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The Development of Internationally Comparable  
Indicators of Education Finance:  
The OECD Experience and its Implications for Mercosur

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## INTRODUCTION

In Latin America, as in other regions, there is growing awareness of the valuable contributions that international comparisons of education can make to the development of national education policies. Mercosur now appears poised to undertake the development of internationally comparable education statistics and indicators for its member countries, a process that eventually could lead to a system of comparative indicators covering all or most of South America, and perhaps even Latin America as a whole. Moreover, Mercosur's apparent intention to link its projected indicators to the indicators developed for OECD's Indicators of Education Systems (INES) project raises the attractive prospect that the Mercosur countries eventually will be able to compare education systems not only among themselves but also with the systems of North America, Europe, and the Asia-Pacific region.

Prominent among the international education indicators produced by OECD are indicators of education expenditures and other aspects of education finance. From the outset, these finance indicators have attracted disproportionate attention from educators, public officials, and the media. The reason is not mysterious. Comparisons of education finance touch on some of the education policy variables most directly subject to policymakers' control—among them, the total resources that a country devotes to education; the allocation of resources among different levels and types of education; the

geographical distribution of funds and resources; the division of financial responsibility for education between the public and private sectors and among national, regional, and local governments; and the mix of different types of personnel and other resources provided for each level and type of schooling. In dealing with such fundamental policy matters, each country's education leaders can benefit from answers to such international-comparative questions as the following:

- Whether their country is investing a larger or smaller share of gross domestic product (GDP) in education than its competitors abroad,
- How the cost of educating each primary, secondary, and tertiary student in their country compares with the costs incurred by other countries,
- To what extent their country relies on central government funding, decentralized regional or local funding, and private-sector funding, compared with the degrees of reliance on these sources in other countries,
- Whether the country's allocations of funds among different levels and types of education and among different types of personnel and other resource inputs into schooling differ from those of other countries, and
- Whether education funds are distributed more equally or more unequally within the country than in other similarly situated countries.

The general purpose of this paper is to consider what Mercosur needs to do to develop a system of internationally standardized education finance indicators and statistics capable of providing answers to these and many other such questions. More specifically, the paper has three objectives. The first is to define the content of the proposed indicator system. This entails identifying the relevant education finance indicators and clarifying the connections between the indicators and the finance statistics that each country would be asked to produce. I am assuming that Mercosur intends not only to base its indicators on the OECD/INES model but also to adopt the existing UOE (UNESCO-OECD-European Union) data collection system as its principal tool for assembling an international data base. Generally this would be a very reasonable approach, as both the OECD indicators and the UOE instrument were designed to be universally applicable rather than specific to a particular group of countries. I suggest later, however, that certain modifications of, or additions to, the OECD/UOE apparatus may be desirable to deal with certain education finance issues important to Latin America and to the rest of the developing world.

The second objective is to examine the problems that are likely to arise in developing internationally comparable education finance statistics for Mercosur, or for Latin America in general, and to outline potential solutions. For this analysis, I depend mainly on experience acquired in developing the OECD finance indicators and designing the finance portions of the UOE instrument. In particular, I draw heavily on findings from the International Education Expenditure Comparability Study, a project carried out a few

years ago, with support from the U.S. National Center for Education Statistics and in collaboration with the INES project, that centered around detailed case studies of the education finance statistics of ten selected OECD countries (Barro, 1997a). Because similar inquiries have not yet been undertaken in Mercosur, no one can say now how significant each type of comparability problem will be for each Mercosur country. Nevertheless, we can see already that certain problems are sure to be important. There is no doubt, for instance, that the lack of data on private expenditures for education and on the finances of private educational institutions is a major impediment to valid comparisons of education spending in Latin America. Likewise, it seems clear that incomplete reporting of regional and local government spending for education leaves large gaps in some countries' expenditure figures. These are among the major problems discussed below.

The third objective of the paper is to outline the steps that Mercosur would have to take to address the aforesaid problems and to produce education finance statistics that are reasonably comparable across countries. I refer here to both the substantive steps needed to develop statistics suitable for international comparisons and the organizational steps needed to create an ongoing system within which international statistics can be collected, processed, disseminated, and improved. Obviously, the latter aspect transcends finance statistics; it pertains to the system of education indicators and statistics as a whole. Nevertheless, some organizational aspects are specific to finance, and it is on those that I will focus in the concluding section.

## **INTERNATIONAL EDUCATION FINANCE INDICATORS AND STATISTICS**

Before considering statistical problems and potential solutions, it is important to be clear about the desired product: Which international indicators of education finance are likely to be relevant and useful for the Mercosur countries, and what kinds of statistics would be needed to produce them? For the most part, it appears that the array of finance indicators developed by OECD for comparisons among its member countries (and certain associated countries) is applicable to other nations as well, including to the nations of Latin America and, more particularly, to the member countries of Mercosur. In fact, the OECD finance indicator set, broadly construed, includes as subsets essentially all the finance indicators applied worldwide by UNESCO in its *World Education Report* (UNESCO, 1993) and all those produced by CEPAL (the United Nations Comisión Económica para América Latina y El Caribe) for its studies of social expenditures in Latin America (CEPAL, 1994, 1996).<sup>1</sup> It follows that the data collection system on which OECD's finance indicators are based—that is, the finance portion of the UOE (UNESCO-OECD-European Union) data collection instrument—should also satisfy most ordinary requirements for financial comparisons among the Latin American and Mercosur countries. However, there do seem to be a few areas, fortunately relatively minor, in which OECD's emphasis on concerns of the more highly developed countries may have caused it to bypass certain issues relevant to Latin America and other developing regions, and in which, consequently, it may be appropriate to add certain supplemental indicators and to collect the corresponding additional statistics. I comment

on these possible extensions after describing the finance components of the existing OECD/UEO apparatus.

### The Basic OECD Expenditure Indicators

The following tables list the main types of finance indicators presented in the two most recent editions of OECD's education indicator report, *Education at a Glance* (OECD, 1995, 1996), plus several other potentially useful indicators that can be calculated from the same set of expenditure statistics (the latter are shown in parentheses). The tables also identify both the expenditure statistics and the related nonfinancial statistics (e.g., statistics on GDP and enrollment) needed to calculate each type of indicator. The indicators are grouped as follows:

- *Indicators of aggregate expenditure* (Table 1). These are comparative measures (both absolute and relative) of amounts spent by different countries for all levels and types of education combined.
- *Indicators of expenditure for specific levels and types of education* (Table 2). These indicators of absolute and relative magnitudes of spending are calculated either for individual levels of education (e.g., primary) or combinations of levels (e.g., primary and secondary combined). They may be further disaggregated to distinguish between expenditures for public and private schools.
- *Indicators of the composition of education expenditures* (Table 3). These indicators compare three aspects of the composition of spending: the distribution of expenditures by level of education, the distribution by source of funds, and the distribution by use of funds.

