


SABER

Working Paper Series

Number 11

June 2016



What Matters Most for Tertiary Education Systems: A Framework Paper

**What Matter Most for Tertiary Education
A Framework Paper**

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TABLE OF CONTENTS

Acknowledgments.....	3
Acronyms	4
Abstract.....	5
Introduction	6
Systems Approach to Better Education Results (SABER).....	9
Past and Present World Bank Group Work in Tertiary Education	11
The Importance of Tertiary Education for Society.....	14
The Status of Tertiary Education Worldwide.....	18
Conceptual Framework.....	26
Vision for tertiary education.....	28
Regulatory framework for tertiary education.....	29
Governance.....	30
System coordination (articulation).....	30
Institutional autonomy.....	31
Finance	32
Quality of tertiary education.....	36
Equitable access, retention, and success.....	38
Relevance of tertiary education for economic and social development	39
Annex 1: Types and Duration of tertiary education	41
Annex 2: SABER-TE Scoring Rubric.....	43
References	54

ACKNOWLEDGMENTS

Appreciation goes to the following World Bank peer reviewers for their great contributions and enhancement of the paper, the data collection instrument and the scoring rubrics at different stages (in alphabetic order): Dina Abu-Ghaida, Diego Ambasz, Nina Arnhold, Roberta Basset, Tara Beteille, Javier Botero, Svava Bjarnason, Xiaonan Cao, Peter Darvas, Juliana Guaqueta, Mohammed Ali Khan, Toby Linden, Sachiko Kataoka, and Jason Weaver.

Also, the insights and feedback received from Claudia Costin (Senior Director, Education Global Practice), Amit Dar (Director, Education Global Practice), and Luis Benveniste (Practice Manager, Global Engagement and Knowledge) were extremely useful. In addition, Elizabeth King (former Vice President, HDNED), and Harry Patrinos (former Practice Manager, Education), provided initial insightful advice.

Relevant perspectives were provided by Gary Rhoades (Center for the Study of Higher Education, University of Arizona) and Jose Gines-Mora (Institute of Education, University of London). In addition, many thanks to the International Association of Universities (IAU) for its participation in managing the validation process for the DCI and SR. Thanks to IAU, experts from across the globe provided invaluable input. They include Francesc Xavier Grau, Ricardo Reich, Peter Eckel, Molly N.N. Lee, Leapetswe Maletse, Jose Joaquin Brunner, Alex Usher, Svava Bjarnason, Goolam Mohamebhai, Maria Jose Lemaitre, Remus Pricopie, John Fielden, Piyushi Kotecha, Giorgio Marinoni, Hany Helal, Ellen Hazelkorn and Eva Egron-Polak.

Several people contributed to this paper. Special thanks to Blanca Torres-Olave for her insightful analytical work and detailed research literature review. In addition, other team members who contributed ideas and perspectives include Husein Abdul-Hamid, Viviana Venegas Roseth, Hana Addam El Ghana, Edna Parra, Silvia Marchionne, Lea lungmann, Giulia Marchesini, Veronica Malo and Michelle Gonzalez-Amador. Also, it is highly appreciated the work done in support of the development of the Data Collection Instrument (DCI) and the Scoring Rubrics (SR) for SABER-TE, by Georgiana Mihut, Ivan Pacheco, Ryan Flynt, and Jaana Puukka. Also, many thanks to Jessica Swan Cross, Michael John Melamed, Tara Danica Siegel, and, especially, Peggy McInerney, for their guidance and support in editing the document. Last but not least, many thanks to Lorelei Lacdao for her administrative and logistical support.

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ACRONYMS

COREHEG	Core Higher Education Group Community of Practice at WBG
DCI	data collection instrument
EMIS	education management information system
IFC	International Finance Corporation
ISCED	International Standard Classification of Education
KPI	key performance indicator
IQA	institutional quality assurance
IMF	International Monetary Fund
LLMICs	low- and lower-middle-income countries
MDGs	Millennium Development Goals
MENA	Middle East and North Africa
MTCU	Ministry of Training, Colleges, and Universities (Ontario, Canada)
MYAA	Multi-Year Accountability Agreement
NQF	National Qualifications Framework
OECD	Organisation for Economic Co-operation and Development
SABER	Systems Approach for Better Education Results
SR	scoring rubrics
TE	tertiary education
TEA	Tertiary Education Authority
TEMIS	Tertiary Education Management Information System
TEI	tertiary education institution
TVET	technical and vocational education training
UNESCO	United Nations Educational, Social, and Cultural Organization
UGSC	University Governance Score Card
WBG	World Bank Group

ABSTRACT

The main objective of this paper is to outline what policies matter most for an effective tertiary education (TE) system. It is crucial to ask not simply whether a system is working, but whether it is working to cope with current and expected demand in nations across the world. The paper presents the conceptual background and operational tools of the Systems Approach for Better Education Results (SABER)-TE domain. These tools are intended to be used by government education policy makers to assess policy areas of relevance to a country's tertiary education system, benchmarking national policies against international best practices. The instruments are designed to be sensitive not only to the aggregation and benchmarking of best practices, but also to the disaggregation of the often-unintended effects of traditional tertiary education policies and practices.

SABER-TE is intended to collect, synthesize, and disseminate comprehensive information on tertiary education to enable policy makers, the World Bank Group (WBG) staff, and development partners to learn how countries address similar policy challenges.

The paper first provides a historical perspective on the World Bank's involvement in tertiary education. Next, it discusses the importance that tertiary education has in today's society and presents a brief review of the most significant issues and trends in tertiary education worldwide. In the second part of the document, the SABER-TE guiding principles are discussed, as well as the policy areas that the framework assesses. The document then describes instruments for data collection; a rubric for scoring, benchmarking, and analyzing the data; and methodological approaches for collecting and disseminating the findings of a SABER-TE assessment.

INTRODUCTION

Since the enactment of the Millennium Development Goals (MDGs) in 2000, the world has experienced remarkable progress in achieving universal primary education. With the exception of Sub-Saharan Africa and South Asia, primary school enrolment is at least 90 percent around the globe (United Nations, 2014). Millions more children are now in school as a result of more effective education and development policies, plus sustained national investments. Even in the poorest countries, average primary school enrollment rates surged above 80 percent and completion rates, above 60 percent. Globally, the number of out-of-school children of primary school age fell from 106 million in 1999 to 58 million in 2011. Despite these achievements, great challenges remain ahead in creating equitable opportunities across educational levels. Consider the fact that close to 175 million young people—that is, one-quarter of the youth population in low- and lower-middle-income countries (LLMICs)¹ — are barely literate (UNESCO 2014). These statistics show the need for ongoing concerted and consistent action at the primary and secondary educational stages.

As part of its Education Strategy 2020: Learning for All, the World Bank Group (WBG) has committed to aiding its country clients in achieving universal education goals, recognizing that simply increasing access is not enough (World Bank 2011). A new approach is necessary in the face of rapid social changes, including a surge of young people eager to enroll in secondary and tertiary education in most emerging economies, growing urbanization in the developing world, a record 210 million people out of work worldwide (ILO and ILS 2012), and the rise of new middle-income countries anxious to boost their economic competitiveness by training more skilled, adaptable workforces. These circumstances call for transforming gains in schooling into improved learning outcomes and better adapting education to new social and economic needs. Indeed, success at the primary and then secondary level breeds demand for greater participation in tertiary education, a demand that is further amplified by the changing requirements of employers globally. To participate in the global society and economy requires increased access to and success in tertiary education. Only such access will enable developing countries and economies to catalyze increased primary and secondary educational attainment into increased economic and social development.

The WBG's Learning for All Strategy aims at giving all people equitable opportunities to acquire the knowledge and skills that they need to have healthy and satisfying lives, to be good citizens, and to be productive contributors to their countries' economic and social development. This aim is fully concordant with the WBG's twin goals of eliminating extreme poverty in the world and boosting shared prosperity (see World Bank 2013b). This endeavor requires working across the entire education system—from early childhood development to better teacher training to tertiary education (TE) and skills development—to ensure that education is effective in supporting progress towards those goals. After all, tertiary education is the key to enhancing primary and secondary education, as tertiary institutions prepare the teachers, administrators, leaders, and other educational professionals who staff the schools and are the key components of human capital that contribute to increased educational quality and attainment in schools.

¹ Low-, middle-, and high-income countries are defined, respectively, as those with a 2013 per capita gross national income (GNI) of US\$ 1,045 or less, between US\$ 1,046 and US\$ 12,745, and above US\$ 12,746, respectively, based on World Bank data and estimates.

Box 1. Defining Tertiary Education

Tertiary education (TE) broadly refers to all education (whether public or private) that occurs following secondary education. The term "tertiary education" is usually distinct from "higher education (HE)," which refers more narrowly to education offered in universities and colleges that award academic degrees and professional qualifications. The more encompassing term "tertiary education" includes not only universities and colleges, but the entire diverse set of public and private postsecondary institutions in a given country—including technical and vocational education and training (TVET) institutes, community colleges, nursing schools, research laboratories, centers of excellence, distance-learning centers, and many more. For the purposes of this paper, "tertiary education" follows the formal definition of the International Standard Classification of Education (ISCED), the reference classification administered by UNESCO that organizes education programs and related qualifications by level and field. According to the ISCED, tertiary education includes levels 5 to 8.*

*A more detailed list of types of academic programs and corresponding codes is included in annex 1.

Despite the manifold benefits of investing in and strengthening tertiary education offerings, the policy environment in many countries remains deeply inadequate. That is, national policy does not ensure equitable access, retention, and the success of all qualified students, regardless of background. For significant change to take place it is essential that decision making in tertiary education be based not only on concrete evidence of current performance, but also on the ability of current policies and programs to drive future performance. It is also essential that policies be grounded in considerations and models appropriate to the needs and conditions of the local economy and society, rather than tertiary models geared toward quite different economies and student populations who do not represent the global majority.

In recent years, the WBG launched a comprehensive initiative known as the Systems Approach for Better Education Results (SABER). This initiative helps countries systematically examine their education-relevant policies using benchmarking methodologies. Work is underway in several SABER policy domains (see Figure 1). By 2014, SABER had been applied more than 200 times in more than 100 countries, resulting in 55 country reports and related data (available on the SABER website at <http://saber.worldbank.org> (World Bank 2014)). Its results have been used to guide policy dialogue in a variety of educational areas. In the context of both great potential and challenge, the WBG has identified tertiary education as a subsector of the education system in which this methodology may help governments and institutions better assess their policies in terms of readiness and implementation. To date, however, only partial analytical work has been carried out in the form of an initial methodology for analyzing governance policies in the subsector.

The main objective of this paper is to outline a framework for a SABER-Tertiary Education (henceforth referred to as SABER-TE) benchmarking tool intended to help policy makers and other stakeholders make informed decisions on how to achieve system-wide goals for tertiary education. SABER-TE collects, synthesizes, and disseminates comprehensive information on tertiary education to enable policy makers, WBG staff, and development partners to learn how countries address similar policy challenges and to track differences among countries in terms of needs, policies, and practices.

The paper first provides historical perspective on the involvement of the World Bank in tertiary education. Next, it discusses the importance of tertiary education in today's society and briefly reviews the most significant issues and trends in TE worldwide. It then discusses the guiding principles of SABER-TE, as well as the policy areas that it assesses. The document goes on to describe the instruments used for data collection; the rubric for scoring, benchmarking, and analyzing the data; and the methodological approaches for both collecting and disseminating the findings of the assessment instrument and for

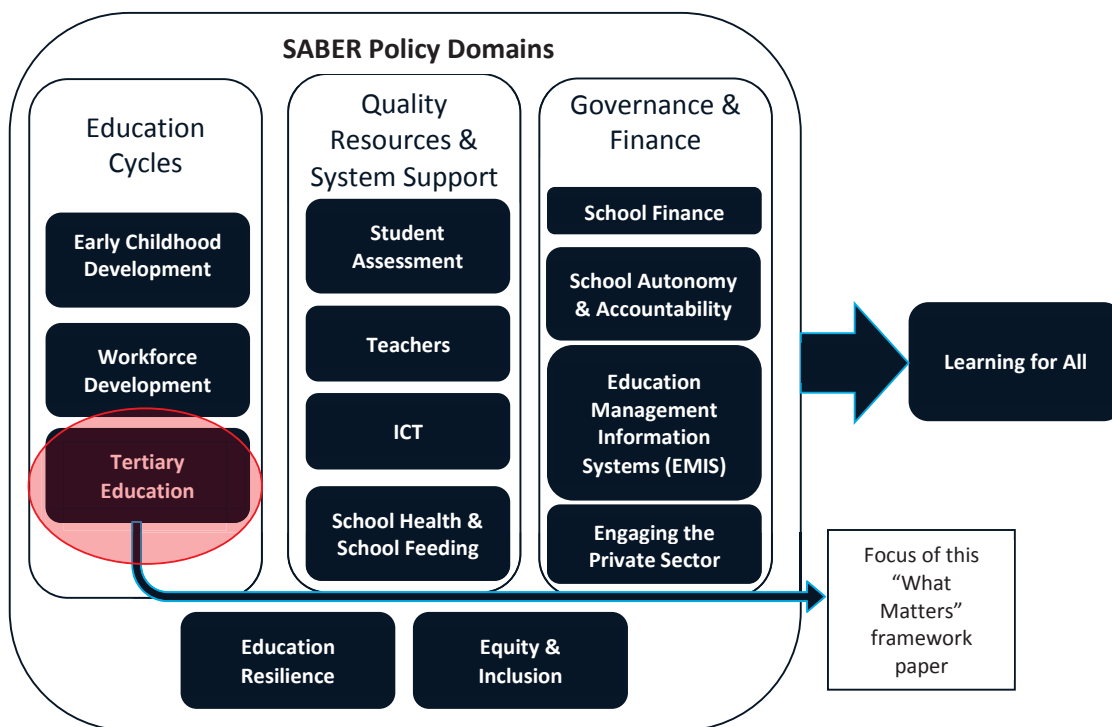
recalibrating parts of a tertiary system that require such work. The latter step is often overlooked when implementing decisions to improve organizational performance and educational results; part of a systems approach is to provide a feedback loop within a system, ensuring that knowledge about how a system is operating is obtained in order that that parts of that system can be refined, reset, or re-engineered, as needed.

SYSTEMS APPROACH TO BETTER EDUCATION RESULTS (SABER)

Within the SABER initiative, a consistent benchmarking system has been established for analyzing a number of specific education policy domains covering the span from early childhood to entry into the workforce (figure 1). For each SABER domain, a series of diagnostic tools have been developed to assess a country's level of educational policy development and to allow for cross-country comparisons.

SABER is intended to help education systems align their governance, management, incentives, financing mechanisms, human resources, and quality assurance systems more effectively around the goal of improving learning outcomes. Countries select the SABER policy domains they find most valuable and relevant to their context and work with the World Bank to apply SABER toolkits to their education systems.

Figure 1: SABER Policy Domains



Source: World Bank (2013c).

As noted in the introduction, SABER-TE offers a conceptual framework and benchmarking tools to help policy makers and other stakeholders make informed decisions to achieve system-wide goals for tertiary education. SABER-TE collects, synthesizes, and disseminates comprehensive information on tertiary education to enable policy makers, WBG staff, and development partners to learn how countries address similar policy challenges. At the same time, it helps the system target distinctive challenges and opportunities within particular regional, national, and local contexts.

SABER-TE is an evidence-based diagnostic tool designed to evaluate tertiary education systems. It helps improve their ability to evaluate data quality *and* the systems themselves in order to enhance educational

quality at the tertiary education level. It follows a descriptive assessment approach, focusing on elements of tertiary education systems that are observable and appraisable to an evaluator with expert knowledge of the structure and conventions of a tertiary education system in a given country. Evaluations are based on direct observations, consultations with key stakeholders and experts in the country, as well as review of relevant primary sources and literature.

Government education policy makers can use SABER-TE to assess policy areas of relevance to a country's tertiary education system and then benchmark them against international best practices. The tool's evidence-based framework is also envisioned as a means to evaluate intended policies and their implementation in particular contexts.

PAST AND PRESENT WORLD BANK GROUP WORK IN TERTIARY EDUCATION

Since 1963 the WBG has actively supported the growth and diversification of tertiary education systems in developing countries and has promoted essential policy reform in the subsector. In the 1960s and 1970s, a time of great social and geopolitical upheaval, the WBG primarily focused on supporting technical and manpower training initiatives aimed at poverty alleviation. In the 1970s and 1980s, much of the support provided by the WBG to tertiary education projects was piecemeal, with a narrow focus on the establishment of new programs or discrete quality improvements in existing teaching and research activities, especially at the institutional level (World Bank 1994). Up until the late 1980s, the WBG did not have an explicit, official policy for the tertiary education subsector.

In the early 1990s, the WBG undertook an internal review of implementation experience with tertiary education projects, as well as an assessment of recent and ongoing interventions in the subsector. Significantly, these initiatives led to the recognition that tertiary education systems are a key priority for development and that the Bank's existing approach did not offer the long-term comprehensive support necessary for the effective performance of these systems (World Bank 1994).

In 1994 the WBG published a landmark report, *Higher Education: The Lessons of Experience*.² The report drew on the Bank's operational and policy analysis experience, a review of existing literature, and original studies in an effort to explore options and strategies for improving the performance of tertiary education systems in developing countries. The report identified four main directions for reform:

- 1) Greater differentiation of institutions—including the creation of non-university institutions such as polytechnic institutes, community colleges, and technical and vocational education and training (TVET) institutions—as well as promoting the introduction of private tertiary education providers.
- 2) Incentives for public institutions to diversify sources of funding, including cost sharing and linking government funding to performance.
- 3) Redefining the role of government in tertiary education.
- 4) Introducing policies specifically designed to address quality and equity objectives. To a large extent, these strategies have remained pillars of the Bank's ongoing policy strategy for helping tertiary education drive economic and social development (World Bank 1994).

The report was not exempt from criticism. Although it outlined recommendations for focused WBG involvement in tertiary education, the document stressed that such involvement should not distract governments from addressing policy priorities and directions in primary education. This narrative was interpreted by some as a directive to de-invest in tertiary education (Samoff and Carrol 2004). The report indicated that the existing evidence showed that investments in tertiary education had lower social rates of return than investments in primary and secondary education, and that investments in primary education could have a more direct impact in poverty reduction because they tended to improve income equality. Primary and secondary education, stated the report, would continue to be the highest-priority subsectors in the Bank's education lending (World Bank 1994).

