

EDUCATION AND SKILLS IN ARGENTINA¹

- Assessing Argentina's Stock of Human Capital

Lauritz Holm-Nielsen & Thomas Nikolaj Hansen

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Acronyms

CAP	Comisión de Acreditación de Posgrados
CAS	Country Assistance Strategy
CASP	Country Assistance Strategy Progress Report
CONEAU	Consejo Nacional de Evaluación y Acreditación Universitaria
CTERA	Confederación de Trabajadores de la Educación de la Republica Argentina
DGCyE	Dirección General de Cultura y Educación
FOMECA	Fondo para el Mejoramiento de la Calidad
LAC	Latin America and the Caribbean
IDB	Interamerican Development Bank
IDECE	Instituto para el Desarrollo de la Calidad Educativa
IMD	Institute for Management Development
INDEC	Instituto Nacional de Estadística y Censos de la Republica Argentina
MECYT	Ministerio de Educación, Ciencia y Tecnología
OECD	Organization for Economic Co-operation and Development
PISA	Program for International Student Assessment
PIRLS	Progress in International Reading Literacy Study
PREAL	Programa de Promoción de la Reforma Educativa en América Latina y el Caribe
RICyT	Red de Indicadores de Ciencia y Tecnología
SPU	Secretaria de Políticas Universitarias
TIMSS	Third International Mathematics and Science Study
UNESCO	United Nations Educational, Scientific and Cultural Organization
WEF	World Economic Forum

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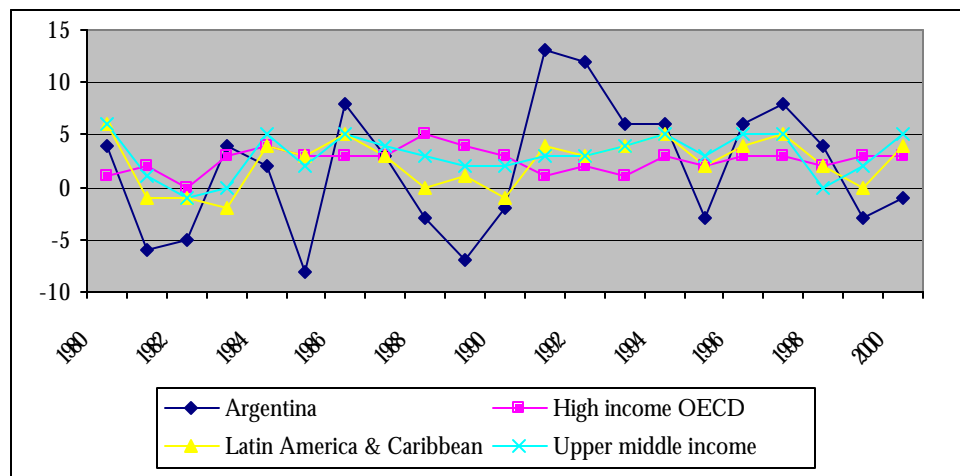
INTRODUCTION

CONTEXT. Argentina's population of 36.2 million people is one the best educated in the entire Latin American and Caribbean (LAC) region. For example, the Argentine population above age 25 has 8.5 years of educational attainment, whereas the Latin American average is 5.9 years (Barro and Lee, 2000). Moreover, Argentina compares well to many non-LAC regions such as East and Central Europe (8.4 years) and East Asia (7.6 years). This in turn reflects the fact that enrollment rates across all education levels have been rising in Argentina (UNESCO, 2001), at least until 2001.

These achievements notwithstanding, Argentina presently finds itself deeply immersed in a serious political and economic crisis. Following rapid growth in the early and late 1990s, economic growth has turned negative at the turn of the millennium (Graph 1). This trend seems to continue, as real GDP growth fell by 16.3 percent during the first quarter of 2002 (EIU, 2002, p.5).

At the same time, Argentina has been unable to service its foreign debt during a period of time, which has damaged its international reputation markedly and led to a significant drop in investments (World Bank, 2001).

Graph 1 GDP Growth (percent)



Note: Annual percentage growth rate based on 1995 US\$

Source: World Development Indicators 2002

As can be seen from Graph 1, this is not the first time Argentina finds itself in a such a period of stagnation. In fact, Argentina's performance over the last decades has been very unstable going from one extreme to the other.

The current crisis and the unstable growth pattern is a result of many factors. Low competitiveness may be one of the underlying reasons. In the most recent edition of the *Global Competitiveness Report*, the World Economic Forum (WEF) finds in a survey that Argentina is only number ten in the LAC region in terms of competitiveness.

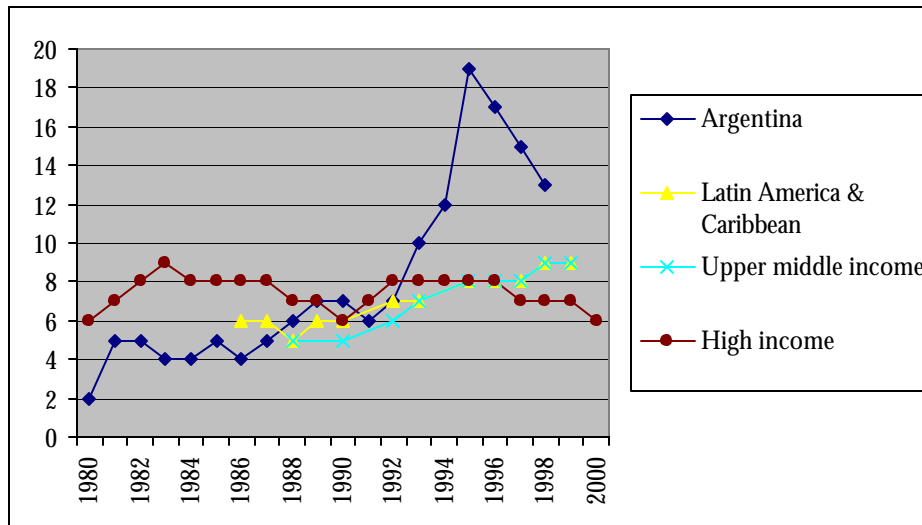
Moreover, several analyses stress that inadequate human capital is one of the reasons why Argentina finds it difficult to increase productivity and competitiveness. For example, the

2000 World Bank *Country Assistance Strategy* (CAS) concludes that lack of skills is a major obstacle to the improvement of total factor productivity in Argentina, and the 2001 *Country Assistance Strategy Progress Report* (CASP) subsequently concludes that improvement of human capital is key to the reduction of poverty in Argentina (World Bank, 2000a, p.19 and 2001, p.5).

High unemployment figures add further to the picture of a misbalance between supply of human capital and the needs of economy (Graph 2; see World Bank, 1998, p.4). Whereas Argentine unemployment was historically low in the early 1980s, the unemployment rate has been soaring for almost two decades and now lies significantly above average rates observed in the LAC region as well the upper middle-income countries. Even though, this trend seems to fade off by the late 1990s, recent data suggest that unemployment rates have picked up again since 2000. Thus, unemployment in 2001 was at 16.4 percent and projections for 2002 and 2003 suggest unemployment rates well above 20 percent (EIU, 2002, p.8)

Moreover, all educational groups have been hit by high unemployment. Even though 60 percent of the unemployed are without a complete secondary education, unemployment among highly skilled has been increasing over the 1990s: Whereas, highly educated people accounted for 29 percent of the unemployed in 1990, the share had risen to 38 percent by 1999 (EIU, 2001, p.16).

Graph 2 Unemployment



Source: World Development Indicators 2002

In sum, there seems to be a paradox between Argentina's excellent performance with regard to educational achievement and, on the other hand, the assumption that human capital could be associated with the weaknesses of the Argentine economy. However, as this paper will demonstrate, this discrepancy is to some degree resolved, once the quality and relevance of Argentine education is taken into account. Thus, the paper defends the position that the supply of human capital at all levels has been somewhat unresponsive to changes in the global economy. Trade liberalization and the emergence of the knowledge economy are prime among these changes.

TRADE LIBERALIZATION AND THE KNOWLEDGE ECONOMY. Traditionally, Argentina's economy has been dominated by traditional industries, which made little use of high technology. In consequence, many high added value products have been imported whereas exports have been dominated by low value added products (MECyT, 2001, p.26; World Bank, 2002b, p.25). Still, this pattern was challenged with the Menem administration's liberalization schemes, which reduced trade and investment protection and consequently led to a decrease in the cost of capital input. This in turn has created a demand for labor capable of exploiting the potentials of modern technologies (World Bank, 2000b, p.5).

Argentina's increasing economic openness has also increased its exposure and vulnerability to global economic trends, such as the emergence of the knowledge economy. At its core, the concept stresses the role of knowledge as an increasingly important determinant of economic growth. Accordingly, the emergence of the knowledge economy has created a strong interest in the acquisition, creation, dissemination and use of knowledge. This in turn puts the spotlight on education and human capital as one of the key ingredients in a successful economy. The solution is not only to *increase* the stock of human capital. A far more challenging task is to *change* the concept of education and stress new skills and new ways of learning. As pointed out by Dahlman & Scherer (2002) and Del Bello (2002, p.2) the emergence of the knowledge economy has led to a change in labor market demand, which now stresses flexibility, cooperation and the ability to access and analyze information. Moreover, the 2000 CAS points out that Argentina's economic transformation has shifted demand to more qualified workers and use of technology.

AGAINST THIS BACKDROP, this paper takes a close look at education and human capital in Argentina. The purpose is to examine whether Argentina's stock of human capital is up to the task, or whether it has failed to keep up with recent changes in the global economy. For that purpose Argentina will be compared to a number of benchmarks, subject to availability of data. First of all, Argentina will be compared to regional values for Latin America and the Caribbean (LAC). The idea is to show how countries subject to somewhat identical conditions compare. Argentina will also be compared to upper middle-income countries. The rationale is that countries at a similar income level have somewhat equal opportunities of improving its stock of human capital. Where appropriate, comparisons will also be made to "model" countries like Korea, Spain and Ireland, which in the course of the last decades have seen a simultaneous and very significant rise in national income and enrollment rates. Finally, to get a broader perspective, Argentina will be benchmarked to the performance of advanced high-income countries (mostly OECD).

The paper will be organized as follows. The first section will provide an overview of the Argentine education system. Against this backdrop, the next section will focus on primary and secondary education with special emphasis on management, input, and participation as well as quality and relevance considerations. Based on a similar structure, the subsequent section will focus on tertiary education. The following section will take a broader look at skills in the Argentine adult population and examine the system for youth and adult training. The conclusion summarizes the paper and identifies the main strengths and weaknesses of the Argentine education system.

ORGANIZATION

FEDERAL LAW OF EDUCATION. Argentina's educational system is regulated by the 1993 *Federal Law of Education*, which has introduced a gradual and progressive structure consisting of a pre-primary, primary and secondary level as well as a system for tertiary education. In addition to the general system, a number of so-called "special regimes" exist, which *inter alia* include the regime for young and adult education (see Table 1).

The transition from the old to the new system is a "work-in-progress", which means that some provinces still work according to old divisions and terms, whereas other have fully embraced the new structure (World Bank, 2002c, p.16).

Table 1 The Argentine Public Education System

	Target age	Duration (years)	Compulsory	Responsibility	
Young and Adult Education	Open	Open	No	Federal State / Provincial	
Tertiary Non-University	18-	1-4	No	Provincial*	
Tertiary University	<i>Postgraduate</i>	21 -	2-3	No	Universities
	<i>Undergraduate</i>	18-21	3	No	Federal State/ Provincial† *
Secondary	15-18	3	No	Provincial*	
Primary	6-14	9	Yes	Provincial*	
Pre-Primary	3-5	1-2	No (First two years) Yes (last year)	Provincial*	

† Tertiary non-university education (teacher training and technical training institutions for example) is administered by the provinces whereas tertiary university education is administered by the state.