**Table 1. Indicators of Aggregate Education Expenditures**

Expenditure Indicator(s)	Expenditure Statistics and Other Data Required for Indicator Calculation
<p>Indicators of aggregate national expenditure for education</p> <ul style="list-style-type: none"> <li>• Aggregate national expenditure for educational institutions as a percentage of GDP</li> </ul> <p>-same plus subsidies for student living expenses -same plus direct purchases by households</p>	<p>Total national expenditure, public plus private, for all levels and types of education combined and indicated components thereof</p> <p>Gross domestic product (GDP)</p> <p>Population</p>

(Aggregate national education expenditure per capita - same variations as above)	
<p>Indicators of aggregate public expenditure for education (with and without subsidies for student living expenses)</p> <ul style="list-style-type: none"> <li>• Aggregate public expenditure for education as a percentage of GDP</li> <li>• Aggregate public expenditure for education per capita</li> <li>• Aggregate public expenditure for education as a percentage of <ul style="list-style-type: none"> <li>-all public expenditure</li> <li>-(public social expenditure)</li> </ul> </li> </ul>	<p>Expenditures of all units of government - central, regional, and local - for all levels and types of education combined (before public-to-private transfers)</p> <p>Total public expenditure</p> <p>Public social expenditure</p>
<p>Indicators of aggregate private expenditure for education (with and without direct purchases by households)</p> <ul style="list-style-type: none"> <li>• Aggregate private expenditure for education as a percentage of GDP</li> <li>• Aggregate private expenditure for education per capita</li> <li>• (Aggregate private expenditure for education as a percentage of all private expenditure)</li> </ul>	<p>Expenditures of households and other private entries for all levels and types of education combined (net of public-to-private transfers)</p> <p>Private expenditure component of GDP</p>

**Table 2. Indicators of Expenditures for Specific Levels and Types of Education**

Expenditure Indicators	Expenditure Statistics and Other Data Required for Indicator Calculation
<p>Indicators of expenditure for particular levels of education</p> <ul style="list-style-type: none"> <li>• Expenditure as a percentage of GDP</li> <li>• Expenditure per student, in equivalent U.S. dollars at PPP rates</li> <li>• Expenditure per capita, in same units</li> <li>• Ratio of expenditure per student to GDP per capita</li> <li>• Relative expenditure per student (base = expenditure per primary student)</li> </ul>	<p>Total expenditures for both public and private institutions at each level of education</p> <p>Full-time-equivalent (FTE) enrollment at each level of education</p> <p>Purchasing-power-parity (PPP) exchange rate between the national currency and the U.S. dollar</p>

<ul style="list-style-type: none"> <li>Cumulative expenditure over the average duration of a program (tertiary only)</li> </ul> <p><i>Levels and combinations of levels</i></p> <p><i>Preprimary education</i></p> <p><i>All primary-secondary education</i></p> <p><i>Primary education</i></p> <p><i>Secondary education</i></p> <p><i>Lower-secondary education</i></p> <p><i>Upper-secondary education</i></p> <p><i>Educación básica</i></p> <p><i>Educación media</i></p> <p><i>Tertiary education</i></p> <p><i>Non-university programs</i></p> <p><i>Initial university programs</i></p> <p><i>Subsequent (postgraduate) university programs</i></p>	<p>Per capita GDP</p> <p>Population</p>
<p>Indicators of expenditure for education in <u>public</u> institutions at each level</p> <p>Indicators of expenditure for education in <u>private</u> institutions at each level (distinguishing between government-dependent and independent private institutions, if appropriate)</p> <p>(same indicator levels as above)</p>	<p>Total expenditures for public institutions at each level of education</p> <p>Total expenditures for all private, government-dependent private, and independent private institutions at each level of education</p> <p>Other variables same as above</p>

**Table 3. Indicators of the Composition of Education Expenditures**

Expenditure Indicator(s)	Expenditure statistics and Other Data Required for Indicator Calculation
<p>Indicators of the distribution of expenditures by level of education</p> <ul style="list-style-type: none"> <li>Percentages of total national expenditure for education devoted to each level</li> <li>Percentages of total public</li> </ul>	<p>Same as in Table 2</p>

<p>expenditure for education devoted to each level</p> <ul style="list-style-type: none"> <li>Percentages of total private expenditure for education devoted to each level</li> </ul> <p>(same levels of education as in Table 2)</p>	
<p>Indicators of the distribution by source of funds</p> <ul style="list-style-type: none"> <li>Percentage of total expenditure for each category of education originating from public sources and from private sources</li> <li>Percentages of <u>initial</u> public expenditure for each category of education derived from central, regional, and local governments and international government services</li> <li>Percentages of <u>final</u> public expenditure for each category of education provided by central, regional, and local governments</li> </ul> <p>("category" refers to a combination of a level and a type of education - see Table 2)</p>	<p>Direct expenditure for each category of education by each level of government (central, regional, local), by students/households, and by other private entities.</p> <p>Intergovernmental transfers (subventions) for each category of education, from each level of government that transfers funds to each level that receives funds</p> <p>Transfers (subsidies) to students or households for each category of education, from each level of government and from other private entities</p>
<p>Indicators of uses of education funds</p> <ul style="list-style-type: none"> <li>Current and capital shares of expenditure for each category of education</li> <li>Percentages of current expenditure for each category of education devoted to</li> </ul> <p>*Personnel compensation  - Compensation of teaching staff  - Compensation of administrators and other professionals  -Compensation of support staff</p>	<p>Current expenditure for each category of education</p> <p>Capital expenditure for each category of education</p> <p>Expenditure for compensation of all staff, teaching staff, administrators and other professionals, and support staff for each category of education</p> <p>Expenditure other than for personnel for each category of education</p>

*Expenditure other than for personnel (same categories of education as above)	
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To summarize the tabulated information on required statistics, data on the following elements of education expenditure would have to be assembled for each country to construct the full set of indicators presented above:<sup>2</sup>

1. Total expenditure for each level of education
2. The portions of expenditure for each level attributable to public and private institutions, with the latter further divided into expenditures for government-dependent and independent private institutions
3. The current and capital portions of expenditure for each category of education
4. The portions of current expenditure for each category of education allocated to personnel compensation and nonpersonnel expenditures, with the personnel component further broken down into compensation of teaching staff, administrative and other professional staff, and support staff
5. For each funding source—central, regional, and local governments; households; and other private entities—and each category of education, a breakdown of expenditures into (a) direct expenditures for educational institutions, (b) intergovernmental transfers (classified according to the receiving level of government), and (c) transfers to students or households

These are precisely the categories and breakdowns of expenditures specified in the finance data collection tables of the UOE instrument (copies of which are provided as an appendix). Thus, any country capable of filling out the UOE tables as instructed would have all the finance data needed to calculate the full suite of basic OECD finance indicators. It is highly unlikely, however, that a country could provide the requested data without first engaging in a substantial effort to develop education finance data specifically for international comparisons. More than a few OECD countries, after years of participation in the INES project, still have substantial gaps in their expenditure figures, and some still report expenditures in ways that deviate significantly from the UOE definitions. The problems that make it difficult for countries to produce internationally statistics are discussed in the following section. First, however, I mention several additional types of indicators that go beyond the basic set outlined above.

### **Indicators of Expenditure Disparities and Trends**

All the indicators and statistics mentioned above have two features in common: the unit of analysis is always the nation as a whole, and all variables pertain to a single time period—that is, a particular financial year. But also of great interest to policymakers are two categories of indicators that do not share these characteristics: indicators of expenditure disparity within a country and indicators of expenditure trends. OECD recently has introduced both into its indicator system, and both are likely to be deemed important in Mercosur as well.



