

UNIVERSITY ADMISSION WORLDWIDE

by
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Introduction

Tertiary education is more than the capstone of the traditional education pyramid—it is a key pillar of human development worldwide. In today's lifelong-learning framework, tertiary education provides not only the advanced skills necessary to meet the demands of increasingly knowledge-based labor markets, but also the training essential for teachers, doctors, nurses, civil servants, engineers, humanists, entrepreneurs, scientists, social scientists, and other personnel. These trained individuals play a critical role in driving local economies, supporting civil society, teaching children, leading effective governments, and making important decisions that affect entire societies.

While the process through which students are selected to enter tertiary education is called admission or entrance, the specific practices of which vary widely from country to country. Often, prospective college or university students apply for admission during their last year of secondary school. In some countries, government bodies or independent organizations are tasked with centralizing the administration of entrance exams and the allocation of student places. Entry quotas for certain institutions and disciplines may be applied, either centrally by governments, or by the institutions themselves.

Some admission practices are comparatively objective and look at only a single score on an entrance examination. Other procedures are quite subjective and consider an entire portfolio of the examination scores, academic performance, references, and extra-curricular work of a prospective student. Multiple admission systems may also be used within a particular country; such systems sometimes vary between public and private institutions.

All of these variables produce an unsurprisingly untidy world of tertiary admission practices, together with an array of concerns and challenges. In some countries, admission practices are thought to be patently opaque, even overtly corrupt—rife with favoritism and nepotism. Developing countries often face particular challenges in the

admission practices of their tertiary education systems. As they seek to improve the quality of these systems, they often look to other countries for examples.

The purpose of this paper is to examine one piece of the tertiary admission puzzle: undergraduate university admission policies and procedures worldwide. It sets forth a basic classification system for university admission systems and highlights key considerations and challenges associated with the various models currently in use. Rather than attempting to provide an in-depth analysis of the many complex influences and issues involved in university admission, the paper seeks to serve as a starting point for understanding the admission landscape. It thus intends to provide a framework for policy makers and institutional leaders to think critically about admission procedures in their countries, as well as to serve as a springboard for future research efforts (topics for which are suggested in the conclusion section). Specific limitations on the scope of the paper include:

- The focus is primarily undergraduate admission to the public university sector. Other segments of tertiary education in a given country, such as vocational institutes, often have different procedures. In addition, private institutions may use very different processes and consider other factors. For-profit and distance education add another layer of complexity. The interplay among the array of admission practices at work within a given country is an important issue, but beyond the scope of this paper.
- Although “admission” can refer broadly to “the process from when a potential student develops an interest in entry to higher education until enrollment in a particular institution and course takes place” (Harman 1994, 318), for purposes of this paper, the term is used more narrowly to refer to the specific activities undertaken to admit students to universities. The scope of the paper does not allow for a full discussion of the formal and informal decisions made at earlier stages in the educational process (e.g., academic versus vocational “tracking”) that may strongly influence the selection process.

The paper begins with an overview of the various factors considered in admission practices, followed by a typology that categorizes the various approaches in use and the factors evaluated by each. Key issues and considerations for evaluating the effectiveness of a particular model in a given context are then outlined. The paper concludes with a discussion of recent and proposed reforms to various tertiary education systems worldwide and offers suggestions for future admission-related research.

I. Factors Considered in Admission Processes

A useful first step in sorting through the wide and complex range of admission systems and procedures in existence is to identify a finite set of factors that are most commonly considered in admission processes throughout the world. These factors can be grouped into four main categories: examinations, secondary school preparation, application materials, and demographic factors.

Examinations

In most admission systems, a candidate's score on one or more examinations is a key consideration. The exams used can be grouped into three primary categories: secondary leaving exams, entrance exams, and standardized aptitude tests. Secondary leaving exams and entrance exams are generally achievement focused, designed to measure acquired learning, knowledge, and ability in a particular curriculum or domain of interest. Standardized aptitude tests generally measure aptitude in more general cognitive skills and are designed to estimate a person's ability to learn.

Secondary leaving exams are, first of all, a certification mechanism; students are required to pass them in order to receive a high school diploma. Not all countries in which a secondary leaving exam is a requirement of high school graduation use these exams in the university admission process; in many countries, such exams are used for certification purposes only. In some countries, individual high schools administer leaving exams. Among the countries profiled in this report, leaving exams that are administered nationally or regionally by a government are usually used for university selection in addition to high school certification. Students may also be required to take a general exam, exams in particular subjects on which they focused in secondary school and/or on which they intend to focus at the university level. In some cases, students may select which subject exams they take.

Like secondary leaving exams, entrance examinations are also achievement oriented and may be administered nationally or regionally by a government or individual institutions. Again, the required subjects vary from system to system. Standardized aptitude tests, in

contrast, are usually not subject specific and are often administered by independent organizations, such as the College Board, which administers the SAT test in the United States. The skills tested by such exams may include reading comprehension, inferential reasoning, and other cognitive abilities, although in some cases subject-specific abilities may be covered as well. For example, the standard SAT exam has a mathematics section and additional subject-specific SAT tests—also administered by the College Board—are required by some U.S. institutions.

Secondary School Preparation

A variety of components of secondary school preparation are taken into account by admission systems. In many cases, a candidate's high school grade point average is considered and may be combined with an examination score to produce a composite score used for admission decisions. Grades in all subjects may be reviewed, or only grades in the particular field of study the candidate intends to pursue at the university level. Some systems consider only grades from the final year or two of high school, while others look for patterns and progress over a longer period.

Beyond a numeric grade point average, an applicant's relative rank when compared to other graduating students may also be considered, as well as the academic rigor and breadth of courses he or she has taken. In some systems, the overall strength and reputation of the secondary institution is also a factor; candidates who graduated from a particularly rigorous secondary school may be looked upon more favorably and/or may not be required to have as high grades as candidates from less demanding schools. Finally, participation in outside-of-school activities and academic programs may be considered. Examples include art and academic clubs, student government, sports teams, volunteer activities, employment, academic camps, and after-school programs designed to prepare students for university study.

Application Materials

In some countries, universities require candidates to submit an application that has a variety of components. Common elements of a university application include essays in which candidates answer a number of questions designed by the institution, together with recommendation letters from teachers, employers, coaches, public officials, and others. In some cases, candidates may be required to submit a portfolio of previously completed work, such as writing samples or artistic pieces. For performance-specific programs (e.g., music, dance, theater, etc.), auditions may be required, and for certain institutions and programs—particularly elite institutions—interviews with faculty and/or alumni may be considered as well. The relative weight of each application element is generally determined by the individual institution.

Demographic Factors

In some cases, admission procedures also take into account the demographic characteristics of applicants. These qualities are often used as “tipping” or “plus” factors, which are considered in conjunction with other criteria when all other conditions are equal and a differentiation is desired, or in the context of equalizing the consideration of different applicants. Although not an exhaustive list, typical demographic factors include race and/or ethnicity, gender, socioeconomic status, ability to pay tuition, and social class (Horn 2007).

How these factors are taken into account, in what combinations, and the weight accorded to each varies greatly across countries. In some systems where admission is based entirely or almost entirely on exam performance, cutoff scores may be set lower for candidates from disadvantaged groups. In others, “affirmative action” programs exist in which complex formulas determine the relative weight given to specific demographic

factors in relation to other admission considerations. These practices, and their implications in terms of equity, are discussed in greater detail below.

II. A Typology of Admission Systems

The typology of admission systems outlined below provides two levels of categorization: “types” and “models.” Types are broad categories intended to serve as a starting point for classification; because examination scores are a factor in a large majority of systems worldwide, the types are based on the examination used. Models are more detailed descriptions designed to capture the nuances of individual processes and procedures, including non-exam factors taken into account, the weight given to each, and so on. The descriptions of each type in the following section include several representative models, along with examples of those models.