In 1998, in collaboration with the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the WBG convened a Task Force on Higher Education and Society, which brought together education experts from 13 countries to explore the future of tertiary education in developing countries.

² At the time, the World Bank had not yet adopted the broader "tertiary education" term.

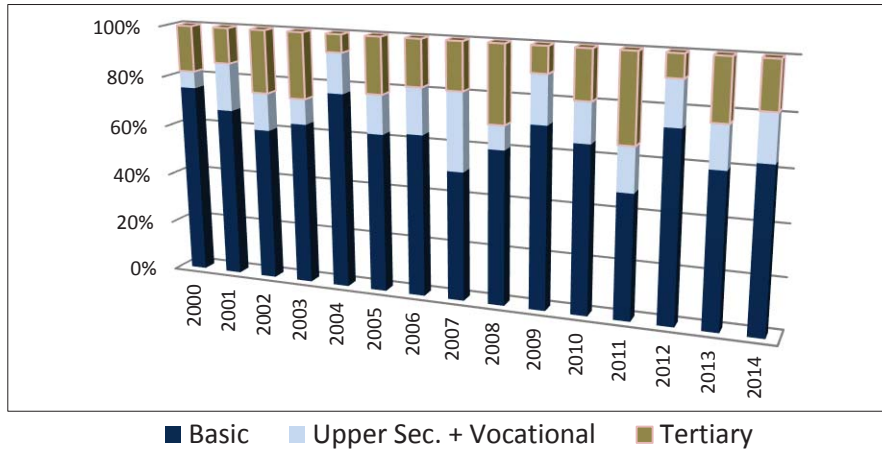
The Task Force highlighted the need to develop the teaching and research capacity of national tertiary education systems in order for developing countries to be competitive in the knowledge economy. Among the main innovations introduced by The Task Force's final report, *Higher Education and Developing Countries: Peril and Promise* (World Bank 2000), were calls: to 1) expand the pool of students with specialized skills and support a general education that encouraged flexibility and innovation; 2) increase access to tertiary education, especially by students from disadvantaged backgrounds; and 3) expand and improve opportunities for lifelong learning, so that individuals could upgrade their skills as needed in a changing economic environment.

Since then, the WBG has strived to develop more productive ways of supporting tertiary education reforms and innovations. It does so through observation and analysis of tertiary education reforms in client countries, promotion of best practices and benchmarking exercises from an international perspective, and the provision of financial support to country governments and institutions.

Currently, the Bank has a highly diversified portfolio of more than 80 lending and technical assistance projects in tertiary education, which deal with a variety of specific areas, including quality assurance, institutional diversification, performance-based funding schemes, alignment of academic offerings with market and societal needs, financing of equitable access programs, public-private partnerships, science and technology, and governance reform, among others. The tertiary education portfolio represents, on average, 20 percent of the total WBG investment in education (figure 2). From 2003 to 2012, the Bank lent US\$ 3.34 billion to 110 education projects with tertiary education components in 58 countries. Also, as of June 2014, the International Financing Corporation (IFC) —the private sector arm of the World Bank Group—had an education portfolio of US\$ 770 million, of which approximately 70 percent was devoted to tertiary education initiatives.

At the same time, one of the WBG's priorities is to create a robust global knowledge base that informs dialogue on how to improve the efficiency and equity of tertiary education around the globe. The development of SABER-TE is a central component of this strategy. By creating detailed, comparable analyses of the characteristics, strengths, and weaknesses of tertiary systems while recognizing their unique characteristics, SABER-TE seeks to create a unique knowledge base to guide reform strategies and programmatic priorities.

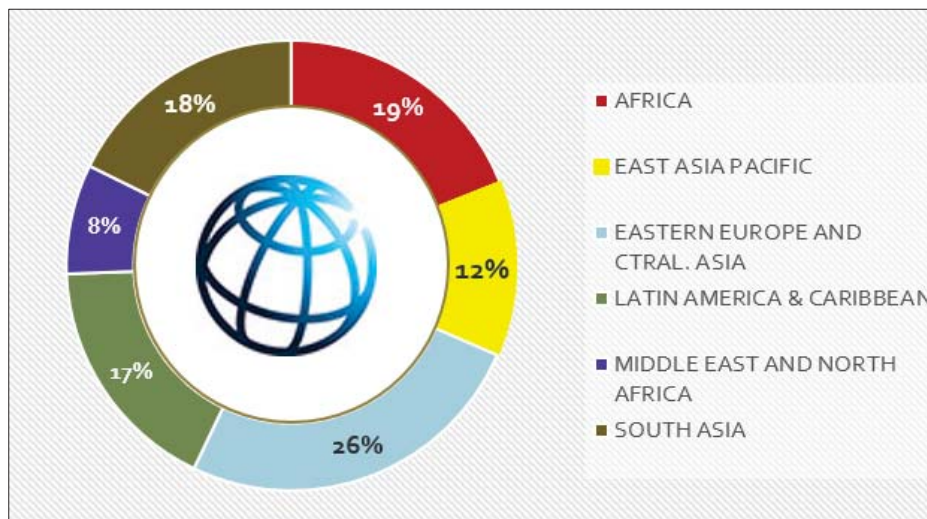
Figure 2. Distribution of WBG Educational Investments, FY 2000–2014



Source: World Bank Data (2014).

WBG projects are reasonably distributed among the different regions of the world in which the WBG operates (figure 3).

Figure 3. Distribution of WBG Educational Investments by Region, FY 2013–2014



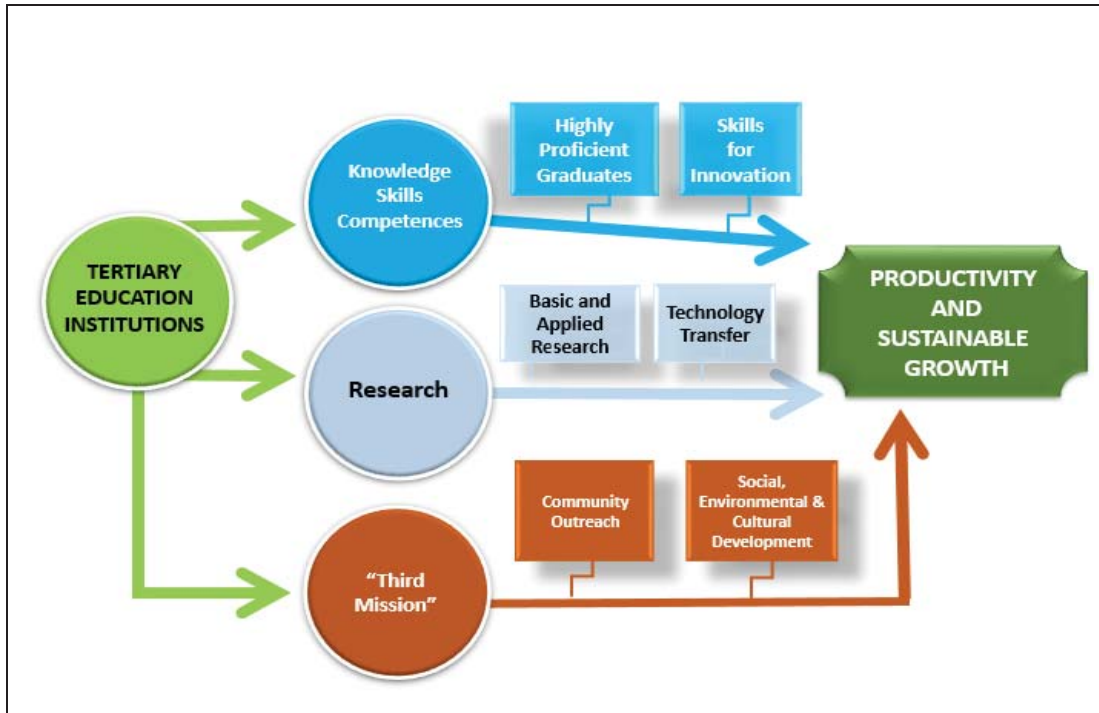
Source: World Bank Data (2014).

The following sections provide an overview of the importance of tertiary education for society, followed by a discussion of its status in the world that focuses on major challenges common to tertiary systems. Next, the SABER-TE Conceptual Framework is discussed. This framework outlines the main policy areas covered by the SABER-TE data collection instrument and the justification for each. Finally, the SABER-TE data collection instrument is introduced.

THE IMPORTANCE OF TERTIARY EDUCATION FOR SOCIETY

Tertiary education is instrumental in fostering growth, development, and poverty reduction. Tertiary systems play multiple roles beyond the teaching and research functions historically associated with tertiary education institutions. These roles, however, vary by the type and mission of a tertiary education institution.

Figure 4. Tertiary Education’s Diversified Roles



First, tertiary education systems play key roles in human capital development and capacity building. A highly skilled workforce with tertiary education credentials is a prerequisite for economic growth because workers’ skills are essential in technology development, transfer, and application (Lucas 1988; Romer 1986, 1990). Despite setbacks associated with the recent financial crisis and contrary to trends experienced in the 1980s and 1990s, the economic returns on education for tertiary education graduates are, in general, the highest in the entire educational system — a finding that holds across the world (Montenegro and Patrinos 2013) (table 1).³ . Educated individuals are more employable, able to earn higher wages, cope better with economic shocks, and raise healthier children (World Bank 2011).

³ In certain countries, however, the rate of economic return, although high, shows signs of a slight decline as more tertiary education graduates enter the labor market.

Table 1. Returns to Schooling by Educational Level and Region (latest available year, 2000–2011)

Region	Primary	Secondary	Tertiary	GDP/pc (PPP 2005)	N
World	10.3	6.9	16.8	6,719	74
Middle East and North Africa	9.4	3.5	8.9	3,645	7
South Asia	9.6	6.3	18.4	2,626	4
Eastern and Central Europe	8.3	4.0	10.1	6,630	7
High-Income Economies	4.8	5.3	11.0	31,748	6
East Asia and Pacific	11.0	6.3	15.4	5,980	6
Latin America and Caribbean	9.3	6.6	17.6	7,269	20
Sub-Saharan Africa	13.4	10.8	21.9	2,531	24

Source: Montenegro and Patrinos (2013).

In addition to individual private economic returns, the broader social effects—including economic effects— of tertiary education institutions and their graduates in a given local and regional economy and society are significant, but more difficult to measure. This is mostly due to the difficulties associated with quantifying the “spillover effect” from tertiary education on such things as the level of technological innovation or human capital in a region as measured with respect to social and political stability and health (Leslie and Brinkman 1988). It is known that these effects increase worker productivity, which in turn is associated with increases in workers’ income levels—and thus greater economic activity. Whether and how to account for indirect factors that enhance productivity is critical to any study that seeks to estimate the impact of tertiary education on a regional economy. To this end, economists have developed two main assessment approaches: one measures the direct and indirect economic effects of direct expenditures of tertiary education institutions, and another measures the future wages of the skilled workers once they graduate (New England Public Policy Center 2006).

In the case of U.S. cities, it is estimated that there is a positive causal relationship between the proportion of university graduates in a city’s labor force and average wages. An estimate suggests that a 1 percent increase in the supply of graduates at the ISCED 6 level raises the wages of high school dropouts by 1.9 percent, those of high school graduates by 1.6 percent, and those of tertiary education graduates by 0.4 percent (Moretti 2004). Significantly, while tertiary education systems make important contributions to increasing the economic development of the cities and regions that they serve, they also contribute to making the latter more responsive to local societal, environmental, and cultural needs (Marmolejo and Puuka 2006).

At the same time, as economies become increasingly globalized, it is assumed that through their research and innovation capacity, tertiary education systems can and must play an important role in fostering greater local, regional, and national competitiveness. The knowledge economy has witnessed the emergence of a “Mode 2” research environment characterized by greater heterogeneity in both the types of knowledge required and the sites at which this knowledge is produced. Thus, research production has shifted from an emphasis on basic to more applied research, allowing for increased activity in fields traditionally been seen as non-research intensive, such as management, education, and other humanities and social science disciplines. Likewise, this phenomenon has allowed many new kinds of “knowledge’

organizations,” such as think tanks, to join the research game. In the case of tertiary education, countries like Canada have, for example, funneled public and private funding for community colleges into applied research that can lead to commercialization of products, processes, and services.

A final significant change in this regard is the closer interaction between tertiary education actors and the private sector. As the world economy transitions from an industry-based to a knowledge-based economy, tertiary education institutions—especially those with established or aspirational research orientations—are increasingly called to align their teaching and research activities with market imperatives, most notably in disciplines related to technology, the sciences, and medicine (Jessop 2008). Nowadays, faculty members of intensive research-oriented universities are asked to develop links with industry, and university policy encourages patents, commercialization of know-how, technology transfer, research parks, commercial spin-offs, science and technology parks, incubators, and consultancy services, among other market-driven activities (Slaughter and Leslie 1997). This is more evident in tertiary institutions located in industrialized countries, but increasingly present—at least as an aspiration—in low- and lower-middle-income countries (LLMICs).

Studies suggest that the research output of universities in LLMICs is generally low and that there is limited transfer of technology from these universities to local industries. However, the gradual emergence of a local critical mass of individuals with tertiary education degrees increases the likelihood of technological uptake and adaptation (Oketch, McCowan, and Schendel 2014). An efficient, well-managed tertiary system is uniquely positioned to supply graduates with necessary skills, provide specialized services and other inputs, and strengthen local innovation networks (Thorn and Soo 2006).

Of course, tertiary education is not only about economic returns and economic impact. There are significant non-market public externalities to both human and economic development associated with a more educated population. Society at large benefits from tertiary education through increased tax revenues, savings and investments from higher earnings; improved health and welfare (for both individuals and their family members), greater longevity, improved cognitive development in children, and reduced family size (Oketch, McCowan, and Schendel 2014). Likewise, there is evidence that individuals with at least some tertiary education are more civically responsible, as evidenced by voting rates, charitable giving, and openness to diversity (World Bank 2011; Bloom, Hartley, and Rosovsky 2006; Farrel et al. 2006). In short, tertiary education institutions prepare individuals not only by providing them with adequate and relevant work-related skills, but also by educating them to be active members of the communities and societies in which they live.

Based on the widespread evidence of the many public and private benefits of a tertiary education, establishing sound policies and interventions that enable inclusive access, graduation and success for all young people would open the door to increased earnings, intergenerational mobility, and a more just society (Birdsall 1999), which in turn would translate into a more productive society (Piketty 2014). While recognizing the crucial role of individual responsibility and effort in determining outcomes, public interventions in tertiary education are justified and essential to eliminating “disadvantages from circumstances that lie largely beyond the control of individual but that powerfully shape both the outcomes and actions in pursuit of those outcomes” (World Bank 2006). Likewise, public regulations are justified in order to establish a legal and operational framework that guarantees the quality of education provided by both public and private tertiary education institutions. The challenge is to steer tertiary education systems towards overcoming and reducing inequality, particularly in relation to students from underserved populations.

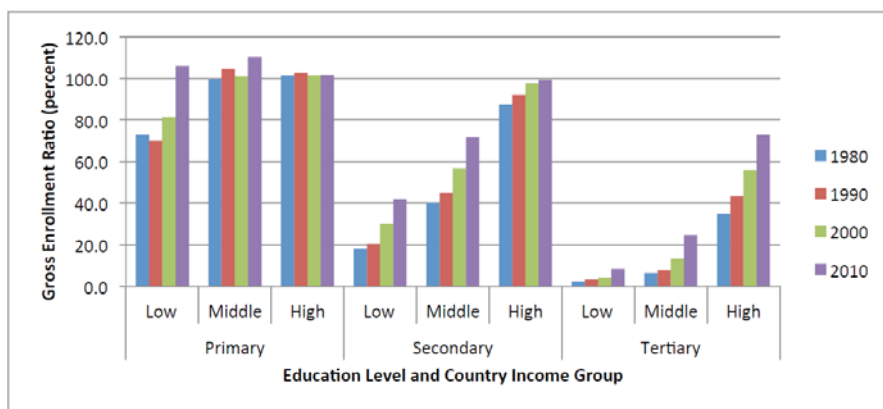
It is important to stress that economic development is both insecure and unsustainable unless accompanied by measures designed to reduce poverty, social exclusion, and environmental problems (OECD 2012). In this regard, tertiary institutions are uniquely positioned to help improve community health and welfare, social cohesion, and a healthy and sustainable environment, each goal guided by their respective missions. For example, universities are well positioned to conduct research on key topics such as sustainable food production in rural areas, training specialized scientists and other knowledge workers through academic and further education programs, and serving as a conduit between interested stakeholders, such as community groups, NGOs, and governmental agencies. Institutions with a stronger focus on education and training, such as community colleges and technical and vocational institutes, can also contribute to social development by providing affordable quality tertiary education directly linked to the skills required in the local economy, facilitating partnerships with the public and private sectors to enhance the quality of life for economically challenged and other disadvantaged groups, and offering lifelong learning and workforce re-training programs to improve the human capital of individuals who may not otherwise have access to these opportunities. One potential benefit of systemic benchmarking initiatives is to illuminate the extent to which government policies can counter inequitable effects (Slaughter and Rhoades 2004) (Piketty 2014), and instead steer market mechanisms towards addressing key social, economic, and political challenges.

Finally, in many parts of the world tertiary education institutions constitute are part and parcel of a nation's social and cultural fabric. Tertiary education can assist in forming a strong nation state and in deepening democracy by producing a citizenry with the knowledge and critical thinking skills necessary to engage in the civil, political, social, cultural, and economic activities of a society in a context of cultural pluralism and diversity. The nation-building role of tertiary education thus includes the cultivation of civic virtues to shape a democratic and civilized society, as well as to initiate and maintain critical discussion within societies (Välilmaa and Hoffman 2008; Tilak 2008). Again the question remains to what extent these nation-building functions of tertiary education are fostered or hindered by policy environments driven primarily by revenue generation and prestige.