An indicator of expenditure disparity measures the degree of inequality in a designated expenditure variable among the regions or localities of a country. OECD's first published disparity indicator pertains to interregional differences in expenditure per primary-secondary student (OECD, 1996). Similar indicators could be constructed for other financial variables and other levels of education (as well as for such related nonfinancial variables as the teacher/student ratio). The significance of disparity measures for expenditure statistics is that the participating countries must produce subnational (e.g., state-level) as well as national data on the expenditure variables in question. I do not comment on the political significance, except to note that interregional inequality in education funding is often a highly sensitive issue.

Any expenditure indicator can be converted into a trend indicator if the underlying statistics are available for two or more years. Trends can be expressed in terms of absolute or relative rates of change or percentage differences between specified periods, or simply represented graphically. Among the trend indicators likely to be deemed especially significant in Latin America are those showing changes in education funding in relation to economic events (e.g., the economic crisis of the 1980s), changes in the distribution of funds among levels of education, and changes in the public and private shares of education spending. Because valid trend indicators require internationally comparable statistics for multiple years, it probably will not be feasible to produce them until fairly late in the indicator development process (unless the countries concerned prove able and willing to revise their expenditure statistics retroactively).

### **Additional Indicators Relevant to Latin America**

As noted earlier, certain finance issues more relevant to developing countries than to the generally high-income OECD countries have not been taken into account, or not dealt with in sufficient detail, in either the OECD/INES indicator set or the UOE data collection instrument. Five categories of such indicators that seem particularly germane to Latin American interests are described briefly below:

- *Education expenditures of households.* The burden of privately financed education costs on households is a matter of concern in many Latin American countries, but no OECD indicator bears directly on the topic. Potentially useful measures include household spending for education as a percentage of personal income, household spending per child, and household spending per household with children. Given sufficiently detailed household survey data, it might even be possible to compare countries with respect to the burdens on households at different points in the national income distribution.
- *The cost per completer of primary and secondary education.* Because many Latin American countries have very high repetition rates at the primary and secondary levels, figures on expenditure per student per year do not necessarily capture inter-country differences in the total cost of educating a primary or secondary student. An indicator of cost per completer, which would take the average number

of years of education per student (and hence the overall repetition rate) into account, would provide a more complete picture of cost differentials. The recently introduced OECD measure of cumulative expenditure per postsecondary student provides a possible prototype for such an indicator.

- *Expenditures for textbooks and instructional materials.* These expenditures account for a very small share of total education spending in most OECD countries and are not separately identified in the UOE data. In Latin America, where they constitute a larger share of spending, various studies have identified the availability of textbooks and materials as a significant determinant of educational outcomes. It may be desirable, therefore, to disaggregate the UOE nonpersonnel expenditure category to allow for explicit reporting of expenditure for books and materials, and to create an indicator of spending per student for such items.
- *Indicators of funding from international sources.* Because external funding of education is of little importance to most OECD countries, the UOE structure provides for only rudimentary reporting of funds from international sources. For Latin America, where some countries receive substantial education aid from foreign countries and international agencies, it may be desirable to provide for more detailed reporting of the sources, destinations, and nature of funds from abroad.
- *Expenditures for education abroad (postsecondary).* Substantial percentages of university students from some Latin American countries may attend institutions outside their own countries. To the extent that this is so, there will be a mismatch between national expenditures for university education and the cost of operating the country's own universities. Indicators of spending for postsecondary education would be more readily interpretable in such situations if there were explicit provision for reporting expenditures for education abroad.

It appears that the supplemental indicators and statistics suggested above could be accommodated by adding additional detail to certain UOE expenditure breakdowns, without otherwise interfering with the existing structure of data categories. In other words, incorporating such items into the data collection forms used for Latin American countries should not create data compatibility problems. Of course, a careful inquiry into the feasibility and advisability of the additions should be undertaken before any such changes are made.

## **EXPENDITURE COMPARABILITY PROBLEMS**

Every country in Mercosur, and probably every country in Latin America, collects and compiles some national education finance statistics of its own. Some countries' statistics are sophisticated and detailed; other countries' are more rudimentary. Many countries

also routinely produce and disseminate at least certain basic education finance indicators, such as figures on public education expenditure relative to GDP and public expenditure per primary, secondary, and tertiary student. But comparisons of these existing national statistics either among the five Mercosur countries or among a broader set of Latin American countries, or between Latin American countries and countries outside the region, generally cannot be expected to yield valid, meaningful, or useful results. The reason is that the education finance statistics prepared by individual countries for their own internal purposes usually are not internationally comparable. Each country has a different education structure; its own system of education finance; its own accounting concepts, categories, and definitions; its own statistical methods and traditions; and often its own ideas about what should and should not be counted as part of education spending. As a result, national expenditure statistics vary greatly in scope, content, and organization, obscuring as much as they reveal about the real inter-country differences in levels and patterns of education spending.

The problems one encounters in attempting to compare education expenditures among countries are of three main types: problems of inconsistent scope or coverage, problems of inconsistent categorization, and problems of inconsistent measurement.

*Problems of inconsistent scope or coverage* arise when countries differ with respect to which components of education expenditure are included in, or excluded from, their statistics on education spending. Such differences may reflect incompatible definitions of the boundaries of education, incomplete or uneven coverage of educational institutions or funding sources, and inconsistent coverage of spending for particular education-related functions or services, or particular elements of education cost.<sup>3</sup>

*Problems of inconsistent categorization* occur when countries apply different rules or definitions for classifying items of spending. Inconsistencies may arise in classifying outlays by level of education, type of institution (public or private), source of funds, nature of expenditure (current or capital), and the type of educational resource (teaching staff, other staff, materials, etc.) for which funds are expended.

*Problems of inconsistent measurement* are encountered when countries rely on different, nonequivalent definitions or methods to quantify expenditures in a given category or, in some instances, to estimate categories of spending for which data are unavailable.

In the remainder of this section, I explore in some detail each of the major types of expenditure comparability problems mentioned above. The discussion of each problem draws on OECD experience and, especially, on the findings of the aforementioned International Expenditure Comparability Study. In each instance, I explain how the problem has affected international expenditure comparisons and how it was addressed in developing the OECD indicators and the UOE data collection system. Where possible, I offer preliminary views about the implications of particular comparability problems for the Mercosur countries, or for Latin American in general, and on the steps that may have to be taken to prevent adverse effects on expenditure comparisons.

## **Problems in Defining the Boundaries of the Education Sector**

A prerequisite for the validity of international comparisons of education finance—especially comparisons of aggregate education spending—is that the countries concerned share a common understanding of how broadly education, or the education sector, should be defined for statistical purposes. If one country's definition includes types of programs or institutions that another country's definition excludes, then the first country will tend to report higher spending, other things being equal, than the second; but the apparent expenditure differential would be spurious because it would reflect only definitional differences, not real differences, between the countries. Disagreements about boundaries arise principally in areas where education borders and blends into other economic sectors and social institutions. I comment on three such border areas in which boundaries were defined inconsistently by different OECD countries, and in which the ability to compare expenditures consequently was reduced. I believe that all three problems will reappear and will need to be dealt with in the Latin American context.

