits for previously completed coursework and often must take supplementary courses, even if the transfer is for the same degree program (World Bank 2002a). Despite relatively few language barriers, no attempt has been made to establish cross-national transfer systems, such as the European Credit Transfer System (ECTS). Strengthening vertical and horizontal linkages between institutions and programs in Latin America would reduce transactions costs, improve efficiency, promote competition between providers of education, and facilitate a focus on student demand for learning opportunities rather than the supply of predefined programs. It would also facilitate the return of students completing part of their education abroad and open the formal post-secondary education system up for lifelong learning opportunities.

### **Productivity and Innovation**

In recent years countries in Latin America have opened their economies by liberalizing trade and encouraging foreign investment. Integration into the world market has improved the region's access to technology and amplified the importance of knowledge as a factor of production.

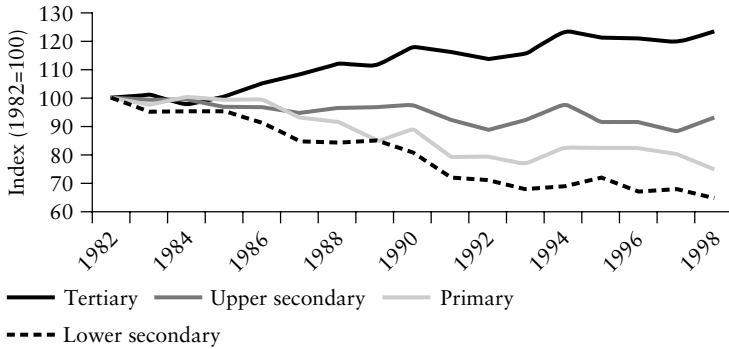
Productivity and competitiveness gains associated with the use of new technologies have increased the demand for advanced human capital. As a result, the relative wages of workers with higher education are on the rise everywhere in Latin America. In Brazil, for example, returns to higher education rose 23 percent between 1982 and 1998, while returns to primary and secondary education decreased (figure 2.12).

The payoffs to higher education are high in most Latin American countries. The rate of return is twice as high as the return to secondary education in Argentina, Chile, and Colombia and more than five percentage points higher in Brazil, Bolivia, and Mexico (table 2.2). A striking feature of Latin America is the fact that the rise in relative wages has taken place in parallel with increases in the relative supply of workers with higher education. Observed wage changes may therefore not fully reflect the increase in demand for higher education graduates.

#### *Innovation as a Driver of Economic Growth*

Access to advanced human capital is not only crucial in the productive sector, it is also a central component of national innovation systems. Evidence shows that the ability of public institutions and private firms to interact in a concerted way to generate and adopt knowledge, technology, and prod-

**Figure 2.12 Returns to Education in Brazil, by Level of Education, 1982–98**



Source: Blom, Holm-Nielsen, and Verner (2001).

ucts is a primary driver of economic growth (Lundvall 1992; De Ferranti and others 2003). Countries in Latin America have unrealized potential for improving their innovative capacity (figure 2.13). The number of scientific publications and patents is low, and ties between universities and the private sector are weak.

*Low Investment and Private Sector Involvement in Research and Development*

Total investment in research and development (R&D) almost doubled in Latin America between 1990 and 2001. Increases in spending were particularly large in Mexico, Chile, and notably Brazil, which has traditionally

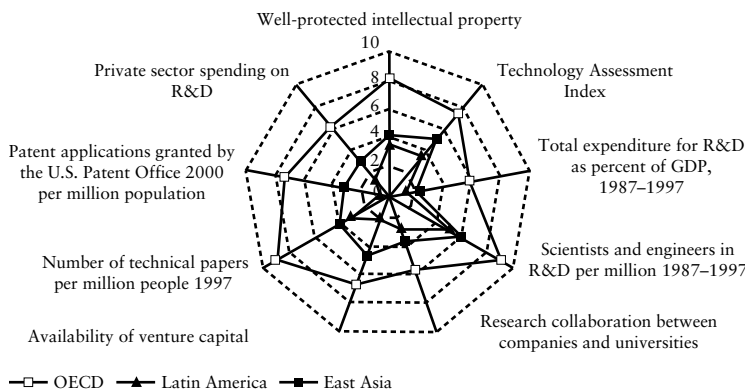
**Table 2.2 Rates of Return to Secondary School and University Education in Selected Latin American Countries, 2001**