THE STATUS OF TERTIARY EDUCATION WORLDWIDE

As governments in LLMICs have focused investments on increasing educational attainment at the primary and secondary education levels, the pool of students demanding opportunities in tertiary education has increased (figure 4).⁴ This has led to a significant growth in tertiary provision in a relatively short period of time. Today, there are around 200 million tertiary education students in the world, in comparison with only 89 million in 1998. It is expected that massive growth will continue in this subsector in the future, mostly in developing countries (World Bank 2016). In short, tertiary education worldwide has experienced dramatic expansion, increased diversification, and a gradual change from peripheral to central priority in the formulation of public policy.

Figure 5. Gross Enrollment Ratio in Education, by Country Income Group



Source: World Development Indicators (database).

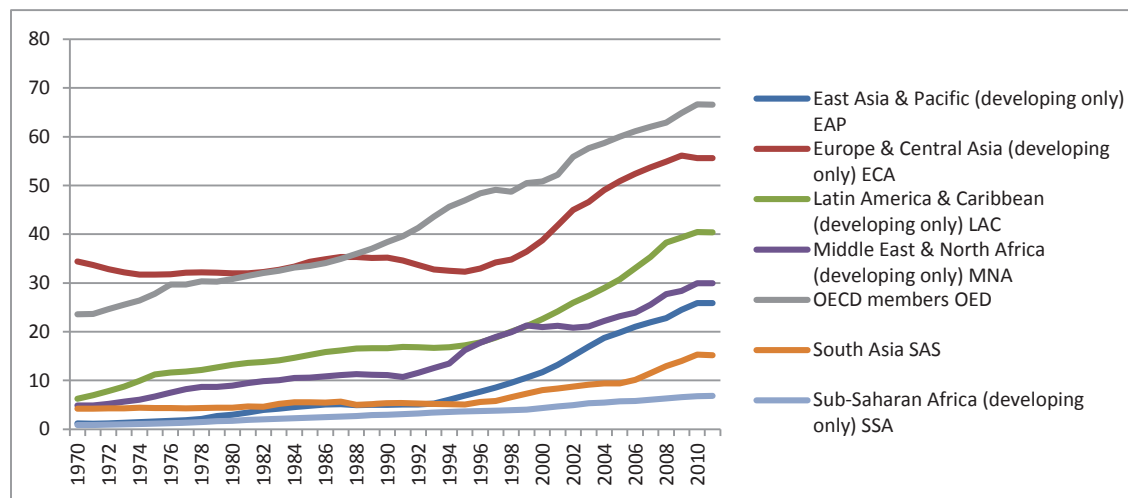
Growth in tertiary education enrollment has been experienced worldwide. Nevertheless, LLMICs in general lag behind highly industrialized nations. This is paradoxical, considering that the LLMICs are experiencing a so-called “demographic bonus”—that is, a rapidly expanding youth population—while some highly industrialized countries have falling birth rates—that is, they are witnessing a gradual reduction in the pool of incoming tertiary education students. As can be seen in figure 5, although improved relative to previous years, the gross enrollment ratio in tertiary education in some countries remains extremely low in comparison with that of more industrialized countries.⁵ To a considerable extent this pattern reflects the fact that currently predominant models of tertiary education have been far more successful in benefiting upper-middle income, already advantaged students than in serving the growing population of young people worldwide.

⁴ This section does not intend to provide an exhaustive analysis of all relevant aspects of the current status of tertiary education worldwide. Rather, it seeks describe those aspects of contemporary tertiary education considered most significant for policy making, albeit at the risk of excluding issues that some readers believe should be included in the discussion.

⁵ Gross enrollment ratio is defined here as total enrollment in tertiary education (ISCED 5 to 8), regardless of age, expressed as a percentage of the total population of the five-year age group that begins after secondary school.

Tertiary education systems also face major challenges tied to rapid socioeconomic change and globalization. Technological advances and the shift towards a global service economy are changing job profiles and skills. The stunning rise of middle-income countries, led by China, India, and Brazil, has intensified the desire of many nations to increase their competitiveness by building more highly skilled workforces. The result is an intense demand for expanded access to tertiary education, particularly technical and vocational education and training (TVET) that can provide students with skills and knowledge relevant to labor market needs.

Figure 6. Gross Enrollment Ratio in Tertiary Education by Region



Source: Own calculations from UNESCO's Institute for Statistics database. <http://www.uis.unesco.org/Pages/default.aspx>

In response to these converging trends, a number of countries have undertaken a major restructuring of their tertiary education systems to enhance the reach and effectiveness of these systems. However, progress has been uneven and sharp contrasts remain between and within tertiary education systems worldwide. Although the economic returns to education for graduates of tertiary institutions are high, in several countries these returns have been gradually declining as a larger number of graduates joins the labor market; concerns about the relevance of their skills also persists (Montenegro and Patrinos 2013). In some countries, including the United States, China, and India, young college graduates have also seen a dramatic deterioration in their job prospects in the past decade (Shierholz, Wething and Sabadish 2012; Bai 2006; Chan 2006; Gereffi et al. 2008; Mooney and Neelakantan 2006). In China, for example, the ballooning supply of engineering graduates has led to increased rates of unemployment, especially for those graduating from non-top-tier universities. While university graduates increased substantially by 2007, job openings for new graduates across all disciplines fell by 22 percent from the 2006 level to only 1.6 million, meaning that 60 percent of China's 2006 university graduates would be unable to find work (Gereffi et al. 2008; Chan 2006).

Another dramatic example can be seen in Middle Eastern and North African (MENA) countries, a region in which more than half of the population is under 25 years old. Although tertiary education enrollment has increased substantially in the region, youth unemployment rates are higher than in any other region of the world, even for individuals holding tertiary education degrees. These trends suggest that growth in

tertiary education enrollment rates is not always paired with education of increased quality and relevance to the labor market.

There is also evidence that tertiary education systems in many countries are plagued with high dropout and noncompletion rates. In Italy only 64 percent of students entering the tertiary level complete a degree. In the United States, out of 4.3 million freshmen students in 2004, 2.1 million did not officially graduate. Data from the Student Pathways Study in South Africa indicate that 50 percent of students enrolled in tertiary education institutions in that country drop out in their first three years. Significantly, many departing students in the study were high-achievers at the secondary level, came from poverty-stricken families, and were indebted to the relevant national student financial aid program and/or other education funding agencies that supported their studies. The high dropout rates bode ill for efforts to break the vicious cycle of poverty in the country (Letseka and Breier 2008).

Moreover, despite extensive efforts to improve tertiary education opportunities worldwide, access to and success at this level of education is highly inequitable. Enrollment in tertiary institutions remains largely restricted to students coming from the wealthier segments of society. One of the main challenges in the subsector worldwide is thus to ensure equitable access, retention, and success of students from underrepresented and traditionally excluded groups.⁶ The fact that tertiary education systems favor students from higher income levels is evident in several regions of the world in both low- and middle-income economies. In Malawi, only one percent of students enrolled in tertiary education are from the lowest economic quintile and only 3 percent are from the second quintile. In contrast, over 80 percent of tertiary education students come from the richest quintile (World Bank 2013a). Along similar lines, a recent study shows that in many Latin American countries, students from the poorest decile generally represent a very small percentage of total tertiary education enrollment. At the other extreme, students from the highest income decile show an access rate similar to that of highly-industrialized countries (World Bank 2015; see figure 7).

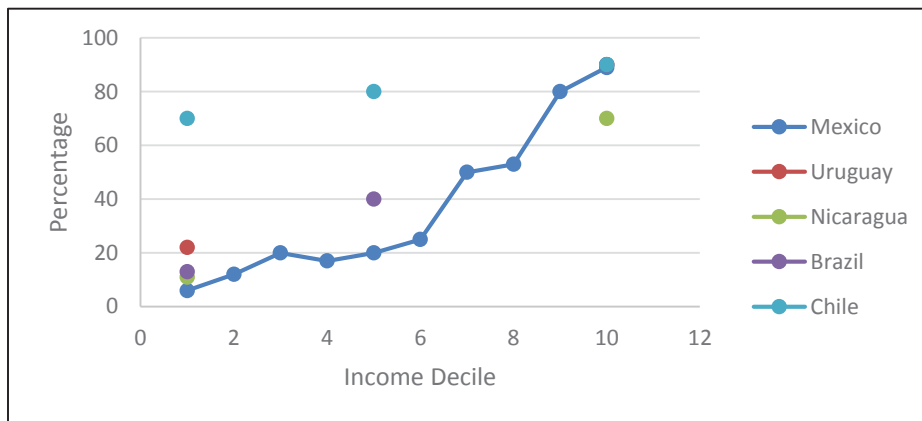
These data point to a regressive funding pattern in countries where heavily subsidized public tertiary systems overwhelmingly benefit students from higher socioeconomic strata. This fiscally regressive pattern is especially pronounced in countries with binary tertiary systems divided between a small, highly selective set of public colleges and universities and a set of private institutions that cater to the bulk of the college-going population. In the absence of well-developed need-based financial aid, government-backed financing of the public sector essentially subsidizes the education of students of higher socioeconomic status. Meanwhile, the options for students from disadvantaged backgrounds may be limited to fee-paying institutions of questionable quality. This situation has led to legitimate policy discussion in several countries about how to better structure tertiary education policies and practices to serve larger segments of the population more effectively.

Chile, for example, has initiated a move towards a free “tuition-for-all” model. The political demand for such a shift is grounded in the excessive debt of students at graduation, and the deep disparity in access to tertiary education between students from low and high socioeconomic strata. In 2009, there were approximately 850,000 tertiary education students in the country, only 18 percent of which were from the

⁶ “Equity” is defined here as equal opportunities to access and succeed in tertiary education. Consequently, “inequity” refers to the lack of equal opportunities to access and succeed at this educational level. “Inequality” refers primarily to the condition of being unequal and tends to depict things that can be expressed in numbers. For example, one might say that inequality in access to tertiary education results from inequity in society, or that inequality in access to tertiary education is a great inequity.

lowest socioeconomic decile, compared to 77 percent from the wealthiest decile (Beyer and Cox 2011). While some scholars provide arguments to the contrary (e.g., Atria y Sanhueza 2013), others express concern that a free tuition-for-all model (rather than free tuition for students from the neediest sectors of society) may further entrench inequality by essentially providing a public subsidy to students from very rich and well-off middle classes that can afford to pay university tuition and associated costs (Badat 2011; Beyer and Cox 2011).

Figure 7. Net Enrollment Ratio in Tertiary Education by Income Decile, Selected Latin American Countries (2012)



Source: World Bank (2015). Public Expenditure Review: Mexico.

In some countries, the socioeconomic gap in access to tertiary education can be exacerbated by overlapping layers of inequality. For instance, in Guatemala, where 40 percent of the total population is indigenous, only 2 percent of the total indigenous population (across all age groups), had attained a tertiary education degree in 2006 (Bashir and Luque 2012). In other words, young people from underprivileged groups (which in different contexts may be defined not only by income, but also by ethnicity, gender, language, age, culture, religion, disability, or caste) may encounter additional barriers stemming from inadequate academic preparation at lower educational levels, low motivation and expectations regarding tertiary education, and lack of institutional capacity to properly address their needs.

In response to this significant limitation on overall development, different countries have established a variety of equity-promotion policies, programs, and procedures at both national and institutional levels. Some countries have attempted to mitigate inequitable access by using a variety of directives or targeted programs, including mandatory admission quotas for students from certain population groups, performance-based funding for institutions meeting equity targets, and need-based grants for students from less privileged socioeconomic backgrounds, among others. However, these initiatives are not exempt from tensions, especially in relation to academic standards. For example, it has been argued that compensatory mechanisms such as simple student quotas can worsen rather than eliminate social inequality (Schwartzman 2009).

Previous studies conducted by the WBG show that inequality in tertiary education is, to a large extent, an extension of inequality at lower levels of education, that is, it reflects system-wide structural barriers that impact the economic and social opportunities of many talented and capable young people. The two main

kinds of additional barriers found at the tertiary level are financial and non-financial; the latter include inadequate information, motivation, academic preparation, and social capital (World Bank 2013b).

Financing (both at the individual and student level) remains one of main barriers to access and success in tertiary education. Income poverty remains a pervasive barrier to school attendance and learning at all educational levels, particularly for girls and minority groups. As mentioned above, in both industrialized and developing countries, there is a strong historical correlation between family socioeconomic background and tertiary educational attainment (OECD 2006; McPherson and Schapiro 2006). In several regions access to tertiary education is severely restricted by the high cost of attendance, especially for students from poorer socioeconomic backgrounds. For instance, whereas in OECD countries the total cost of tertiary education (including tuition, fees and living expenses) averages 35 percent of per capita GDP, the figures in Colombia (66 percent) and Peru (96 percent) are significantly higher (Cerdan-Infantes and Blom 2007).

At the system level, the high cost of tertiary education is magnified by dramatically increased expansion pressures. As the youth population continues to grow in regions like Sub-Saharan Africa, MENA, and Latin America, the task of publicly funding tertiary education institutions becomes increasingly difficult. Countries with limited resources find it very difficult to rely exclusively on public funds to finance the large expansions needed to meet increasing social demand for access without compromising the quality of educational offerings (Johnstone 2004); Experton and Fevre 2010). In countries where tertiary education is heavily subsidized by the state and tuition fees are low, for example, the growing cost of education at this level takes a significant share of public budgets. In the end, this cost must be absorbed by taxpayers. In several cases, governments have reduced budgetary support of tertiary education because it competes with other social demands, resulting in a gradual reduction of institutional capacity and decreased educational quality.

Likewise, there is a well-documented tendency of unit costs in tertiary education to grow faster than unit costs in an economy overall. In the knowledge economy, this tendency is accelerated both by the rapidly increasing cost of technology and a labor market in which the need for skills and knowledge is also subject to rapid change (Cheslock 2006; Johnstone 1998). In the United States alone, the tuition cost to students and families of a college degree has increased twelve-fold over the past 30 years as tertiary education institutions compete to position themselves in global rankings. However, the Delta Cost Project has clarified that the actual costs of educating students has not grown much; rather, there is a substitution effect whereby reduced state support is shifting costs to the consumer (Desrochers and Hurlburt 2012). Some of the associated phenomena include exponentially stringent selectivity standards, significant investment in support infrastructure, and mounting competition to attract faculty and administrators with high salaries. A similar phenomenon is observed in other countries. For instance, in China in 1998, public support covered 91 percent of all tertiary education expenditures; just 12 years later public funds covered only 43 percent of all tertiary education expenditures. Correspondingly, revenues from student fees grew from 6 to 31 percent over the same period. Globally, the decrease in public funds for tertiary education has resulted not only in higher tuition and fees for students, but also in a more aggressive pursuit of revenue-generating activities and additional sources of financial resources on the part of tertiary education institutions that are not always directly connected to their principal mission (Slaughter and Rhoades 2004).

In terms of nonfinancial barriers to tertiary education, a lack of information about the costs of tertiary education, financing options, and labor market prospects of various institutions and academic programs have also been identified as enrollment barriers for disadvantaged populations in regions like Latin

America (Murakami and Blom 2008). More generally, one of the most pervasive obstacles to improving not just enrollment rates, but the overall quality of tertiary education, is the lack of dedicated information systems to track student access, retention, completion, and outcomes after graduation. Targeted interventions like ACCES (*Acceso con Calidad a la Educacion Superior*, in Spanish) in Colombia have enhanced the transparency of tertiary education market as part of comprehensive reforms aimed at improving equity. This initiative has increased the availability of information about tertiary institutions to students, their families, employers, and the government. The project's “relatively small investment in information systems, designed to provide students and their families with the information necessary to guide their decisions regarding institution and careers, has greatly enhanced the outcome of the project’s major investment in student assistance” (Cerdan-Infantes and Blom 2007, p.4).

In this regard, there is evidence that the most effective equity-promotion policies at the tertiary level are those that combine financial aid with measures to overcome nonfinancial obstacles, that is, policies that address the equity environment comprehensively rather than relying on piecemeal approaches to individual barriers to entry. First, there is strong evidence that well-targeted and efficiently managed financial aid can be instrumental in reducing financial barriers to tertiary education. A combination of three methods is used to help students from disadvantaged groups: 1) no tuition or low tuition fees; 2) need-based grants; and 3) student loans. Second, many countries have successfully implemented outreach and bridging programs to secondary schools (i.e., building partnerships with K–12 institutions and reaching out to students at a very young age to expose them to the path towards tertiary education), reformed selection procedures and/or preferential admission programs, special institutions and programs that target underprivileged groups, and retention programs to improve completion rates (World Bank 2013c).

Additionally, to meet increasing student demand, tertiary education systems around the world are establishing a variety of new institutions alongside traditional universities— short-duration technical institutes and community colleges (ISCED level 5), polytechnics, distance-education centers, and open universities, among others. In some cases, institutional diversification has been accompanied by a carefully planned process that includes provision for a more dynamic adaptation of the curriculum, employer involvement, and prospective labor market studies. In other cases, the proliferation of institutions has occurred with limited overall planning, oftentimes based on purely political decisions aimed at appeasing requests from communities or economic sectors eager to have tertiary education institutions of their own or to meet growing demand. This tendency is more prevalent in countries with weak licensing and quality assurance frameworks.

At the same time, national policies and regulatory frameworks are shifting to allow private providers a much more substantial role in the tertiary education sector, even in systems where public providers had previously dominated, such as Eastern Europe, Latin America, Asia, Sub-Saharan Africa, and Australia (Levy 2006; Salerno 2004; Shin and Harman 2009). In some countries, the increase in the number of private institutions meets not only the needs of specific groups, but of entire societies (Reiko 2014). Such non-university institutions (both public and private) can absorb a significant share of the expanding demand for tertiary education. At the same time, because these institutions are typically more responsive to local labor market needs, they can help improve the balance between skills supply and demand, as well as provide sustainable training alternatives to students who are either not interested or sufficiently prepared for a longer-term academic degree.

Nevertheless, while the for-profit sector of tertiary education has emerged predominantly in the United States, but also globally, significant challenges remain due to increased levels of student debt, default on student debt, and various forms of consumer abuse. As a result, in recent years, major players in the for-

profit sector have either closed or experienced dramatic declines in enrollments and market share, to the detriment of both students and overall tertiary education attainment. Certain events, including the failure of large for-profit institutions like Corinthian Colleges and Universidad del Mar in the United States and Chile, respectively, illustrate the potential for predatory practices among for-profit providers in an insufficiently or inadequately regulated environment.