**Preprimary Education: Where Does Education Begin?** At the outset, there was serious disagreement within OECD over (1) the minimum age a child must reach to be considered a participant in preprimary education and (2) whether any distinction should be made between "educational" and "noneducational" programs for children above the specified age threshold. At one extreme, France defined all programs for children three (or even two) and older as components of education, while at the other, Sweden classified all its extensive programs for children younger than six as "noneducational" day care. These gross differences in definitions, and hence in the scope of financial and other statistics, essentially ruled out international comparisons of spending for preprimary education.

OECD eventually solved the problem by (1) designating age three (or two in certain instances) as the standard starting age for preprimary education and (2) stipulating that all school-based or center-based (i.e., institutionalized) programs for children at or above that age should be reflected in statistics on preprimary education, without regard either to the official status of the programs or to whether the programs are deemed "primarily educational" or "primarily custodial." The adherence of most OECD countries to this standardized definition, which is now embedded in the UOE system, has made possible meaningful international comparisons not only of preprimary expenditures but also of rates of participation in preprimary education—neither of which was possible before.

The same problem will have to be addressed in Latin America. Several Latin American countries have early-childhood programs, some operated by noneducation ministries and some mainly by private organizations, that are not officially considered parts of the national education system and not reflected in national education statistics. Valid comparisons of preprimary spending will not be possible until the definition of the sector is standardized—something that presumably can be accomplished by applying the existing OECD/UOE specifications.

**Vocational-Technical Education and Training of the Labor Force.** Every country distinguishes in some manner between vocational-technical education and subsequent training of the labor force, but in the absence of an internationally standardized definition, each country defined this distinction for itself. As a result, some countries included in education, and hence in their education statistics, types of activities that other countries classified as "noneducational" training programs. Comparisons of spending, especially for upper-secondary and postsecondary education, suffered accordingly.

In the OECD context, the most serious such problem concerned German-style dual-system apprenticeship programs and other programs in which students alternate between periods of instruction in schools and periods of practical training in the work place. Although program participants count as full-time secondary students, most of the countries concerned have been unable to provide data on expenditures for the work-based training components. Consequently, some countries' expenditures for secondary education have been seriously understated and cannot be properly compared internationally. Despite some remedial steps, this problem continues to affect the expenditure figures of certain European countries. Fortunately, it appears that the types of programs in question are not sufficiently important in Latin American countries to pose a similar problem.

Another training-related issue concerns labor training programs operated outside the official education system, often by labor or employment ministries. Such programs frequently are not covered by national education statistics. However, programs of similar character, serving similar types of students, are run by the education authorities in other countries, and hence are likely to be reflected in education expenditure figures. This problem is definitely relevant in Latin America, where a number of countries have youth training programs that are not normally treated as part of education for statistical purposes. According to the OECD definition, outlays for such programs should be included in the figures countries report to international agencies.

**Adult, Continuing, "Informal," or "Out-of-School" Education.** The distinction between regular, or "mainstream," education programs and the activities variously characterized as adult, continuing, informal, or "out-of-school" education is vague and subject to varying national interpretations. The diverse programs falling under these headings sometimes are offered by regular secondary and postsecondary institutions; sometimes by separate adult education systems; and sometimes by local public agencies or private organizations. The statistical treatment of such programs has been erratic, with some countries covering them to the same extent as regular programs, some covering them in part, and others excluding them entirely. OECD's current position on the issue, as reflected in the UOE instructions, is that adult and other such programs should be included insofar as they cover subject matter similar to that covered in mainstream education, whereas programs of a mainly recreational or general cultural character should be excluded. It is not clear whether issues concerning adult education will turn out to be of comparable importance in Latin America, but the question certainly deserves attention as part of the effort to improve the expenditure (and other) statistics.

## **Problems of Inconsistent Coverage of Educational Institutions and Sources of Funds**

Two intertwined problems that strongly affect international expenditure comparisons are incomplete coverage of educational institutions and incomplete coverage of sources of education funds. The principal difficulty in each case is that many countries have neglected the private aspects of education finance. There are gaps in the coverage of public institutions and public funding sources as well, but they are minor compared with the omissions on the private side.

**Coverage of Institutions.** Many national systems of finance statistics fail to cover at least some types of private institutions, and some national systems cover no private institutions at all. As we learned at OECD, a major distinction in this regard is that between *government-dependent* private institutions, which depend heavily—sometimes wholly—on public funds, and *independent* private institutions, which receive little or no public money. The expenditures of the former generally are included in official statistics (although the funds they receive from private sources may not be reported), whereas expenditures of the latter often are not.

Among public institutions, the ones most likely to be omitted from national education finance statistics are those belonging to noneducation agencies, such as ministries of labor, employment, health, agriculture, and defense, or subnational authorities active in similar fields. In cases where such institutions enroll substantial numbers of students, the gaps in coverage can result in significant understatements of education spending. In addition, the expenditures of some locally operated public primary and secondary schools sometimes go unreported because of statistical limitations—that is, the data collection systems of the countries concerned are insufficiently developed to provide full coverage of local-level finances.

**Coverage of Funds from Private Sources.** Incomplete reporting, or nonreporting, of the education outlays of households and other private entities is a major obstacle to valid international comparisons. The effects of such underreporting on comparisons within OECD have been limited by the fact that European private schools are mainly publicly financed. (However, the expenditures of such countries as the United Kingdom have been substantially understated because of the failure to include private spending in national statistics.) But because large numbers of students in some Latin American countries attend privately funded private schools, the lack of adequate data on private funds and private institutions is likely to be a much more serious problem in the Latin American setting than it has been for OECD.

To see how the problems of coverage of private institutions and coverage of funds from private sources are interrelated, consider the following diagram, in which expenditures are cross-classified by institutional auspices (public or private) and source of funds (also public or private), yielding four categories of education spending:

- Category A, *public funds for public educational institutions*, is almost always covered—and is sometimes the only type of spending covered—by national education finance statistics. The pertinent expenditure amounts generally can be extracted from government budget documents.
- Category B, *public funds for private institutions*, also is usually covered, in the sense that government payments to or on behalf of private institutions are included in government budgets. However, such funds can be difficult to separate from public outlays for public institutions and may not be easy to disaggregate by level or type of education.
- Category C, *private funds for public institutions*, may or may not be covered by national expenditure figures, depending on the country's accounting practices. In some countries, tuition fees and other private payments are classified as own-source revenue of the public institutions and reported along with other forms of revenue. In other countries, they are treated as extra-budgetary funds, and may not be reported at all.
- Finally, Category D, *private funds for private institutions*, is the least likely to be included in national statistics. Many countries have no mechanisms for collecting data on such funds. For countries in which few students attend private schools or in which the private schools are mainly publicly funded, the consequences are minimal; but for the countries in which privately funded private schools play substantial roles, this gap in the finance data seriously impairs international comparisons.