* Provinces include City of Buenos Aires

Source: MECYT, 2001; *Federal Law of Education*

PRE-PRIMARY, PRIMARY AND SECONDARY EDUCATION. Pre-primary education (*inicial*) is offered to children aged 3-5 and is mandatory for the five-year old population (Petty, 1995, p. 36). Like in many other countries the purpose of pre-primary education is to prepare children for primary education by stimulating their social skills as well as their ability to communicate and think in a structured way (MECyT, 2002, p.17).

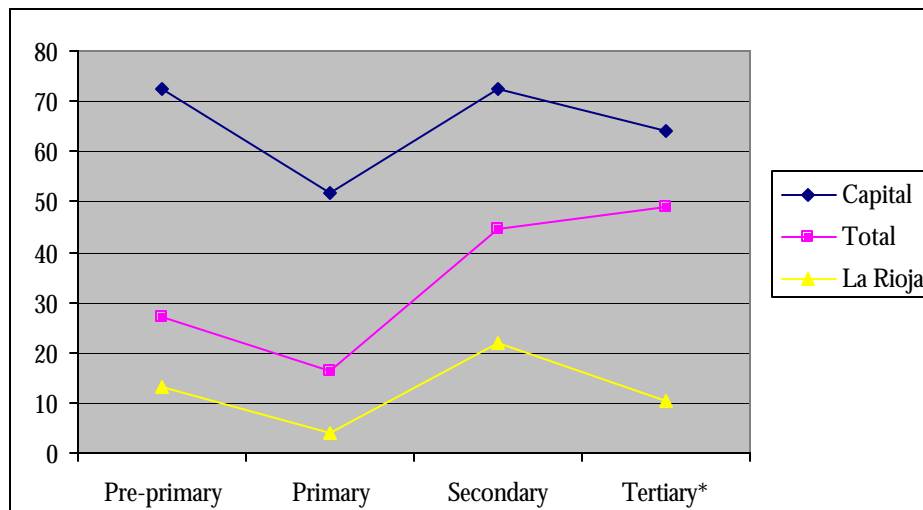
With the enactment of the *Federal Law of Education*, primary school (*Educacion General Basica*) was extended from seven to nine years with children aged six to 14 years old as the target group (World Bank, 1998, p.4). Primary schooling is mandatory and designed to provide a common basic education to all children in Argentina

Secondary education, which is referred to as *polimodal* in the *Federal Law of Education*, combines general and area-oriented education. The subjects are grouped into five different areas: (i) humanities and social sciences, (ii) natural sciences, (iii) economics and organizational administration, (iv) production of goods and services, and (v) communications, arts and design. Upon completion of the secondary level, the student is

granted a diploma, which gives access to any kind of tertiary education. The polimodal level can also be complemented/integrated with a number of technical professional courses such as electronics, agriculture, construction, and multimedia (World Bank, 2000*b*, p.8, MECyT, 2002, p.77).

The bulk of schools are public. Thus, three quarters of pre-primary institutions are public and public participation is even greater for primary institutions, where they account for approximately 85 percent. In secondary education, on the other hand, it is approximately 45 percent. In tertiary education, on the other hand, it is approximately 45 percent of all institutions in private ownership (Graph 3).

Graph 3 Distribution of private institutions by level and region 1997 (percent)



* Excl. Universities

Source: INDEC, Distribución de las unidades educativas de Educación Común

The presence of public institutions is especially strong in rural provinces. Graph 3 shows the figures for the province of La Rioja, a predominantly rural province. As can be seen the share of private institutions is less than 5 percent, and private secondary schools only account for little more than 20 percent of total secondary institutions in that particular province. In the City of Buenos Aires, by contrast, the distribution between public and private schools is almost fifty-fifty at the primary level and the share of private institutions is almost three quarters at the tertiary level (See Graph 3; INDEC, 2002).

TERTIARY EDUCATION. The tertiary sector in Argentina is divided into a university and non-university branch. The non-university branch comprises various fields: Teacher training institutions (*Institutos superiores de formación docente*), technical training (*Institutos de Formación Técnica*), art education and various “short courses” (duration 1-4 years) (Dahlman & Scherer, 2002, p.54; UNESCO, 2001, p.2).

In aggregate, the non-university sector comprises more than 1,750 institutions, which is far more than the 91 institutions in the university sector. In terms of enrollment, on the other hand, the non-university system only accounts for 25 percent of total tertiary enrollment (SPU, 2002).

As can be seen from Graph 3, a substantial part of the non-university institutions are private. Hence, following a period of notable growth in the number of private institutions, the

private sector currently accounts for 50 percent of total institutions (SPU, 2002; MECYT, 2001, p.28). Again, the share of private institutions is especially high in the capital region (64.1 percent) and very low in the province of La Rioja (10.5 percent)

The university sector currently features 91 universities (including university institutes), with a slight overweight in the number of private universities (approximately 50 to 41). This in turn reflects a considerable increase in the number of private institutions in recent years (UNESCO, 2001, p.2). Notwithstanding the high number of private universities, enrollment in public universities account for more than 85 percent of total university enrollment (SUP, 2002).

YOUNG AND ADULT EDUCATION. The concept of lifelong learning (*educacion continua*) stresses the need for learning through all life cycles by establishing a varied supply of education programs, which address the learning needs of people who are no longer part of the formal education system. Ideally, a system for lifelong learning targets young and adult people without a complete primary or secondary education as well as employed and unemployed workers, who need training in order to maintain or improve their skills.

Even though Argentina has seen an increase in the number of young and adult education programs in recent years, the bulk of them have targeted people who have not yet completed primary and secondary education (Del Bello, 2002, p.26). In consequence, very few government-sponsored programs cater to those who demand work-oriented training programs in order to stay in or join the work force (EUI, 2001, p.15)

PRIMARY AND SECONDARY EDUCATION

MANAGEMENT

The powers and responsibilities of the Ministry for Education, Science, and Technology (*Ministerio de Educacion, Ciencia y Tecnologia*, MECyT) have been changed following the 1992 enactment of the *Law of Transference of Educational Services*, which, for fiscal reasons mainly, transferred the full responsibility for secondary education to the provinces (Winkler & Gershberg, 2000, p.10). The law did not mark a complete change with the past, but completed a gradual transfer of responsibility to the provinces, which had been underway for several years (Galiani & Schargrodsky, 2000, p.284). Thus, primary schools were transferred to the provinces back in 1978 along with some secondary schools (MECyT, 2001, p9f).

In consequence, the provinces are today responsible for 90 percent of total education spending, which includes curriculum and day-to-day tasks such as personnel management, maintenance and books (World Bank, 2000a, p.22; PREAL, 2001, p.17). MECyT, for its part, is still responsible for the overall budget and policies on primary and secondary education. MECyT is also responsible for monitoring, evaluation and statistics (through IDECE), and the subsequent distribution of these data. Finally, MECyT participates, in cooperation with the provincial governments, in the development of strategies to improve equity and quality in the education system (World Bank, 2002c, p.23). As pointed out by Winkler and Gershberg (2000, p.7) the current division of labor between MECyT and the provincial ministries of education is unique, seeing that no other LAC country has concentrated so much decision-making power at the regional level.

According to a study by Galiani & Schargrodsky (2002), decentralization in Argentina has, on balance, resulted in better performance of students in public schools. The reason why this has happened is not clear though. As they point out in their article, decentralization is basically a trade-off between various interests (see also Winkler and Gershberg, 2000). In favor of decentralization counts the fact that it promotes flexibility and sensitivity to local conditions (Galiani & Schargrodsky, 2002; see also IDB in Murillo, 1999, p.34). It remains questionable though whether this has been the case in Argentina, seeing that education has been transferred to the provinces rather than the municipalities or the schools themselves (Winkler & Gershberg, 2000, p.15). In fact, most of the Argentine provinces are quite large, and the distance between administration and pupils therefore remains significant.

Against decentralization, it has been pointed out that local officials may be subject to capture by local elites. Another argument stresses the fact that local bureaucracies may be lacking in experience and manpower, which in turn makes it difficult, in the short run at least, to manage new areas. Still, capture by local interests, for example, is not more likely to happen in a province with several million inhabitants. Also, provided that transfer of responsibilities is associated with transfer of funds (which was the case in Argentina), it is not clear why provinces, should be less competent than the central government. Still, there is no doubt that the provinces have been exposed to a significant administrative load, which for some provinces has been overwhelming. For example, even though the Buenos Aires provincial government did maintain a high number of officials in the *Dirección General de Cultura y Educación* (DGCyE) during the transfer, it nevertheless lacked expertise in a wide number of areas (World Bank, 2000b, p.7). More systematic evidence is presented by Galiani & Schargrodsky (2000). They find that the effects of decentralization are negligible in provinces, which have a significant fiscal deficit (a proxy for administrative capacity), whereas the effects are positive in provinces that run a balanced budget.

UNIONS. The teacher population is organized in unions, such as CTERA, which has been quite articulate over the years and has, for example, organized frequent strikes. Still, as pointed out by Murillo (1999) the influence of teacher unions in Argentina has been relatively modest due to a number of reasons. First of all, teacher organization in Argentina has been relatively fragmented. In consequence, no union has been able to credibly guarantee worker restraint in exchange for government concessions. Secondly, the most representative organizations have been associated with parties in opposition to the Justicialista party, which in turn has made it difficult for them to access the administration throughout most of the 1990s (Murillo, 1999). For example, the Menem administration tended to neglect the unions when the education sector was subject to decentralization in the early 1990s.

INPUT

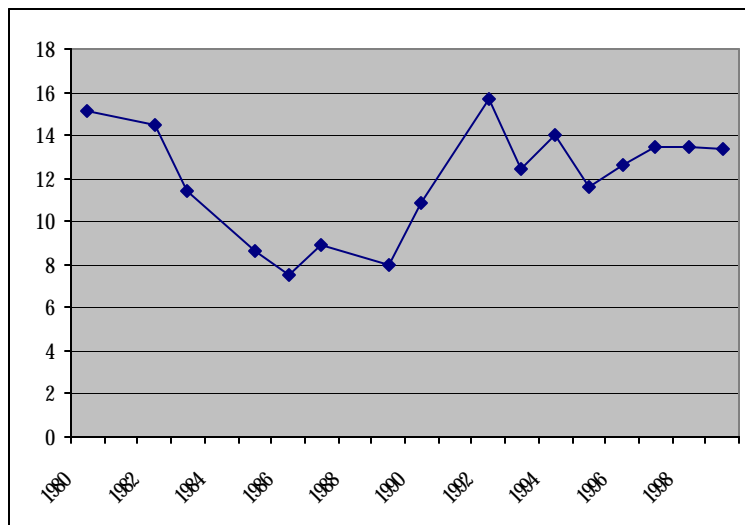
This section will focus solely on trends in public expenditure, seeing that the public sector is responsible for the bulk of educational expenditure in Argentina. In 1998 for example, public expenditure for education amounted to approximately 85 percent of total expenditure (IDECE, 1999).

Educational expenditure in Argentina has on several occasions been subject to cuts in the wake of major economic crises. For example, educational expenditure at the primary level dropped more than 60 percent in the period 1979-1985, and between 40 and 50 percent for

secondary and tertiary education. In consequence, the current crisis has also induced many people to fear that new spending cuts are under way (Gaudin, 2002).