(percent)

Country	Secondary school graduates	University graduates
Argentina	8	16
Bolivia	8	14
Brazil	15	22
Chile	12	24
Colombia	5	18
Mexico	10	16

Source: De Ferranti and others (2003); Duryea, Jaramillo, and Pagés (2001).

**Figure 2.13 Indicators of National Innovation Systems in Latin America**



Note: Variables are normalized on a scale of 0 (lowest) to 10 (highest).

Source: World Economic Forum (2000); World Bank (2002d).

given high priority to research at federal universities (World Bank 2002c). The region, however, still falls considerably behind world leaders in the field. In 2000 Latin American countries as a whole allocated 0.54 percent of GDP to R&D, while the average for the OECD was 2.24 percent (OECD 2002b). Ireland allocated 1.54 percent and the Republic of Korea 2.70 percent of GDP to R&D (World Bank 2002d).

Large structural differences exist between Latin America and the OECD with regard to the financing and execution of research. In OECD countries private industry is the main investor in R&D. In Latin America, by contrast, the bulk of research is financed by the government and carried out by public research institutes and universities. In Chile, for example, industry accounts for only 15 percent of research; in Peru the figure is just 10 (Hansen and others 2002). Research activities at private universities are also very limited in Latin America because of a focus on instruction and the low availability of qualified researchers among the faculty. In addition, the high percentage of part-time faculty places private institutions in a weak position to carry out research. Complementing public resources by encouraging private sector investment in R&D would provide Latin America with a much stronger basis for research and commercialization of innovations.

### *Inadequate Stock of Researchers*

In addition to being centers of research, higher education institutions play an important role as suppliers of researchers. Universities in Latin America

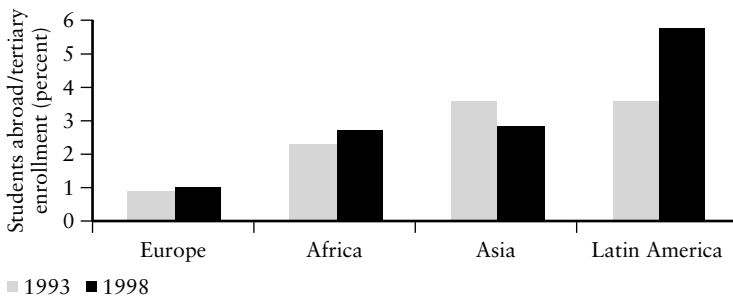
have not been effective in producing doctoral graduates and postdocs beyond their own need for qualified staff. In 1999 the region had only 0.32 researchers per 1,000 inhabitants, an alarmingly low figure given the OECD average of 5.51 (OECD 2002a). This gap can be explained partly by the low priority given to graduate and postgraduate programs, which translates into low annual PhD production in Latin America. The gap also stems from a lack of career opportunities for young researchers (Mullin and others 2000). In an environment of increasing internationalization of research and education, talented young researchers from Latin America often go abroad to make a better life for themselves and to progress in their fields.

### International Connectivity of Higher Education

The internationalization of higher education provides new opportunities for Latin America to access new knowledge, attract talented individuals, and learn from practices in higher education abroad. International connectivity in advanced education and research also holds considerable potential for strengthening national innovations systems in Latin America. For these reasons, Latin American countries are increasingly engaging in the global market for talent and higher education services.