Institutional diversification is not exempt from challenges and limitations. In societies with a strong university tradition, for example, the widening of non-university educational options at the tertiary level tends to be seen with skepticism and caution by employers, parents, and students. There is a strong tendency for these institutions and their academic programs to be portrayed as low quality and low prestige. At the same time, adequate articulation provisions that enable students to easily transfer from non-university institutions to the traditional universities frequently do not exist. This represents a potential barrier for students who seek to continue their studies at the university level. Since many non-university institutions tend to have less strict selectivity admission policies and offer less expensive academic programs, they tend to attract students who may not meet university selectivity standards or be able to afford the costs of attending a university. Together, these factors contribute to an unhealthy stratification within the tertiary education system.

Several countries have tried to address these problems through such strategies as establishing and strengthening articulation pathways to facilitate the transfer of students across institutions; promoting the transfer of credits from university courses to non-university institutions and vice versa; developing joint curricular offerings by faculty members from both types of institutions; mandatory recognition of credits for college-level courses offered by non-university institutions; joint appointments of faculty members; granting special intermediate-status to certain institutions in order to promote the gradual recognition of their programs across institutions; creating pathways for selected non-university institutions to eventually attain university status; and positively promoting the recognition of non-university credentials in society at large.

The competition inherent in broadening the spectrum of tertiary education providers can make institutions more efficient, increase educational quality, expand coverage, and lead to cost reduction—all important considerations in progressing towards Education for All goals. However, these positive outcomes can be achieved only when they are based on robust quality assurance systems that ensure tertiary offerings are accessible, available, affordable, relevant to local educational and labor market needs, and of acceptable quality (Daniel, Kanwar, and Uvalic-Trumbic 2005, 2006). A primary concern is to protect students from low-quality and disreputable providers, as well as to encourage the development of institutions and programs that help meet a country's human, social, economic, and cultural needs. Quality assurance is thus an effort that simultaneously involves governments, tertiary providers, academic staff, student organizations, quality assurance agencies, and accreditation bodies, among other stakeholders.

In the knowledge economy, tertiary education plays a crucial role in economic growth and social progress. In addition to teaching and research, traditionally considered the key missions of higher education institutions, so-called “third-mission” activities promote the engagement of tertiary institutions with industry and society at large. Yet despite important world-class examples of good practice, the potential of tertiary education institutions to address the considerable social, cultural, and environmental challenges of the regions and constituencies that they serve often remains untapped. A strict focus on teaching or research and a lack of incentives to conduct socially oriented activities may discourage service-minded faculty and limit resources for third-mission activities. Ultimately, this focus may fail to generate

the necessary critical mass to produce projects that could have potentially positive multiplier effects at the local and regional level. This important dimension of tertiary education should be recognized by public and private stakeholders as important to national development (OECD 2012).

Finally, developing adequate research and development (R&D) capacity at the tertiary level is imperative to identify and adapt scientific and technological options, and eventually, create technologies that are unique and relevant to a given country, region, or city (Fagerberg and Verspagen 2002; Thorn and Soo 2006; Ischinger and Puukka 2009). It is not only universities that contribute to this goal: technological institutes, community colleges, and TVET institutions play an equally important part in building local innovation networks and supplying a highly skilled labor force to strengthen R&D capacity (Thorn and Soo 2006).

The creation of partnerships among tertiary institutions and external partners are evidence of the barriers to increasing the capacity for R&D at the tertiary level (STI Group 2010). In regions like Latin America, linkages between universities and private companies are quite weak, even when there is strong evidence that considerable benefits could be accrued from these partnerships (Mark, Thorn, and Blom 2006). The reasons behind this phenomenon are complex. In countries like Argentina, Brazil, Colombia, and Mexico, over 60 percent of all researchers are employed by universities (which in turn receive the bulk of public subsidies for research). Lack of a tradition of public-private partnerships and incentives for translating research capacity into commercial applications keeps educational institutions aloof to the needs of industry. Many developing countries suffer, moreover, from a weak private sector, which limits that sector's ability to significantly partner with tertiary education institutions. The partnership model that is so powerful in the West and North, particularly in the United States, is premised on a vibrant private sector and on levels of corporate wealth not found in many developing countries and economies. That fact is a challenge to consider other forms of partnerships and other partners in order to leverage economic, social, and political development.

Finally, the low regard with which local entrepreneurs hold university education and research, along with the limited capacity of private companies to absorb emerging knowledge, further compound the issue (IMD 2005). Numerous employer surveys consistently reveal concerns about the misalignment between graduates' skills and employer expectations, especially in terms of soft or behavioral skills (see, for example, di Gropello, Kruse and Tandon 2011; di Gropello, Tan, and Tandon 2010). Tertiary systems play an important role in boosting economic productivity and innovation by equipping individuals with the necessary knowledge and skills to prosper in the labor market. However, in some contexts this may require strengthening communication with the private sector. Tertiary institutions with close links to the market (such as TVET centers), benefit from the participation of the business sector in technical committees, which helps ensure a closer fit between skills supply and demand.

CONCEPTUAL FRAMEWORK

The previous section highlighted some of the formidable challenges faced by tertiary education systems. As these systems grow in size and complexity, it is a challenging task to coordinate their various components, functions, and objectives. This complexity calls for an effective normative operational framework to ensure that a tertiary education system performs well and adequately responds to domestic education and training needs.

A fundamental principle in the analysis of the tertiary education sector is to see it as part a continuum comprised of the entire educational system. Understanding the role of tertiary education and its intersection with primary and secondary education is crucial: the level of attainment and quality of schooling at preceding levels of education directly affects growth, quality, and attainment at the tertiary level. Consequently, it is in the best interest of tertiary education to design and implement policies and programs that positively enhance the effectiveness of pre-tertiary education. And it is not only desirable, but also necessary for tertiary education to play a more active role in connecting to preceding levels of the educational system.

Any policy design should be properly attuned to the local context. Transplanting practices, even though they may be successful in a given context, may not necessarily be sufficient if the transplantation ignores the local environment and local needs. That is, simplistic adoption of practices hinders proper adaptation, genuine and effective indigenous developments, and the long-term sustainability of improvements in a country's tertiary education system.

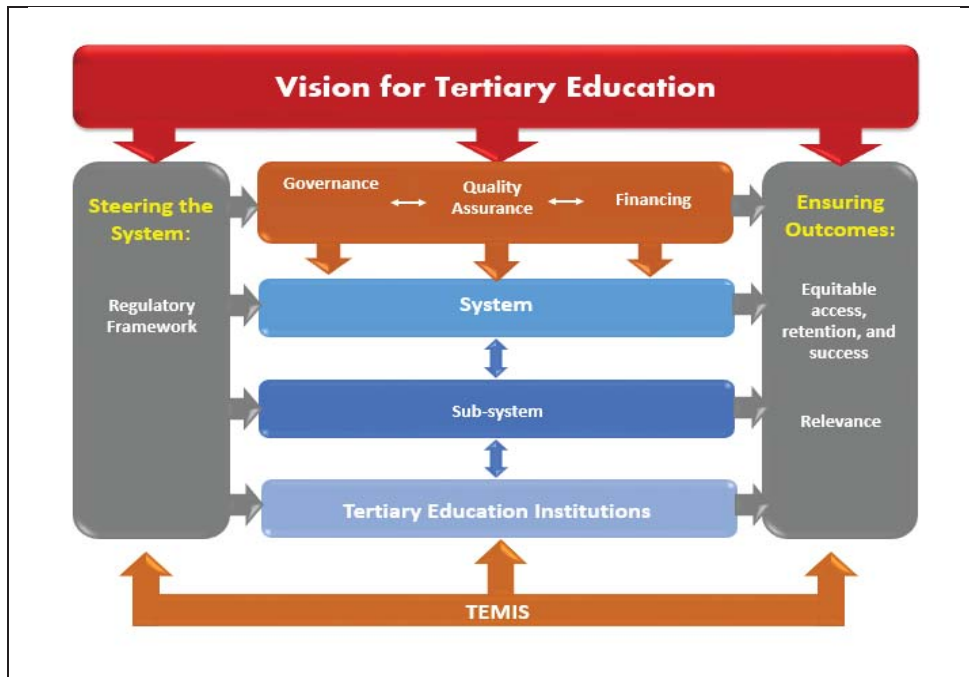
Last but not least, it is critical to recognize that tertiary education systems are dynamic and that fluidity and recalibration are necessary elements in both their analysis and design.

Despite the complexity and uniqueness of each tertiary education system, several components are common to all. These components can serve as a basis for analyzing policy readiness and implementation in individual systems (figure8). These components include:

- **Vision.** Not always formally in place, a vision of a tertiary education system is typically an aspirational description of what a tertiary education system seeks to achieve or accomplish in the long term and is intended to serve as a guide for steering the system.
- **Regulatory framework.** A regulatory framework is the set of regulations that a government has in place to, at least in theory, protect the interests of all tertiary education stakeholders, especially students and the public. An overall regulatory framework includes the legislative and statutory context in which tertiary education institutions operate, which may be national, regional, local and, in some cases, international.
- **Programmatic domains.** These are the key components of different tertiary education institutions—regardless of their specific mission or specialty—and the overall tertiary education system as a whole. Programmatic domains are usually reviewed in terms of their contribution to the vision of the tertiary education system and include governance, quality and finance.
- **Outcomes.** The activities of tertiary education institutions and their corresponding effectiveness are seen in terms of their delivery capacity, which is usually measured in terms of equitable access, efficient retention, and adequate readiness of students for work upon graduation. Outcomes also include the relevance of a tertiary education institution not only with respect to teaching, but also with respect to its research and outreach work.

- **Tertiary Educational Management Information System (TEMIS).** A TEMIS is the set of technological and institutional arrangements for collecting, processing, and disseminating data in a tertiary education system. A TEMIS is crucial for tracking changes, ensuring data quality, timely reporting of essential information for planning and management purposes, as well as for decision making by policy makers both at the institutional and central government levels.

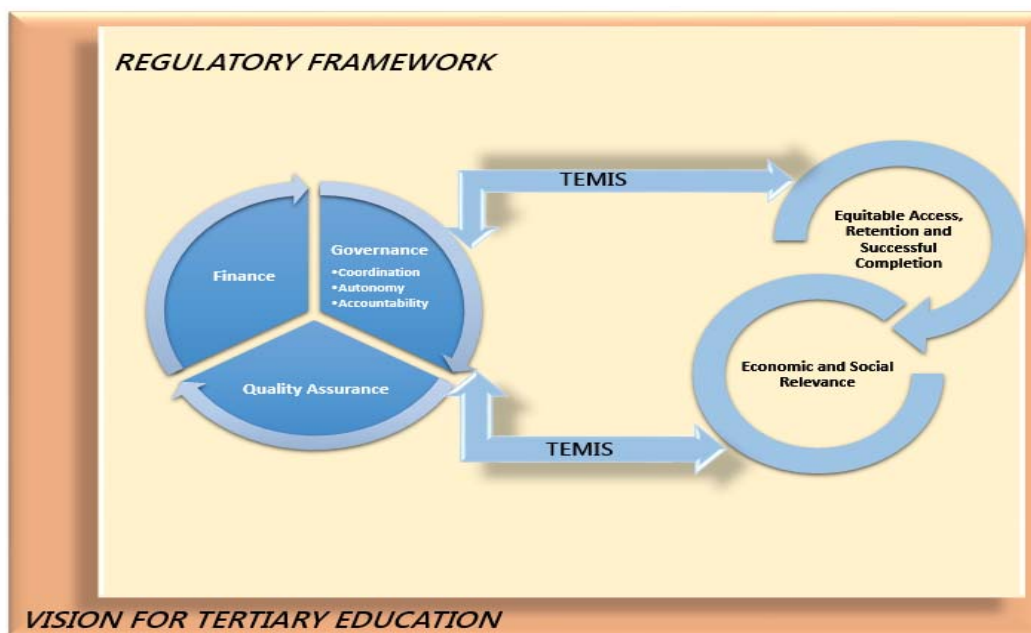
Figure 8. Conceptual Framework for a Tertiary Education System



As indicated before, the SABER-TE has been developed to help countries benchmark the quality and readiness of their tertiary education policies, as well as the quality of policy implementation (figure9). Consequently, the following components are considered:

- Vision
- Regulatory framework
- Governance
- Financing
- Educational quality
- Equitable access, retention, and successful completion
- Relevance of tertiary education to economic development

Figure 9. Policy Domains in SABER-TE



The data collection instrument, review and consultation process, and specific rubrics of the SABER-TE benchmarking tool are aimed at gathering and analyzing relevant evidence on a country level for each policy domain. Cognizant of each country’s unique contextual characteristics, the resulting data generate a benchmarking score. It is crucial here to stress some features of the benchmarking process. First, the SABER-TE process is intended to be a very rigorous process involving not only professional judgment, but also a review of evidence and consultation with key stakeholders and expert informants. The qualitative and quantitative data gathered from the expert informant questionnaire is analyzed in combination with a documentary review of primary and secondary sources (where available) to ensure that a given country’s score is an accurate a snapshot of its policy reality. Second, while the indicators in the scoring rubric are assigned numerical values, these values not intended to be used as ordinal, but rather, as categorical data.

Vision for tertiary education

VISION FOR TERTIARY EDUCATION: The country or government has a vision and plan for the tertiary education sector, and a willingness to translate its vision into a concrete action plan.

A vision of a tertiary education system is an aspirational description of what a tertiary education system seeks to achieve or accomplish in the long term. It is intended to serve as a guide for steering the system.

The level of specificity of a country’s vision for tertiary education appears to be strongly connected to the degree of centralization of its government. Usually when a central government is significantly involved in steering the tertiary education system, a formal vision with specific goals and even performance or

progress indicators is in place. On the contrary, it is common to find that a vision for tertiary education is not clearly stated in countries where the central government has limited involvement in the sector.

As noted by Fielden (2008), the articulation of a vision and strategy for the sector involves answering questions about the purpose of tertiary education in a country, the principal goals and targets to be set in terms of participation, and the process by which these targets will be achieved, including the types of institutions to be supported, the time period for such support, and the definition of relevant stakeholders in achieving these objectives.

Regulatory framework for tertiary education

REGULATORY FRAMEWORK: The tertiary education system is based on an appropriate regulatory framework that supports the work of tertiary education providers for the benefit of the students and the public.

The regulatory framework is the set of legal norms and organizational arrangements that are in place to ensure the adequate provision of tertiary education in the country, thus protecting the interests of all tertiary education stakeholders, especially students and the public. The overall regulatory framework defines the legislative and statutory context in which institutions of tertiary education operate.

An appropriate regulatory framework typically includes a statement on tertiary education in national law, as well as a legal framework defining the eligibility of public and private providers for entrance into the tertiary education sector, certification requirements for operations, and the specific regulatory requirements that apply to all types of tertiary education institutions, including public and private (for-profit and nonprofit) institutions.

The need to clarify roles and requirements in legislation is becoming increasingly important, given the growing complexity of the tertiary education sector and the many different actors which may be involved. An appropriate regulatory framework helps clarify how various stakeholders operate in the system, allowing space for both state and private organizations without creating barriers to flexibility (Fielden 2008).

It is fundamental to understand the way in which the regulatory framework is set up in order to have a better sense of a government's capacity to steer the tertiary education system. Usually in "hard" steering models, the steering of the tertiary education system is achieved via detailed legislation, line-item financing, and detailed prescriptions for curriculum and other academic matters (even determining, in some cases, the number of students that an institution can accept). In contrast, the increasingly prevalent "soft" steering model is achieved through performance-based financing, quality assurance regulations, and established reporting mechanisms. In some countries, the level of steering exercised by the government varies depending on the type of institution(s).

In all cases, an adequate review of the regulatory framework is a necessary to better understand how a tertiary education system works, including potential strengths and weaknesses that may directly impact the operation of tertiary institutions.

Governance

GOVERNANCE: The tertiary education system has adequate structures, policies, and processes that enable tertiary education institutions to operate efficiently and effectively. At the central level, the tertiary education authority has staff and resources to implement reforms and to guide, support, and monitor tertiary education institutions.

Globally, the governance of tertiary systems has undergone major changes, with efforts to move away from a top-down towards a bottom-up approach, from regulation to evaluation, and from strong government regulation to a more open field ruled by market forces and competition among education institutions. The extent to which these changes have been implemented and their outcomes vary greatly from one country to another (Shin and Harman 2009).

The term “governance” broadly describes all the structures, processes, and activities involved in the planning and direction of the institutions and people working in tertiary education (Fielden 2008). It is important to emphasize that while a particular governance model is largely the result of cultural and historical aspects of a given system, it is also an ongoing project that can be influenced by an intentional regulatory framework. At the system level, governance is based on the laws established by the regulatory framework, and results are the outcome of a series of structures, policies, and processes that enable tertiary education institutions to operate —hopefully efficiently and effectively.

Two important clarifications are relevant at this point. First, while SABER-TE recognizes the importance and unique dynamics of governance at the institutional level (such as the composition of governing boards and the election of institutional authorities), the instrument is not designed to explore these dynamics in detail, but rather, to focus on systemwide phenomena. Second, the SABER-TE framework is based on an assumption that despite great variation in tertiary education systems from one country to another, it is nonetheless possible to identify some key dimensions of governance policy. As mentioned above, a sound governance structure is based on an adequate regulatory framework. Such a structure includes **adequate coordination among the various components of a diversified system, as well as adequate institutional autonomy and accountability measures**. Together, these components help a tertiary education system more effectively meet national and local needs.