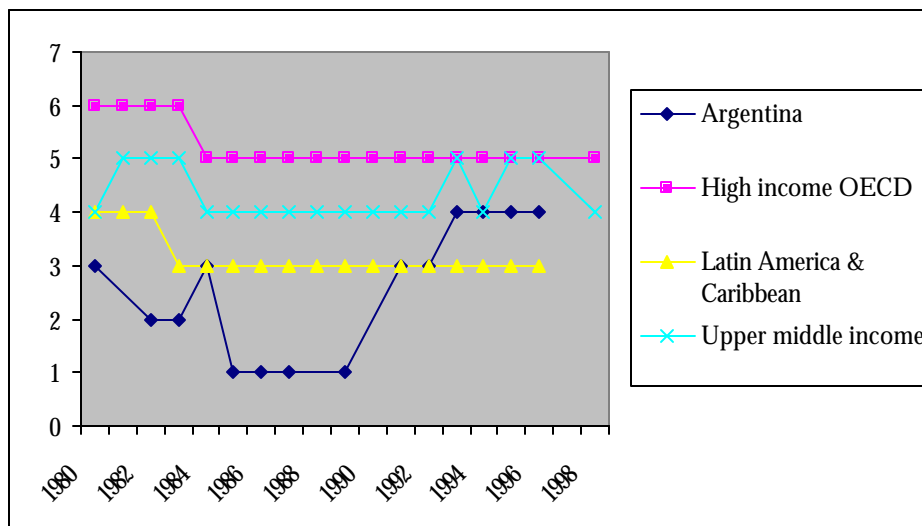
Whereas the implications of the current crisis are uncertain, it can be concluded that public expenditure for education has been increasing steadily since the mid 1980s. Graph 4, for example, shows that expenditures have increased steadily since the late 1980s as share of total public expenditures. Likewise, expenditures have increased with 15 percent in real terms in the period 1993-1997 (Ministry of Economy in World Bank, 2002 *b*, p.6).

Graph 4 Public expenditure on education (percent of total public expenditure)



Source: Ministerio de Economia

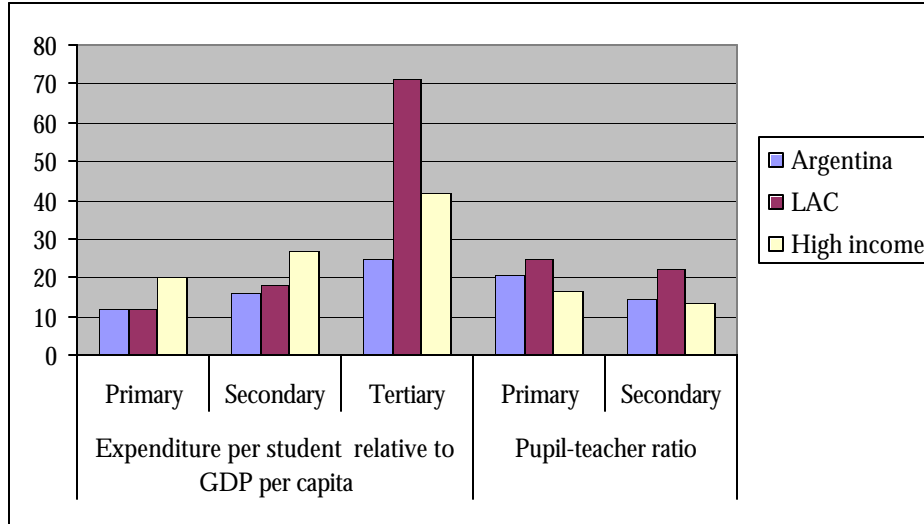
Graph 5 Public expenditure on education (percent of GDP)



Source: World Development Indicators 2002

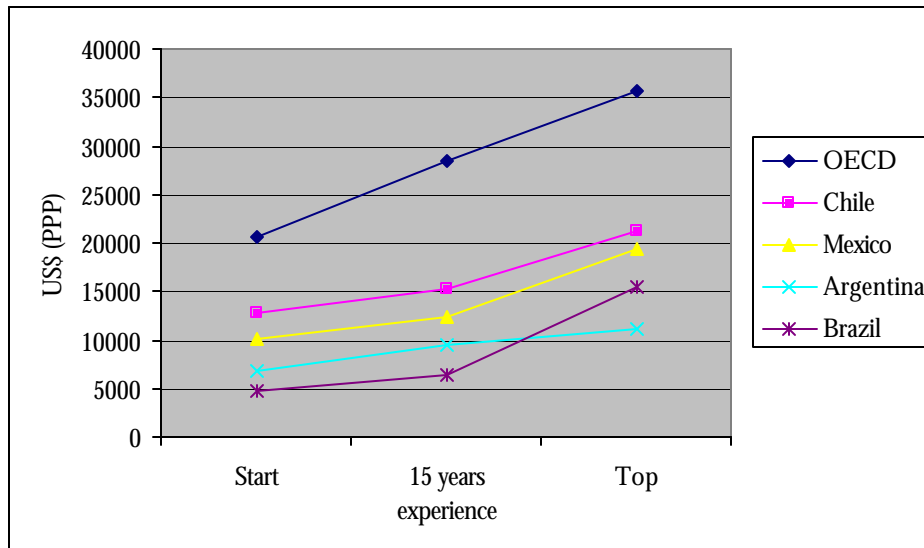
Education expenditures have also increased as share of GDP.¹ As can be seen from Graph 5, educational expenditure accounted for only 1 percent of GDP in the mid-late 1980s, a proportion far below that observed in the 1980s in the average Latin American (3 percent), upper middle income (4 percent) and high income OECD country (5 percent). However, by the mid 1990s the share of educational expenditures had increased to four percent in Argentina, which places the country at level with upper middle-income countries and slightly above the Latin American average.

Graph 6 Expenditure per student (1998) and pupil-teacher ratio (1999)



Source: OECD, 2000

Graph 7 Primary teachers' annual salaries in public institutions (US\$PPP 1998)



Source: OECD, 2000

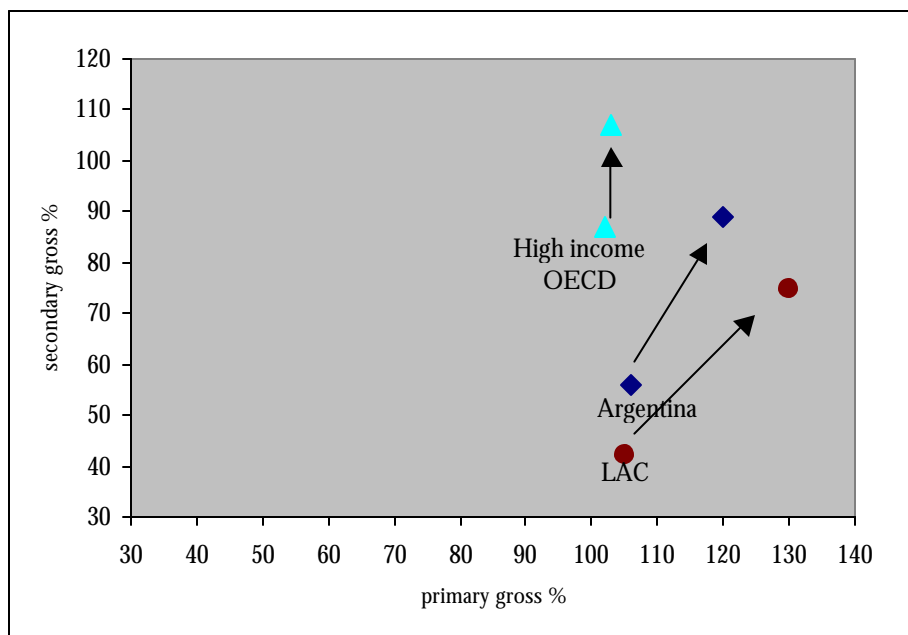
INPUT BY LEVEL. In the Latin American region, there has been a tendency to invest heavily in tertiary education at the expense of primary and secondary education. A country like Brazil, for example, spends eight times more on tertiary students than on primary students. Likewise, as can be seen from Graph 6, the average LAC country spends approximately seven times more on tertiary students. Argentina, on the other hand, has a spending pattern more in line with the average high-income country, where spending per tertiary students is only twice as high as spending per primary pupil. Clearly, it is difficult to determine the ideal ratio between basic and higher education spending, but a consolidated basic education system is a necessary precondition for a strong higher education system.

TEACHER ENDOWMENT. In primary school, Argentine teachers have 20 pupils compared to the average LAC teacher who has 25 pupils. At the secondary level, Argentine teachers teach 14 pupils on average, whereas LAC teachers must deal with 22 pupils. In fact, pupil-teacher ratios in Argentina are much more in line with the average high-income country (Graph 6). The low ratios in Argentina do not automatically imply that Argentine pupils receive better education, but it does improve chances that Argentine pupils receive better targeted instruction than the average LAC pupil.

Based on the data presented in Graph 7, teacher salaries in Argentina are somewhat behind the levels of other leading LAC economies, such as Chile and Mexico, and far behind the levels observed in the average OECD country. What is more interesting is the fact that salaries are relatively stable over the life cycle. Whereas Brazilian teachers at the top level earn significantly more than teachers at the entry level, progression is less significant in Argentina. In consequence, the teacher career is economically less attractive in Argentina – especially in the long term.

PARTICIPATION AND EQUITY

Graph 8 Primary and secondary enrollment 1980 and 1998 (gross percent)



Source: UNESCO in World Development Indicators 2002

PRIMARY EDUCATION. 1998 UNESCO data reveal a primary net enrollment rate in Argentina around 107, which is somewhat above the level observed in the LAC region and among upper middle-income countries (both 97) (UNESCO data in World Bank, 2002*b*, p.92*f*). In consequence, primary education has become universal in Argentina and almost every child enters primary education on schedule (UIS, 2001, p.40). Moreover, Argentina has the highest survival rate in the LAC region with 94 percent of pupils reaching grade five (UIS, 2001, p.43).

Unfortunately, little time-series data is available on *net* enrollment rates, which in turn makes it difficult to tell how primary enrollment in Argentina has developed in recent years. *Gross* enrollment rates can be traced over time, on the other hand. Graph 8 maps the evolution of gross primary enrollment from 1980 to 1998. It appears that gross enrollment rates have increased significantly in Argentina and the LAC region overall. Still, these high values may also be due to high repetition rates, which boost gross enrollment rates.

SECONDARY ENROLLMENT. Secondary enrollment has also seen notable progress over the years. Current net enrollment ratio is 74 percent, which is in line not only with many Central and East European countries (79 percent in Czech Republic) but also with Ireland (77 percent).

Moreover, Graph 8 shows that secondary gross enrollment rates have improved markedly in recent years. Whereas gross secondary enrollment was 56 in 1980 it had increased to 89 by 1998. Even though a high incidence of repetition may have some bearing on this development, this trend also seems to suggest a real positive change in the education system. This significant growth also means that Argentina has caught somewhat up with the levels observed in high-income OECD countries.

DESERTION. Nevertheless, secondary education remains to a large extent Argentina's Achilles heel. The major problem is low survival rates, a problem common to most LAC countries (PREAL, 2001, p.8). According to World Bank (2000*b*, p.5) the secondary graduation rate in Argentina is only 52 percent compared to about 80 percent in OECD-countries. Argentine survival rates also lag most middle-income countries (UIS, 2001).

Economy is one of the key reasons why secondary survival rates are low. In fact, almost half of the pupils who drop out of secondary school do so for economic reasons according to UNIECF (UNICEF in Gaudin, 2002, p.36). Seeing that the current economic crisis has caused the government to cut down on expenses to salaries, school food programs and stipends, dropout rates are expected to remain high (Gaudin, 2002).

Still, secondary desertion rates are influenced by other factors than economy. Marchionni & Sosa Escudero (2002) analyze the determinants of secondary attendance in the Gran Buenos Aires area. In addition to family income, they find the following variables to be positively related with secondary attendance and completion: Parent's level of education and a small number of sisters and brothers. Moreover they find children of legally wed parents and children in nuclear families to be more likely to complete secondary education (Marchionni & Sosa Escudero, 2002, p.20). Low student motivation and student perception of secondary education as being irrelevant to the needs of the economy have also been stressed as significant variables, even though the skill premium for secondary graduates has been rising relative to primary education (World Bank, 1998, p.4 and 2000*b*, p.5).