Not surprisingly, given the wide variation in systems, the typology used here has certain limitations. First, as noted in the introduction, the countries provided as examples of each model are classified according to the *primary* or *dominant* system used for undergraduate entrance to the public university system. Many countries have alternate routes into the tertiary system (e.g., for adult students, professional qualifications may be considered). Moreover, technical and vocational institutions, as well as private institutions, may have different admission requirements. In some cases, particular programs (e.g. medicine) or elite institutions may also have additional requirements.

Second, for countries that administer a national university entrance examination, the typology does not take into account whether the admission process is centrally coordinated (i.e., examination scores are submitted to a central entity, which determines student placements) or the university system as a whole is centrally planned (i.e., the number of spaces available in each institution is determined by the national government). Systems that are centrally planned are often centrally coordinated as well (China is a good example). However, there are examples of systems in which the government determines the number of spaces available, but individual institutions are responsible for the selection process (Spain). Conversely, there are systems in which individual

institutions determine the number of spaces available, but the admission process is centrally coordinated (Ireland). These distinctions are outlined in the individual country examples.

Finally, the typology undoubtedly does not capture all of the models in existence; there are certainly additional models of each system type already in use and others will likely be added as admission procedures worldwide continue to evolve. The countries used as examples were selected to provide both representative models and geographic diversity. Although efforts were made to obtain as much data as possible about the system used in each country, the descriptions vary in terms of depth and breadth, based on availability of reliable, detailed information.

Despite these limitations, the typology serves as a useful starting point for classifying admission practices, one that can be expanded and modified as needed to accommodate additional models. Although used here primarily to classify national systems, the typology can also be applied to subsystems, such as the private sector, as well as procedures used by individual institutions.

Sources

Unless otherwise cited, information about individual country systems was obtained from the following four sources, as well as personal reports by individuals with experience and/or significant knowledge of the systems:

- the Database on Higher Education Systems of the International Association of Universities;
- Eurydice, the education information network created of the European Union;
- the “International Education Links” of *World Education News & Reviews*, an online education newsletter; and
- *Wikipedia*, the online encyclopedia.

A note on the final source: Since its creation in 2001, Wikipedia’s accuracy, scholarly credibility, and legitimacy as an academic source have been fervently debated (see, for example, Read 2006 and 2007). This concern is certainly warranted. Anyone with Internet access may contribute and edit articles; no scholarly or other qualifications are

required. While there are editing guidelines posted on the Wikipedia Web site and administrators enforce certain policies, such as those pertaining to “deliberate attempts to compromise the integrity” of the site, responsibility for ensuring the accuracy of content rests with unscreened individual contributors.

As the Wikipedia site has grown, however, and the content has been refined by more and more users, its *limited* use in academic work has become more accepted (Guess 2008). In fact, the Wikipedia Web site itself now offers guidelines for its use in research. It can be a particularly good starting point for research on topics about which little previous scholarly research has been conducted, as it directs researchers to experts and other sources of information.

Admission practices are a prime example of a topic for which Wikipedia provides a base of information not published elsewhere, providing an invaluable starting point for research and comparison of systems and procedures.¹ Although Wikipedia was used in the preparation of this report, it should be noted that all information obtained from the site was verified and supplemented by information from other sources, such as the other three sources listed above, official government Web sites,² journal articles, and interviews and correspondence with higher education experts and other professionals familiar with particular country systems.

Type 1: Secondary Leaving Examinations

Type 1 admission systems rely on candidates’ scores on one or more secondary leaving examinations in the admission process. As noted above, the leaving exams used in this process are generally nationally or regionally administered by the government, achievement oriented, and may cover a wide range of subjects. Alternatively, students may choose the subject exams they will take, either based on their secondary school

¹ The Wikipedia entry on “University Admissions” can be found at the following website: http://en.wikipedia.org/wiki/University_admissions (accessed June 2008). Readers of this report and members of the higher education community are encouraged to visit this site and post information about their systems, thereby contributing to the accuracy and breadth of information available, as well as providing additional models and best practices for use by colleagues and scholars worldwide.

² In many cases, the material on these Web sites was undated. Consequently, they are not cited in the body of the paper, but the URLs are included in the Reference list at the end of this report.

program or intended university program of study. A candidate's score may be the only factor considered in the admission process, or it may be combined with other factors, such as a secondary grade point average. The process may be centrally coordinated or planned, with cutoff scores determined by a government or another entity, or institutions may manage the process and set their own selection criteria. In certain cases, cutoff scores are set lower for particular groups, thereby bringing demographic factors into play in the process. Representative models of Type 1 admission systems include:

National exam score only

- **France.** Students who attain a passing score (at least 50 percent) on the nationally administered, essay-based *Baccalauréat* examination have open access to most university programs. However, the elite universities (*Grandes Écoles*) require additional examinations, as noted below.
- **Austria.** As in France, passing the secondary leaving examinations (the *Reifeprüfung* or “*Matura*”) typically entitles applicants to enroll in university studies of their choice with no further consideration. The *Reifeprüfung* consists of three to four written exams, plus three to four oral exams. Compulsory subjects include German, mathematics, and a foreign language. All students take the examinations on the same day at the same time nationwide. The exams are scored by a board consisting of a candidate's teachers, the headmaster or headmistress of the relevant secondary school, and one external person, usually a high-ranking school official or the head of another school.
- **Ireland.** Students in Ireland take national Leaving Certificate examinations at the end of secondary school, which are administered by the State Examinations Commission (SEC) of the national government. Institutions determine the number of places available in each of their programs, but the admission process is centrally coordinated by the Central Admissions Office, an independent organization owned by the institutions. Candidates submit their institution and program preferences to the SEC and are automatically matched by computer to a program and institution, based on their preferences and examination scores. The higher a candidate's score, the more likely it is that he or she will be admitted to his or her first-choice program.
- **Egypt.** Similarly to Ireland, admission to university in Egypt is based entirely on a candidate's score on a national secondary leaving examination. The process is centrally coordinated, but, unlike Ireland, it is coordinated by the national government, specifically, the Admission Office of Egyptian Universities (*Maktab Tanseek Al-Jame'at Al-Masriyah*). The number of spaces available in each institution and program is determined by the Supreme Council of Universities (SCU), the members of which include the Minister of Higher Education and State for Scientific Research, university presidents, and experts in higher education and

public affairs. Candidates submit their institution and program preferences to the centralized Admission Office and are matched to a program based on their preferences and exam performance.

National exam score, plus secondary school academic performance

- **Tanzania.** Control and coordination of the admission process in Tanzania for both public and private institutions are shared by the Tanzania Commission on Universities (TCU) and individual institutions. Candidates apply directly to the institutions of their choice (they may apply to a total of three). They send each institution an application letter, in response to which the institution sends them a full application to complete and submit. Most institutions and programs require national secondary leaving examination scores and high school transcripts (although supplementary materials or interviews may be required for some programs). Individual institutions and programs determine the exam scores and grades required for admission.

In addition to submitting their applications to individual institutions, candidates are required to submit an application to the TCU, indicating the institutions to which they are applying. In the event that a candidate is accepted by more than one institution, the TCU determines which institution he or she will attend. Assignment is based on a variety of factors, including gender, other demographic considerations (e.g., disability status), demands of the labor market, and other national economic and social needs.