System coordination (articulation)

Tertiary education is an arrangement of different types of institutions that can be categorized according to their different missions. The level of diversification of a tertiary education system can have a significant impact on governance structures at the subsystem and institutional levels. Different subsystems and institutions have different missions based on factors such as their stated function (for example, primarily research-intensive, teaching-oriented institutions or focused on vocational and technical training), institutional type (public or private), and the geographical contexts and constituencies they serve (Lester 2005; Hatakenaka 2008). One critical challenge of systemwide governance is the extent to which a tertiary education system seeks to meet high level research goals as opposed to providing teaching and educational access to a wide majority of people. This is of special importance in an initiative like SABER-TE, given that many tertiary education institutions in LLMICs are not research intensive and may historically be more oriented towards teaching and third-mission activities. A clear division of labor that recognizes the unique role of different types of institutions in a tertiary education system is essential for sound governance. Different institutional missions entail different goals and expected results. Funding,

governance, and quality assurance mechanisms that take into account the unique structures and imperatives of different types of institutions can help maximize their contribution to the system as a whole.

A differentiated system also requires an enabling governance structure that facilitates articulation, or the transition of students between different types of institutions. Articulation comprises mechanisms that enable student mobility within the tertiary sector, such as academic credit accumulation and transfer, recognition and equivalence of degrees, recognition of prior learning, and so forth. In policy and practice, articulation has received far less attention than differentiation, even though almost all countries acknowledge the need for articulation as necessary for both increasing the efficiency of the tertiary education sector and enabling an array of a less fragmented labor force.

It is also essential to consider the tertiary education sector part of the continuum represented by the entire educational system.

Because it involves multiple institutional actors, multiple subsets of the educational system, and systemwide student information systems, engendering articulation is quite complicated. Ng'ethe, Subotzky and Afeti (2008) identify a lack of cooperation and absence of dialogue between university and nonuniversity institutional groups as two of the main deterrents to articulation. In contexts where universities are under no obligation to articulate with nonuniversity institutions and there is no history of inter-institutional cooperation, institutions may see articulation—even with their peers—as a threat to their autonomy.

To promote the successful creation and implementation of articulation strategies, Ng'ethe, Subotzky, and Afeti (2008) stress the need to promote and incentivize collaboration between universities and nonuniversity institutions. Agencies charged with promoting quality standards and the accreditation of tertiary education programs can likewise contribute significantly to improving articulation within the tertiary education sector by implementing a National Qualifications Framework (NQF) or similar system. Usually, a successful NQF specifies minimum credit requirements for different institutional levels, develops generic descriptors, and implements instruments for measuring and classifying learning outcomes and competences within a given framework. The implementation of an overarching national, regional (and eventually, international) NQF does not imply the uniformization of courses, but rather, "the creation of convergence in the recognition of achievement levels" (Ng'ethe, Subotzky, and Afeti 2008).

Articulation is a fundamental component of a sound integrated educational setting. Pathways fostering an adequate flow of students from previous educational levels are the best way to foster more efficiency in an entire educational system, and ultimately benefit tertiary education. Articulation with previous levels of education can be achieved through a variety of activities ranging from a shared curriculum and faculty to streamlining the admission process for secondary school graduates, just to mention a few.

Institutional autonomy

As tertiary education systems incorporate increasing numbers and types of public and private institutions to accommodate a growing student population, old models of total control by a central ministry of education or similar entity may prove unworkable with respect to academic freedom, human resource policies, budget allocations, and public-private partnerships. Thus a major challenge of tertiary education is supporting a governance framework that gives institutions a high degree of autonomy in managing their

internal affairs, while remaining accountable to their constituencies, especially regarding the use of public funds.

In many countries, tertiary education has been historically supported by public funding. However, fiscal constraints of recent years have undermined many states' financial capacity to further expand the public tertiary education system while maintaining affordable access and satisfactory quality (Shin and Harman 2009). Other key roles of tertiary education, such as contributing to knowledge generation and innovation, also suffer in a constrained fiscal environment because such functions are largely dependent on public funds. In order to simultaneously increase participation rates and the quality of education, a more diversified array of financial resources from both public and private resources is needed to support tertiary education, including such arrangements as public-private partnerships (PPPs).

Just as there is no single ideal level tertiary education funding, there is no single ideal mix of public and private funding sources. Different countries will need to find the most adequate balance for their particular circumstances (Sondergaard et al. 2012). Among the range of possible strategies, in addition to allowing institutions to charge tuition to students, are allowing public institutions to: 1) collect more revenue or subsidy in return for enrolling more students; 2) generate funds through service-for-fee activities, such as consulting; 3) retain any surplus from annual budgets and self-generated funds; 4) seek alumni or corporate donations to constitute an endowment; and 5) purchase, own, and sell buildings, facilities, and equipment.

Some of these strategies will be more feasible and productive in certain contexts than in others. In all cases, it is critical that institutions be given sufficient autonomy to decide how best to allocate their own funds. Facilitating or expanding the establishment of more private tertiary education institutions can also be an important component of a diversification strategy. Where this is the case, it is crucial that an overall quality assurance system be in place and that sufficient financial assistance funds (whether public or private) made available to assist students in need.

Although the SABER-TE tool is designed to analyze a tertiary education system as a whole, rather than individual tertiary education institutions, a related benchmarking tool developed by the World Bank Group in conjunction with the Center for Mediterranean Integration is useful for evaluating the governance of individual institutions. Known as the University Governance Score Card (UGSC), this benchmarking tool has been successfully implemented in eight countries and more than 160 tertiary education institutions in the Middle East and North Africa (MENA) region, with plans for further implementation in more countries within and beyond that region. Once data from different institutions are gathered at the country level, it is possible to draw relevant conclusions at the national level that shed light on the strengths and weaknesses of the governance of tertiary education as a whole. More information about the UGSC is included in annex 2.

Finance

FINANCE: Public financing is used to steer tertiary education toward envisioned systemwide goals. Private funding contributes to tertiary education as relevant and appropriate.

As highlighted in the section on governance, adequate financing mechanisms are essential to effectively support the policy goals and objectives of a tertiary education system. For public universities especially,

whose main source of funding is often the state, a national law may define the legal framework in which these institutions operate. This law may go as far as determining institutional governance structures. For private universities, the regulatory framework can govern entry into the system as well as accreditation rules.

As the youth population continues to grow, the task of funding tertiary systems has become increasingly difficult. Each country must search for financing approaches that enable it to meet the formidable challenge of expanding access without sacrificing quality. In this environment, the way in which tertiary education institutions are financed impacts their capacity to and incentives for achieving systemwide goals, such as student access and completion rates, as well as the relevance of educational offerings for development needs (Experton and Fevre 2010).

In addition to the diversification of revenue streams at the institutional level, incentive- or performance-based funding and financial aid that offset the tertiary education costs of low-income populations have been used to promote efficiency and equity as desirable tertiary outcomes. In the public sector, one of the most effective policy instruments to steer institutions and improve their performance is the linking of funding formulas to performance measures. Incentive-based funding involves the provision of funds to institutions based on their success in meeting certain performance targets or their contribution to certain systemwide goals.

In a comprehensive review of tertiary education funding allocation mechanisms, Salmi and Hauptman (2006) find that linking institutional or student funding to performance measures can significantly help tertiary education systems achieve the goals of improved equity, quality, and efficiency. First, the policy allows governments to shift from line-item to outcome-based funding, thus giving institutions greater autonomy in how they spend their budgets while increasing their accountability. Second, the flow of information between institutions and central education authorities is improved, since government goals must be clearly stated and accompanied by a list of indicators to be used as evidence of progress; the latter are used to determine the extent to which different programs meet system goals. This greater emphasis on planning and evaluation can help improve transparency at the system level; likewise, it can improve efficiency in the management of institutions and individual programs, as these institutions periodically assess what is and is not working (OECD 2007; Sondergaard et al. 2012).

It is important to stress that in order to achieve improved results, this type of policy must be carefully designed, paying close attention to specific country circumstances and clearly stipulating a concrete problem to target. The experience of several countries in introducing performance-based budgeting suggests positive benefits when this condition is met. For example, as part of overall funding strategies, Ontario's Ministry of Training, Colleges, and Universities (MTCU) introduced the Multi-Year Accountability Agreements (MYAAs). These agreements articulate the government goal for the system and the responsibilities of individual institutions for meeting those goals. Recognizing that funding stability and predictability enable public institutions to better meet government goals for the sector, the MYAAs provide multiyear funding allocations for the three years covered by each agreement. Future funding for participating institutions is partly based on the achievement of key performance indicators (KPIs), such as student graduation, retention, and post-graduation employment rates; qualitative and quantitative measures of participation on the part of target student populations (e.g. disabled, aboriginal, and First Nations students); participation in the provincial Credit Transfer System; and registration in online programs and work-integrated learning programs. Significantly, the KPIs are tailored to the circumstances and mission of each institution and MYAA outcomes are reviewed on an annual basis, allowing for the fine-tuning of targets and strategies for meeting postsecondary goals.

With some exceptions private tertiary education institutions do not generally receive direct government funding for core operations, although they can receive such support indirectly either through tax breaks or having students who receive government-sponsored grants or loans. Although in many countries private institutions can apply for and receive funding for scientific research, it is often the case that their research facilities and success rates are inferior to those of public institutions. As a result, private institutions are for the most part entirely self-funded via tuition fees. However, public resources can be used to influence their behavior, such as by collecting and disseminating enrollment and graduation rates, as they may not otherwise have formal reporting arrangements with the government (Sondergaard et al. 2012).

Given the high cost of education services at the tertiary level, sustainable financing, cost-effectiveness, and returns to investments are all major concerns when expanding. In addition to using performance-based allocation mechanisms and tapping diverse funding sources, cost-sharing schemes have been introduced with varying degrees of success in China, Japan, Korea, the Philippines, Indonesia, Russia and most of the other former Soviet republics, Brazil, Colombia, and many other countries in Latin America (COREHEG 2010; World Bank 2011). In countries where free access to tertiary education has been historically (and often constitutionally) a basic right, cost sharing can be a highly contested practice. For example, in regions like Eastern Europe and Central Asia the introduction of fees while retaining the principle of free tuition in public institutions has required a delicate political balance. In fact, cost sharing often occurs via a “dual-track” method in which students deemed especially meritorious are not required to pay, while a limited number of less meritorious applicants are allowed to enroll as fee-paying students (Sondergaard et al. 2012; Johnstone 2004).

The relevant literature indicates that to be compatible with equity, cost sharing must be accompanied by financial assistance policies and programs, implementation of programs to compensate for unequal educational opportunities at the secondary level, and reforms in both curriculum and pedagogy (Johnstone 2004). In Latin America, for example, high out-of-pocket costs and inadequate access to financing are two leading factors responsible for low tertiary enrollment rates in the region (Murakami and Blom 2008). While well-targeted loans are important to improve access to tertiary education, most students from the poorest backgrounds require additional funding in the form of grants to be able to enroll and, equally important, graduate from their chosen programs (Cerdan-Infantes and Blom 2007).

In addition to a series of qualitative questions, SABER-TE includes quantitative questions that assess the level of investment of the public and private sector in tertiary education. These questions touch on resource mobilization, resource allocation, resource utilization, equity, the incidence of public subsidies, and the availability of financial aid.

The way in which tertiary education institutions are funded impacts the incentives of those institutions to achieve certain systemwide goals. There is no one correct way to finance a tertiary education system. Rather, the effectiveness of a financing strategy is measured by the degree to which financing and monitoring align to promote national goals of completion, quality, relevance, and research generation. When a financing strategy is misaligned, systemic issues such as lack of access by low-income groups, excessive time to completion, low enrollment rates overall, and insufficient research generation may go unresolved. Such a situation brings into question the cost efficiency of public investments in the system in general.

It is difficult to conceptualize what an education finance system looks like and what its most important parts are. Multiple actors are involved in financing education: national governments, state and/or local governments, service delivery organizations (i.e., tertiary education institutions), students, banks, and

private donors, among others. Despite this difficulty, financing systems are generally organized along three main strands (box 2):

1. Resource mobilization
2. Resource allocation
3. Resource utilization and equity

Box 2. Dimensions of Tertiary Education Financing	
1	Resource mobilization Resource mobilization in the tertiary education context refers to the ability of the government to ensure adequate financial resources for institutional use. The key is not how funds are raised (i.e., whether resources originate from public or private coffers), but that institutions have sufficient resources to reach systemwide goals regarding mass enrollment, quality programming, and research generation. SABER-TE Finance takes a baseline of the financial inputs into tertiary education from the perspective of national expenditure, student aid funding, per student expenditure, and expenditure targeted at research and development. By collecting data on these dimensions, it is possible to analyze the efficiency of a country's tertiary system in comparison to those of other countries in achieving attainment, equity, and R&D outcomes.
2	Resource allocation Every education finance system has informal and formal rules that determine the size of the budget for its tertiary sector?, the distribution of resources across levels of government and institutions, and in some cases, the level of spending among different inputs, such as capital and current needs. An important relationship measure is who defines performance (governments or tertiary institutions), what conditions are placed on receipt of public funds, and to what extent institutions must compete with other institutions for special funding for capital expenditures, research, or special programming. Many governments use a specific funding formula to determine the level of expenditure allocated to individual institutions, which generally balances the tension between fixed (block) and variable funding (per student/per credit). Block funds are allocated to institutions regardless of enrollment levels and ensure a stable source of funds year over year for institutional planning purposes. Per-student funds are allocated based on annual enrollment levels and typically vary depending on the type of student enrolled (i.e. whether a study is full- or part-time and the course of study he/she is pursuing—liberal arts are generally a low-cost course of study, whereas medical sciences are more expensive). The tension between fixed versus variable funding is important, as it has implications both for the degree to which governments can hold institutions accountable for performance and the degree of autonomy enjoyed by institutions.
3	Resource utilization and equity Are available resources used in an efficient way within tertiary education institutions? In order to evaluate this question, indicators measuring the efficiency of the system in graduating students (in terms of time and cost) are taken into consideration. The way in which resources are utilized to improve equitable access and outcomes is paramount. To what extent are tertiary education resources distributed among students from disadvantaged backgrounds?

Quality of tertiary education

QUALITY: Systematic, objective evidence demonstrates how well tertiary education systems meet specific and systemwide goals—especially whether they fulfill the value-added assumption that students graduate from tertiary education programs with more skills and knowledge than when they initially arrived.

Strong pressures to expand access prompt concerns about how to evaluate the quality of tertiary systems that are growing in terms of both enrollments and the number and type of institutional offerings (Alexander 2000; Brennan and Shah 2000; Jeliaskova and Westerheijden 2002). One important strategy used towards this end is the creation of a government authority or independent agency charged with overseeing institutional quality assurance (IQA) standards for postsecondary institutions and academic programs. Compliance with IQA standards can play a significant role in determining the accreditation status of an institution or, in the case of specialized accreditation, a program or unit within an institution. In turn, accreditation is often a prerequisite to qualify for public and private funds, maintain legal institutional status, as well as attract students and recruit qualified faculty.

In order to analyze the level of development of a tertiary education quality framework, a good approach consists of reviewing its different components (table 2). As can be seen there, a traditional framework emphasizes quality control, while a transitional one focuses on quality assurance. Ultimately, a sound framework emphasizes quality enhancement.

Table 2. Typology of Tertiary Education Quality Framework Components

Variable/Type	Traditional (I)	Transitional (II)	Mature (III)
Approach to quality	Quality control (QC)	Quality assurance (QA)	Quality enhancement (QE)
National efforts	Procedures to <u>control/</u> <u>impose</u> quality measures	<u>Control plus incentives,</u> <u>training, and monitoring</u>	<u>Accreditation</u> based on adoption of QA practices
Level of institutional intervention	Institution wide	Academic offerings	Institutional and academic offerings
Timing of intervention	Ex-ante-facto	Ex-post-facto	Both
Dominant evaluation approach	Educational <u>inputs</u>	Educational <u>processes</u>	Both
Participatory approach	Mandatory	Voluntary	Both
Applicability by institutional type	Either private OR public educational institutions. Differential treatment.	Private AND public educational institutions. Trends towards equal treatment.	Educational institutions and specialized accrediting agencies. Equal treatment.
Applicability by institutional level	Universities	Universities and some non-university institutions	All levels of the tertiary education system

Level of government participation	Central — government agency	Semi-autonomous	Independent — nongovernmental entity
Level of student participation	QA system application	QA system design	Both

The data collection instrument developed as part of SABER-TE is intended to collect relevant information on the different elements summarized in table 2.

Another important aspect of quality assurance is the collection and dissemination of relevant data on institutional outcomes and processes. However, this is one of the most difficult aspects of tertiary education effectiveness to measure. Efforts to replicate internationally comparable metrics, such as those of the Programme for International Student Assessment (PISA) or of the Trends in International Mathematics and Science Study (TIMSS), at the tertiary education level have been largely unsuccessful, partly because it is incredibly difficult for a single instrument to account for the vast difference in skills, competencies, and knowledge associated with different disciplines and fields of study in different contexts.

As tertiary education systems move towards greater decentralization and institutional autonomy, monitoring progress towards institutional and systemwide goals is essential for quality assurance (Porta and Arcia 2011). The implementation of a Tertiary Education Management Information System (TEMIS) can be an important tool in this regard. Systematically gathering information about educational quality proxies can help policy makers and other stakeholders evaluate progress and plan ahead. Such proxies may include student enrollment, retention, and graduation rates; related entry and exit tests; insertion of graduates into the labor market; and the value-added of attending a tertiary education institution. Likewise, the systematic monitoring of graduates' transition into the workforce is essential to evaluate the relevance of tertiary education offerings to labor market needs. As noted earlier in this paper, without measures such as exit surveys and tracer studies to establish the kinds of jobs that graduates find on the labor market, institutions cannot accurately assess their own performance or respond to the changing demand for skills (Sondergaard et al. 2012).

The availability of outcome data that reflect institutional performance and internal efficiency increase the transparency of tertiary systems to the general public. In fact, such data often constitute the only accountability mechanism that the central government has for informing society at large about the performance of tertiary education institutions (Barrera et al. 2009). Providing public access to information about specific programs (such as graduation rates, time to degree, average tuition and fees, and available financial aid) can help students and parents make informed choices. Targeted programs such as ACCES (*Acceso con Calidad a la Educacion Superior*, in Spanish) in Colombia show that even relatively small investments in upgrading institutional information systems helps generate major benefits at the system level. One of the goals of ACCES is to assist tertiary institutions in upgrading their information systems and thereby provide students and their families with the information necessary to guide decisions on institutions and career training. The program established standard indicators for reporting and helped create a web-based system to facilitate collection of this information in a central database. These changes led to more efficient, transparent, and effective institutions, as well as refined the allocation of student assistance (Cerdan-Infantes and Blom 2007).