EQUITY. Even though secondary graduation rates are low compared to most high-income countries, the graduation rates for the top income deciles compare well to most high-income countries. According to data from the Interamerican Development Bank (IDB), more than 90 percent of the richest income decile completes secondary education, a fraction that stands in sharp contrast to the lowest income decile's graduation rate at 13 percent (PREAL, 2001, p.31; see also World Bank, 2002a, p.12 and 2000b, p.9). This, in turn, calls for little surprise seeing that economy plays a large role in young people's decision to attend secondary education.

Moreover, as pointed out in World Bank (2000a, p.12), rates of return are probably lower for individuals with poor parents. Thus, even though secondary enrollment rates have increased overall, they have actually *decreased* for the poorest income groups as a result of their lower return rates.

POLICY. In response to the high desertion rates among lower income groups in secondary education, the government has launched a number of initiatives. The *Jornada Completa* program, for example, has been launched to target the "youth-at-risk" population (World Bank, 2000b, p.9). Likewise, the *Plan Social* was created within the framework of the Federal Education Law to support the poorest schools (mostly in rural areas) through the provision of books and teacher training (MECyT, 2001, p. 57).

These efforts notwithstanding, it is generally perceived that the authorities have had little success in increasing secondary enrollment rates among the poorest segments of the population. Even though some of the projects may have been successful in meeting their immediate objectives, no widespread change has been achieved. Moreover, the initiatives have in some cases been unsuccessful due to lack of administrative capacity. As pointed out in World Bank (1998, p.3) for example the provinces have been unable to efficiently target social assistance to the poorest sections of the population.

Moreover, evaluations from the National Program of Student Scholarships indicate that the current supply of scholarships for secondary schools is far from adequate. Thus, the reports show that only about 40 percent of the potential recipients actually receive scholarships (MECyT, 2001, p.53). Lack of scholarships could to some extent be due to a "substitution effect", which allegedly has caused provinces to shift funds away from education, as the central government increases the transfer of education resources to the provinces.

QUALITY

This section will review the available data on quality of education in Argentina and subsequently analyze the Argentine performance. As the sections above have demonstrated, Argentina features one of the most educated populations in the Latin American region in terms of years of schooling. Still, as pointed out in the introductory chapter, the Argentine population may be less competitive once quality and relevance is taken into account. For example, a 1993 survey of the quality of secondary education in Argentina revealed that 40 percent of secondary graduates did not read and write in accordance with acceptable standards (World Bank, 1998, p.3). Likewise, a 1995 assessment characterized the Argentine education system as "a low-quality, high-spread" system.

OPERATIVO NACIONAL. With the enactment of the *Federal Law of Education*, Argentina established, for the first time, a system for monitoring the quality of education: The National Learning Assessment System (*Operativo Nacional*). The *Operativo Nacional* was set up with a

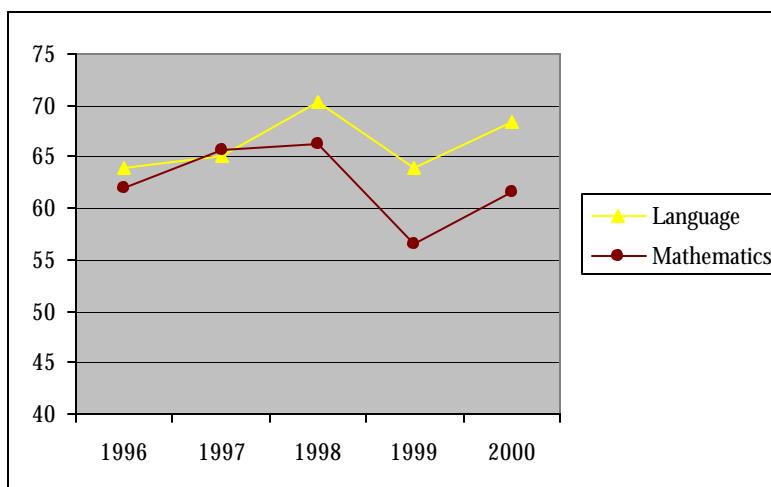
view to measure the knowledge obtained by students as they progress through the primary and secondary education system. The system, which is operated by IDECE (Instituto para el Desarrollo de la Calidad Educativa), is targeted towards pupils in the 3rd, 6th and 9th grade (primary) as well as 3rd *polimodal* (secondary) (IDECE, 2000a).

The system consists of various tests grouped by areas, such as mathematics and language. The language tests have been designed to approximate the students' conceptual understanding and reading comprehension. The mathematics tests have been constructed to estimate students' ability to solve problems, conduct mathematical operations and read graphs and tables. Still, the actual contents of the tests change on a yearly basis, which in turn makes comparison over time difficult (IDECE, 2000a, p.5). However, IDECE has published time-series data for language and mathematics performance (*resultados equiparados*), which take these changes into account. Graph 9 and Graph 11 show these results for pupils in 3rd primary, 9th primary and 3rd secondary during the period 1995 – 2000.

Coincident with the introduction of the *Operativo Nacional*, a number of initiatives were launched within the framework of the *Federal Law of Education* in order to improve the quality of education. These initiatives included targeted investments in infrastructure and pedagogic materials as well as the *Red Federal de Formación Docente Continua*, which provided for free teacher courses throughout the country (MECyT, 2002, p.61; World Bank, 2000a, p.11). Nevertheless, as the graphs below indicate (Graph 9 - Graph 11), little progress has been made with the exception of 3rd secondary where notable improvement has taken place in both language and mathematics abilities. In other words, there is no conclusive evidence that the *Federal Law of Education* has helped improve the quality of education in Argentina.

Extracts from the 1999 *Operativo Nacional* reveal a marked difference between the performance of students in private and public institutions. Whereas scores for public students in 9th grade averaged 55 for language and mathematics, private students at the equivalent level scored approximately 15 points higher. The data also show significant regional variation. Whereas math achievement in the City of Buenos Aires averaged 68 in 1999, a large number of Northern provinces scored less than 50 (Catamarca, Jujuy, La Rioja, Santiago del Estero, Chaco and Formosa).

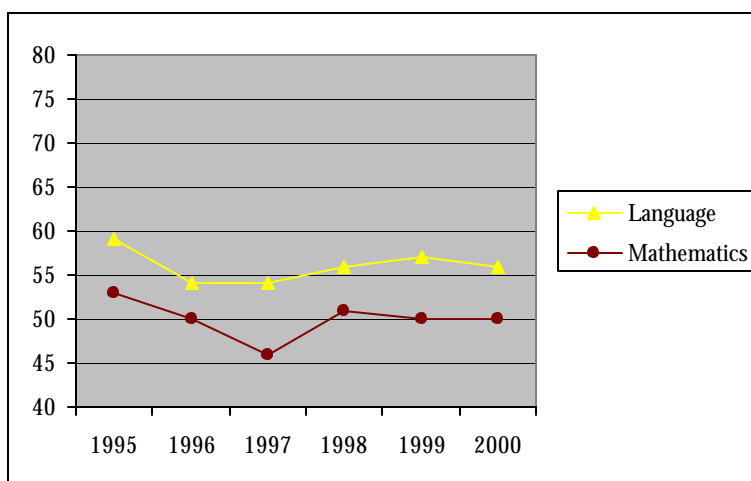
Graph 9 Language and Mathematics Skills, 3^o EGB



Note: Data reflect percentage (average) of correctly answered questions in the test. Original data has been adjusted to correct for variation in degree of difficulty of tests. Data is based on entire population.

Source: IDECE, 2000c

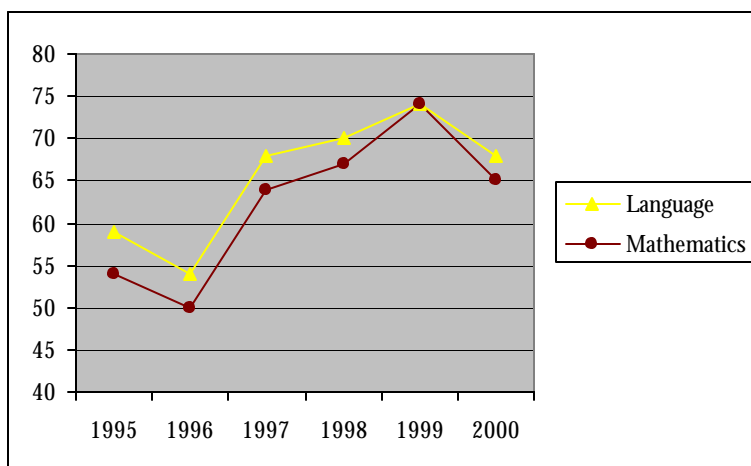
Graph 10 Language and Mathematics Skills, 9º EGB



Note: Data reflect percentage (average) of correctly answered questions in the test. Original data has been adjusted to correct for variation in degree of difficulty of tests. Data is based on entire population.

Source: IDECE, 2000a

Graph 11 Language and Mathematics Skills 3º polimodal

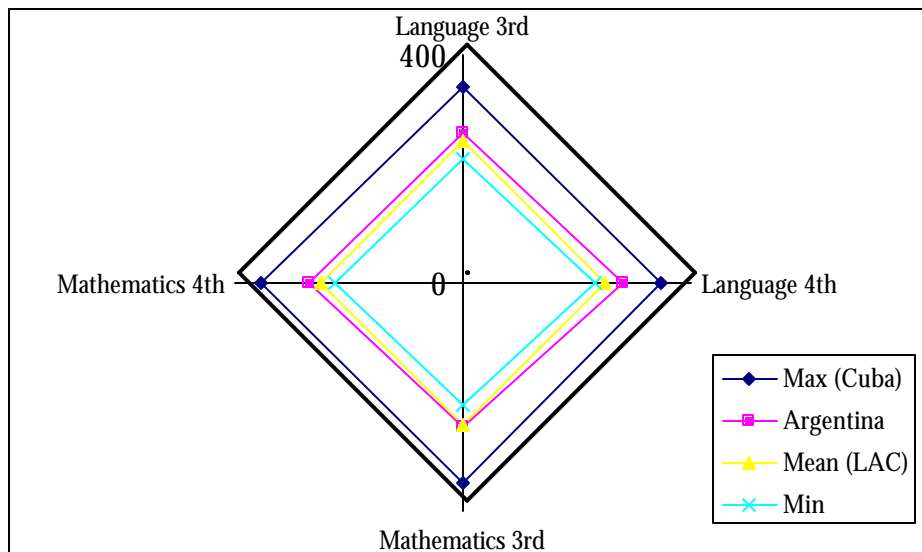


Note: Data reflect percentage (average) of correctly answered questions in the test. Original data has been adjusted to correct for variation in degree of difficulty of tests. Data is based on a sample of 3º polimodal students.

Source: IDECE, 2000^a

INTERNATIONAL TESTS AND SURVEYS. Like most LAC countries, Argentina has little tradition for participating in international learning assessments. One of the only major international tests including Argentina is the 1997 UNESCO comparative study of language and mathematics skills in primary school throughout the LAC region. According to the assessment, which is based on the performance of third and fourth year students (primary school) in thirteen LAC countries, Argentina is clearly one of the better performing countries in the region (see Graph 12). Thus, Argentina emerges in the very top together with countries like Brazil and Chile in terms of language as well as mathematics achievement. Still, Cuba outperforms all other countries in the sample by at least one standard deviation. Consistent with the findings of the *Operativo Nacional*, a breakdown of the UNECO results shows that students in private schools perform significantly better than pupils in public schools. This does not necessarily imply that private schools do a better job than public schools, since children from higher income levels (with stronger resources behind them) are more likely to enter private schools.