	<b>Public Educational Institutions</b>	<b>Private Educational Institutions</b>
<b>Funds from Public Sources</b>	<p style="text-align: center;">A</p> <p>Public funds for public institutions:</p> <p>Normally covered (not always completely) by national statistics</p>	<p style="text-align: center;">B</p> <p>Public funds for private institutions:</p> <p>Usually covered; not always separable from A</p>
<b>Funds from Private Sources</b>	<p style="text-align: center;">C</p> <p>Private funds for public institutions:</p> <p>Sometimes covered, sometimes partly covered, sometimes missing</p>	<p style="text-align: center;">D</p> <p>Private funds for private institutions:</p> <p>Frequently not covered by national statistics</p>

**Implications for Latin America.** The lack of data on the private aspects of education finance could turn out to be the largest single impediment to valid expenditure comparisons involving Mercosur and other Latin American countries. In such countries as Chile and Colombia, large percentages of primary, secondary, and tertiary students are enrolled in private institutions that depend heavily on tuition fees and other private funds. Expenditure comparisons involving these countries that did not take the private funds into

account would not be meaningful. To illustrate, Colombia reports that it spends 3.9 percent of GDP on education, a figure similar to what other Latin American countries report, but far below the 6.1 percent of GDP spent, on average, by the member countries of OECD. But Colombia's figure excludes private funds. Taking into account that about one-third of Colombia's students attend privately funded private schools, it seems likely that the inclusion of private spending would raise the Colombian percentage of GDP to around 6 percent—or essentially the same as that of the developed world. The private share of education spending in Chile may be even higher—on the order of 40 percent. Comparisons of total spending or spending per student that exclude these large private contributions cannot be valid. Clearly, filling the gaps in the data on private spending would have to be one of the highest-priority tasks in developing a set of education finance indicators for Mercosur.

### **Problems Concerning Particular Functions, Services, and Elements of Education Cost**

The fact that a particular education sector is covered by a country's education finance statistics does not necessarily imply that all types of spending for that sector are taken into account. Many problems in comparing expenditures across countries arise not because whole sectors or whole classes of institutions are omitted but rather because outlays for particular functions, services, or cost elements are covered inconsistently. These problems generally do not concern the "core" aspects of education. There is no disagreement that the basic teaching function and such closely related functions as administration of schools and maintenance of school buildings should be reflected in expenditure statistics. Likewise, no one disputes that such basic cost elements as the salaries of teachers, purchases of instructional materials, and outlays for constructing and equipping school buildings should be included in education accounts. This agreement does not always extend, however, to the less central components of education spending. In the OECD work, we found significant disparities among countries in the coverage of spending for support functions, ancillary services for students, and the nonsalary portions of personnel compensation, as well as certain items peculiar to postsecondary education. Similar differences in coverage are likely to be detected among Latin American countries when the statistics of the individual countries are examined in detail.

**Expenditures for Support Functions.** Expenditures for educational administration, building maintenance, and other support functions often are underreported when such functions are performed by municipalities or other general-purpose local governments. For example, the municipal workers who clean and maintain the local school may also clean and maintain other local government buildings. Their salaries may be reported under a general public works heading in the municipal budget rather than as spending for education. In such instances, certain elements of education costs "disappear" from the education accounts, and education spending is correspondingly understated.

**Expenditures for Ancillary Services.** Ancillary services include such things as health and psychological services for students, transportation of students to and from school, the



provision of meals in schools, and sometimes the provision of student housing. Whether such services are reflected in education expenditure statistics often depends on who is responsible for providing them. If it is the education authorities, the costs are likely to be counted as education spending; if it is a different agency (e.g., local health authorities, in the case of student health services), they are likely to be omitted. A complicating factor is that certain ancillary services often are financed wholly or in part by fees collected from students or their families. Where this is so, we find that some countries' expenditure figures reflect total spending for the service in question, while other countries' figures reflect only spending net of fees. These disparities translate into errors in inter-country comparisons of spending.

**Nonsalary Components of Personnel Compensation.** The nonsalary components of compensation include expenditures for retirement programs (pensions) and such other fringe benefits as health insurance and unemployment compensation. In the OECD work, we found that some countries omitted pension costs from their education expenditure figures, while countries that did include such costs sometimes measured them inconsistently. The amounts spent for pensions are sufficiently large that these discrepancies substantially skewed expenditure comparisons in some instances. Similarly, outlays for health care and other fringe benefits are reflected in the expenditure figures of some countries but not others, and such outlays are not always measured consistently.

**Items Specific To Tertiary Education.** Several issues concerning the proper scope of statistics on education expenditures pertain specifically to tertiary, especially university-level, education. Without going into detail, I summarize three such issues, each of which was important enough to seriously distort comparisons of spending for tertiary education among certain OECD countries.

- *Expenditures for university research.* OECD countries disagreed, and continue to disagree, about whether outlays for university research should be included in, or excluded from, expenditures for tertiary education. Because research outlays can account for large fractions—20 or 30 percent or more—of total university spending, inconsistent national practice in this regard seriously degrades international comparisons. Multiple conceptual and technical problems have impeded efforts to quantify and compare the research components of different countries' expenditures.
- *Expenditures for university hospitals.* The inclusion of expenditures for university-affiliated hospitals made some countries' tertiary expenditure figures incompatible with those of countries that excluded such costs. Fortunately, most countries now have complied with the UOE stipulation that such costs should not count as education spending.
- *Financial aid and subsidies for student living expenses.* OECD's expenditure statistics initially failed to distinguish between expenditures for tertiary institutions and subsidies for the living expenses of tertiary students. Some countries commingled the two, while other countries chose not to report the

subsidies. The resulting expenditure figures were misleading and difficult to interpret. OECD has eliminated much of the problem by distinguishing sharply in the UOE data collection tables between the two forms of spending.

Nevertheless, some problems concerning the treatment of financial aid to students remain unresolved—e.g., how one should separate subsidies for tuition fees from subsidies for living expenses and how student loans and various types of indirect subsidies should be reported—and continue to interfere with expenditure comparisons.

At least some of these problems are likely to be encountered in Latin America as well, and steps will have to be taken to eliminate, or at least to minimize, the adverse effects on comparisons of spending for university and nonuniversity tertiary education.

### **Problems in Categorizing Expenditures by Level of Education**

A very important problem affecting all but the most aggregative international comparisons of education spending is that the definitions of levels of education are not fully standardized across countries. This difficulty has come to be known as the "ISCED problem," because it reflects in part deficiencies of the ISCED taxonomy, the International Standard Classification of Education (in Spanish, *Clasificación Internacional Normalizada de Educación*, or CINE), on which the OECD/UOE classification of education programs by level is supposed to be based. Because the ISCED levels have been only loosely and vaguely ("flexibly") defined, each country has been free, in essence, to define them for itself. Thus, different countries have applied the seemingly standard labels "primary," "lower secondary," and "upper secondary" to programs that sometimes differ in duration by more than a factor of two and that, as a result, cannot legitimately be compared. In the OECD work, we found that these inconsistencies preclude comparisons of total spending or spending relative to GDP and degrade comparisons of spending per student for the individual constituent levels of primary-secondary education. Other definitional problems have blurred the secondary-tertiary boundary and made it difficult to distinguish consistently among the different sublevels of tertiary education.

Now pending at UNESCO is a proposal for a major revision of ISCED. Elsewhere, I have argued that the proposed changes are likely to enhance international comparability in some respects but also to introduce new comparability problems, especially at the postsecondary level (Barro, 1997b). The net effect will become apparent only as the new taxonomy is implemented by the countries.