National exam score, plus application dossier

- **United Kingdom.** Scores on secondary leaving examinations, called “A-levels,” are the primary factor in the university admission process in the United Kingdom. The exams are subject specific and students choose the subjects on which they will be examined. As in Ireland, the admission process is coordinated by a central organization, the University and Colleges Admissions Service (UCAS). Candidates submit an application dossier to UCAS consisting of secondary school academic information (including A-level scores, or predicted scores, if they are still in school), employment history, a personal statement, and a reference letter, along with up to five programs (i.e., institution and course of study) to which they wish to apply. The application is then forwarded to the relevant institutions, each of which decides whether or not to accept the applicant based on its own standards and criteria. For students who have not yet completed secondary school, this offer is generally contingent upon their achieving a certain score on the A-level exams.

Regional and/or state exam score, plus secondary school academic performance

- **Australia.** The university system in Australia is centrally planned, with the government determining the number of government-supported spaces available in

each institution and program. The admission process is also centrally coordinated. However, unlike Ireland and the United Kingdom, it is coordinated at the state rather than the national level. Secondary leaving examinations are accordingly administered by each state. Based on a combination of examination scores and a school-based quantitative evaluation of secondary school performance (similar to a grade point average, although this term is not used), candidates are assigned an “Equivalent National Tertiary Entrance Rank” (ENTER) score, which ranks them in relation to all students in their national cohort. Candidates submit their program preferences (i.e., institution and course of study) to the state-based coordinating body (or multiple bodies, if they are applying to institutions in more than one state), and are automatically assigned by computer to a program, based on their ENTER score and specified preferences.

In many cases, institutions adjust the ENTER scores of applicants to take into account demographic or socioeconomic variables, for example, economic disadvantage. In addition, while the national government determines the number of places available in each institution and program that it will fund, institutions are free to offer additional spaces for which students pay full tuition. The required ENTER score for these latter spaces may be lower than that required for government-funded spaces.

Type 2: Entrance Examinations

Like secondary leaving examinations, university entrance examinations are often administered nationally or regionally by the government in the countries where they are used; in these cases, admission procedures are also often centrally coordinated. However, in a number of systems entrance examinations are administered by individual institutions, which determine the required cutoff score and other admission criteria. Like secondary leaving exams, entrance examinations generally measure the knowledge candidates acquired in subjects studied in high school and may be considered alone or in combination with other factors in the admission process. Representative models of Type 2 systems include:

National exam score only

- **China.** Candidates take a national entrance exam in one of two categories: humanities or sciences and engineering. The university system is centrally planned and admission is centrally coordinated by the national government, which determines the number of spaces available in each institution and program. Candidates specify the institutions and departments they wish to enter in order of

preference and are assigned by the government to an institution and program based on their exam performance and preferences. Cutoff scores are lower for candidates from disadvantaged groups, such as ethnic minorities, as well as for athletes and recipients of national and international awards.

- **Iran.** Similar to China, university candidates in Iran take a centralized national examination, which is administered by the Education Evaluation Organization, a division of the national Ministry of Science, Research, and Technology. The *Konkur* is a four-and-a-half hour multiple-choice exam that covers all subjects taught in Iranian high schools, including math, science, Islamic studies, and foreign languages. Since the early 1980s a policy of preferential treatment for students from underprivileged groups has been in place, and in the 1990s, a new policy was implemented to give priority to candidates applying to institutions in their home provinces, thus localizing the student population and preventing student migration to large cities (Kamyab 2008).
- **Republic of Georgia.** University candidates in Georgia take a national entrance examination administered by the National Examination Center, which is governed by the Ministry of Education and Science. Minimum required scores are determined by the individual universities every year. After administering the exam, the National Examination Center sends each institution a ranked list of candidates who have attained the minimum score; institutions must admit students based exclusively on these lists (Republic of Georgia 2004).

National exam score, plus secondary school academic performance

- **Turkey.** The Student Selection Exam (*Öğrenci Seçme Sınavı*, or ÖSS), the national university entrance examination in Turkey, is administered by the Student Selection and Placement Center (*Öğrenci Seçme Yerleştirme Merkezi*, or ÖSYM). University education in Turkey is centrally planned, with the number of spaces available in each institution and program (including those in private institutions) determined by the Council of Higher Education (CHE), a constitutional body in charge of the planning, coordination, and governance of all higher education institutions other than those of the military and security forces. ÖSYM is affiliated with CHE and is responsible for coordinating the admission process. A candidate's ÖSS score is combined with his or her high school grade point average to create a composite admission score; the grade point average carries heavier weight for students planning to continue in the same field in which they specialized in secondary school. Candidates are matched to an institution and program based on their composite score and program preferences.
- **Spain.** As in Turkey, the number of spaces in each institution and program in Spain is determined by the government. (In contrast to Turkey, private institutions are free to determine the number of places they will offer, with the exception of a few specific fields, such as medicine). University candidates take a government-administered national exam (*Selectividad*), which is required to enter both public and private institutions. Their score on the exam is combined with their high school grade point average to produce a composite score on a scale of 0 to 10. A

candidate's GPA is weighted at 40 percent and the exam score, 60 percent. A score of 5 is the passing grade required to enter the tertiary system, but individual institutions set their own score requirements based on the number of applicants and the number of spaces available in each program. Candidates may enroll in any program for which they have attained the minimum score.

Institutionally administered exam scores only

- **Argentina and Paraguay.** Students in both these countries receive a *bachillerato* degree upon completion of secondary school. There is no national secondary leaving exam; the *bachillerato* is the qualification required necessary to enter the university system. Candidates apply to individual institutions, which administer their own entrance examinations to determine the students they will accept.

Institutionally administered exam scores, plus secondary school academic performance

- **Bulgaria.** Currently the university admission process in Bulgaria considers two factors: scores on institutionally administered entrance examinations and a candidate's secondary school record. The subjects covered on the examinations depend on the program to which the candidate applies; for example, applicants to law programs take literature and history exams, whereas applicants to medicine programs take exams in biology, chemistry, etc. As noted in more detail below, the government recently introduced a plan to create a national secondary leaving examination that will replace the institutionally administered entrance exams in the university admission process.
- **Serbia.** The number of spaces available in each university is set by the national government, which also determines how many of these spaces will be government-funded and how many will be allocated to tuition-paying students. However, individual institutions administer their own entrance examinations and oversee their own admission processes. Institutions weigh applicants' average grade achieved over four years of secondary education (40 percent) with scores on their entrance exams (60 percent). Candidates may be required to have completed certain subjects in secondary school in order to apply for particular programs.

Type 3: Standardized Aptitude Tests

As noted earlier, standardized aptitude tests are designed to measure general cognitive abilities, rather than achievement, of candidate students. When used in the admission process, they are usually combined with other factors that measure previously acquired knowledge and academic achievement (with the notable exception of Sweden). As is detailed below, significant controversy surrounds standardized aptitude tests with respect

to their fairness and how well they predict student success at the university level. Representative models of Type 3 admission systems include:

Standardized aptitude test scores or secondary school academic performance

- **Sweden.** University candidates take the Swedish Scholastic Aptitude Test (SweSAT), which is administered by the National Agency for Higher Education, a government entity. Admission may be based on a candidate's score on the SweSAT or on his or her high school grades; at least one-third of the places in any university program must be allocated based on SweSAT scores and at least one-third, on high school grades. Institutions may impose additional requirements for certain programs (i.e., require specific skills), however, this can apply to no more than 10 percent of total spaces offered by an institution in a given year.

Standardized aptitude test scores, plus application dossier

- **The United States.** Contents of the required dossier and the relative weight applied to each application element are determined by each institution in the United States. Most institutions consider the candidate's performance on a standardized aptitude test such as the SAT or ACT (American College Testing). Secondary school performance is a key factor, and many institutions, particularly in the elite sector, require a considerable number of application materials, including essays, recommendation letters, interviews, and in some cases, auditions and/or portfolios. Demographic factors and extra-curricular activities (e.g., participation in sports) are often taken into account as well.