Graph 12 Student scores in Language and Mathematics 3rd and 4th grade



Source: UNESCO, 1998

Survey-data on the quality of education in Argentina is available through *Latinobarometro*, who have asked respondents throughout Latin America to appraise the quality of their education systems. The 1998 survey revealed that the Argentines perceive their primary and secondary education system to be of a rather low standard. In fact, the Argentine education system received one of the worst ratings (“rather deficient”) in the entire LAC region, only second to the appraisal of the Venezuelan basic education system (*Latinobarometro* according to Arellano, 2001, p.75).

The available data leave a mixed picture. Clearly, Argentina is doing reasonable well in a regional context. The question is, however, whether Argentina’s basic education system is competitive on a more global scale. A number of indications suggest that this is not the case. Firstly, the *Latinobarometro* data suggest that the basic education system is considered inadequate by the Argentines themselves. Secondly, no real improvement can be observed over the last five years according to the data provided from the *Operativo Nacional*. Therefore,

quality of education appears to be insufficient on balance. However, more firm conclusions can be drawn once internationally comparable data is made available.²

A NUMBER OF FACTORS have an impact upon the quality of education in Argentina and its performance in recent years. Still, the overall spending level does not seem to be associated with the level of quality. Hence, the "input" section demonstrated that funding for primary and secondary education has been on the rise in recent years. Nevertheless, no tangible quality improvement is noticeable.

The low quality of the teacher education, on the other hand, may help explain why student performance is stagnating in Argentina (See the "Input" section on p.7 and Dahlman & Scherer, 2002). Another parameter with significant impact upon student achievement is the level of teacher salaries, or more specifically, the degree to which teachers perceive their salaries as sufficient (UNESCO, 2002, p.34). As the data in the "Input" section demonstrated teacher salaries are relatively low in Argentine – and show little tendency to increase over the life cycle. The implications of insufficient teacher compensation can be severe. As pointed out by PREAL (2001, p.21) low teacher compensation makes it difficult to attract and retain the most qualified candidates. At the same time, low payment and rigid reward structures reduces the incentive to perform.

Differences in teacher salaries may also help explain why private schools do better than public schools. The best candidates are recruited to private schools, which in turn leaves the poorest sections of the pupils with the least skilled teachers (PREAL, 2001, p.21).

Insufficient spending on goods and services, such as classroom equipment, may also contribute to keeping quality levels low in Argentina. According to UNESCO (2002) lack of investment in school-related factors is one of the key reasons why educational quality in the basic education system remains low. Thus, based on the 1997 regional survey by UNESCO, it turns out that student perception of the classroom environment is one of the key factors in explaining student achievement (UNESCO, 2002, p.14). World Bank (1998, p.5) suggests that educational spending in Argentina has been unbalanced: Spending on goods and services take up 3 percent of total educational expenditure, whereas OECD-countries spend 8-10 percent of their education budget on goods and services. Infrastructure investment may also help explain why private schools do a better job than public schools. As the section on relevance will show, for example, private schools invest heavily in modern technologies, whereas penetration in the public sector is low. However, great efforts have been done to increase the number of buildings and improve the quality of school equipment in public schools (MECYT, 2001, p.37f).

A number of institutional factors may also have bearing on the quality of education in Argentina. First of all, lack of administrative capacity and experience in the provincial governments may contribute to the problem. The data presented by Galiani & Schargrotsky for example, suggest this is the case (see the "management" section on p.6-7 above).

The effects of decentralization are less clear. As pointed out in the 'management' section, Galiani and Schargrotsky found decentralization to improve quality, especially in the case of administratively strong provinces. Their study is confined to secondary schools, where, according to Graph 11, student achievement has improved significantly in the latter half of the 1990s. Seeing that the transfer of secondary schools to the provinces was completed in 1994, decentralization may have had some impact upon student performance. The effects on quality in primary school are less clear though, seeing that no time-series data is available for

primary student performance in the period following the transfer of primary schools to the provinces in 1978. Still, it cannot be ruled out that the 1992 decentralization had a more positive impact, that the 1978 transfer, seeing that the provincial governments had accumulated substantial administrative experience following the first decentralization wave. In consequence, there is no clear evidence *against* the assumption that decentralization promotes quality in Argentina, but, at the same time, more data is needed to confirm whether there is a *positive* relationship.

Lack of teacher autonomy, on the other hand, may have kept quality levels low overall. As pointed out by UNESCO (2002, p.19) and Eskeland & Filmer (2002) teacher autonomy is a key factor, which improves the rent available to local schools, motivates teacher performance and thereby also student achievement. In the case of Chile, for example, Vegas (2002) found that teacher autonomy increased student performance, where it was coupled with decentralization. In the case of Argentina, Eskeland and Filmer (2002) found school autonomy to improve student performance in schools, which at the same time allowed for extensive parental participation and decision-making. The problem is, however, that school autonomy in Argentina is rather limited compared to other LAC countries such as Chile (Winkler & Gershberg, 2000, p.16).

RELEVANCE

The question of relevance is a difficult one. In the following, it will primarily be interpreted as “relevant to the needs of the economy?” and more specifically “relevant to the future development challenges of Argentina?” For example, as pointed out in the introduction, Argentina will need not only to *increase* its stock of human capital, but also *change* what is taught, if the country wants to improve its competitiveness and take actively part in the knowledge economy. In consequence, Argentina will need to stimulate so-called “higher order skills” and integrate information and communication technologies into the education system.

HIGHER-ORDER SKILLS. “Higher order skills” is a broad concept, which stresses, *inter alia*, adaptability, flexibility as well as the ability to identify and access relevant information and make independent analysis based on this data (See Del Bello, 2002, p.26). However, “higher order skills” are not prevalent in the LAC region. According to UNESCO (2002, p.13), LAC students do not “interpret that which they read. They learn to read aloud, or to ‘enunciate’ texts, but they do not learn through reading”. Later in the same report, UNESCO stresses, “they [primary students] learn more to pronounce the words aloud [...] but do not know how to learn through reading” (UNESCO, 2002, p.29).

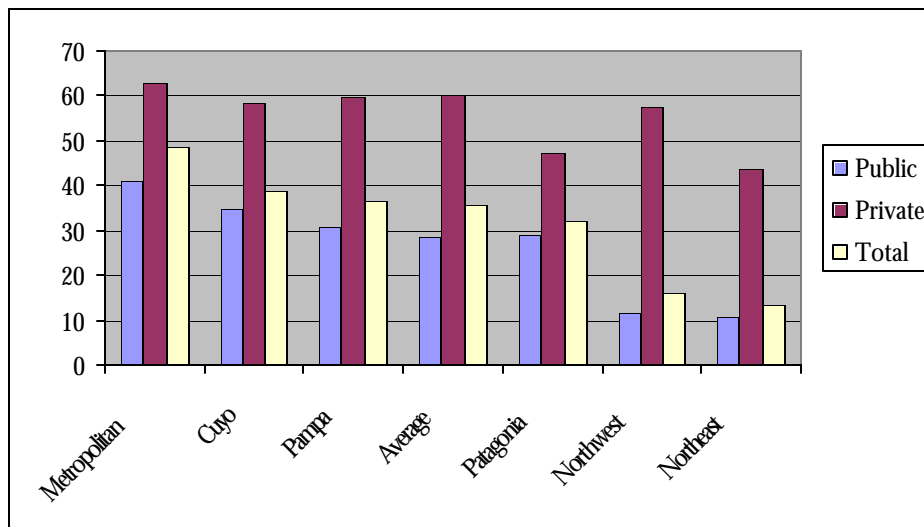
This pattern may not apply equally to all LAC countries, but surveys and analyses indicate that this is clearly the case in Argentina. For example, a survey of 6th grade indicated that teaching strategies rely excessively on rote-learning at the expense of cooperation and analytical abilities (Dahlman & Scherer, 2002, p.52f). Also, World Bank (2002) notes that the Argentine education system is, to a large extent, based on static routines rather than the development of skills in line with the needs of the knowledge economy. Moreover, breakdown of data from *Operativo Nacional* show that 6th grade students are especially poor at “problem solving”, “analysis of situations” and “interpretation of results” (45-50 points), whereas they do significantly better in more standardized fields such as “using algorithms” (69 points).

Outdated curricula may be one of the core reasons why Argentina lags behind with regard to the development of “higher order skills”. The private sector has complained, for example, about the excessive dominance of rote learning and repetition (Dahlman & Scherer, 2002, p.55). In consequence, curricula reform was one of the key objectives of the *Federal Law of Education*. Still, it is unclear whether these reforms will be successful. As pointed out in a ministerial report, the reforms were formulated with little consideration for teaching conditions and insufficient consultation with the teacher population (MECyT, 2002, p.67).

INFORMATION AND COMMUNICATIONS TECHNOLOGIES Little data is available on the ICT-skills and abilities of Argentine pupils. However, the current penetration of ICT-facilities in the basic education system gives a rough indication: approximately 36 percent of schools are connected. Connectivity is by far the highest in the metropolitan region, whereas penetration is low in rural areas, especially the northern regions (Graph 13). Large schools are also more likely to be connected (Dahlman & Scherer, 2002, n.18).

Finally, as demonstrated in Graph 13, penetration is significantly higher in private schools. This in turn suggests, that pupils from private schools are better prepared to take advantage of ICT-technologies, whereas a large proportion of pupils from public schools, especially in rural, northern areas, are unlikely to meet the demands for ICT-literate workers.

Graph 13 Penetration of IT by region and sector 1998 (percent)



Source: National Census of Educational Infrastructure according to MECYT, 2001, p.39.

However, a number of policy schemes have been initiated to increase penetration in the public schools system. *RedEs*, for example, is a program designed to link 40,000 schools in a four-year period (Dahlman & Scherer, 2002, p.60). The national education portal, Educ.Ar, is another interesting initiative, which will help Argentine students to access knowledge on-line.

TERTIARY EDUCATION

MANAGEMENT

Whereas the provinces are responsible for non-university tertiary education, universities refer to the federal government. Still, universities are predominantly autonomous. For example, the 1917 university reform (*Reforma Universitaria*) granted the Argentine public universities academic and administrative autonomy. Subsequently, university bodies (*Asambleas Universitarias* and *Consejos Superiores*) took the bulk of decisions on budgets, administration and academics (World Bank, 2002).

With the 1995 enactment of the *Higher Education Law*, university autonomy was enforced and compromised at the same time. The law enforced autonomy by ensuring continued economic and financial autarchy for the national universities. Autonomy was also extended seeing that universities were authorized to independently create new programs and careers at the undergraduate level (Del Bello, 2002, p.42). This applies particularly to fields such as social sciences, humanistic sciences and natural sciences, whereas more specific fields such as engineering, medicine and law are subject to more concrete regulations. Whereas a rather liberal regime was introduced for undergraduate studies, a more rigid regime was introduced for postgraduate studies. This reflected the fact that the number of post-graduate programs had soared in the 1980s and first part of the 1990s with little government control (Kelly, 1997).

The law compromised autonomy, on the other hand, by replacing the CAP system (*Comisión de Acreditación de Postgrados*) with CONEAU (*Consejo Nacional de Evaluación y Acreditación Universitaria*). CONEAU is the first attempt to set up a centralized and uniform system for monitoring the quality of universities in Argentina. In addition, CONEAU has been made responsible for authorizing the establishment of new universities, public and private (UNESCO, 2001, p.2; Del Bello, 2002, p.39). Apart from the establishment of CONEAU, the *Higher Education Law* also compromised autonomy by regulating various aspects of the curricula such as the length of various BA careers and, as mentioned above, introducing tighter control with postgraduate studies.

Despite the establishment of CONEAU and other central regulations, autonomy remains one of the core characteristics of the Argentine university system. Nevertheless, the question of university autonomy remains subject to intense debate between state, market and the universities themselves.