Data and analyses of such variables as access, retention, and achievement rates should be disaggregated by gender, age, socioeconomic status, ethnicity, language, disability, and other characteristics relevant to the context at hand. This information can enable institutions to design and implement targeted policies

and programs to increase educational equity. In Costa Rica, for example, public universities are governed by a Council of Rectors, which is responsible for system planning and development, including the collection of information on student background and equity indicators. These data provide the basis for allocating scholarships to underrepresented students (Bashir and Luque 2012).

Equitable access, retention, and success

EQUITABLE ACCESS, RETENTION, AND SUCCESS: The tertiary education system is committed to contributing to a more just society by implementing concrete measures that promote equitable access by and the success of underserved and disadvantaged populations.

As mentioned in the section “Status of Tertiary Education,” young people from underprivileged groups (defined by socioeconomic status, ethnicity, gender, language, age characteristics, culture, religion, disability, or caste, depending on the context) in most countries face significant barriers to access and successfully graduate from tertiary education. SABER-TE starts from the assumption that equity-promotion policies, programs, and procedures (both at national and institutional level) are a *sine qua non* of a strong efficient tertiary system. This assumption is reflected in the design of its data collection instrument, which does not simply treat equity concerns as an isolated standalone category—an all too common practice in research and policy worldwide. Rather, the equity component is embedded in the key policy dimensions of student aid financing, the presence of a strong TEMIS, performance-based funding to promote equity goals, and adequate articulation mechanisms.

The “Status of Tertiary Education” section noted that socioeconomic background is often the largest determinant of whether a student has difficulty in completing tertiary education. Socioeconomic status, along with additional factors such as ethnicity, gender, native language, and urban or rural residence, play a significant role in tertiary attainment. An important equity goal, then, is to ensure that sufficient needs-based financial aid is available to students from disadvantaged populations so as to facilitate their entry and retention in tertiary education programs. The financial equity dimension of SABER-TE explores the benefits incidence of public subsidies and the availability of financial aid for students.

A fully operational Tertiary Education Management Information System (TEMIS) is also essential for monitoring a country’s progress towards access, retention, and graduation equity goals. For example, the average tertiary dropout rates around the world oscillate between 30 and 60 percent, reflecting big inefficiencies in the sector that have immense social and personal implications. Without a functioning system to collect related data at the institutional and system levels, it is impossible to diagnose the extent of the problem in a given context, much less decide on an appropriate course of action. In this regard, questions regarding the collection of enrollment, dropout, and graduation rates; and the existence of graduate tracer studies, “pathways” that facilitate the transfer of students from one type of institution to another, and performance-based incentives that promote recruitment and retention of underserved students are intended to provide a broad picture of a given country’s equity-related efforts.

To gain a useful, nuanced understanding of inequity patterns, indicators such as those included in SABER-TE must be analyzed comprehensively and in relation to other policy domains, as well as to other sectors of the educational system. For example, the academic readiness of high school students is closely associated with both the successful access and retention of underprivileged students in tertiary education. In fact, this criteria is as important to these two rates as the financial dimension mentioned above. The gap between tertiary education eligibility and tertiary education readiness (most often measured through

high school courses taken, grades, and standardized test scores) is a major impediment to increasing the retention, graduation, and successful entry into the labor market of tertiary education students from disadvantaged backgrounds. Substantial disconnects between P–12 and postsecondary education systems in terms of curricula and learning expectations often mean that even those students who meet enrollment proficiency standards may be underprepared to succeed in tertiary -level courses (SREB 2010).

Relevance of tertiary education for economic and social development

RELEVANCE: The tertiary education policy environment supports research and development activities that respond to local conditions, resources, and needs, as well as an institutional orientation towards social development.

In addition to tracking educational and labor market outcomes, it is just as important to examine the relevance of tertiary education to economic and social needs. For decades, the main focus of the international development community, including much of the work of the World Bank Group, was primary and secondary education. In the early 1970s, rates-of-return analyses legitimated the view that the bulk of public investment should be allocated to primary and secondary education, the two sectors calculated to generate the greatest societal benefits. In contrast, tertiary education (and university systems in particular) was broadly considered as a luxury item offering primarily private returns to the individual, and therefore a poor use of public resources (Robertson 2009).

However, since the 1990s a growing body of evidence has shown that returns to tertiary education have been underestimated. In addition to contributing to economic development, tertiary institutions also contribute substantial social, cultural, and environmental externalities. Such externalities include nonmarket private benefits, such as improved health and welfare (for both individuals and their family members), greater longevity, improved cognitive development in children, and reduced family size. More broadly, evidence suggests that higher levels of learning contribute to nonmarket social benefits as varied as poverty reduction, increased income equality, higher literacy rates, access to high-quality primary and secondary education, civic participation, good governance, and the protection of human and environmental rights (OECD 2012; McMahan and Oketch 2013; Oketch, McCowan, and Schendel 2014; McMahan 2009). While this type of contribution is rarely included in monitoring and evaluation exercises it can be of great relevance in LLMICs (Oketch, McCowan, and Schendel 2014).

By the same token, it is important to recognize the contribution of tertiary education to research and development (R&D) activities that respond to local conditions, resources, and needs. In a knowledge-based economy, research and technological innovation are important drivers of long-term economic growth. In highly industrialized societies, industry and tertiary education institutions (TEIs) have long developed complex relationships related to training, research, and high-technology innovation that are now considered essential to economic development (Slaughter 1998; Torres and Schugurensky 2002). In these contexts, the contribution of tertiary education to development is twofold. First, investment in tertiary education–driven research can lead to profitable ventures, as knowledge developed in universities and other tertiary institutions is translated into processes and products with practical value. Second, a highly skilled workforce with tertiary credentials is a prerequisite for R&D because their skills are essential in technology development, transfer, and application (Lucas 1988; Romer 1986, 1990).

One problem with this model of tertiary education and technological innovation is that successful technology transfers only occur in a small portion of top research universities, in a few fields, and in a few countries (Chakrabarti and Santoro 2004; Johnson 2007; Turk-Bicakci and Brint 2005). Because the model

is largely based on observations of higher-income countries, it reflects a number of assumptions that may not hold in most LLMICs. For example, some traditional ways to measure the R&D contribution of tertiary institutions include the number of patents registered by universities and the volume of product licensing, yet both practices require considerable financial investment from the institutions. Further, the type of basic research associated with scientific breakthroughs relies on massive public investment with no guarantee that the results will lead to marketable technological outputs. The OECD calculates that building and sustaining a world-class university is roughly a 1.5 billion dollar business annually—a cost that few national economies, let alone individual universities, can afford (Ischinger and Puukka 2009). The amount of investment required presents a significant barrier to lower-income countries that may not have the financial resources or institutional capacity either to fund adequate research programs or to commercialize their outcomes (Oketch, McCowan, and Schendel 2014).

In other words, when mobilizing tertiary education to support innovation and technological competitiveness, context is key. In some LLMICs, it may be unrealistic to expect all tertiary institutions to be at the cutting-edge of R&D infrastructure, capabilities, and production. Moreover, innovation that is based on imitation and adaptation (especially from research-intensive universities in highly industrialized countries) is often inadequate to solve the very context-specific problems of LLMIC cities and regions. The most relevant goals for many LLMICs, then, may not be getting TEIs to focus on creating new technology, but rather to purposefully apply existing technologies to suit domestic needs.

Nusche (2008) identifies four systemwide factors that encourage institutions of higher learning to contribute to regional economic development: an explicit orientation of public policy toward this goal; adequate incentives for regional engagement; institutional autonomy and leadership; and improved capacity of local and regional actors to determine the strategic direction of higher education institutions. These findings suggest a need for the state to establish an appropriate governance framework that actively promotes and supports this type of activity. Likewise, there is a need to systematically monitor and foster this activity by using appropriate incentive mechanisms for institutions, communities, and individuals.

ANNEX 1: TYPES AND DURATION OF TERTIARY EDUCATION ACADEMIC PROGRAMS INCLUDED IN THE INTERNATIONAL STANDARD CLASSIFICATION OF EDUCATION (ISCED)

Tertiary education builds on secondary education by providing learning activities in specialized fields of study.

It aims to impart learning at a high level of complexity and specialization. Tertiary education includes what is commonly understood as academic education, but also includes advanced vocational or professional education. It comprises ISCED levels 5, 6, 7 and 8, labelled respectively as short-cycle tertiary education, bachelor's or equivalent level, master's or equivalent level, and doctoral or equivalent level. The content of programs at the tertiary level is more complex and advanced than a lower ISCED levels.

Table A1.1 ISECD Levels

01	Early childhood educational development
02	Pre-primary education
1	Primary education
2	Lower secondary education
3	Upper secondary education
4	Post-secondary non-tertiary education
5	Short-cycle tertiary education
6	Bachelor's or equivalent level
7	Master's or equivalent level
8	Doctoral or equivalent level

The typical duration of tertiary education academic programs included in the SCED are shown in table A1.2 below.

Table A1.2 Typical Duration of Tertiary Education Academic Programs

5	2 to 3 years
6	3 to 4 years when directly following ISCED level 3; or 1 to 2 years when following another ISCED level 6 programme
7	1 to 4 years when following ISCED level 6; or 5 to 7 years when directly following ISCED level 3
8	Minimum 3 years

Source: OECD, European Union, UNESCO Institute for Statistics (2015).

ANNEX 2: SABER-TE SCORING RUBRIC

Policy Dimension 1: Vision for Tertiary Education					Dimension Score:
<i>Policy level 1.1: Clear vision</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
The country/state has a fully developed vision/plan for tertiary education that serves as a guide for steering the system.	There is no stated vision/plan for tertiary education	There is a partially developed vision/plan for tertiary education	There is a fully developed vision/plan for tertiary education	There is a fully developed vision/strategic plan for tertiary education created within the last 10 years.	
The creation of the tertiary education vision/ strategic plan is relevant and representative, and includes input from key stakeholders and considers key societal factors.	The creation of the vision/strategic plan did not include key stakeholders.	The creation of the vision/strategic plan included some key stakeholders, but no clear considerations of key societal trends.	The creation of the vision/strategic plan included some key stakeholders and some considerations of key societal trends.	The creation of the vision/strategic plan included varied key stakeholders and clear considerations of key societal trends.	
Policy Dimension 2: Regulatory Framework for Tertiary Education					Dimension Score:
<i>Policy level 2.1: Steering the system</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
The country has an explicitly stated tertiary education law for steering the system towards optimal performance.	No tertiary education law exists and there are no concrete plans to establish one.	No tertiary education law exists, but there are concrete plans to establish one.	A tertiary education law exists, but it has not been revised in 10+ years.	A tertiary law is in place as has been revised in the past 10 years.	
The regulatory framework includes provisions to adequately regulate the market entry and operation of public tertiary education providers.	There are no regulations for either the market entry or operation of public providers.	There are regulations in place only for the market entry of public providers, but not for monitoring their operations.	There are regulations in place for both the market entry and to monitor the performance of public institutions, and they were reviewed more than 10 years ago.	There are regulations in place for both the market entry and to monitor the performance of all public institutions, and they were reviewed less than 10 years ago.	
The regulatory framework includes provisions to adequately regulate the market entry and operation of private tertiary education providers.	There are no regulations for either market entry or operation of private providers.	There are regulations in place only for the market entry of private providers, but not for monitoring their operations.	There are regulations in place for both the market entry and operations of private providers, but without an explicit distinction between for-profit, not-for-profit, and cross-border private institutions.	There is a clear regulatory framework for the market entry and operations of private providers, with an explicit distinction between for-profit, not-for-profit, and cross-border private institutions.	

The regulatory framework includes provisions that adequately regulate the market entry and operation of non-university institutions.	There is no regulation for the market entry and operations of nonuniversity institutions.	There are regulations in place only for the market entry of new nonuniversity institutions, but not for monitoring their operations.	There are regulations in place for both the market entry and to monitor the performance of all tertiary institutions, and they were reviewed more than 10 years ago.	There are regulations in place for both the market entry and to monitor the performance of all tertiary institutions, and they were reviewed less than 10 years ago.	
The regulatory framework includes provisions to adequately regulate the distance and online education.	There is no regulation for the market entry and operation of distance and online education.	There are regulations in place only for the market entry of distance and online education, but not for monitoring its operation.	There are regulations in place for both the market entry and to monitor distance and online education.	There are regulations in place for both the market entry and to monitor distance and online education, with explicit distinction between types of education providers.	
The regulatory framework includes provisions to adequately regulate the independent agencies and buffer bodies.	Independent agencies or buffer bodies do not exist in the country.	The country does not regulate the activity of independent agencies or buffer bodies.	The country regulates the activity of independent agencies or buffer bodies, but does not monitor their operation.	The country regulates the activity of independent agencies or buffer bodies and monitors their operation.	
Policy Dimension 3: Governance					Dimension Score:
<i>Policy level 3.1: Articulation</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
The regulatory framework establishes distinct functions for university and non-university institutions in contributing to systemwide goals.	The regulatory framework does not establish a formal distinction between the functions of university and non-university TEIs.	The regulatory framework hints at a formal distinction between the functions of university and non-university TEIs, but the possible functions of both organizational types are underspecified or not specified.	The regulatory framework establishes a formal distinction between the functions of university and non-university TEIs, but only the possible functions of universities are clearly specified.	The regulatory framework establishes a formal distinction between the functions of public and private TEIs, and the possible functions for both organizational types are clearly specified.	
The regulatory framework provides incentives to strengthen the unique mission of different institutions.	The regulatory framework does not provide incentives to strengthen the unique mission of different institutions.	The regulatory framework provides some incentive to strengthen the unique mission of different institutions, but the incentives are unclear	The regulatory framework provides some incentive to strengthen the unique mission of different institutions, but the incentive is not accompanied by financial or regulatory consequences	The regulatory framework provides some incentive to strengthen the unique mission of different institutions, and the incentive is accompanied by financial and regulatory consequences	
The tertiary system has an enabling governance structure that facilitates collaboration between institutions.	There are no system-wide incentives to promote	There are some incentives, but only for collaboration among the same organizational type of	There are some incentives for collaboration between the same organizational type	There are clear, formal, documented incentives and programs to promote	

	collaboration between TEIs.	institution (e.g., universities).	of institution (e.g., universities) and between institutions of different types.	collaboration between the same type of institution (e.g., universities) and between different types of institutions.	
The tertiary system has an enabling governance structure that facilitates student transfer across institutions.	There is no formal structure or mechanism to facilitate student transfers.	There are some transfer structures or mechanisms, but only across the same type of institution (e.g., universities).	There are some structures or mechanisms to facilitate student transfer across the same (e.g. universities) as well as among different types of institutions.	There are clear, formal, documented structures or mechanisms to facilitate student transfer across the same (e.g. universities) as well as among different types of institutions.	
The tertiary system has an enabling governance structure that facilitates collaboration and/or communication with other educational sectors (e.g., secondary education).	There is little to no significant collaboration with other educational levels.	Collaboration with other educational levels is done exclusively through centralized channels; institutions do not have the autonomy to seek or improve ties.	Some collaboration with other educational levels is done through centralized channels, and institutions have some autonomy to seek or improve ties.	Some collaboration with other educational levels is done through centralized channels, and there are clear, formal, documented incentives to promote collaborations across educational sectors.	
<i>Policy lever 3.2: Institutional autonomy</i>					Sub-lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
Public TEIs are able to negotiate at least some performance targets with stakeholders, such as the government or tertiary education agencies (TEAs).	Performance targets do not exist for public TEIs.	Performance targets exist for public TEIs, but they are not open to negotiation.	At least some performance targets for public TEIs are open to negotiation, and they are negotiated on an ad-hoc basis.	At least some performance targets for public TEIs are open to negotiation, they are negotiated through an evidence-based transparent process.	
The governance framework for public TEIs supports their academic autonomy.	The governance framework makes no explicit provisions regarding the academic autonomy of public TEIs.	The governance framework allows few forms of academic autonomy of public TEIs.	The governance framework allows some forms of academic autonomy of public TEIs.	Public TEIs can make academic decisions with few or no restrictions.	
The governance framework for public TEIs supports their staffing autonomy.	The governance framework makes no explicit provisions regarding the staffing autonomy of public TEIs.	The governance framework allows few forms of staffing autonomy of public TEIs.	The governance framework allows some forms of staffing autonomy of public TEIs.	Public TEIs can make staffing decisions with few or no restrictions.	