Type 4: Multiple Examinations

In this admission system, performance on a national secondary leaving or entrance exam is considered, along with performance on one or more additional exams, which may be administered by the government, the education institution in question, or independent organizations. Representative Type 4 models include:

National entrance exam scores, plus institutionally administered entrance exam scores

- **Japan.** University candidates in Japan take a national entrance examination consisting of five to seven subject tests. The overall score on this exam determines the specific institutions to which a candidate is eligible to apply; institutions are divided into tiers, with higher scores required by more prestigious

institutions. Candidates are then required to take a second round of entrance exams, administered individually by each institution to which they apply. Admission is based on a combination of the national and institutional exam scores; each institution determines the relative weight of each.

- **Russia.** Since 1999, about half of Russia's universities have relied primarily on a centralized entrance exam administered by the government. As Clark (2005b) notes, "Ministry officials emphasize that universities are free to base their admission decisions on centralized testing results or their own tests. While it has been welcomed in the provinces, top universities . . . are strongly opposed to the unified test, saying it is not a good enough indicator of a student's knowledge." The latter put greater weight on their own exams in selecting students for admission.
- **France/Grandes Écoles.** As noted above, students who pass the *Baccalauréat* have open access to most tertiary institutions in France. For the elite sector of the *Grandes Écoles*, however, candidates must also pass institutionally administered entrance examinations. These exams require two years of intense study in highly selective preparatory classes administered by high schools, or by the *Grandes Écoles* themselves.

National entrance exam scores, institutionally administered entrance exam scores, and/or secondary school academic performance

- **Brazil.** Higher education institutions in Brazil administer their own entrance examinations, called the *Concurso Vestibular*, which are generally comprised of a combination of multiple-choice and essay questions. Most exams cover core secondary subjects; additional subjects may be required for specific programs. Many institutions also consider candidates' scores on the National Secondary Education Test, a national entrance examination that was introduced by the Ministry of Education in 1998. In addition, a number of institutions are following the lead of the Federal University of Brasilia, which in 1996 introduced an admission system that assesses students on their performance throughout secondary school. Institutions are free to determine which factors to use for admission and what weight to accord each in the selection process (Salmi, forthcoming).

National secondary leaving exam scores, plus institutionally- administered entrance exam scores

- **Finland.** Students take the *ylioppilastutkinto* examination in order to receive a high school diploma in Finland. Universities also administer their own entrance examinations, which are program specific. Admission is generally based on both secondary leaving examination and entrance examination scores, however, a certain percentage of spaces in most programs are awarded based entirely on entrance examination scores.

National secondary leaving exam scores, plus standardized aptitude test scores

- **Israel.** A government-determined minimum level of performance on national secondary leaving exams (the *Bagrut* examinations) is required to access the university system in Israel. In addition, candidates are required to take the Psychometric Entrance Test (PET), a standardized aptitude exam administered by the National Institute for Testing and Evaluation, a non-profit, non-government organization. Minimum required scores on the PET are determined by individual institutions.

Multiple exams administered by multiple entities

- **India.** University candidates are admitted to university in India based on their scores on one or more secondary leaving or entrance exams. These exams are conducted by many different entities, including the national government, provincial governments, individual institutions, and groups of institutions (e.g., all management or IT-focused institutions in a particular province). Institutions or consortia set their own requirements regarding which examinations candidates must take, how much weight each exam carries, and what scores are required for admission. In some cases, the process is centrally coordinated for a consortium or group of institutions. Candidates may apply to individual institutions or groups of institutions (for which there is a centrally coordinated process). A certain percentage of spaces in public institutions are also reserved for members of certain castes (Agarwal 2006).

Type 5: No Examinations

As noted previously, a majority of university systems worldwide use examinations of one kind or another in the admission process. Nonetheless, certain systems do not require examinations; these systems generally rely heavily on secondary school academic performance in selecting students. Non-exam-based admission procedures are also beginning to appear in the private sector in various countries, most notably the United States. Type 5 models include:

Secondary school academic performance

- **Norway.** The university admission process in Norway is centrally coordinated by the Norwegian Universities and Colleges Admission Service, which is a government agency. Candidates specify up to ten programs to which they would

like to apply, in order of preference. They are awarded points based primarily on their high school grades, with additional points awarded for specific courses, demographic variables, and military service experience. Candidates are automatically matched to a program based on their total points and specified preferences.

- **Canada.** The minimum requirement for university admission in Canada is completion of secondary school; there are no national or provincial examinations. Admission requirements are set by each institution or, in some cases, by individual schools or programs. In general, high school grades are the most heavily weighted factor, but most institutions and programs also have specific requirements for courses taken in high school. In Ontario, admission to public institutions is coordinated centrally; candidates apply through one of two organizations: the Ontario Universities Application Centre or the Ontario College Application Service. In British Columbia, candidates have the option of applying either through a coordinating organization, the Post-Secondary Application Service of British Columbia, or directly to individual institutions. In other provinces, candidates apply directly to each institution.

Application dossier with no exam scores required

- **Certain U.S. institutions.** Since the mid-1980s, a growing number of United States institutions have adopted an “SAT optional” policy in their admission practices due to concerns about fairness, equity, validity, and other issues related to the SAT exam. (These issues are discussed in detail in the following section). Currently there are approximately 750 institutions in the United States that do not require standardized tests for admission to bachelor degree programs.

Among these are a number of large public institutions, such as the University of Oklahoma and Arizona State University, which consider standardized test scores only when minimum grade point average and/or class rank requirements are not met. Also included are a growing number of highly selective private liberal arts institutions, admission to which is based on a dossier that includes a student’s high school record, information about extracurricular activities, application essays, recommendation letters, and interviews with school officials or alumni; test scores are included only if the candidate chooses to submit them. Bates College and Bowdoin College in Maine were among the first to adopt such policies; other institutions, including Bennington College, Mount Holyoke College, Hampshire College, and Connecticut College, have followed suit. In the spring of 2008, Wake Forest University became the first top-30 national university to implement a test-optional admission policy (Hatch 2008).

Table 1: A Typology of Admission Systems Worldwide

Type 1: Secondary leaving exams	
National exam score only	Austria, France, Ireland, Egypt
National exam score, plus secondary school academic performance	Tanzania
National exam score, plus application dossier	United Kingdom
Regional/state exam score, plus secondary school academic performance	Australia
Type 2: Entrance exams	
National exam score only	China, Iran, Georgia
National exam score, plus secondary school academic performance	Turkey, Spain
Institutionally administered exam scores only	Argentina, Paraguay
Institutionally administered exam scores, plus secondary school academic performance	Bulgaria, Serbia
Type 3: Standardized aptitude tests	
Standardized aptitude test scores or secondary school academic performance	Sweden
Standardized aptitude test scores, plus application dossier	United States
Type 4: Multiple exams	
National entrance exam scores, plus institutionally administered entrance exam scores	Japan, Russia, France (<i>Grandes Écoles</i>)
National entrance exam scores, institutionally administered entrance exam scores, and/or secondary school academic performance	Brazil
National secondary leaving exam scores, plus institutionally administered entrance exam scores	Finland
National secondary leaving exam scores, plus standardized aptitude test scores	Israel
Multiple exams administered by multiple entities	India
Type 5: No exam	
Secondary school academic performance	Norway, Canada
Application dossier does not require exam scores	Certain U.S. institutions

III. Creating the “Right” System: Key Issues and Considerations

Given the wide array of admission practices and procedures currently in use around the world, it is clear that there is no one “right” admission system. The effectiveness of a particular system depends highly on the context in which it is implemented, including the government structure, economic factors, the labor market, culture, and national strategic priorities.