The universities, for their part, are interested in preserving and maximizing their autonomy and decision-making power. However, autonomy has its drawbacks seen from the viewpoints of the state. For example, autonomy makes it difficult for the federal government to monitor universities and enforce common standards and policies (Del Bello, 2002, p.33). Thus, the federal government cannot change the academic orientation of the universities under the present regime, nor can it enforce administrative standards and practices. This has, resulted in mismanagement in some universities. In consequence, the Parliament has established CONEAU and the Ministry with support from the universities are introducing more transparent management tools such standardized information systems. These efforts can to some extent be seen as a small victory for the federal government (Pacitti, 2002*b*; see also Petty, 1995). Still, there is no clear evidence that improved centralized capacity will improve management and eradicate inefficient use of resources.

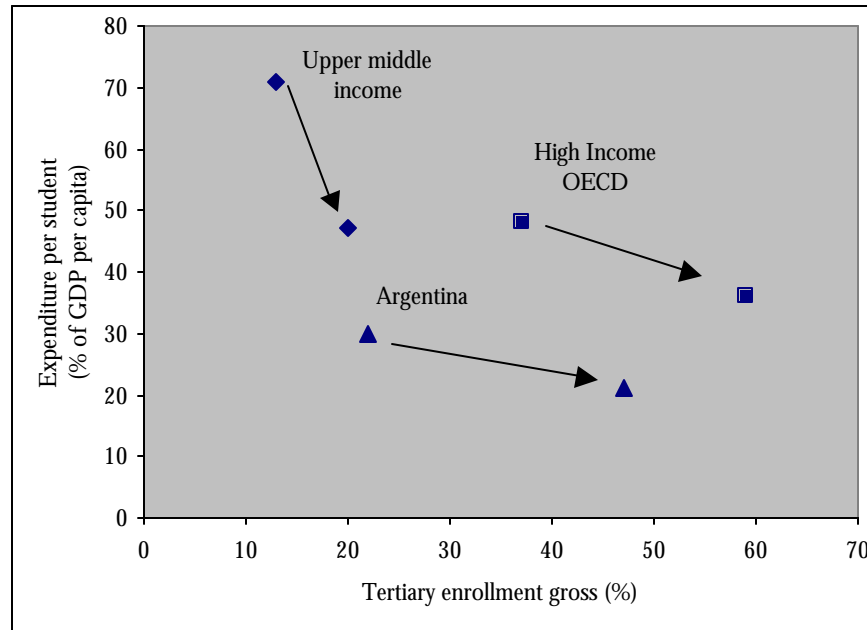
Seen from the viewpoint of the market, the preference goes towards increasing responsiveness to the needs of the economy. However, it is unclear whether university autonomy is preferable in this connection. Dahlman & Scherer (2002) stress, for example, that increased autonomy would lead to higher responsiveness to the needs of the market. Still, this depends to a great deal on the orientation of university management. If narrow academic interests dominate university bodies, university autonomy may just as well remove focus further from the economy's needs. By contrast, if the central government is committed to the needs of the economy, the private sector may prefer to enforce government control with the universities, rather than letting the universities drift away.

Finally, a note on private universities. Whereas CONEAU has been created to monitor the public universities, no central quality system is yet in place for private universities. In consequence, the private university sector continues to exist in a void and the absence of control may therefore cause the quality of private institutions to deteriorate (UNESCO, 2001, p.4).

INPUT

In the wake of the current crisis, the government has set forth proposals to cut down on university expenditures. Unsurprisingly, these demands have been met with fierce resistance from the universities. According to one university representative, the former rector at the University of Buenos Aires, Oscar Schuberoff, these cuts would deal "the final blow" to the state university system.

Graph 14 Tertiary enrollment and expenditure per student, 1980 and 1996*



* Or latest year available

Source: World Development Indicators 2002

Nevertheless, expenditure for tertiary university education has increased in real terms with more than 60 percent in the period 1992-1998 (Brunner & Nogueira, 2000, p.5). Still, the

spending increase has coincided with a massive rise in tertiary enrollment in Argentina, and expenditure per tertiary student (as percentage of GDP per capita) has therefore dropped with almost one third over the past two decades. As shown in Graph 14, this is a trend common to many countries.

PARTICIPATION AND EQUITY

As pointed out above tertiary enrollment has increased significantly in Argentina over the past decades. In fact, Argentina is the strongest performer in the region in terms of tertiary enrollment, following an increase from 22 percent in 1980 to almost 50 percent by 1998 (Graph 14, see above). Of those 50 percent almost three quarters are enrolled in the tertiary university system, and the remaining 25 percent in the tertiary non-university system (MECYT, 2001, p.29).

The Argentine performance is clearly better than the average upper middle country, which saw tertiary enrollment increase from 13 to only 20 percent in the same period (Graph 14). Moreover, the rise in Argentine tertiary enrollment compares to the likes of Ireland and Spain, which saw their tertiary enrollment rate rise from 18 and 23 in 1980 to 45 and 55 in 1997. In fact, Korea is one of the only countries, which outperforms Argentina seeing that Korean tertiary enrollment increased from 15 percent in 1980 to 68 percent in 1997.

The increasing supply of secondary graduates is clearly one of the reasons why Argentina has succeeded in elevating tertiary enrollment (Del Bello, 2002, p.3). Free access, low-cost university studies and the existence of mass universities such as the *Universidad de Buenos Aires*, *Universidad de Córdoba* and *Universidad de La Plata* have also contributed to boosting tertiary enrollment. The skill premium to tertiary graduates (relative to primary graduates) has also been increasing, which in turn has increased the economic incentive to enroll in higher education (World Bank, 2002*b*, p.131 and 2000*b*, p.5).

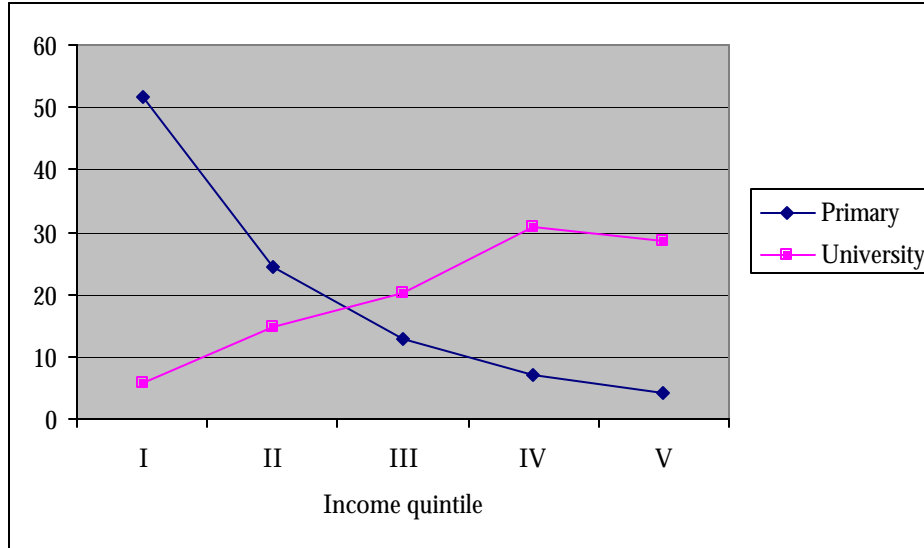
DESERTION. According to Gaudin (2002) no official statistics exist to trace university drop-out rates in Argentina. Still reports from *Universidad de la Plata* suggest that drop-out rates might be quite high in the Argentine university system. In fact, more than 30 percent of students at the university dropped out, primarily so for economic reasons (Gaudin, 2002, p.37). Likewise, Del Bello reports desertion rates in first year of the public university sector to be around 50 percent and graduation rates to be as low as 19 percent. In the private sector by contrast, the graduation rate is 40 percent, far superior to the public system (Del Bello, 2002, p.7).

High dropout rates and low graduation rates in especially the public university system suggests that the “mass university” approach has failed in the sense that it is unable to monitor and assist students in a way similar to the smaller, private universities.

High dropout rates might also suggest that the quality of teaching is poor (see p.23 below) and student motivation is low. Thus, the fact that Argentines under 21 can qualify for an extension of their parents' health insurance if they enroll in university might cause a sizable number of young people to enroll even though they have no substantial interest in studying. Once they reach the age of 21 (and no longer qualify for free insurance extensions) they are therefore likely to drop out. In consequence, these students boost enrollment and dropout rates at one and the same time.

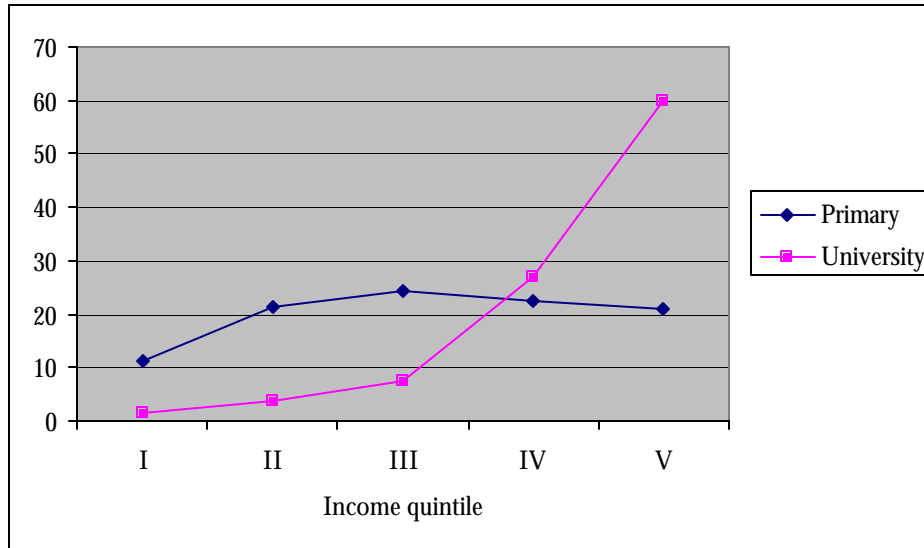
EQUITY. Tertiary enrollment is clearly biased towards the richest income groups. Graph 15 compares the income distribution of primary and tertiary enrollment in the public system.

Graph 15 Distribution of public enrollment by income level 1996 (percent)



Source: Del Bello (2002) based on Encuesta Nacional de Gasto de los Hogares

Graph 16 Distribution of private enrollment by income level 1996 (percent)



Source: Del Bello (2002) based on Encuesta Nacional de Gasto de los Hogares

Whereas the lowest income quintile account for 50 percent of enrollment in primary school, they only take up six percent of university enrollment. The richest income quintile, by contrast, accounts for less than five percent of primary enrollment, but almost 30 percent of

public university enrollment. This social bias is somewhat surprising given the fact that the public university system in Argentina maintains free access and low-cost education. However, even though university education is low-cost, it is associated with considerable costs to enroll in universities such as living costs, books, and (short term) loss of income. At the same time, the government has done little in order to improve university enrollment rates among the lower income quintiles. The main exceptions are a number of grant programs administered by various universities and a national grant program with very low coverage – 3,000 grants for 40,000 potential grantees (Del Bello, 2002, p.13).

Finally, low-income groups have a relatively weak economic incentive to enroll in tertiary education, seeing that the increasing skill premium to tertiary graduates do not apply as strongly to poor income groups (World Bank).

The social bias is even stronger in the private university system. Despite the fact that the richest income quintile takes up a little proportion of the total population, it nevertheless takes up more than 60 percent of enrollment in private universities. In comparison, the lowest income group account for less than two percent of enrollment in private universities.

QUALITY

Several accounts suggest that the Argentine system for higher education has been experiencing decaying quality standards over the last years. The 2000 CAS, for example, talks of low efficiency in public universities (World Bank, 2000a, p.ii) and the 2001 CASP notes that higher education in Argentina “remains a challenge” (World Bank, 2001, p.14). High desertion rates, low graduation rates, decreasing costs per tertiary student and towering unemployment rates likewise indicate that quality standards are low. Nevertheless, no conclusive evidence exists to support these assumptions. In consequence, reports of low quality are mainly based on proxies and symptoms rather than hard evidence. Nevertheless, the abundance of “low quality” reports seems to support the assumption that higher education in Argentina is in need of a quality lift.