The regulatory framework for public TEIs supports their governance autonomy.	The regulatory framework makes no explicit provisions regarding the governance autonomy of public TEIs.	The regulatory framework allows few forms of governance autonomy of public TEIs.	The regulatory framework allows some forms of governance autonomy of public TEIs.	Public TEIs can make governance decisions with few or no restrictions.	
The governance framework grants public TEIs significant freedom to diversify their sources of funding.	The governance framework makes no explicit provisions regarding the autonomy of public TEIs to diversify their sources of funding, or public TEIs have no autonomy to diversify revenue sources.	Public TEIs have limited autonomy to diversify their sources of funding.	Public TEIs have some autonomy to diversify their sources of funding.	Public TEIs have considerable autonomy to diversify their sources of funding.	
Private TEIs are able to negotiate at least some performance targets with stakeholders, such as the government or TEAs.	Performance targets do not exist for private TEIs.	Performance targets exist for private TEIs, but they are not open to negotiation.	At least some performance targets for private TEIs are open to negotiation, and they are negotiated on an ad-hoc basis.	At least some performance targets for private TEIs are open to negotiation, they are negotiated through an evidence-based transparent process.	
The governance framework for private TEIs supports their academic autonomy.	The governance framework makes no explicit provisions regarding the academic autonomy of private TEIs.	The governance framework allows for few forms of academic autonomy of private TEIs. .	The governance framework allows for some forms academic autonomy of private TEIs.	Private TEIs can make academic decisions with few or no restrictions.	
The governance framework for private TEIs supports their staffing autonomy.	The governance framework makes no explicit provisions regarding the staffing autonomy of private TEIs.	The governance framework allows few forms of staffing autonomy of private TEIs.	The governance framework allows some forms of staffing autonomy of private TEIs.	Private TEIs can make staffing decisions with few or no restrictions.	
The regulatory framework for private TEIs supports their governance autonomy.	The regulatory framework makes no explicit provisions regarding the governance autonomy of private TEIs.	The regulatory framework allows few forms of governance autonomy of private TEIs.	The regulatory framework allows some forms of governance autonomy of private TEIs.	Private TEIs can make governance decisions with few or no restrictions.	
Private TEIs enjoy significant freedom to diversify their sources of funding.	The governance framework either makes no explicit provisions regarding the autonomy of private TEIs to diversify their sources of funding, or public TEIs have no autonomy to	Private TEIs have limited autonomy to diversify their sources of funding.	Private TEIs have some autonomy to diversify their sources of funding.	Private TEIs have considerable autonomy to diversify their sources of funding.	

	diversify revenue sources.				
Policy Dimension 4: Finance					Dimension Score:
<i>Policy lever 4.1: Coverage of resource allocation</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
Public funds are allocated to accredited public and private TEIs	Public funds are not allocated to TEIs.	Public funds cover either capital expenditure or recurrent expenditure only.	Public funds are allocated both to public and private TEIs.	Public funds are allocated only to accredited public and private TEIs	
Public funds allocated to public TEIs cover recurrent expenditure and capital expenditure.	Public funds are not allocated to public TEIs.	Public funds cover either capital expenditure or recurrent expenditure only.	Public funds cover limited types of both capital expenditure and recurrent expenditure.	Public funds cover both capital expenditure and recurrent expenditure	
Public funds are allocated to public TEIs to cover research expenditure.	Public research funds are not allocated to public TEIs.	Public funds cover research expenditure at public TEIs and are allocated through non-competitive processes.	Public funds cover research expenditure at public TEIs and are allocated through competitive processes.	Faculty, research centers, departments and schools/faculties at public TEIs are eligible to apply for and receive competitive public funds for research purposes.	

<i>Policy lever 4.2: Resource allocation</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
Public funds are allocated to TEIs through a stable and transparent process and using a block grant budget system	Public funds are not allocated to TEIs.	Public funds are not allocated through a stable process from one financial year to the next.	Public funds are allocated through a stable and transparent process from one financial year to the next using a line item budget system.	Public funds are allocated through a stable and transparent process from one financial year to the next using a block grant budget system.	
There is a publicly known or accessible formula used to allocate public funds to TEIs, which specifies the amounts disbursed as fixed and variable funding.	No formula is used to allocate public funds to TEIs.	There is an explicit formula used to allocate public tertiary funds, but it is either not publicly accessible or only partially accessible.	There is a publicly known or publicly accessible formula used to allocate public funds to TEIs, which specifies the amounts disbursed as fixed and variable funding.	There is a publicly known or accessible formula used to allocate public funds to TEIs, which specifies the amounts disbursed as fixed and variable funding.	
The stakeholders that contribute to determining the different parts of the funding allocation mechanism are clearly identified.	No stakeholders that contribute to determining the different parts of the funding allocation mechanism are explicitly identified.	Some stakeholders that contribute to determining the different parts of the funding allocation mechanism are identified, but the way they contribute towards its utilization is unclear.	All stakeholders that contribute to determining the different parts of the funding allocation mechanism are identified, but the way they contribute towards its utilization is unclear.	All stakeholders that contribute to determining the different parts of the funding allocation mechanism are identified, and the way they contribute towards the formula is clear.	
Performance-based funding is used as part of the funding allocation mechanism.	Performance-based funding is not part of the funding allocation mechanism.	Performance-based funding is part of the funding allocation mechanism to a limited degree.	Performance-based funding is part of the funding allocation mechanism for various targets..	Performance-based funding is part of the funding allocation mechanism for a wide range of targets.	
There is a mechanism which involves data collection for monitoring the progress of institutions toward performance targets.	There is no mechanism for monitoring the progress of institutions toward performance targets.	There is a mechanism for monitoring the progress of institutions toward performance targets, but the data is faulty or inconclusive.	Monitoring of progress toward performance targets takes place, with the data used to exclusively evaluate this progress.	Monitoring of progress toward performance targets takes place and the data are used to review both progress towards performance targets and the adequacy of the performance-based criteria themselves.	
There is at least one competitive line of funding accessible to TEIs aimed at promoting innovation or to address national priorities.	There is no competitive line of funding available to TEIs.	There is at least one competitive line of funding accessible to TEIs aimed at promoting innovation or to address national priorities, but it is accessible only to public TEIs.	There is at least one competitive line of funding accessible to TEIs aimed at promoting innovation or to address national priorities, it is accessible only to both public and private TEIs.	There is at least one competitive line of funding accessible to TEIs aimed at promoting innovation or to address national priorities, it is accessible only to both public and private TEIs and faculty, research centers, departments and schools/faculties are eligible to apply for and receive such competitive public funds.	

<i>Policy lever 4.3: Resource utilization (Equity)</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
There are public programs in place to provide financial aid to students from disadvantaged backgrounds with the goal of advancing equity goals in access and retention.	There is no government-provided financial aid that promotes equity goals.	There is a government-backed student loan program, but no needs-based grants or scholarships.	The government provides needs-based scholarships or grants.	The government provides a combination of both loans and grant funding to promote equity goals.	
The financial cost-sharing mechanisms available effectively serve the needs of targeted beneficiaries.	There are no financial cost-sharing mechanisms in place.	There are financial cost-sharing products available, but they do not specifically target underserved populations.	Loan products and repayment methods are tailored to individual needs as required (i.e., they are income contingent, offer a grace period, and use mortgage-style payments).	Loan products and repayment methods are tailored to individual needs as required, and there are mechanisms in place to monitor their effectiveness in serving the needs of targeted beneficiaries.	
The outcomes of financial aid programs are adequately monitored.	The outcomes of financial aid programs are not monitored at all.	There is some monitoring of financial aid programs, but the data are unreliable or insufficient.	The outcomes of financial aid programs are adequately monitored, but the data are not used to make necessary changes to the programs.	The outcomes of financial aid programs are adequately monitored, and the data are used to make necessary changes to the programs in order to improve their performance.	
There are financial incentives that reward institutions for meeting equity goals.	No financial incentives reward institutions for meeting equity goals.	Funding is offered without monitoring the performance of institutions on equity goals	Incentive funding is offered based on the progress of institutions on equity goals, and is not included in the public funding mechanism.	Incentive funding is offered based on the progress of institutions on equity goals and is officially included in the public funding mechanism.	
Policy Dimension 5: Quality assurance					Dimension Score:
<i>Policy lever 5.1. Accreditation and institutional quality standards</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
There is at least one institutional accreditation agency (IAA) or quality assurance agency (QAA) that oversees the quality of individual institutions in the country	There is no IAA or QAA operating in the country.	There is no IAA or QAA operating in the country, but one is in development.	There is at least one quality assurance agency in the country, but its legal status is uncertain.	There is at least one quality assurance agency in the country with a clearly defined legal status.	
The IAA(s) or QAA(s) is/are independent agency/agencies from government.	There is no IAA or QAA operating in the country.	There is at least one IAA or QAA in the country and it has no independence from the government.	There is at least one IAA or QAA in the country and it has some independence from the government.	There is at least one IAA or QAA in the country and it has full independence from TEIs.	

The IAA(s) or QAA(s) is/are independent agency/agencies from TEIs.	There is no IAA or QAA operating in the country.	There is at least one IAA or QAA in the country and it has no independence from TEIs	There is at least one IAA or QAA in the country and it has some independence from TEIs.	There is at least one IAA or QAA in the country and it has full independence from TEIs.	
The IAA(s)'s or QAA(s)'s jurisdiction is nationwide.	There is no IAA or QAA operating in the country.	The IAA(s) or QAA(s) only cover certain regions in the country.	The IAA covers all institutions in the country with the exception of cross-border providers.	The IAA covers all institutions in the country, including cross-border providers.	
The IAA(s)'s or QAA(s)'s jurisdiction includes both public and private TEIs.	There is no IAA(s) or QAA(s) operating in the country.	The IAA(s) or QAA(s) only has/have jurisdiction over private institutions.	The IAA(s) or QAA(s) only has/have jurisdiction over public institutions.	IAA(s) or QAA(s) cover both public and private TEIs.	
The IAA(s)'s or QAA(s)'s jurisdiction includes both university and nonuniversity institutions.	There is no IAA or QAA operating in the country.	The IAA(s) or QAA(s) only has/have jurisdiction over nonuniversity institutions.	The IAA(s) or QAA(s) only has/have jurisdiction over university institutions.	IAA(s) or QAA(s) has/have jurisdiction over both university and nonuniversity TEIs.	
The IAA(s)'s or QAA(s)'s jurisdiction includes full time, part time, on-site and online programs.	There is no IAA or QAA operating in the country.	The IAA(s) or QAA(s) only has/have jurisdiction over full time and on-site programs.	The IAA(s) or QAA(s) only has/have jurisdiction over full time and part-time on-site programs.	IAA(s) or QAA(s) has/have jurisdiction over full time and part-time online and on-site programs.	
The IAA(s) or QAA(s) has/have developed Institutional Quality Standards (IQAs) to apply in its/their evaluations.	There are no IQAs in place.	The IQAs in place to be compliant with the agency(ies) accreditation focus mostly on inputs.	The IQAs in place to be compliant with the agency(ies) accreditation focus mostly on processes and inputs.	The IQAs in place to be compliant with the agency(ies) accreditation focus mostly on outcomes..	
The IAA(s) or QAA(s) has/have developed Program Quality Standards (PQAs) to apply in its/their evaluations.	The IAA or QAA has not developed PQAs	The PQAs in place to be compliant with the agency(ies) accreditation focus mostly on inputs.	The PQAs in place to be compliant with the agency(ies) accreditation focus mostly on processes and inputs.	The PQAs in place to be compliant with the agency(ies) accreditation focus mostly on outcomes.	
The IAA(s) or QAA(s) provides incentives for TEIs to create Management Information Systems (MIS) through IQAs or PQAs.	The IAA(s) or QAA(s) do not provide incentives for TEIs to create MIS.	The IAA(s) or QAA(s) do(es) provide incentives for TEIs to create an input focused MIS.	The IAA(s) or QAA(s) do(es) provide incentives for TEIs to create a process focused MIS.	The IAA(s) or QAA(s) do(es) provide incentives for TEIs to create a process focused MIS.	
The IAA(s) or QAA(s) involve TEI stakeholders, including students, as part of their activities.	The IAA(s) or QAA(s) does not involve TEI stakeholders as part of their activities.	The IAA(s) or QAA(s) involve no more than one stakeholder in their activities.	The IAA(s) or QAA(s) involve no more than three stakeholders in their activities.	The IAA(s) or QAA(s) involve three or more stakeholders in their activities, including students.	
There are practical consequences for programs/TEIs that do not meet the evaluation/accreditation standards.	There are no practical consequences for an institution/program not passing IAA(s) or QAA(s) accreditation/evaluation.	There are few practical consequences for an institution/program not passing IAA(s) or QAA(s) accreditation/evaluation.	There are significant practical consequences for an institution/program not passing IAA(s) or QAA(s) accreditation/evaluation, but institutions/programs are not offered the possibility to undergo the accreditation/evaluation process again.	There are significant practical consequences for an institution/program not passing IAA(s) or QAA(s) accreditation/evaluation, and institutions/programs are not offered the possibility to undergo the accreditation/evaluation process again	

<i>Policy Lever 5.2: Tertiary education management information system (TEMIS)</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
There is at least one national or regional TEMIS in operation.	There are no TEMIS in the country	The TEMIS collects and analyzes information of only some types of TEIs.	The TEMIS collects and analyzes information of most types of TEIs.	The TEMIS collects and analyzes information of all types of TEIs.	
The TEMIS collects data on student enrollment, retention/dropout rates, graduation rates, and student transfer rates.	TEMIS does not collect this type of data.	The TEMIS collects data on only one of these indicators.	The TEMIS collects data on at least two of these indicators.	The TEMIS collects data on at least three of these indicators and information on demographics to inform equity-related reports and policymaking.	
The TEMIS collects data on tuition levels, financial aid, grants, scholarships, and student loans.	TEMIS does not collect this type of data.	The TEMIS collects data on one of these indicators.	The TEMIS collects data on two indicators.	The TEMIS collects data on the two indicators and information on demographics to inform equity-related reports and policymaking.	
The TEMIS collects data on students' academic readiness.	TEMIS does not collect this type of data.	The TEMIS collects data on not more than one indicator.	The TEMIS collects data on not more than two indicators.	The TEMIS collects data on several indicators, and collects information on demographics to inform equity-related reports and policymaking.	
The TEMIS collects data on graduated outcomes.	TEMIS does not collect this type of data.	The TEMIS collects data on one of the indicators only.	The TEMIS collects data on no more than three indicators.	The TEMIS collects data on three or more of the indicators and collects information on demographics to inform equity-related reports and policymaking.	
The TEMIS collects data on institutional contributions to local economic, social, or cultural development.	TEMIS does not collect this type of data.	The TEMIS collects data on one of these indicators.	The TEMIS collects data on two of these indicators.	The TEMIS collects data on all three indicators.	
The TEMIS collects data on institutional RDI indicators.	TEMIS does not collect this type of data.	The TEMIS collects data on no more than one relevant indicators.	The TEMIS collects data on no more than three relevant indicators.	The TEMIS collects data on four or more relevant indicators.	
The TEMIS collects data on faculty related indicators.	TEMIS does not collect this type of data.	The TEMIS collects data on no more than one relevant indicators.	The TEMIS collects data on no more than two relevant indicators.	The TEMIS collects data on three or more relevant indicators.	
The TEMIS is used extensively for system evaluation and reform.	The TEMIS data is not utilized for system evaluation and reform.	The TEMIS data is utilized for system evaluation and reform ad hoc.	The TEMIS data is utilized for system evaluation and reform in a formalized and systematic process.	The TEMIS data is utilized for system evaluation and reform in a standardized process and the data collected as part of TEMIS is revised based on policy needs.	

Policy Dimension 6: The relevance of Tertiary Education for economic and social needs					Dimension Score:
<i>Policy lever 6.1: Economic development</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
There is a system-wide policy mandate or directive to strengthen the role of tertiary education in enhancing economic development.	There is no such policy directive.	There is a relevant policy directive, but it hasn't been translated into specific programs.	There is a relevant policy directive and it has been translated into specific programs, but their impact is largely unmonitored.	There is a relevant policy directive and it has been translated into specific programs with documented outcomes and monitoring mechanisms.	
<i>Policy lever 6.2: Fostering R&D and innovation</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (0)	Emergent (1)	Established (2)	Advanced (3)	
There is a system-wide or sector-specific policy mandate or decree to strengthen RDI activity in tertiary education.	There is no policy mandate or decree to strengthen RDI in TE.	There is a relevant policy mandate or decree but it has not been translated into specific programs.	There is a relevant policy mandate or decree, and it has been translated into specific programs but their impact is unmonitored.	There is a relevant policy mandate or decree and it has been translated into specific programs which are monitored and reviewed.	
There are financial incentives to foster RDI activity across different tertiary sub-systems.	There are no financial incentives to foster RDI in TE.	There are at least some financial incentives to foster RDI in TE but they only target few institutional types (e.g. universities).	There are at least some financial incentives across more than one institutional type (e.g., universities and TVET institutions).	There are at least some financial incentives across more than one institutional type and the outcomes of the incentives are monitored on a regular basis.	
There are system-wide programs and/or incentives to foster institutional autonomy and leadership with regards to RDI activity.	There are no programs to foster RDI-related autonomy and leadership.	There are at least some programs, but they only target a few institutions or only one institutional type (e.g. TVET).	There are at least some programs across more than one institutional type (e.g. universities and TVET institutions).	There are at least some programs across more than one institutional type and the outcomes of the incentives are monitored on a regular basis.	
There are programs and/or incentives to enhance the capacity of local and regional actors to contribute to RDI activities in tertiary institutions.	There are no programs or incentives to foster the involvement of local and regional actors in RDI activities.	There are at least some programs, but they only target a few institutions or institutional types (e.g., universities).	There are at least some programs across more than one institutional type (e.g., universities and TVET institutions).	There are at least some programs across more than one institutional type and their impact is monitored.	

<i>Policy lever 6.3: Fostering social and cultural development, and Environmental protection and sustainability</i>					Lever Score:
Best practice indicators	Scoring				
	Latent (1)	Emergent (2)	Established (3)	Advanced (4)	
There is a system-wide policy mandate or decree to strengthen the role of tertiary education in fostering social and cultural development.	There is no such system-wide policy mandate or decree.	There is a relevant policy mandate or decree, but it has not been translated into specific programs.	There is a relevant policy mandate or decree and it has been translated into specific programs, but their impact is largely unmonitored.	There is a relevant policy mandate or decree and it has been translated into specific programs with documented outcomes and monitoring mechanisms.	
There is a system-wide policy mandate or decree to strengthen the role of tertiary education in fostering environmental protection and sustainability.	There is no policy mandate or decree to foster TEIs' role in environmental protection and sustainability.	There is a relevant policy mandate or decree, but it has not been translated into specific programs.	There is a relevant policy decree and it has been translated into specific programs, but their impact is not monitored.	There is a system-wide/sector-specific policy mandate or decree, and it has been translated into specific programs with monitoring mechanisms.	