For governments and institutions that are in the process of designing, evaluating, and/or reforming their admission procedures, there are a number of key issues, considerations, and challenges associated with the various models described above. These issues should be taken into account when determining which system would be most effective in a given context. At the macro level, the issues relate to overall control of the tertiary education system and its impact on society and the economy; at the level of the admission process, the issues concern the reliability and validity of the various factors considered, including their ability to predict student success. Underlying all facets of the process are issues of equity and fairness, as well as the particular considerations of developing countries, such as resource scarcity, admission systems inherited from former colonizers, and lack of adequate data collection and analysis systems.

As noted in the introduction, the scope of this paper does not allow for in-depth treatment of the many complex issues involved in admission systems. Rather, this section is intended as a catalyst and conversation starter: it brings the most critical issues to light and will hopefully spur further analysis and research. (Many of the suggested topics for further research noted at the end of the report build on the themes introduced in this section.)

Government versus Institutional Control

Based on the countries profiled in this report, there are three primary ways in which national and/or regional governments exert control over the university admission process:

- 1) determining the number of spaces overall (or in some cases, the number that will be funded by the government) available in each institution and program;
- 2) establishing a centrally coordinated admission process; and
- 3) administering a secondary leaving or entrance examination(s).

Government control is strongest in those countries in which the government is responsible for all three of these areas (e.g., China). In other countries, governments exert partial control over the process while leaving other aspects of admission to the discretion of individual institutions or other organizations (e.g., an independent coordinating body, as in Ireland).

In theory, the more control the government exerts over tertiary education “inputs” through the admission process, the more control it has over the “outputs,” which can be advantageous in helping it meet national economic and strategic goals. Regulating the number of students who enter the system effectively regulates the number of graduates entering the labor market. In the event that there are more graduates in a particular field than can be absorbed by the labor market, or conversely, if a shortage of qualified workers exists, the government can adjust the number of spaces available in university programs in that field, increasing or decreasing the number of students admitted. The number of graduates is thereby adjusted and the labor market imbalance is theoretically corrected within a few years.

A government can also strategically adjust criteria to ensure an adequate supply of graduates in areas that are a particular priority for other strategic or social reasons (e.g., technology, medicine, etc.). Political considerations related to the labor market may also come into play; for example, a government may establish admission policies that encourage high school graduates to enter tertiary education in order to keep them from directly entering the labor market, with the goal lowering youth unemployment rates and maintaining political stability. It is important to note that while such interventions by the government can influence labor market outcomes, there are a wide variety of other

variables that may affect their effectiveness; for example, study abroad rates and “brain drain.” Governments, therefore, must be attentive to the interplay of a wide array of influencing factors in planning their admission strategies and policies vis-à-vis the labor market.

A second potential advantage of government involvement in the university admission process is that it can remove a significant management burden from individual institutions and, in systems where enrollment quotas for each institution are set by the government, the task of student recruitment. Institutional resources that might otherwise be used for marketing, recruitment and admission staff salaries can instead be devoted to other areas. In an era of competition for resources and increasing demand for accountability in tertiary education worldwide, nationally centralized admission processes allow institutions to focus their time and money on other strategic priorities.

On the other hand, if individual institutions control the process and set admission criteria, they are able to determine which applicants to accept based on their own individual missions and program goals. Arguably, this allows institutions to focus on their strengths and produce the highest-quality graduates possible in the fields in which these universities excel, thereby facilitating fulfillment of their missions and maximizing their contributions to society and the economy. In addition, competition among institutions for students may serve as a quality control mechanism, pressuring institutions to maintain high standards for teaching and research in order to attract top candidates.

In determining the extent to which a government should control the university admission process, and in what ways, a number of factors should be considered. First, the government and political structure of the country (or state/region) must be examined. Is decision-making power and authority for public services centralized with the national government, or disbursed to regional or local government entities? If such authority is centralized in general, then a centralized university admission system may make sense politically and culturally. If such authority is widely disbursed, then the administrative structures needed to coordinate the process at the national level are likely not present and efforts to create them may not be well received either by institutions or the public. While this does not necessarily mean that a centralized admission system is the wrong choice, it

may be more difficult to implement; governments should thus consider whether the benefits of centralization will outweigh the anticipated difficulties in its achievement.

A second important consideration in determining a government's role in university admissions is the national labor market and economic goals. What is the state of the labor market? What are the government's economic goals? If the labor market is imbalanced, with an oversupply of workers in certain fields and an undersupply in others, or if the government has particular goals in mind for the national economy, a centralized system may be the best option. Other labor market issues, such as youth unemployment rates, may also be considered.

Finally, the financial and personnel resources of both the government and individual institutions must be taken into account. Does the central government have the financial and personnel resources necessary to support a national examination and/or a heavily centralized admission process, given competing priorities and demands? In countries where government resources are scarce, or there are more urgent public service needs, the financial burden of administering a national exam may be too great. Conversely, it must be asked whether individual institutions have the capacity to administer an admission process that involves developing their own entrance examination and application materials, as well as reviewing all applicant dossiers. If this burden is to be shared between a government and its higher education institutions, the division of labor and responsibility must be delineated and each party's role in the process clearly specified.

Objectivity versus Subjectivity

Standardization and objectivity are the primary advantages of using an examination score as one, or the only, factor in university admission. All students take the same test, answer the same questions, and are graded on the same scale. The score is unambiguous, allowing for an easy comparison of applicants, and does not require interpretation or judgment on the part of those making admission decisions; in theory, there is little or no subjectivity involved. Standardization can be an important advantage, particularly in contexts where corruption is common and personal connections and other non-merit

factors often determine access to opportunities and resources. The use of exam scores can mitigate the influence of these factors and ensure a measure of equity and fairness in the admission process.

It is important to note, however, that examinations are not necessarily entirely objective. While a candidate's final score may be unambiguous, the process of arriving at that score may involve varying levels of subjectivity. In many countries, secondary leaving or entrance examinations (whether nationally or institutionally administered) have an essay component that must be read and evaluated; even some standardized aptitude tests, such as the SAT in the United States, include essay questions. Certain exams also include an interview or oral examination. Reading and evaluating an essay for which there is no single correct answer, like grading an oral exam, requires interpretation and judgment. The resulting score is to some extent dependent on the priorities and preferences of the evaluator. With any examination, corruption can also taint results and decrease objectivity if adequate measures are not taken to monitor its administration and evaluation for fairness.

Thus, although systems that rely entirely on examinations for admission are not without subjectivity, consideration of additional factors increases the subjectivity of the process substantially at a variety of levels. On a macro level, decisions and judgments must be made concerning the factors that will be taken into account and the relative weight accorded to each. At the level of individual evaluation, moreover, subjective judgment calls abound. These judgments run from interpreting what an "A" from one secondary institution, as opposed to another, means, to evaluating the quality of application essays in terms of both content and mechanics, to deciding how an applicant's previous employment experience will impact his or her academic path.

However, introducing non-exam factors—and thereby a greater level of subjectivity—into the admission process has a number of potential advantages. First and foremost, it mitigates the problem of "all eggs in one basket" associated with exams. A candidate's fate is accordingly not determined by one measure that accounts for a three- to four-hour block of his or her time. For example, considering a candidate's high school grades provides a picture of his or her abilities and qualifications over multiple years. Adding other factors to the mix, such as application essays and interviews, provides an even more

detailed picture of the candidate. This process may allow institutions to better assess the candidate's "fit" with the institution, its programmatic strengths, and its overall mission. Arguably, the students who "fit" best with the institution are more likely to succeed academically, thrive socially and personally, and ultimately graduate and contribute to society and the labor market.