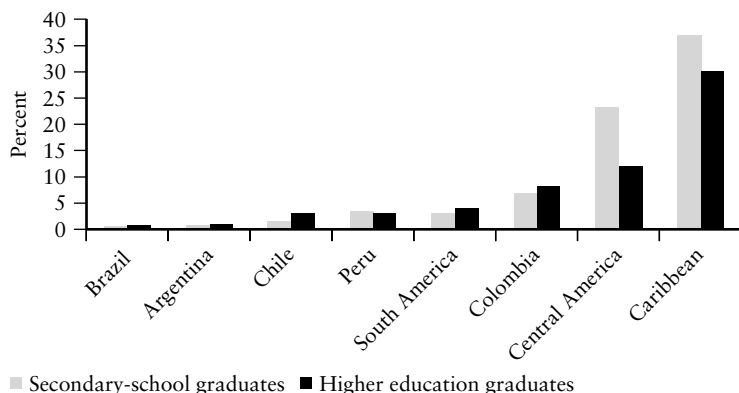
Latin America has more students at U.S. universities relative to the proportion enrolled at home than any other region in the world (figure 2.14). Europe—particularly Spain, Italy, and France—also hosts a significant number of students from Latin America (OECD 2002b).

**Figure 2.14 Foreign Students at U.S. Universities Relative to Proportion Enrolled in their Region of Origin, 1993 and 1998**



Source: De Ferranti and others (2003).

**Figure 2.15 Emigration by Educated Nationals in Selected Countries in Latin America and the Caribbean, 2000**



Source: Wodon (2003).

Moreover, a rising number of scholars from Latin America are teaching or conducting research abroad. In 2002 the number of visiting scholars in the United States from Argentina, Brazil, Colombia, and Mexico grew 20 percent (Chin 2003).

Temporary international mobility of skilled labor has positive implications for access to new knowledge. Permanent migration, however, erodes the human capital base and drains scarce resources. Every year emigration from Latin America to the United States claims a significant number of the region's better educated population. This is especially the case for countries in the Caribbean, among which 30 percent of graduates leave the country, and Central America, which loses 10 percent of its graduates to emigration. Estimated rates for South America are lower, with a high of 8 percent for Colombia (figure 2.15).

For Latin American countries, the challenge is to provide quality education and adequate opportunities for employment and merit-based career progression in order to retain talented individuals. To do so, Mexico runs a program targeted at researchers who have recently completed their PhDs abroad. The program provides incentives to return by establishing research positions, paying higher salaries, and covering repatriation expenditures. Between 1991 and 2000 the program funded the repatriation of more than 2,000 Mexican researchers living in 33 countries (Wodon 2003). Chile has established centers of excellence to raise the quality of research and to lure back highly skilled nationals. Reinforcing such initiatives will

place the region in a better position to profit from internationalization by harnessing feedback effects and drawing on the experience and skills of returnees.

### *Forming Partnerships with Foreign Institutions*

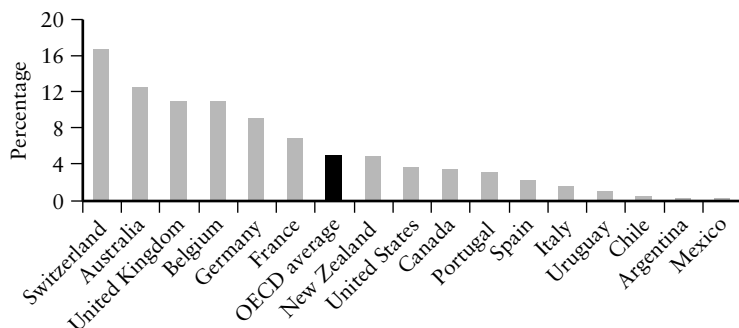
In recent years foreign providers have entered the market for higher education in Latin America. European and U.S.-based institutions provide learning opportunities or are setting up institutions in Latin America, and universities in the region are developing strategic alliances with sister institutions abroad. Within the region a number of universities have also launched programs targeted at students in neighboring countries and remote areas. Brazil, Colombia, Costa Rica, and Mexico, among others, have established distance learning programs. Mexico's Technological Institute of Monterrey (ITESM) operates a virtual university that provides distance education to more than 12,000 students throughout the Americas. To overcome cross-national inconsistencies and provide the means for certification of skills, ITESM has formed partnerships with local universities, such as the Universidad Católica in Chile and the Instituto Tecnológico de Buenos Aires in Argentina (UNESCO 2002; Burkle 2002).