REFERENCES

- Alexander, F. K. 2000. "The Changing Face of Accountability: Monitoring and Assessing Institutional Performance in Higher Education." *The Journal of Higher Education* 71 (4): 411–31.
- Altbach, P., and J. Salmi, eds. 2011. *The Road to Academic Excellence: The Making of World-Class Research Universities*. Directions in Development Series. World Bank, Washington, DC.
- Atria, F. & C. Sanhueza. 2013. "Propuesta de Gratuidad para la Educación Superior Chilena." *Clave de Políticas Públicas*. No. 17. Instituto de Políticas Públicas UDP, Santiago.
- Bai, L. 2006. "Graduate Unemployment: Dilemmas and Challenges in China's Move to Mass Higher Education." *The China Quarterly* 185: 128–44.
- Badat, S. 2011. "Free Higher Education for South Africa?" *International Higher Education* 63: 22-23.
- Barrera-Osorio, F., T. Fasih., H. A. Patrinos, and L. Santibáñez. 2009. *Decentralized Decision Making in Schools: The Theory and Evidence on School-Based Management*. World Bank, Washington, DC.
- Bashir, S., and J. Luque. 2012. Equity in Tertiary Education in Central America: An Overview. Policy Research Working Paper 6180. World Bank, Washington, DC.
- Beyer, H., and L. Cox. 2011. "Gratuidad de la educación superior: Una política regresiva." *Puntos de Referencia* [Centro de Estudios Públicos, Santiago, Chile] 337. http://www.cepchile.cl/dms/archivo_4870_2977/pder337_LCox_HBeyer.pdf.
- Birdsall, N. 1999. Education: The People's Asset. Working Paper 5. Center on Social and Economic Dynamics, Brookings Institution, Washington, DC.
- Bloom, D., M. Hartley, and H. Rosovsky. 2006. "Beyond Private Gain: Public Benefits of Higher Education." In *International Handbook of Higher Education*, ed. J.F. Forest and P.G. Altbach, 293–308. Springer, Dordrecht, Netherlands.
- Brennan, J., and T. Shah. 2000. "Quality Assessment and Institutional Change: Experiences from 14 Countries." *Higher Education* 40: 331–49.
- Cerdan-Infantes, P., and A. Blom. 2007. "Colombia: Assisting Students from Low-Income Families to Attend Tertiary Education." *En Breve* [World Bank] 100 (January): 1–4.
- Chakrabarti, A. K., and M. D. Santoro. 2004. "Building Social Capital and Learning Environment in University-Industry Relationships." *International Journal of Learning and Intellectual Capital* 1 (1): 19–36.
- Chan, J. 2006. "China's Middle-Class Dream Shattered: Millions of Graduates Face Unemployment." World Socialist Web Site [sic]. June 2, 2006. <http://www.wsws.org/articles/2006/jun2006/chin-j02.html>.
- Cheslock, J. J. 2006. "Applying Economics to Institutional Research on Higher Education Revenues." *New Directions for Institutional Research*, [Wiley] (132): 25–41.
- COREHEG (World Bank Thematic Group on Tertiary Education). 2010. Education Sector Strategy 2020: Tertiary Education. Background Note for Education Sector Strategy 2020. World Bank, Washington, DC.

- Daniel, J., A. Kanwar, and S. Uvalic-Trumbic. 2005. "Who's Afraid of Cross-Border Higher Education? A Developing World Perspective." *Higher Education Digest* 52: 1–8.
- Desrochers, D. M., and S. Hurlburt. *Trends in College Spending: 2001-2011: A Delta Data Update*. Association for Institutional Research, Washington, DC.
- . 2006. "A Tectonic Shift in Global Higher Education." *Change: The Magazine of Higher Learning* 38 (4): 16–23.
- di Gropello, E., A. Kruse, and P. Tandon. 2011a. *Skills for the Labor Market in Indonesia: Trends in Demand, Gaps, and Supply*. Washington, DC: World Bank.
- di Gropello, E., H. Tan, and P. Tandon, P. 2010. *Skills for the Labor Market in the Philippines*. World Bank, Washington, DC.
- Experton, W., and C. Fevre. 2010. *Financing Higher Education in Africa*. Directions in Development Series. World Bank, Washington, DC.
- Fagerberg, J., and M. M. Godinho. 2005. "Innovation and Catching-Up." In *The Oxford Handbook of Innovation*, ed. J. Fagerberg, D.C. Mowery, and R. R. Nelson, 514–42. Oxford: Oxford University Press.
- Fagerberg, J. and B. Verspagen, 2002. "Technology-gaps, innovation-diffusion and transformation: an evolutionary approach." *Research Policy* 31: 1291-1304.
- Farrell, L. C., C. Harmon, C. Laffan, and C. O' Carroll. 2006. *The Economic and Social Impact of Higher Education*. Irish Universities Association, Dublin. http://researchrepository.ucd.ie/bitstream/handle/10197/672/harmonc_report_pub_019.pdf?sequence=3.
- Fielden, J. 2008. "Global Trends in University Governance." *Education Working Paper Series*. No. 9. Washington, DC: World Bank.
- Gereffi, G., V. Wadhwa, B. Rissing, and R. Ong. 2008. "Getting the Numbers Right: International Engineering Education in the United States, China, and India." *Journal of Engineering Education* 97 (1): 13–25.
- Hatekanaka, S. 2008. *The Role of Higher Education in High-Tech Industry Development: What Can International Experience Tell Us?* Annual Bank Conference on Development Economics, South Africa. World Bank, Washington, DC. <http://siteresources.worldbank.org/INTABCDSESOUAFR2008/Resources/SachiHatakenaka.pdf>.
- ILO (International Labour Organization) and International Institute for Labour Studies (IILS). 2012. *World of Work Report 2012: Better Jobs for a Better Economy*. ILO and IILS, Geneva.
- IMD (International Institute for Management Development). 2005. *World Competitiveness Yearbook*. Lausanne, Switzerland: IMD.
- Ischinger, B., Puukka, J. 2009. "Universities for Cities and Regions: Lessons from the OECD Reviews." *Change: The Magazine of Higher Learning* 41(3), 8-13.
- Jeliazkova, M., and D. F. Westerheijden. 2002. "Systemic Adoption to a Changing Environment: Towards a Next Generation of Quality Assurance Models." *Higher Education* 44: 433–48.

- Jessop, B. 2008. "A Cultural Political Economy of Competitiveness and its Implications for Higher Education." In *Education and the Knowledge Based-Economy in Europe*, ed. B. Jessop, N. Fairclough, and R. Wodak, 11–39. Sense Publishers, Rotterdam.
- Johnson, W. H. A. 2007. "Managing Collaborations of Engineering Management with Academia and Government in Triple Helix Technology Development Projects: A Case Example of Precarn from the Intelligent Systems Sector." *Engineering Management Journal* 19 (2): 12–22.
- Johnstone, D. 2004. "Higher Education Finance and Accessibility: Tuition Fees and Student Loans in Sub-Saharan Africa." *Journal of Higher Education in Africa*. 2 (2): 11–36.
- . 1998. *The Financing and Management of Higher Education: A Status Report on Worldwide Reforms*. With A. Arora and W. Experton. World Bank Document 19129. World Bank.
- Leslie, L. and P. Brinkman. 1998. *The Economic Value of Higher Education*. American Council on Education, Washington, DC.
- Lester, R. 2005. *Universities, Innovation and the Competitiveness of Local Economies: A Summary Report from the Local Innovation Systems Project – Phase I*. MIT IPC Working Paper IPC-050-010. MIT, Cambridge, Massachusetts.
- Letseka, M., and M. Breier. 2008. "Student Poverty in Higher Education: The Impact of Higher Education Dropout on Poverty." In *Education and Poverty Reduction Strategies: Issues of Policy Coherence*, ed. S. Maile, 83–101. Human Sciences Research Council, Pretoria, South Africa.
- Levy, D. C. 2006. "The Unanticipated Explosion: Private Higher Education's Global Surge." *Comparative Education Review* 50 (2): 217–40.
- Lucas, R. 1988. "On the Mechanics of Economic Development." *Journal of Monetary Economics* 22 (1): 3–42.
- Mark, M., K. Thorn and A. Blom. 2006. *Study of Innovation Data from Chile and Colombia*. Unpublished background paper. World Bank, Washington, DC.
- Marmolejo, F., and J. Puukka. 2009. *Supporting the Contribution of Higher Education to Regional Development: Lessons from an OECD Review of 14 regions throughout 12 Countries*. *Revista de Economía* [Universidade Federal do Paraná] 3 (35): 59–71
- McMahon, W. W. 2009. *Higher Learning, Greater Good: The Private and Social Benefits of Higher Education*. Johns Hopkins University Press, Baltimore, MD.
- McMahon, W. W., and M. Oketch. 2013. "Education's Effects on Individual Life Chances and on Development: An overview." *British Journal of Educational Studies* 61 (1): 79–107.
- McPherson, M. S., and M. O. Schapiro. 2006. "U.S. Higher Education Finance." *Handbook of the Economics of Education*, Vol. 2, ed. E. Hanushek and F. Welsh, 1403–34. Elsevier, Amsterdam.
- Montegro, C. E., and H. A. Patrinos. 2013. *Returns to Schooling around the World*. Background paper for *The World Development Report 2013*. World Bank, Washington, DC.
- Mooney, P., and S. Neelakantan. 2006. "Foreign Academics Question the Quality of their Countries' Engineering Programs." *Chronicle of Higher Education* (online), September 8, 2006.

- Moretti, E. 2004. "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data." *Journal of Econometrics* 121: 175–212.
- Murakami, Y. and A. Blom. 2008. Accessibility and Affordability of Tertiary Education in Brazil, Colombia, Mexico and Peru within a Global Context. World Bank, Washington, DC.
- Ng'ethe, N., G. Subotzky, and G. Afeti. 2008. *Differentiation and Articulation in Tertiary Education Systems*. World Bank, Washington, DC.
- New England Public Policy Center. 2006. Assessing the Economic Impact of Higher Education Institutions in New England. Memorandum. New England Public Policy Center, Federal Reserve Bank of Boston, Boston. <https://www.bostonfed.org/economic/neppc/memos/2006/nagowski022206.pdf>.
- Nusche, D. 2008. Assessment of Learning Outcomes in Higher Education: A Comparative Review of Selected Practices. OECD Education Working Paper 2. Directorate for Education, OECD, Paris.
- OECD (Organisation for Economic Co-Operation and Development). 2006. "Higher Education: Quality, Equity, and Efficiency; Meeting of OECD Education Ministers Athens, Greece, 27–28 June 2006." In *Education Policy Analysis 2006: Focus on Higher Education*, 9–66. , June 27–28, 2006. OECD Publishing, Paris. http://www.keepeek.com/Digital-Asset-Management/oecd/education/education-policy-analysis-2006/higher-education-quality-equity-and-efficiency_epa-2006-2-en#page1.
- . 2007. Performance-based Budgeting in OECD Countries. OECD Publishing, Paris.
- . 2012. *Higher Education in Regional and City Development: Southern Arizona, United States, 2011*. OECD Publishing, Paris. [10.1787/9789264028036-en](https://doi.org/10.1787/9789264028036-en).
- OECD, European Union, and UNESCO Institute for Statistics. 2015. *ISCED 2011 Operational Manual: Guidelines for Classifying National Education Programmes and Related Qualifications*. OECD Publishing, Paris.
- Oketch, M., T. McCowan, and R. Schendel. 2014. The Impact of Tertiary Education on Development: A Rigorous Literature Review. EPPI-Centre Report 2205. U.K. Department for International Development, London). <http://r4d.dfid.gov.uk/>.
- Piketty, T. 2014. *Capital in the 21st Century*. Trans. Arthur Goldhammer. President and Fellows of Harvard College, Cambridge, MA.
- Porta, E., and G. Arcia. 2011. Improving Information Systems for Planning and Policy Dialogue: The SABER EMIS Assessment Tool. World Bank, Washington DC.
- Reiko, Y. 2014. Measuring Quality of Undergraduate Education in Japan: Comparative Perspective in a Knowledge Based Society. Springer, Dordrecht, Netherlands.
- Robertson, S. 2009. "Market Multilateralism, the World Bank Group, and the Asymmetries of Globalizing Higher Education: Toward a Critical Political Economy Analysis." In *International Organizations and Higher Education Policy: Thinking Globally, Acting Locally?*, ed. R. Malee Bassett and A. Maldonado-Maldonado, 113–31. Routledge, New York and London.
- Romer, P. M. 1986. "Increasing Returns and Long-Run Growth." *Journal of Political Economy* 94 (5): 1,002–1,037.
- . (1990. "Endogenous Technical Change." *Journal of Political Economy* 98 (pt. 2): S71–S102.

- Salerno, C. 2004. "Public Money and Private Providers: Funding Channels and National Patterns in Four Counties." *Higher Education* 48: 101–30.
- Salmi, J., (2009). *The Challenge of Establishing World-Class Universities*. Directions in Development; World Bank, Washington, D.C.
- Salmi, J., and A. M. Hauptman. 2006. "Innovations in Tertiary Education Financing: A Comparative Evaluation of Allocation Mechanisms." *Education Working Paper Series*. No. 4. Washington D.C., The World Bank.
- Samoff, J., and B. Carrol. 2004. *Conditions, Coalitions, and Influence: The World Bank and Higher Education in Africa*. Proceedings of the Annual Conference of the Comparative and International Education Society. <http://www.eldis.org/vfile/upload/1/document/0708/doc17679.pdf>.
- Schwartzman, S. 2009. "Los desafíos de la educación superior en América Latina." First published on the website of Asuntos del Sur (<http://www.asuntosdelsur.org>), January 25. Available on the website of the Observatorio de la Universidad Colombiana, Bogotá, Colombia. http://universidad.edu.co/index.php?option=com_content&view=article&id=652:los-desafios-de-la-educacion-superior-en-america-latina&catid=36:ensayos-acadcos&Itemid=81.
- Shierholz, H., H. Wething, and N. Sabadish. 2012. *The Class of 2012: Labor Market for young graduates remains grim*. EPI Briefing Paper 340. Economic Policy Institute, Washington, DC.
- Shin, J. C., and G. Harman. 2009. "New Challenges for Higher Education: Global and Asia-Pacific Perspectives." *Asia Pacific Education Review* 10 (1): 1–13.
- Slaughter, S. 1998. "National Higher Education Policies in a Global Economy." In *Universities and Globalization: Critical Perspectives*, ed. J. Currie and J. Newson, 45–70. Sage, Thousand Oaks, CA.
- Slaughter, S., and L. L. Leslie. 1997. *Academic Capitalism: Politics, Policies, and the Entrepreneurial University*. Johns Hopkins University Press, Baltimore.
- Slaughter, S., and G. Rhoades. 2004. *Academic Capitalism and the New Economy: Markets, States, and Higher Education*. Johns Hopkins University Press, Baltimore.
- Sondergaard, L., M. Murthi, D. Abu-Ghaida, C. Bodewig, and J. Rutkowski. 2012. *Skills, Not Just Diplomas: Managing Education for Results in Eastern Europe and Central Asia*. World Bank, Washington, DC.
- SREB (Southern Regional Education Board). 2010. *Beyond the Rhetoric: Improving College Readiness through Coherent State Policy*. The National Center for Public Policy and Higher Education, San Jose, California. Available online at <http://knowledgecenter.completionbydesign.org/sites/default/files/82%20SREB%20June%202010.pdf>
- STI Group. 2010. *Education Sector Strategy 2020: Science, Technology, and Innovation Capacity Building*. Background Note for Education Sector Strategy 2020. World Bank, Washington, DC.
- World Bank. 2000. *Higher Education and Developing Countries: Peril and Promise*. World Bank, Washington, DC.
- Thorn, K., and M. Soo. 2006. *Latin American Universities and the Third Mission: Trends, Challenges, and Policy Options*. World Bank Policy Research Working Paper 4002. The World Bank, Washington, DC.
- Tilak, J. 2008. "Higher Education: A Public Good or a Commodity for Trade? Commitment to Higher Education or Commitment of Higher Education to Trade." *Prospects* 38 (4): 449–66.

- Torres, C., and D. Schugurensky. 2002. "The Political Economy of Higher Education in the Era of Neoliberal Globalization: Latin America in Comparative Perspective." *Higher Education* 43 (4): 429–56.
- Turk-Bicakci, L., and S. Brint. 2005. "University-Industry Collaboration: Patterns of Growth for Low- and Middle-Level Performers." *Higher Education* 49: 61–89.
- UNESCO (United Nations Educational, Scientific, and Cultural Organization) and OECD (Organisation for Economic Co-operation and Development). 2005. Guidelines on Quality Provision in Cross-Border Higher Education. UNESCO and OECD, Paris.
- UNESCO (United National Educational, Scientific, and Cultural Organization). 2014. EFA Global Monitoring Report 2013/4: Teaching and Learning: Achieving quality for all. UNESCO, Paris.
- United Nations. 2014. The Millennium Development Goals Report 2014. United Nations, New York.
- Välilmaa, J., and D. Hoffman. 2008. "Knowledge Society Discourse and Higher Education." *Higher Education* 56 (3): 265–85.
- World Bank. N.d. World Development Indicators (database). World Bank, Washington, DC.
- . 1994. Higher Education: The Lessons of Experience. Washington, DC: World Bank.
- . 2002. *Constructing Knowledge Societies: New Challenges for Tertiary Education*. World Bank, Washington, DC.
- . 2006. *World Development Report 2006: Equity and Development*. Oxford University Press, New York.
- . 2011. Learning for All: Investing in People's Knowledge and Skills to Promote Development: World Bank Group Education Strategy 2020. Human Development Network. World Bank, Washington, DC.
- . 2013a. Malawi Skills Development Project. Public Appraisal Document. World Bank, Washington, DC.
- . 2013b. The World Bank Group Goals: End Extreme Poverty and Promote Shared Prosperity. World Bank, Washington, DC. <http://www.worldbank.org/content/dam/Worldbank/document/WB-goals2013.pdf>.
- . 2013c. Equity and Access in Tertiary Education. Completion Note (P111705). World Bank, Washington, DC.
- . 2013d. The World Bank Policy on Access to Information. Board Report. Document 79034. World Bank, Washington, DC.
- . 2014. SABER in Action: An Overview. World Bank, Washington, DC. http://wbgfiles.worldbank.org/documents/hdn/ed/saber/supporting_doc/in_actions/SABER_in_Action_Overview.pdf.
- . 2015. Public Expenditure Review: Mexico. World Bank, Washington, DC.

The Systems Approach for Better Education Results (SABER) initiative collects data on the policies and institutions of education systems around the world and benchmarks them against practices associated with student learning. SABER aims to give all parties with a stake in educational results—from students, administrators, teachers, and parents to policymakers, business people and political leaders—an accessible, detailed, objective snapshot of how well the policies of their country’s education system are oriented toward delivering learning for all children and youth.

This report focuses specifically on policies for Equity and Inclusion in Education Systems.

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