In determining which type of system—a comparatively objective system or one that involves more subjectivity—is most appropriate for a given country or context, the prevalence of corruption and the power of personal influence should be a key consideration. How widespread is corruption? To what extent is access to educational opportunities generally determined by personal connections and influence? If highly subjective admission procedures are used (e.g., significant reliance on factors other than examinations), what systems are in place to monitor the process and ensure that these factors do not dominate the outcome? How effective are these systems in achieving this goal? In the context of widespread corruption among university officials, or where personal connections and influence often act as gatekeeping mechanisms to the university system, a national examination and/or highly centralized admission process may ensure a measure of fairness that would not otherwise be present. However, if a government itself is severely corrupt, then a decentralized process in which individual institutions have more power to set their own standards and monitor the process may mitigate the influence of corrupt officials.

Reliability and Validity

Of critical concern for any admission process—regardless of who controls it and what factors are considered—are its reliability and validity, including how well the process actually predicts candidates' academic success at the university level. Examinations, whether secondary leaving exams, entrance exams, or standardized aptitude tests, present a number of concerns in these areas. First, the testing instruments themselves may be flawed. In some cases, exams may not have been adequately tested in the development process; in others, the testing instruments may be employed for purposes beyond those for which they were originally designed and tested (Horn 2007).

Even in situations where an examination instrument has been rigorously tested and the results proven valid and reliable, a variety of circumstantial factors may influence an individual student's performance. For example, a student's health, living conditions, nutrition, anxiety level, and various psychosocial factors can have a significant impact; difficulties in any of these areas could lead to a low exam score that does not accurately reflect actual achievement, aptitude, or ability to succeed at the university level.

Conversely, there may be situations in which a student's score on an exam is higher than his or her academic ability would actually merit. In many countries, for instance, coaching for examinations has become a major industry. In Japan, for example, "many students who fail to gain admission to their preferred institution try again the following year and commonly devote themselves full time to the preparation process at private schools known as *yobiku*. Such students are commonly referred to as *ronin*, or masterless samurai. The *ronin* experience is so common in Japan that the Japanese education system is often said to have an extra year built into it" (Clark 2005a). Coaching for entrance examinations is common in many countries, including Brazil, Iran, and India, as well as for standardized aptitude tests in the United States. Although it can be argued that coaching is actually part of secondary school preparation and supplements what students learn in the formal school setting (or makes up for what they fail to learn), for some students, strong performance on an examination may reflect his or her training in taking that particular exam rather than actual academic achievement or aptitude.

Given all of these issues, it is perhaps not surprising that the ability of exams, as well as other admission factors, to predict academic success at the tertiary level has become the subject of debate and research. Much of this research has focused on the U.S. admission system—and standardized aptitude tests in particular—but the findings have important potential implications for admission systems worldwide. For example, a 2001 study conducted by the College Board performed a secondary analysis of studies on the correlation between SAT scores and cumulative college grade point average. The average correlation among the studies analyzed was .36 (Burton and Ramist 2001). While this is a substantial correlation, much of the variance in cumulative grade point average is still unaccounted for, indicating that other factors play an important role in determining how successful a student actually will be at university. In addition, the extent to which

predicted academic performance is lower for minority students suggests bias and equity issues, which will be discussed in further detail below (Burton and Ramist 2001).

Of note, essay-based examinations that focus on writing ability, rather than multiple-choice tests, may be more effective in predicting academic success at the tertiary level. A recent College Board study in the United States found that scores on the writing component of the SAT test were better predictors of college grades than scores on the math and critical reading sections, which are comprised of multiple choice questions (Kobrin et al. 2008). In addition, exams that are focused on achievement rather than aptitude may carry more predictive power; a study conducted at the University of California found that student scores on SAT II tests—subject-specific achievement tests required by certain U.S. institutions for admission—were notably more powerful predictors of academic success than scores on the more ubiquitous standard SAT, which is an aptitude exam.

Aside from examinations, the most frequently considered factor in admission processes is a candidate's high school academic performance. In terms of its predictive power, this criterion appears to be a good choice; research evidence indicates that among individual factors, high school grades are the strongest predictor of success in tertiary education (although this power is enhanced substantially when considered in combination with other factors, such as exam scores) (Burton and Ramist 2001, Geiser and Santelices 2007). While this research was based in the United States and studied U.S. students, it may have implications for university admission in other countries, indicating that further research in a global context would be worthwhile.

The ability of other admission factors to predict success is somewhat less clear. In theory, looking beyond grade point average and considering courses taken in high school allows institutions to evaluate the overall strength of an applicant's academic preparation. For example, if he or she enrolled in "honors" classes or focused on a particular area and how well he or she is likely to be prepared for further study as a result. As noted previously, the use of application materials such as essays, portfolios, and recommendation letters enable institutions to gain a greater sense of applicant personalities and how likely they are to fit the culture of a given institution, together with their motivations for applying to the institution or program and their plans and priorities for their college or university

experience. The College Board is currently sponsoring a number of studies to determine how well these “other” factors predict academic success in tertiary education (Schmidt 2008), which may provide guidance on the weight that should be accorded them in admission processes.

In terms of policy implications, regardless of the type of examination used, it is important that any exam instrument be rigorously tested for reliability and validity, including how well it predicts academic success at the tertiary level. Governments considering implementing new exams, or revising those currently in use, should take into account the availability of expertise and financial resources needed to conduct such tests and provide ongoing analysis of results. As already noted, further research outside the United States is needed to determine whether there are significant reliability and validity problems with the various admission examinations currently in use worldwide. The results of such research would help governments, policy makers, and institutions determine how much weight to place on exam scores in admission decisions, and whether to introduce other factors, such as high school grades, into the process.

Equity Issues

At first glance, the issue of equity in admission processes may appear fairly simple. It can be argued that an equitable admission process is one that treats applicants equally; all candidates are required to meet the same standards and those with the strongest qualifications are admitted to the best programs. According to this definition, equity would seem to correlate strongly with objectivity, and systems based on examination scores that offer little room for subjective interpretation or bias would appear to be the most equitable.

Equity in admissions, however, is a much more complex issue, and must be considered at a variety of points during the process, as well as within the greater social and economic context of a given country or region. First, basing admission entirely on examination scores means applicants are being compared on the same criterion, yet the content of examinations may be biased against certain groups, for example, by drawing on cultural knowledge or experiences to which they do not have access (Freedle 2003). Scores for

such populations are therefore not necessarily indicative of applicants' actual knowledge and abilities. Making assessments based entirely on biased examination scores consequently does not provide an equitable comparison of applicants' actual merits. Hence it can be argued that admission processes that consider only these scores, while perhaps relatively objective, are not in fact equitable.

Second, on top of the bias inherent in the content of exam questions, examinations may be biased against certain segments of the population which do not have access to the resources required to adequately prepare for these tests. With respect to exams that test knowledge acquired in high school, students who attend lower-quality schools are less likely to succeed than those who attend higher-quality secondary schools. In countries with a large test preparation industry, moreover, students who cannot afford expensive classes and tutoring are potentially at a considerable disadvantage.

Finally, the role of tertiary education in promoting equity in the greater society should also be considered. Because minority students and those at the lower end of the economic spectrum are less likely than their majority-group peers to have access to high-quality secondary school preparation, they may in fact struggle more at the tertiary level and may not be as academically successful in the long run. If the goal of an admission process is to admit candidates who are likely to perform at the highest level and be best prepared for the labor market upon graduation, these students are not the strongest candidates. Research indicates, however, that it is these students for whom attaining a tertiary degree—regardless of courses taken and grades received—is likely to have the greatest impact in terms of social mobility and improved economic status (see, for example, Walder 1995 and Isaacs, Sawhill, and Haskins 2008). Because elevating the socioeconomic status of disadvantaged groups is a key long-term development goal in many countries, the potential positive or negative impact of admission procedures in this realm should not be overlooked.