On the other hand, there is little evidence available to support the assumption that quality is better in either private or public institutions, even though desertion rates are far higher in the public system, which in turn suggests that quality is lower in public universities. However, this contrasts with the fact that graduates from private and public institutions have equal job opportunities (Del Bello, 2002, p.7).

Whereas little data exist to trace the quality of higher education in Argentina, many reports and indicators can be used to explain why quality is low. As already noted in the “input” section (see p. 20 above) spending for tertiary education in Argentina has been dropping in terms of “per student costs” even though the total budget has increased (see Graph 14 above). Clearly, the surge in tertiary enrollment has not been met with an equivalent rise in expenditures, which in turn has made it difficult for the system to maintain, let alone improve, quality standards. Unfortunately, it will be extremely difficult for the government under the current conditions to increase tertiary per-student costs further.

The teacher/professor endowment is another factor, which has significant bearing on the quality situation. 1997 data on faculty staff in public universities reveal that 12 percent of Argentine faculty staff has a doctoral degree (World Bank, 1999b, p.36). According to data in Del Bello (2002, p.53) the share of faculty staff with a postgraduate degree may even be less than 6 percent. Other LAC countries do remarkably better. In Costa Rica, for example, the

share is 17 percent and in Brazil as much as 20 percent of faculty staff have a doctoral degree. Moreover, the share observed in Brazil seriously trails most high-income OECD countries (World Bank, 1999b, p.36).

The ability to attract and withhold the best-qualified teaching personnel may also be reduced by the low pay offered to university professors in Argentina. In consequence, many young candidates look elsewhere for jobs, which has implied that the average age of university professors has been increasing in recent years. This in turn implies that an aging population of professors, who have been criticized for lack of willingness to revise curriculum, controls many faculties.

Lack of competition is another factor, which may help explain why quality standards are low or even decaying. As Del Bello (2002, p.35) points out the environment in many Argentine universities is uncompetitive and indifferent to the strategic importance of research and development, a situation, which is unlikely to change as long as old faculty staff remain in control of the universities.

Still, the introduction of FOMECA (*Fondo para el Mejoramiento de la Calidad*) is a promising development, which might help introduce competitive measures into the university system (Del Bello, 2002, p.25). In theory, Argentine universities are funded through three different channels: (i) Fixed allocations, (ii) allocations based on attendance/graduation, and (iii) funds allocated on a competitive basis. FOMECA belongs to the latter category, which otherwise has been neglected in Argentina. More precisely, FOMECA is a competitive fund designed to support the ongoing reform of the Argentine university sector. It does so by supporting projects developed and proposed by the universities themselves. These projects typically target the need for reforming curriculum and study plans as well as updating equipment and skills of university faculty. During its first five years (1995-2000) the fund granted, *inter alia*, 1,700 postgraduate scholarships, supported 37 university libraries, and invested almost US\$ 175 millions in infrastructure, books and human resources (Brunner & Nogueira, 2000, p.6).

It is expected that FOMECA will induce university staff to be more focused on performance and relevance in the future. So far, Brunner & Nogueira (2000) conclude in a preliminary evaluation, that FOMECA has been successful in generating reforms with high ownership. The program has been especially successful in increasing the skills of university faculty and supporting the modernization of university equipment and libraries as well as university administration. These achievements notwithstanding, Brunner & Nogueira (2000, p.45f) question the sustainability of the program as well as its ability to identify institutional flaws and address them in an effective manner. Thus, in a worst case scenario the fund will develop into a time-limited intervention, which represents nothing but another line of university funding. In a best case scenario, by contrast, the fund will develop into a long-term intervention, which unlike other existing channels, will be successful in sustaining institutional change in the university sector.

Finally, ineffective management of the higher education sector may also have contributed to insufficient quality standards. As noted in the "management" section (see p19 above) no quality framework has been in place to monitor the performance of higher education institutions and enforce common quality standards. Hence, the higher education sector has developed into a sector, where quality differs widely between the different suppliers, depending on the administrative capacity of the universities and their ability to attract

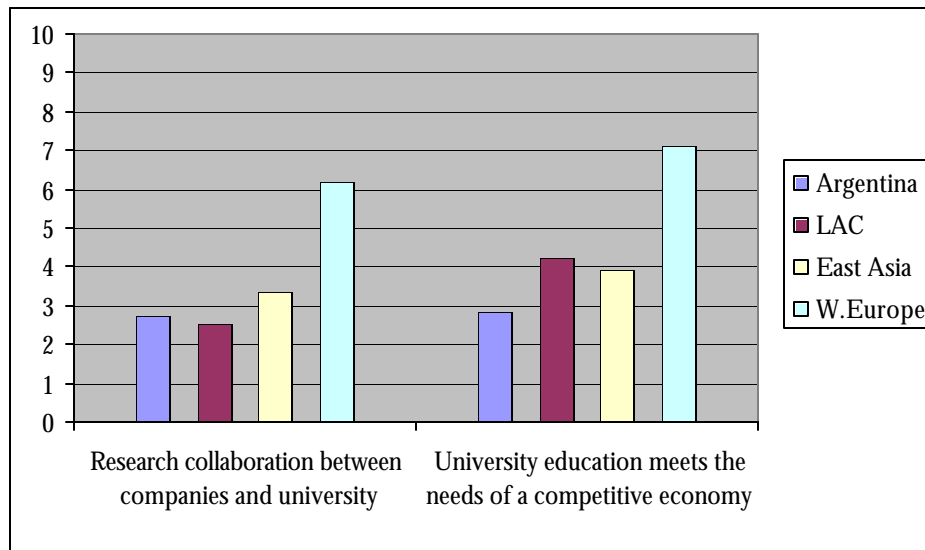
qualified teaching personnel. Moreover, lack of external evaluations has made it difficult for students to choose between the different institutions. In consequence, the recent creation of CONEAU represents a welcome change, but it remains to be seen whether its creation will help bring about a real quality lift in the public university sector.

RELEVANCE

As pointed out in the section on the primary and secondary system, “relevance” is in the present context interpreted as relevant “to the needs of the economy?” and relevant “to the demands of the knowledge economy?” This section will address these questions by looking at a number of surveys of Argentine business executives and subsequently look into the Argentine supply of graduates.

The data in Graph 17 illustrate the perception of Argentine business executives with regard to two issues, which reflect the pertinence of higher education in Argentina. The first question deals with prevalence of research collaboration in Argentina. This is not an exact measure of the level of relevance in the university system, but given the assumption that a relevant university system will lead to increased collaboration with the private sector, it can be used as a proxy for relevance. As the graph shows Argentina is doing slightly better than the average LAC country but is somewhat behind the level observed in East Asia. At the same time, the universities in the Western European countries clearly outperform the rest of the sample with regard to collaboration with the private sector. In consequence, Argentina is doing reasonably well compared to most LAC and East Asian countries but is at a clear disadvantage compared to countries in Western Europe.

Graph 17 Relevance of tertiary education



Note: Data has been collected through surveys by the World Economic Forum and the Institute for Management Development. Values have been normalized to fit a 1-10 scale, where ten indicates a high level of collaboration and relevance

Source: World Economic Forum and the Institute for Management Development

The other issue on display in Graph 17 asks directly to the relevance of the university system to the economy. On this indicator, Argentina’s performance is very weak. Thus, the score

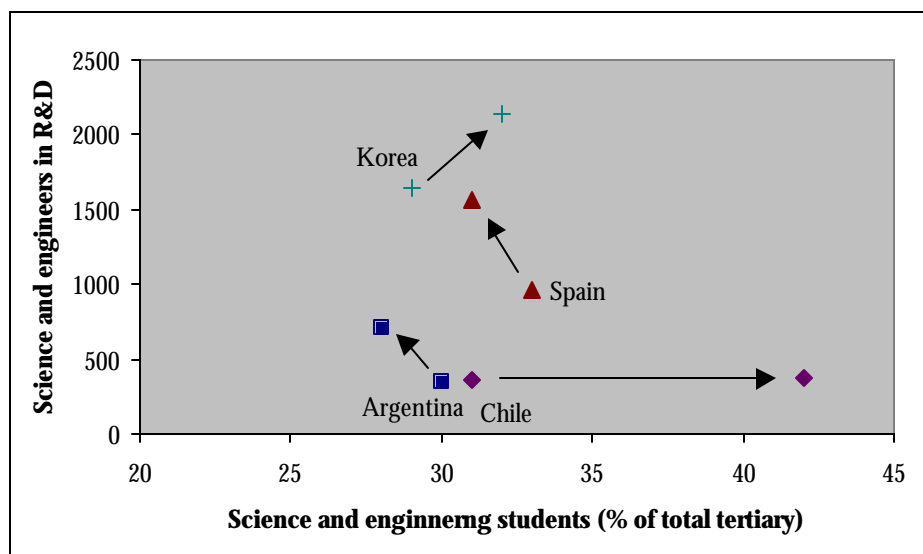
afforded to Argentina is markedly behind the average LAC and East Asian score and far behind the score observed in Western European countries. In consequence, the Argentine university system does not appear to meet the needs of the economy.

SUPPLY AND DEMAND BY AREA. There seems to be a mismatch between the supply of certain university graduates and the demands of the economy. Some careers turn out vast numbers of graduates even though no demand is present in the economy. This is the case for medical careers, for example. Hence, more than 60,000 students are set to join the current stock of 90,000 qualified doctors. In consequence, Argentina features more doctors per 1,000 people than the United States for example, and the government has therefore undertaken to restrict entry into medical school (Del Bello, 2002, p.11). The turnover of lawyers and teachers is likewise high, even though there has been no demand for an increase.

By contrast, other careers are in undersupply. Matriculation in engineering is deemed too low, for example (Pacitti, 2001). As can be seen in Graph 18, enrollment in science and engineering has gone slightly back over the past decade whereas Argentina's neighbor, Chile, has managed to increase science and engineering enrollment significantly.

In terms of scientists and engineers in research and development (R&D), by contrast, Argentina clearly outperforms Chile following a significant increase over the past ten years (Graph 18). Still, the Argentine endowment is far behind the levels of Spain and Korea, which likewise have seen the number of scientists and engineers in R&D increase significantly since the late 1980s. Dahlman & Scherer (2002, p.29) take the position that

Graph 18 Scientists and engineers 1988 and 1998*



* Or latest year available

Source: World Development Indicators 2002

Argentina suffers from an oversupply of researchers, seeing that the private sector demand for R&D personnel is negligible. As they point out, the Argentine enterprise sector has a tradition for systematically neglecting the importance of research and development activities. In consequence, the recent increase in the stock of R&D personnel has not been met by demand and can therefore not be seen as relevant to the economy. Still, the question remains

whether a supply-driven expansion of R&D personnel can, in the long term, stimulate demand for R&D in the private sector?

CONCENTRATION. A different discussion has to do with the geographical distribution of graduates. In theory, the university system should be able to meet the development needs of the entire country. Nevertheless, the supply of university graduates is extremely high in the capital region, whereas supply is negligible in other parts of the country. The high concentration in the capital region is chiefly due to the fact that two of the biggest universities, *Universidad de Buenos Aires* and the *Universidad Nacional de la Plata*, are located in or around the Gran Buenos Aires area together with a number of new universities such as the *Universidad de Lanus* and the *Universidad de Lomas de Zamora*. Also, there is a high concentration of private universities, especially in Buenos Aires city. This leads to oversupply of professionals and graduates in the Gran Buenos Aires area, whereas other, more remote parts of the country find it difficult to attract skilled labor.

POLICY. A number of policies and strategies can be used to increase the relevance of tertiary education in Argentina. First of all, it is critical to increase the interface between the universities and the economy. As noted above, the environment in many universities is somewhat closed and unresponsive to external conditions. In consequence, university exposure to the needs of the economy should be strengthened.