### *Inadequate Strategies for Trade in Higher Education Services*

Latin American countries are sending students abroad in great numbers. However, they have been less successful in attracting skilled foreigners to the region. Governments in Australia, the United Kingdom, and a number of smaller OECD countries have developed active international recruitment strategies and provided the necessary resources to cater to foreign students. These countries now have above 10 foreign students per 100 national students. For Uruguay, Chile, Argentina, and Mexico, foreign students constitute less than 1 percent of enrollees in higher education (figure 2.16).

Trade in higher education services is a reality, and its future growth has significant implications for Latin America. The OECD estimates the current monetary value of trade in higher education services at about 3 percent of total trade in services in its member countries (Larsen, Morris, and Martin 2002). Due to a high outflow of students and a limited inflow, Latin American countries are facing a growing deficit in the trade of higher educational services. Brazil, for example, spent an estimated \$78 million on nationals studying abroad in 2000. The same year, revenues generated by foreign student flows into Brazil amounted to only \$4 million. In contrast, Australia had a surplus in the trade of higher education services of almost \$1.8 billion in 2000 (OECD 2002b).

**Figure 2.16 Foreign Students as a Percentage of All Students Enrolled in Host Country, in Selected Countries, 2000**



*Note:* Data for Argentina, Chile, and Uruguay are from 1999.

*Source:* OECD (2002a).

Latin American strategies for reaping greater benefits from trade in educational services are still in their nascent stages. It remains to be seen how the Global Agreement on Trade in Services (GATS) will influence the global market for higher education and what role Latin America will play in this market (Knight 2003).

### The Way Ahead

This chapter overviews developments in higher education in Latin America in order to assess the readiness of the region to realize the potential of the knowledge economy and the globalization of higher education. Considerable progress has been made in recent years. Enrollment in higher education has risen to almost one-third of the 18–24 age cohort, and growth of private provision and nonuniversity tertiary education have expanded learning opportunities. Quality assurance mechanisms are being established in the region, and institutions are increasingly being held accountable for their performance. Latin American countries offer many possibilities for students wishing to enroll in advanced education, and recent advancements hold considerable promise for bringing the region closer to the international knowledge frontier.

Important progress notwithstanding, many problems persist, and there is a need to give priority to higher education. Programs are often of low quality and relevance, and talent is underused, due to considerable inequities. Widespread inefficiencies reduce the return on the use of scarce resources, the lack of credit transfer mechanisms impedes national and international

mobility, and the region falls far short of building a critical mass of researchers of international repute.

The process of internationalization has important implications for Latin America, especially with regard to gaining access to the rapidly increasing pool of knowledge and know-how. The internationalization of education appears not yet to have reached a sufficient level of importance on the political agenda. A large number of Latin American students study outside Latin America, and many university graduates emigrate to the north. Latin American countries have not been able to develop adequate strategies to attract foreign students or skilled nationals from abroad. It is therefore likely that Latin America in general will not reap the full benefits of the GATS.

Adopting a proactive approach to higher education and research by setting strategies for the medium and long term would help the region shape the agenda for the future rather than reacting to changes introduced by other stakeholders in the international educational community. In this regard, it is critical that Latin American countries strengthen their capacity to generate and analyze data on the performance of their higher education sectors. Filling information gaps in learning and labor market outcomes would provide a strong basis for long-term policy decisions, which, in turn, would improve the prospects of reaping the full benefits of internationalization.

Recent reforms of higher education in Latin America are broadly consistent with international trends. While Latin American countries appear to be on track to develop modern higher education systems, they may not be moving at a fast enough pace, as high-income nations continue to advance rapidly. Latin America should not only create learning opportunities at the current rate of the OECD countries but also aim at closing the gap. Boldly welcoming this challenge by applying creative and innovative approaches to higher education will be key to the success of Latin America in the global market for knowledge and talent.

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