In fact, many admission systems worldwide take demographic factors into consideration in order to address the multifaceted issue of equity. As noted in the individual country descriptions above, many exam-based systems set differential cutoff scores for particular groups, including minorities, handicapped students, and economically disadvantaged candidates. In systems that rely less heavily on examinations, demographic factors are

taken into account in a variety of different ways, with varying weights. “Affirmative action” programs in the United States that consider race as one of many factors in the admission process are an example of such measures. Introduced by an executive order of President John F. Kennedy in 1961, “affirmative action” requires government contractors to ensure equal treatment of applicants and employees without regard to race or other demographic variables. Since then, institutions have applied this concept in various ways, including the establishment of “quotas” that designate a certain number of spaces for minority applicants and adjustments of overall applicant ratings.

Critics assert that affirmative action programs unfairly discriminate against non-minority candidates and result in less qualified candidates being accepted at the expense of their more qualified peers. Affirmative action processes have been the subject of much litigation, including at the level of the U.S. Supreme Court. A number of individual states, including Michigan, California, and Washington, have now specified requirements for affirmative action programs in public institutions (Moreno 2003). The debate surrounding this issue is not confined to the United States; for example, Agarwal (2006, 95) notes that India’s caste-focused affirmative action policies “remain and [will] continue to [be] a divisive and emotive issue” nationwide.

Amid the controversy, various alternatives to demographic factors have been suggested to ensure equity in the university admission process. For example, researchers in the United States have determined that using class rank, rather than SAT scores as a measure of merit, results in a greater proportion of minorities becoming successful candidates, and does not significantly impact overall graduation rates (Sigal and Tienda 2007). Rather than consider demographic factors, the former Soviet state of Georgia addresses the equity issue earlier in the process by providing free classes to prepare students in minority regions for the national entrance exam (Republic of Georgia 2007).

In determining what is the best admission system for a particular context, equity must be considered from a variety of perspectives. A system should be equitable in that candidates are treated fairly and held to a clearly defined standard, yet should also facilitate equity in the larger sense by taking into account the circumstances beyond the control of applicants. Such circumstances may, for example, put candidates at a disadvantage and thereby potentially unfairly restrict their access to a university

education. As noted previously, in contexts in which corruption is rampant and personal influence often determines access to opportunities, a comparatively objective exam-based system may be the best option for ensuring equity and fairness, particularly if cutoff scores take into account demographic factors and facilitate equity in the broader sense. In decentralized, non-exam-based systems, equity may be enhanced by considering demographic variables together with a variety of other admission factors, but institutions and systems should clearly specify which factors are taken into account and how much weight they are given.

Quality Control

Regardless of the procedures used, the extent of government control over the process, and the factors that it takes into account, it is imperative that the admission process be implemented effectively, with attention to quality control and fairness. It is critical that a system of checks and balances in which all stakeholders involved—national, regional, and local governments; external monitoring agencies and boards; faculty and administrators of individual institutions; and applicants themselves—monitor the process and take measures to eliminate problems such as corruption, nepotism, bribery, and bias. Regular evaluations should be undertaken to ensure, moreover, that a monitoring system in place that is appropriate for the context, particularly if evidence of problems arises or there is a change in the political situation or economic goals.

Issues for Developing Countries

For developing countries, many issues in the admission process with which all tertiary systems grapple are even more pronounced. Resources are likely to be in scarce supply for both the government and individual institutions, and competing demands for those resources are all the more pressing. Corruption may also be a particularly significant problem, and inequity is often an issue both in the admission process itself and in the greater social and economic context. In some cases, few formalized admission procedures

may be in place, while in others, a system may have been inherited from a former colonial power that may not fit the current political and cultural context or national social and economic goals.

By bringing an international perspective based on the experience of multiple countries with varied political and social contexts, research and other non-governmental organizations can play a useful role in helping developing countries determine the most important priorities for a university admission system and which type is likely the best fit for a given context. Whatever the initial role of external organizations in establishing, evaluating, and monitoring admission procedures, however, governments and local institutions must ultimately build the capacity to manage and monitor their own processes. In many contexts, a critical first step in this direction is the creation of an effective data collection and management system. Such a system allows for analysis and comparison of applicant numbers, examination scores, acceptance rates, graduation rates, and a variety of other variables at the national, regional, and institutional levels (Horn 2007). Collection and regular review of such data allows governments to monitor the effectiveness of admission procedures in fulfilling economic and social goals, determine when adjustments or changes should be made, and assess what direction those modifications should take.

Recent and Proposed Reforms

Admission systems are not static. As government systems, economic and social circumstances, and national priorities change, admission systems must evolve to meet the needs of the tertiary education system and the economy, as well as the social, political, and cultural context of which they are a part. These changes are generally incremental, rather than wholesale overhauls of admission procedures. Many recent and proposed changes to university admission processes worldwide are in countries that rely heavily on examinations. In some cases the focus of these changes is to modify either the exams themselves or how they are administered; in others, it is to introduce other factors into the process for consideration, such as a student's secondary school academic record,.

The goals of recent reforms vary widely, from increasing fairness and equity to reducing the influence of corruption to better meeting the needs of the labor market. A sample of systems that have made notable changes to their admission systems since 2000 includes:

- **Saudi Arabia.** Prior to 2008, students were required to take a national secondary leaving examination administered by the Ministry of Education that was a major factor in the university admission process. However, amid concerns about student anxiety concerning the high-stakes national exam, the exam is now being eliminated. Instead, each secondary school will be responsible for administering its own leaving exams. The Ministry of Education will provide schools with guidelines regarding the overall goals of the exams and the number and type of questions. Although these school-administered exams will be considered in the admission process, a student's high school grade point average will now carry greater weight (Shalhoub 2008).
- **Turkey.** Since its institution in 1960, the national university entrance examination in Turkey has undergone a number of reforms, generally related to content. Most notably, in 1980, the exam was split into two parts, the ÖSS and the ÖYS, the second of which was only open to candidates who achieved a certain score on the first. The two-exam system was maintained until 1999, when the ÖYS exam was eliminated. The ÖSS exam was modified again in 2006 to include more questions and subjects. And in May 2008, it was announced that the exam would be offered multiple times a year rather than just once. This change is intended both to reduce student anxiety about the high-stakes nature of the examination and eliminate concerns about having to wait an entire year before retaking it in the event of a failing score (*Today's Zaman* 2008).
- **Former Soviet Union.** In the Republic of Georgia, a national university entrance examination was implemented in 2005 to curb rampant corruption. Previously, "even the least-qualified candidates could easily gain entry to higher education institutions using backdoor means, such as bribery, political, or personal connections and influence. According to some estimates, most slots at public institutions were sold outright to prospective students" (Lomaia 2006, 2). Russia's university entrance exam was introduced in 2007 for similar reasons. In addition, "reformers hope[d] the new test [would] widen access to students with limited means and to those from remote regions, while also helping to boost quality standards" (*World Education News & Review* 2007). National entrance exams have also been introduced in a number of other former Soviet states, including Kyrgyzstan and Kazakhstan, and Ukraine has also announced plans to implement such an exam (Clark 2005b).
- **United Kingdom.** Amid complaints from universities that too many candidates were receiving the highest possible grade on their A-level examinations, making it difficult to determine who were the top candidates, an additional grade was added to system in 2008 to "challenge bright pupils and help universities distinguish between them." (Lipsett 2007). Candidates with scores in the top 10 percent of test takers will receive the new grade, with the change being piloted by education

officials in 2007. According to one education minister, "This is a long overdue but welcome acknowledgement by the government. In recent years grade inflation has crept into the A-level exam" (Lipsett 2007).