Exposure to the needs of the economy can be promoted by strengthening labor mobility between the universities and the private sector. This in turn requires a change of mindset in both sectors. Still, policymakers can make a significant contribution by setting up framework conditions, which allow university personnel to benefit economically from cooperation with the private sector. Matching grants, which will allow private sector companies to attract university researchers, are also worth considering.

Secondly, the government must provide for grants, incentives (and restrictions?), which will induce students to enroll in fields where the need is greatest. This is obviously a difficult task seeing that it to some extent conflicts with the principle of university autonomy.

Finally, internationalization represents an interesting area for action, seeing that Argentina has become interdependent with the global economy. Hence, the greater the exposure of domestic universities to international currents and trends, the greater the competitiveness of Argentine graduates. Internationalization can be stimulated, *inter alia*, by promoting international student exchange through grants as well as "internationalizing" the contents and curricula of Argentine universities.

THE ADULT POPULATION

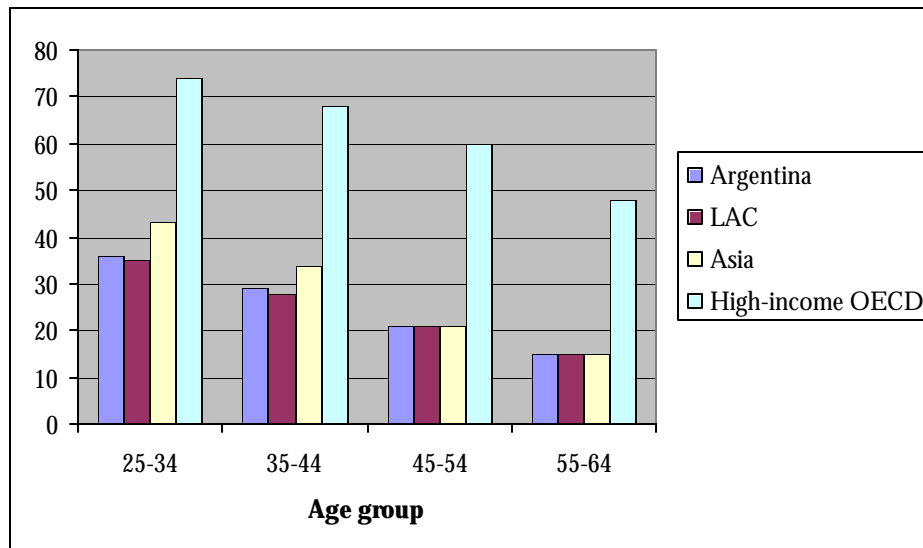
ATTAINMENT AND SKILLS

Educational attainment in Argentina tends to be higher among younger generations. The gap between young and old generations is reflected in the fact that average educational attainment for the 1930 cohort amounts to little more than seven years, whereas the 1970 cohort has attained 12 years of schooling (Behrman in Arellano, 2002, p.65). Moreover, as can be seen in Graph 19, only 15 percent among the 55-64 years have completed secondary education, whereas 36 percent of the 25-34 years old have finished secondary education.

These numbers are testimony to the recent progress of the Argentine education system, a progress, which evidently has favored the younger generations, whereas the implications for the older generations are less positive. By contrast, they have to some extent been left behind and have found it increasingly difficult to enter the labor market. As pointed out by MECyT (2001, p.59) secondary education is required by most employers today, which in turn means that a significant share of adults in Chile need to re-enter the education system in order to access the labor market.

Nevertheless, survey data from IMD suggest that Argentina has plenty of relevant skills available in its workforce. Thus, Argentina was rated number nine in a 2001 survey of 49 emerging and advanced economies, with regard to availability of skilled labor (IMD, 2001). Still, whereas this indicator suggests that Argentina has skills relevant to its economy, they do not reveal whether Argentina has skills for the *knowledge* economy. In other words, as long as the Argentine economy is dominated by low-tech, knowledge extensive production, there is no demand in the economy for new skills and highly trained personnel.

Graph 19 Population with minimum secondary education by age 1998 (percent)



Source: OECD, 2002

If Argentina, by contrast, wants to develop into a knowledge-based economy, it will have to develop new skills, such as higher-order skills and information technology skills. According to a World Economic Forum survey of Argentine executives, the quality of IT workers in Argentina is on average in a Latin American context and far behind the levels of key LAC economies such as Chile, Brazil and Costa Rica (in Arellano, 2002, p.70).

In consequence, Argentina faces a dual challenge in elevating the skills of its adult population. Firstly, it is necessary to make primary and secondary training opportunities available to young and adults, who have not completed these levels. Secondly, it is necessary to address the challenges of the knowledge economy directly by offering programs, which will enable the Argentine workforce to take advantage of the latest knowledge and technologies.

EDUCATION AND TRAINING PROGRAMS

MANAGEMENT. Education and training programs for young and adults in Argentina remain uncoupled from the rest of the education system. Whereas primary, secondary and tertiary education lies within the jurisdiction of MECyT, the responsibility for youth and adult training programs is dispersed between different authorities and coordination with MECyT is loose and unsystematic. In other words, Argentina does not feature a coherent system for lifelong learning. This loose management structure has led to the creation of what Dahlman & Scherer (2002, p.57) characterize as “second class” training system, which suffers from poor administrative capacity and lack of vision.

According to the *Federal Law of Education* (article 30), the responsibility for youth and adult training programs is shared between the public sector and private entities such as the enterprise sector. In Argentina, however, adult education has primarily been organized by the public sector, whereas the enterprise sector has been reluctant to invest in this area. In fact, Argentine companies are less inclined to invest in training and development than most other LAC countries. Countries like Brazil, Costa Rica and Chile, for example, are doing significantly better than Argentina. Also, most East and South East Asian companies have a stronger tradition for investing in staff training. Countries like Taiwan, Malaysia and Korea, for example, clearly outperform Argentina with regard to training.

A similar picture emerges from an IMD survey, which asks whether “employee training is a high priority in companies”. Again, Asian countries like Singapore and Taiwan do well just like a number of Central and East European countries (Estonia and the Slovak Republic, for example) receive a high rating. Argentina, on the other hand is rated number 40 in a sample of 50 emerging and developed economies (IMD, 2001).

PARTICIPATION AND RELEVANCE. No systematic data is available on training expenditures in Argentina. Likewise, little data is available on participation in training programs. According to data from IDECE total enrollment in adult education was by 1999 more than half a million people (534,501), which represents a 60 percent change from the 1996 level (IDECE, 1999, para.3.1 and 1996, para.5.2).

In order to further increase participation in training programs, employees and employers alike must have strong incentives to participate. Seen from the viewpoint of the employer, training programs must be relevant to the needs of the economy. This has so far not been the case in Argentina, where youth and adult training programs traditionally has focused on the need to complete primary and secondary education and less on the need for improving the skills of the work force. For example, most of the government-sponsored courses have focused on literacy and post-literacy training (MECyT, 2002, p.60). Likewise, a 2001 survey of employers by the WEF show that Argentine employers rate domestic IT training programs as mediocre, whereas executives in Costa Rica, Chile and Brazil think much more highly of their respective IT-programs. This difference also helps explain why Argentine employers have a much lower esteem for the quality of IT-workers than employers in other key LAC economies.

Seen from the employees' point of view, training programs must formally recognize the skills of workers, whether they have been attained through formal education or not. At the same time, participation must be associated with a skill premium, which links back to the question of relevance.³

POLICY. According to reports from the MECyT, the Ministry has acknowledged the need for a new strategy on youth and adult education. Consequently, Argentina is currently reforming its policy for youth and adult education, which puts extra emphasis on the need for training programs, which will increase the competitiveness of the Argentine labor force (MECyT, 2002, p.60).

CONCLUSIONS

In many ways, Argentina's education system has succeeded in creating a stock of human capital, which, by and large, meets the needs of the economy. Still, the education system has not succeeded in creating human resources, which enable Argentina to develop into a *knowledge based* economy.

Instead the economy continues to be dominated by low-tech, knowledge extensive industries, which consider the current stock of human capital as largely sufficient (as documented by IMD survey data, for example). This assumption receives further support from the fact that a large part of Argentine researchers are unable to find employment. In other words, there is no strong demand for analytical skills, flexibility and the ability to solve problems independently. And there is no supply.

Nevertheless, the fundamentals of the Argentine education system are strong: educational attainment is high and comparable to many emerging economies in the Far East as well as Central and Eastern Europe. Likewise, participation is high and the growth in tertiary enrollment, for example, equals the performance of Ireland and Spain, both of which have been very successful in stimulating economic growth and foreign investments in recent years. Also, the number of youth and adults participating in training programs has been increasing.

Nevertheless, Argentina has, in contrast to Spain and Ireland for example, seen growth rates turn negative and foreign investor confidence drop. Arguably, lack of skilled and relevant human capital has contributed to bringing this situation about, even though it is hardly the only, nor the prime reason.

The chief flaws of the Argentine education are low quality and lack of relevance. Student achievement in the basic education system has, according to the *Operativo Nacional*, stagnated and dropout rates in secondary education have been excessively high. Likewise, reports of low quality in the tertiary education system abound, and several surveys indicate that the relevance of university education in Argentina is low. The training system likewise seems to be in need of realignment

Several things can help explain this situation. Curriculum at all levels is too heavily focused on rote learning and repetition and the quality of teachers and professors is probably not adequate. Likewise, lack of investments in infrastructure has helped aggravate the situation, especially in the public sector. Flaws in the management structure have also contributed to less than desired quality standards. Some provinces for example have had insufficient experience and administrative capacity. In the university system decreasing costs per student (coincident with the emergence of mass universities) and the absence of systematic quality assessments are also part of the explanation. Lack of competition and weak university-enterprise interfaces have likewise contributed to keeping relevance low.

Even though these weaknesses cannot be repaired overnight, there is room for optimism. As already mentioned, the fundamentals are strong in terms of high enrollment and schooling. With regard to the management structure, for example, there are indications that decentralization has helped elevate quality standards in the secondary system. The introduction of CONEAU is likewise a promising initiative, which arguably will help raise quality in the university sector. Once, the results of international comparisons are published, Argentine policy makers will have a better picture of the strengths and weaknesses of the Argentine education sector and of the skills of the Argentine adult population.

Still, these efforts and initiatives need to be complemented by further actions. Teacher autonomy should be strengthened for example, while decentralization should move closer to the school level. Despite recent Government policies, teacher training is another area, which also need further support.

Finally, it is critical to strengthen the interface between education institutions and the private sector. This applies in particular to the higher education sector and training programs, where private sector relevance has been very low. As already pointed out, this calls for a change of mindset in both camps, which calls for more than simply Government policies. Still, a lot can be done through policies, which encourage and provide economic incentives for public-private cooperation.

This, in turn, seems to be the core challenge of the Argentine education system. If it can be met, there is real hope that relevance will increase, which in turn will enable the Argentine population to better meet the needs of the knowledge economy.

NOTES

¹ Expenditures relative to GDP may not be a valid measure in the case of Argentina, seeing that GDP has fluctuated significantly over the years. Thus, a rise or drop in expenditures relative to GDP may reflect a change in GDP rather than a real change in educational expenditures.

² Argentina participated in the so-called PISA-plus assessment, which estimates knowledge and skills among 15 year olds. Argentina also participated in the PIRLS (Progress in International Reading Literacy Study) study, which measures literacy achievement of fourth grade students. The results from both assessments will be released by the end of 2002 / early 2003. Argentina will also participate in the 2003 edition of the PISA survey and will join the 2003 edition of the TIMSS-assessment of mathematics and science achievement together with 52 high- and middle-income countries.

³ For more see Leigh on recent OECD experience in Dahlman & Scherer, 2002, p.58.

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