What problems of categorization by level are likely to be encountered in Mercosur? Based on some existing compilations of descriptive data (McMeekin, 1997; UNESCO, 1996), I can offer the following preliminary and tentative observations:

- The combined duration of primary and secondary education (not counting any preprimary education) seems to be 12 years in all the Mercosur countries except Brazil, where it is 11 years. Therefore, primary-secondary education can be considered a relatively standardized category.
- One can identify for each country a basic education category, sometimes made up of two or three nationally defined institutional stages, corresponding to the combination of the primary and lower-secondary levels in ISCED, and with a duration of either 8 years (Brazil, Chile) or 9 years (Argentina, Paraguay, Uruguay). This would be a suitable category for international comparisons.
- It would be more difficult to compare Mercosur countries with respect to amounts spent for the standard ISCED/UOE categories of primary, lower-secondary, and upper-secondary education. The distinction between primary and secondary education seems to be less important in Mercosur (and in Latin America generally) than that between basic education and educación media (which seems to be equivalent to upper-secondary). Although Argentina, Paraguay, and Uruguay have levels that can be equated directly to those in ISCED (cycles of 6-3-3 or 3-3-3-3 years), the same may not be true of Chile and Brazil. This implies, among other things, that it may be necessary in some cases to define artificial levels, not corresponding exactly to national institutional stages, for purposes of international comparison.
- At the postsecondary level, each country seems to offer some short programs, usually of 2-3 year duration, that might be equated to the nonuniversity tertiary category of ISCED (or whatever its successor is called in the revised ISCED). However, whether such programs are substantively comparable across countries and whether the distinction between short and long, or nonuniversity and university, programs is consistent across countries are matters that would have to be investigated.
- Each Mercosur country has initial university programs leading to the licenciatura degree, but the duration of these programs varies both across countries and among individual fields of study within each country. Issues of program equivalency across countries would have to be explored. The proposed revised version of ISCED includes a cross-classification by program duration that would be helpful in the Mercosur context.
- Some Mercosur countries offer postgraduate programs leading to a master's degree (Chile: magister; Brazil: mestrado), which can be followed by a program leading to the doctorate. In the other countries, study for the doctorate directly follows the licenciatura; there is no lesser postgraduate qualification corresponding to the master's degree. It remains unclear, even in the revised ISCED, how these structural differences should be taken into account in international comparisons.

A final point concerning categorization by level is that comparability diminishes when, and to the extent that, countries report spending "not allocated by level." OECD has discouraged this practice, asking countries instead to assign even administrative and overhead expenses to specific levels of education. It appears that the normal expenditure categories of at least some Latin American countries would have to be altered, and some outlays would have to be prorated among levels, to eliminate or greatly reduce the "not allocated" category of spending.

### **Problems in Categorizing Expenditures by Source of Funds**

Before the development of the UOE instrument and in the absence of a well-defined international accounting structure, countries used disparate, sometimes idiosyncratic, methods to differentiate between funds from public and private sources and to calculate the national, regional, and local shares of initial and final expenditures. Gaps in the coverage of household and other private expenditures aggravated the problem. OECD could not present coherent indicators of sources of education funds until the third (1995) edition of *Education at a Glance*.

The key to improving the source-of-funds statistics was the inclusion in the UOE forms of distinctions among (1) direct expenditures for educational institutions, (2) intergovernmental transfer payments (subventions), and (3) transfers to students or households. Given these breakdowns, one can calculate the amounts of education money generated by, and ultimately expended by, each public and private funding source. Among the problems remaining in this area, one potentially important for Mercosur is that no satisfactory method has yet been devised for representing the role of general-purpose (as opposed to education-specific) intergovernmental transfers in education finance.

Whether the Mercosur countries will find it difficult to provide the needed expenditure breakdowns remains to be determined. A possible facilitating factor is that the UOE accounting structure is similar to that used by the International Monetary Fund (IMF) to collect data on government finance—a structure with which many countries may already be familiar.

### **Problems in Categorizing Expenditures by Use of Funds**

To answer questions about how education funds are used, OECD has asked countries, first, to distinguish between current and capital expenditures and, second, to break down current expenditures into the amounts spent for specified categories of personnel and other resources. The distinction between current and capital spending generally has not been problematic, although a few countries with unusual methods of financing school buildings have had difficulty providing suitable data. However, OECD has found it difficult to assemble internationally comparable data on the composition of spending by resource category.

Although the distinction between spending for personnel and spending for other resources seems straightforward, in fact it is not. Differences in the coverage of ancillary and support functions and disparate methods of accounting for contracted services have impaired comparisons of the shares of total spending devoted to personnel. In addition, because some countries define "teaching personnel" more broadly than others, OECD has been unable to collect consistent statistics on the shares of total personnel compensation accounted for by teaching staff, administrative and other professional staff, and support staff. One can expect to encounter similar definitional and technical problems in the Latin American statistics.

### **Enrollment, PPPs, and Expenditure per Student**

In addition to expenditure statistics, data on such nonexpenditure variables as GDP, population, and enrollment are needed to calculate the OECD expenditure indicators. In particular, two items essential for comparisons of expenditure per student are (1) statistics on full-time-equivalent (FTE) enrollment and (2) the purchasing-power-parity (PPP) exchange rates needed to convert national expenditure figures into equivalent U.S. dollars.

We found in the OECD work that inconsistent measurement of FTE enrollment distorted comparisons of spending per student at several levels of education, but most importantly at the tertiary level. The problem is that some countries do not recognize the concept of "part-time university student." Because they count all students as full-time, even though many really participate at low levels, their figures on spending per student are misleadingly low compared with those of countries that take part-time status into account. Consistent measurement of FTE enrollment is necessary for comparisons of spending per student to be valid.

Although Latin American countries sometimes translate their levels of education spending into U.S. dollars by applying ordinary market exchange rates, this approach does not yield satisfactory international comparisons. The reason is that market exchange rates reflect many factors other than the relative purchasing power of the currencies in question—interest rates, trade policies, economic stability, and the like. To reflect the relative purchasing powers of different currencies more accurately, international agencies increasingly rely on PPP exchange rates to compare such basic economic variables as total and per capita GDP. OECD uses the same PPP factors to compare education spending per student, and it will be important for the Mercosur countries and other Latin American countries to do the same.

To illustrate the significance of using PPPs, the official market exchange rate for Chile in 1995 was 396 pesos per U.S. dollar, but the PPP rate (as reported by the World Bank) was only 170 pesos per dollar. Thus, Chilean spending per student, expressed in U.S. dollars, would have appeared 2.3 times greater according to a PPP conversion than according to a standard market-rate conversion. The switch to PPPs will have similarly

dramatic effects on the expenditure-per-student figures of many other Latin American countries.

## **STEPS TOWARD THE DEVELOPMENT OF FINANCE INDICATORS FOR MERCOSUR**

Let us suppose that Mercosur does decide to proceed with the development of education indicators within the general OECD/UOE framework, and, as an important part of the effort, to produce a set of indicators of education finance. What steps would the individual member countries and Mercosur as an organization have to take to accomplish the mission? In particular, what would they have to do to deal with the types of comparability problems discussed in this paper? I offer here some tentative suggestions about these matters. Although some of these remarks apply to education indicators in general, I emphasize the aspects specific to comparisons of education finance.