- **Colombia.** The *Instituto Colombiano para el Fomento de la Educación Superior* (Colombian Institute for the Development of Higher Education) recently adopted a resolution outlining new procedures for the administration of the *Prueba de Estado* (state examination for admission to higher education). The resolution is intended to ensure that the exam is administered fairly, using standard procedures. Topics addressed by the resolution include exam sites, registration procedures, verification of the identity of test takers, the conduct of students during the examination, and sanctions for misconduct (Ministerio de Educación 2008).
- **United States.** Recent reforms of various aspects of the university admission process in the United States include:

A number of modifications were to the SAT test in 2005, including the addition of an essay component, elimination of certain types of questions (e.g., "analogy" questions, which had caused particular concerns about cultural bias), and expansion of the mathematics section.

As noted previously, a growing number of institutions joined the "SAT-optional" movement and no longer require candidates to submit SAT scores for admission.

As described earlier, "affirmative action" policies have been the subject of significant controversy, debate, and litigation. Public university systems, as well as individual institutions—both public and private—continue to modify their policies and practices regarding the consideration of demographic variables in the admission process, with various reforms likely to continue in the foreseeable future.

The 2001 "No Child Left Behind" Act required states to assess primary and secondary students in certain subjects at certain grade levels. In order to comply with the act, some states have implemented standardized statewide secondary leaving examinations. How these exams should be taken into account in the tertiary admission process is currently the subject of much debate among admission officials.

Systems to which reforms have been proposed or are currently in process of being implemented include:

- **Iran.** As noted previously, university admission in Iran is based entirely on student performance on the *Konkur* examination. Amid concerns about access and equity, the perception that "Iranian schools have been turned into factories for exam cramming," and criticism of the exam process for creating "psychological and social problems, such as anxiety, boredom, and hopelessness among the youth who fail the test," the government is considering reforming the university admission process. In particular, the idea of using candidates' cumulative grade

point average from the final three years of secondary school for selection of university candidates is under consideration. It has also been suggested that community colleges be introduced into the tertiary education system to “divert less academically inclined students from participating in the university entrance exams,” thereby decreasing the overall number of candidates and preventing the anxiety associated with failure by less-qualified candidates” (Kamyab 2008).

- **Bulgaria.** After nearly a half-century of debate and controversy, the government will introduce a national secondary leaving examination in 2009. Student scores on this exam will become a primary factor in the university admission process. Individual institutions will no longer administer their own entrance examinations, thereby decreasing the burden on students, who previously had to take separate exams for each institution to which they applied.
- **Egypt.** The government of Egypt is considering creating an aptitude-focused university entrance examination separate from the current national secondary leaving examination. Admission would then be based primarily on candidates’ scores on the two examinations, although individual institutions would potentially be allowed to add additional criteria as well.
- **France.** Due to concerns about university quality, high university dropout rates, and rising unemployment rates among graduates, President Nicolas Sarkozy introduced a number of proposed reforms of the university system in 2007, including reforms of the admission process. Although Sarkozy said he would maintain the policy that guarantees students who pass the *Baccalauréat* a place in the tertiary education system, he noted that “the number of students taking the different courses will depend on the realities of the job market.” To address the high dropout rate, the French president also proposed a “public service to guide school-leavers to the studies that suit them best” (Marshall 2007).
- **Korea.** In spring 2008, the Korean Education, Science, and Technology Ministry announced that as of 2009, universities in Korea would be able to select students through special admission agreements with science-focused high schools, as well as “gifted and talented” science high schools. The number of such high schools—and the number of students they serve—will also be increased in coming years. The new policy will enable universities to sign contracts with individual high schools that specify how many students will be admitted. Selection will be based on research proposals, advanced placement exam scores, and research conducted by candidates during high school (*University World News* 2008).

Conclusion

The importance of tertiary admission at the institutional, national, and global levels cannot be overstated. As the World Bank's "Tertiary Education" Web page notes:

Knowledge and advanced skills are critical determinants of a country's economic growth and standard of living as learning outcomes are transformed into goods and services, greater institutional capacity, a more effective public sector, a stronger civil society, and a better investment climate. Good-quality, merit-based, equitable, efficient tertiary education and research are essential parts of this transformation (World Bank 2008).

The admission process to tertiary education is the mechanism by which "inputs" to the system are regulated. Effective admission procedures are a critical component of an institution's ability to fulfill its mission and goals, and on a greater scale, of the capacity of tertiary education to contribute to a nation's economic and social goals. At the broadest level, maximizing the effectiveness of admission processes helps maximize the capacity of tertiary education to promote social mobility, encourage economic development, and ultimately, alleviate poverty on a global scale.

While this report has provided a basic overview of admission systems currently in use and drew attention to many complex issues surrounding them, further efforts are needed to explore these issues in greater depth. Possible questions for future research include:

- What are the specific goals of a university admission process from the perspective of multiple stakeholders, including individual institutions, governments, governing boards, the public, etc.?
- How do admission processes vary by institution type and by tertiary education sector (i.e., universities versus technical institutions, public versus private versus for-profit institutions, etc.)? In countries with multiple admission systems, how do these systems interact and affect each other?
- To what extent do national governments actually attempt to control the labor market through involvement in the university admission process? How effective are these efforts?

- What variables affect candidate choices about what institutions to apply to and where to matriculate (e.g., disciplinary tracking at the secondary level, financial considerations, geographic location, etc.)?
- What types of corruption affect admission processes, and in what ways? What measures are most effective in reducing various types of corruption and mitigating their influence?
- What are the similarities and differences among exams used in the university admission process in different countries? In terms of content, what distinguishes secondary leaving exams from entrance exams?
- How do various exams compare in terms of reliability and validity, including their ability to predict student success at the university level? Do findings of U.S.-based studies in these realms apply internationally?

Gaining a greater understanding of the admission models currently in use and exploring the issues and challenges outlined in this report in more depth would help governments and institutions determine the practices and procedures best suited to meet their needs, as well as ensure fairness, promote equity, and ultimately, realize the potential of tertiary education. This report has sought to contribute to a robust and ongoing dialogue on university admission among government and institutional leaders, development organizations, scholars, and other stakeholders in the global tertiary education enterprise.

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The process through which students are selected to enter tertiary education is called admission or entrance, the specific practices of which vary widely from country to country. Often, prospective college or university students apply for admission during their last year of secondary school. In some countries, there are government bodies or independent organizations tasked with centralizing the administration of entrance exams and the allocation of student places. Entry quotas for certain institutions and disciplines may be applied, either centrally by governments, or by the institutions themselves. Some admission practices are comparatively objective, looking only at a single score on an entrance examination. Other procedures are widely subjective, considering an entire portfolio of a prospective student's examination scores, academic performance, references, and extra-curricular work. There may be multiple admission systems used within a particular country; these can sometimes vary between public and private institutions. Corruption and various political factors may significantly impact the process as well.

The purpose of this paper is to examine, compare, and contrast undergraduate university admission policies and procedures worldwide. It sets forth a basic classification system for university admission systems, and brings attention to some of the key considerations and challenges associated with the various models currently in use. Rather than attempting to provide an in-depth analysis of the many complex influences and issues involved in university admission, the paper is intended to serve as a starting point for understanding the admission landscape, provide a framework for policymakers and institutional leaders to think critically about the admission procedures in use in their countries, and act as a springboard for future research efforts, topics for which are suggested.

The findings, interpretations and conclusions expressed in this paper are entirely those of the authors and should not be attributed in any manner to the World Bank, its affiliated organizations or to the members of its board of executive directors or the countries they represent.

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