One thing clear is that there would be no reason for the Mercosur countries (or any other group of non-OECD countries) to replicate the OECD indicator development process. The OECD/INES project was obliged by circumstances to work simultaneously on designing the indicator system and improving the data submissions from the individual countries—tasks that would ordinarily be undertaken sequentially. The current system evolved through multiple cycles of data collection, indicator preparation, evaluation, and revision. In retrospect, one can see that the interplay and tension between the design and implementation efforts was vital to the process. It yielded an indicator system well-grounded in reality and ensured that each country's data providers were fully involved and conversant with the results. That the process worked is testimony to the leadership of Norberto Bottani, the INES project director from 1988 to 1995, who created the organizational framework and devised the participatory, interactive style of work that led to the project's success.

But the current situation is different from that prevailing when OECD began its work. An established and tested system of international indicators now exists. The fourth annual cycle of data collection based on the UOE finance data tables is in progress. Detailed definitions and instructions for the data providers are available—something that was not true when OECD produced its first two indicator reports. A sophisticated data management system is operational at OECD. Moreover, it has been demonstrated that the OECD/UOE system can be adopted and implemented by countries outside the circle of the original developers. Several Eastern European countries, South Korea, and one Latin American country, Mexico, now participate in the annual UOE data collections and are represented in the published indicators. In sum, there is a solid technical foundation and a substantial body of experience with implementation for Mercosur and other Latin American countries to draw on as they develop their own international comparisons of education.

Focusing on the substantive aspects of indicator development, it appears that Mercosur will have to undertake work in four areas to produce technically sound, policy-relevant, international comparisons of education finance: First, it will have to define the desired product: which finance indicators and statistics should be included. Second, it will have to assess the existing education finance statistics of each country. Third, it will have to take action, or induce the countries to take action, to resolve data quality and comparability problems. Fourth, it will have to produce the finance indicators and analyze the results. I consider each of these tasks in turn, following which I comment briefly on certain organizational and procedural matters. I do not address the operational issues of how Mercosur would collect, process, and manage data, partly because of space limitations and partly because it appears that the OECD procedures could be borrowed more or less intact.

### **Definition of the Desired Product**

An important initial task is to identify the types of education finance comparisons deemed interesting, useful, and of high priority by the Mercosur countries, and hence to define both the desired indicator set and the attendant data requirements. Among the pertinent considerations are the following:

First, distinctions should be drawn between short-run and longer-run objectives. Considerations of technical feasibility and availability of the resources needed to improve finance statistics are important in this regard. For instance, indicators pertaining to the core sectors of education undoubtedly can be produced sooner and more easily than indicators that represent the more peripheral sectors as well.

Second, the appropriate scope of the Mercosur finance statistics depends on whether comparisons are to be made only among the Mercosur countries or also between Mercosur countries and member countries of OECD. For instance, a decision to compare the percentages of GDP devoted to education by Mercosur and OECD countries would make estimation of the private components of education spending a high-priority task.

Third, the desirability of extending or modifying the OECD indicators and the UOE statistics to address issues of special interest to Mercosur (or to Latin America) has to be considered. Several possible extensions were mentioned earlier. Each would require additions to the UOE data collection forms (consisting mainly of more detailed breakdowns of expenditure categories) as well as the development of the new indicators themselves.

Fourth, the relationship between the OECD indicators and the UOE statistics is an important consideration in deciding which indicators and statistics to produce. In general, particular finance data items are not associated exclusively with particular indicators; rather, the UOE finance tables reflect a coherent system of accounts that needs to be developed as a whole. Thus, a decision to forego a particular indicator would not necessarily reduce the burden of data collection.<sup>4</sup> Conversely, once the full set of UOE

statistics were assembled for each country, Mercosur would be able to construct a wide array of expenditure indicators, not limited to the subset that OECD chooses to publish in any particular year.

### **Assessment of Existing National Education Finance Statistics**

Before setting out to improve education finance statistics, Mercosur would have to assess the finance statistics that each country already has. The purposes of these individual-country assessments would be (1) to determine how the scope, content, and organization of finance statistics vary among the Mercosur countries and how the statistics of each country deviate from the UOE specifications; (2) for each country, to identify missing expenditure items and specific problems of measurement or categorization; and (3) to identify options for improvement. The discussion of comparability problems earlier in this paper provides an outline of the key points to consider. To recapitulate, one would want to determine for each country,

- How broadly the country defines the boundaries of education for statistical purposes
- Which categories of public and private educational institutions are and are not covered by existing finance statistics
- Whether all public and private sources of education funds are taken into account
- Whether all recognized education-related functions, services, and cost elements are covered, and whether any inappropriate items are included
- Whether the country's definitions of levels and types of education correspond to OECD's
- How the country categorizes education funds by initial and final source
- How the country differentiates between current and capital outlay and among different categories of current spending
- How the country measures enrollments and other nonfinancial variables needed to construct education finance indicators

These, of course, are only the main headings. In practice, one would apply a more detailed protocol, or "menu" of questions, to each country. With respect to potential improvements, one would want to consider such things as the content of municipal and institutional financial accounts, the possibility of obtaining finance data from nontraditional sources, and the existence of household survey data from which private expenditures might be estimated. The previously cited International Expenditure Comparability Study provides a prototype for this sort of inquiry



## **Actions to Enhance Data Quality and Comparability**

Before commenting on what a country can do to enhance the quality and international comparability of its expenditure statistics, I pause to clarify the purpose of such activity. The objective is not necessarily to alter or to replace any country's own internal education finance statistics. Such statistics normally reflect national institutional structures and national policy concerns, and countries may need to retain them in more or less their current form. Rather, the intent is to use the existing national statistics, augmented and transformed as necessary, to construct the separate, possibly substantially different set of statistics needed for comparisons with other countries.

The OECD experience has shown, however, that the process of preparing statistics according to international specifications sometimes helps a country to improve its internal statistics as well; in fact, that may be a motive for the country's involvement. For example, Mexico joined the OECD indicator project a few years ago with the explicit aim of drawing on OECD methodology to upgrade its own internal statistics and indicators. In such instances, benefits flow in two directions: participation in the international work leads to better national statistics, which, in turn, equip the country to prepare better data for the international agencies.

One can summarize briefly the relatively few generic solutions to the major types of comparability problems. Consider the steps a country can take to fill gaps in the coverage of its expenditure statistics. Basically, there are only three main possibilities:

*Incorporation of existing but unused data.* Many OECD countries were able to fill gaps in their expenditure figures by making use of existing expenditure data not previously taken into account in official education finance statistics. Often such data come from noneducation agencies. For instance, it may be possible to use data from labor or employment ministries to fill gaps in the coverage of spending for vocational training; data from health or welfare ministries (or state agencies) to fill gaps in the coverage of spending for preprimary education; and data from finance ministries or social security agencies to represent otherwise unreported expenditures for pensions and other fringe benefits. Data from private organizations may also be helpful: For example, an association of private schools or an association of universities may be able to supply data on institutions not covered by government statistics.

*Reliance on expenditure estimates.* In several important instances, most notably in connection with household expenditures and the finances of private institutions, estimation is the only method that can yield usable results in a reasonable time frame. Estimates can be derived from diverse data sources and by a variety of techniques. To illustrate, estimates of the expenditures of private primary and secondary schools might be based on (a) sample surveys of institutions, (b) sample surveys of households, (c) cost studies of "representative" institutions, or (d) data on numbers of teachers or students, combined with data or assumptions regarding unit costs. Apart from private schools, similar methods might be used to estimate expenditures for private postsecondary schools

or preprimary institutions not covered by education statistics or such expenditure components as outlays for support services and teacher pensions. In the OECD work, we learned that national statisticians sometimes are reluctant to rely on estimation techniques, but the only alternative in some instances is to leave important data categories blank, and hence to distort international comparisons.

*New data collection.* The third possibility is, of course, to undertake new or expanded data collection in areas where finance statistics have been lacking. A country with inadequate information on the education expenditures of its municipalities could decide, for example, to institute a new system, or improve an existing system, of municipal financial reporting. Likewise, a country with no statistical coverage of private postsecondary schools could create a new institutional survey. Realistically, however, it is implausible to think that countries would incur the costs of new data collection (which sometimes are political as well as monetary) solely to improve international comparisons. It is only when the same data collection effort would contribute to domestic goals as well—e.g., to improve accountability or to strengthen the capacity for education planning—that a country is likely to approve the necessary investment.

The potential solutions to problems of inconsistent categorization of expenditures are somewhat different. Where a country's definitions of levels of education differ from the international norms, the only short-term solution is to restructure the categories by prorating and combining expenditures as necessary. For instance, it has sometimes been necessary to partition combined outlays for preprimary and primary education into components corresponding to the separate levels. The longer-run solution is, of course, to encourage national reporting according to the standard UOE or ISCED categories. With respect to categorization by source of funds, problems occur mainly when national accounting practices diverge from international standards, and the solution, if the national data structure permits, is to recalculate shares of funds according to the latter. In the case of categorization of funds by use (e.g., a breakdown of spending by type of personnel), definitional differences may rule out any simple solution. The only option may be to rely on highly disaggregated data, such as personnel or payroll files, to construct new expenditure categories.

As a rule, there is no single, universally applicable solution to a given type of comparability problem. Which approach is most suitable depends on specific national circumstances. Consider, for example, the common problem of missing data on spending for preprimary education. One country might be able to fill the gap by using data already assembled by the noneducation agency (perhaps a ministry of health or welfare) responsible for early-childhood services. Another country might have to collect and aggregate data on preprimary spending from each of its states. A third country, lacking any such data, might have to estimate expenditures from preprimary enrollment figures and assumptions about unit costs. Sometimes more than one approach is feasible, and tradeoffs among accuracy, timeliness, and cost must be taken into account.

## **Preparation of Indicators and Analysis of the Results**

One implication of a decision to apply the UOE instrument to the Mercosur countries is that there would be no need to decide in advance which indicators to produce. The UOE data set is sufficiently versatile to support a wide variety of indicators. Mercosur could choose those deemed interesting and technically sound for presentation and analysis; the selection could change from year to year. OECD formulas are available for all the basic indicators. Only such additional indicators as Mercosur introduces itself would require new formulas and definitions.

In the analytical area, however, Mercosur may find itself in a position to advance the state of the art in international comparisons. With only five countries to consider, it should be possible to analyze differences in spending levels and patterns in more detail than has been feasible for OECD. For example, inter-country differences in central, regional, and local government shares of public spending for education could be linked to differences in federal structures and in the division of responsibility for financing schools; variations in the public and private shares of spending could be linked to enrollment patterns and the availability of public subsidies for private institutions; and so forth. Although indicators are often interesting in their own right, they are usually not self-interpreting. Their value to policymakers and other audiences would be enhanced if Mercosur were to decide from the outset to present them in a well-developed analytical framework.

### **Points Concerning Organization and Process**

Most issues of organization and process are beyond the scope of this paper, as they pertain to the indicator and statistics system as a whole; however, I comment briefly on a few points germane to the development of successful indicators of finance.

To proceed with education indicators, Mercosur probably will need two organizational mechanisms: one, a central office with a professional staff and sufficient technical capacity to develop and maintain an indicator system; the other, a coordinating group composed of representatives of the participating countries. Jointly, these bodies would carry out design and development work, organize and monitor data collection, address shared technical issues, and promote cooperation and consistency of practice among the countries. The central office would maintain the data base, provide technical assistance, produce the indicators, conduct analyses, and disseminate the results. The coordinating group would serve as the main communications channel between Mercosur and the countries, and its members would integrate the work of the various participating agencies in their respective countries.

Assuming that considerable attention will be given to comparisons of finance, the central office should have at least one expert on finance systems, issues, and indicators. Further, it might be desirable to attach to the coordinating group a working committee on finance statistics and indicators. Each committee member should have extensive knowledge of both the education finance systems and the finance data systems of his or her country. The committee would deal with issues of data quality and international comparability and

would confer on technical matters with those responsible for providing, collecting, and processing education finance data. Through such an arrangement, Mercosur might be able to avoid a problem that OECD never fully resolved—namely, that national participants in the indicator work were not necessarily knowledgeable about education finance, leaving some countries inadequately represented in discussions of finance statistics and indicators.

Probably the main point to make regarding the indicator process is that it should be highly interactive. International comparisons are more likely to be valid if (1) each country understands how its statistics are supposed to be prepared and how they will be used, (2) the agency responsible for preparing indicators (the aforesaid central office) understands the data that each country has provided, including the problems the country encountered and how it dealt with them, and (3) each country knows what data the other countries have provided and how, at least in general terms, those data were prepared. No country should be expected to work in isolation to develop statistics for international comparison. There should be ongoing interactions both between each country and the central office (queries, responses, technical advice, etc.) and among the countries (comparisons of methods, consultation on shared problems). With respect to financial comparisons in particular, it would be helpful for national participants to understand each others' education finance systems, accounting categories, and data collection methods. The organizational arrangements suggested above are intended to promote such communications. It will be up to those leading the effort, however, to make sure that interactions are more than formal exercises—that they actually deal in depth with the substantive problems of international comparisons.

## ENDNOTES

<sup>1</sup> The OECD finance indicator set, broadly construed, can be said to include not only the selected indicators published in the most recent edition of OECD's indicator report, *Education at a Glance* (OECD, 1996), but also the additional indicators published in earlier editions and those calculated and presented in background documents.

<sup>2</sup> The tables exclude certain OECD finance indicators of a more detailed or specialized nature, some of which have been published experimentally or produced only for developmental purposes. Among the excluded items are indicators of direct household purchases of educational goods and services, the composition of expenditure for personnel compensation (broken down into salaries, pension costs, and other fringe benefits), subsidies for student living expenses, and postsecondary expenditures net of certain outlays for university research. Some of these require special expenditure statistics not available from the UOE data collection instrument.

<sup>3</sup> Note that differences in the statistical coverage of educational programs and institutions undermine the comparability of all types of education statistics, not just statistics on finance, whereas differences in the coverage of elements of education costs harm only

comparisons of spending. For example, a country's failure to cover a category of educational institutions would detract from international comparisons of enrollment and staffing as well as comparisons of spending, but only the latter would be affected by a failure to include expenditures for teachers' pensions. Thus, problems of the first type have broader significance for the system of international education indicators as a whole.

<sup>4</sup> There are some exceptions. For instance, if there were no interest in comparing countries with respect to uses of funds (shares devoted to teaching personnel, other personnel, etc.), there would be no need for countries to provide breakdowns of expenditure by resource category.

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## **APPENDIX**

**UOE Finance Data Collection Tables, 1996**

Finance 1. Education expenditures by source of funds, type of transaction, and level of education

Finance 2. Education expenditures by nature, resource category, and level of education