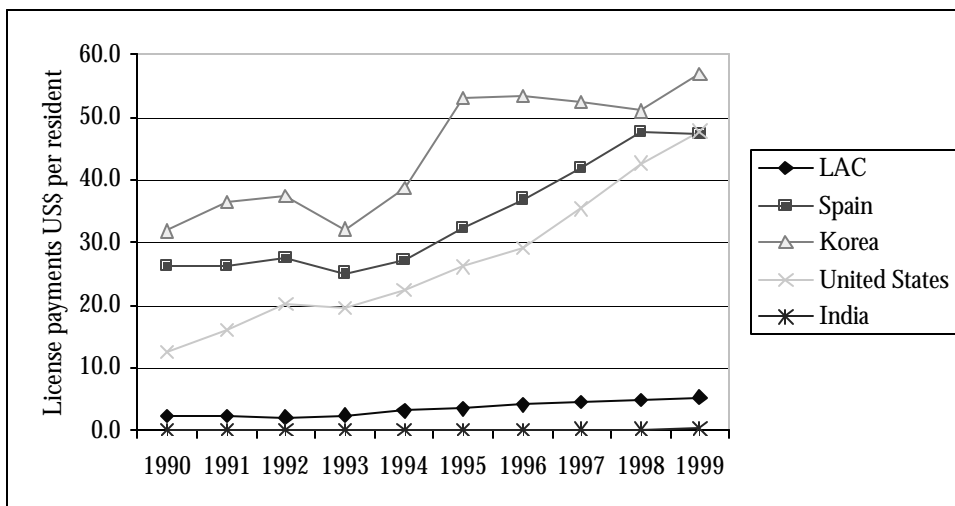


First, I would like to express our gratitude to the host, the U.S. Department of Commerce. Second, to the organizers, the Center for Quality Assurance in International Education, and to the OECD.

Trade in education, why are we here? I believe that educational exchange has been guided by mutual interests, by other rules of the game, and now we are moving into another completely different legal framework. We heard this morning about the GATS² and it could almost sound like a discussion on export of bacon and butter from Denmark. The market for knowledge is here, education is one of the goods traded in it, and GATS will regulate it. The challenge is here; economic and social development are increasingly driven by the advancement and application of knowledge. Education in general, and tertiary education and research in particular, are fundamental to the construction of a knowledge economy in all nations, including the poorest. However, the science and technology systems in developing and transitioning countries face persistent problems of finance, efficiency, equity, and quality in governance. The new challenges linked to rapid changes in technology, communications, and the globalization of trade and labor markets have amplified the traditional problems of tertiary education in science and technology. These new challenges have been dealt with in recent technical papers from the World Bank³.

What is this knowledge market about? One indicator is the doubling in numbers of intellectual property rights lawyers in the United States during the nineties⁴. We also see that countries increasingly pay for licenses.

License payments



We see the same trend in all markets, the growing importance, in economic terms, of knowledge.

¹ OECD-U.S. Forum on Trade in Education, Washington D.C. May 23, 2002

² Global Agreement on Trade of Services

³ World Bank 2002: “Constructing Knowledge Societies: New Challenges for Tertiary Education”; and “Strategic Approaches to Science and Technology in Development”

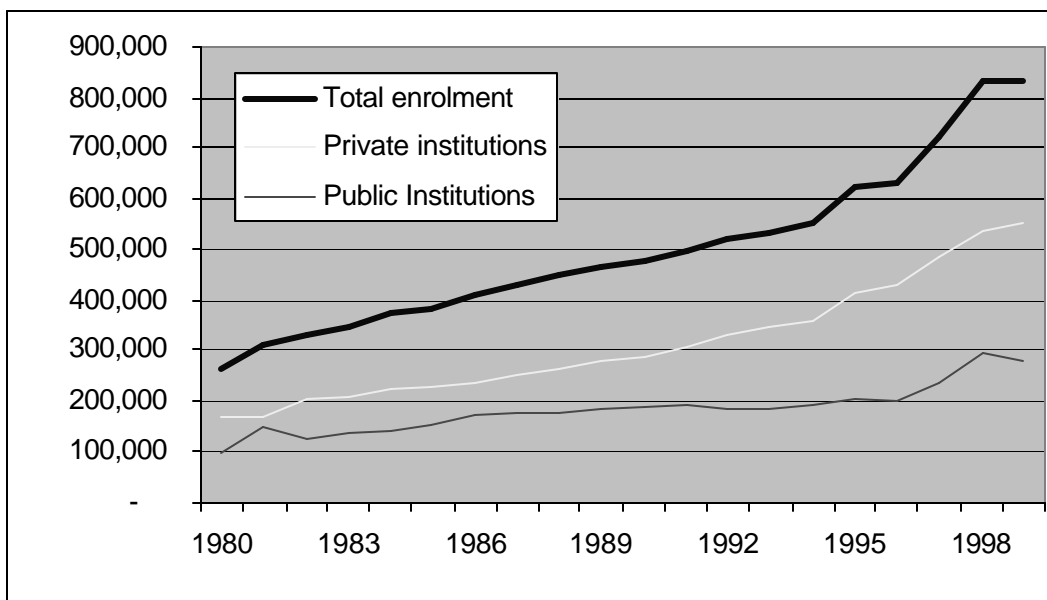
⁴ J.A. Barton ; *Science* 2000 : 287, 1933-34

What is the vision? The ex-president of Chile⁵ expressed it this way: “the country needs its universities and institutions of higher education in order to continue to grow, and in order to be in a condition to build itself into the new world of knowledge, technology, discovery, and innovation”. When we talk about the open markets for knowledge we need to remember that all countries individually have their own needs. It is not just about building a big open market.

What are the trends? We can see that the markets actually pay higher returns to higher levels of education. The Bank did a study based on the household surveys in Brazil⁶ where we learned that the relative return to the investment in education increases rapidly at the tertiary level whereas at the other levels it is declining slightly. This does not mean that a secondary graduate earns less money, but relative to the tertiary level, you see a dramatic difference. We expect over time this will be a trend in every single country. It pays off to invest more in education.

What is the response from the market? If the internal market in a nation is deregulated and the market is able to respond to it, there is increased enrollment. In Colombia the total enrollment has more than doubled over a 20-year period. More importantly, Colombia shows another trend, which is consistent for many countries, when the system is deregulated: the public sector grows in terms of provision of more seats for students, but the private sector grows even faster. The private sector provides 65% of the seats in Colombia⁷. The expansion leads to higher levels of attainment.

Accelerated Enrollment-Colombia



In Latin America, the average number of years of schooling is approaching 9 years. Of course, the OECD is higher than that. Thus while there is a fair chance of catching up over the next generation there is a gap. Expected years of further schooling for a person 17 years old at this moment in France, Korea, Spain, and the United States, is more or less between 2- and 2-1/2 years, whereas in countries like Mexico and Brazil, it is approximately half a year. That includes all university and post-secondary formal education. This gap which is only 2 years is very hard to

⁵ President Eduardo Frei Ruiz-Tagle (1999)

⁶ A. Blom, L. Holm-Nielsen, and D. Verner; World Bank Policy Research Working Paper 2686, 2001

⁷ World Bank 2002: Colombia: Tertiary Education – Paving the Way for Reform

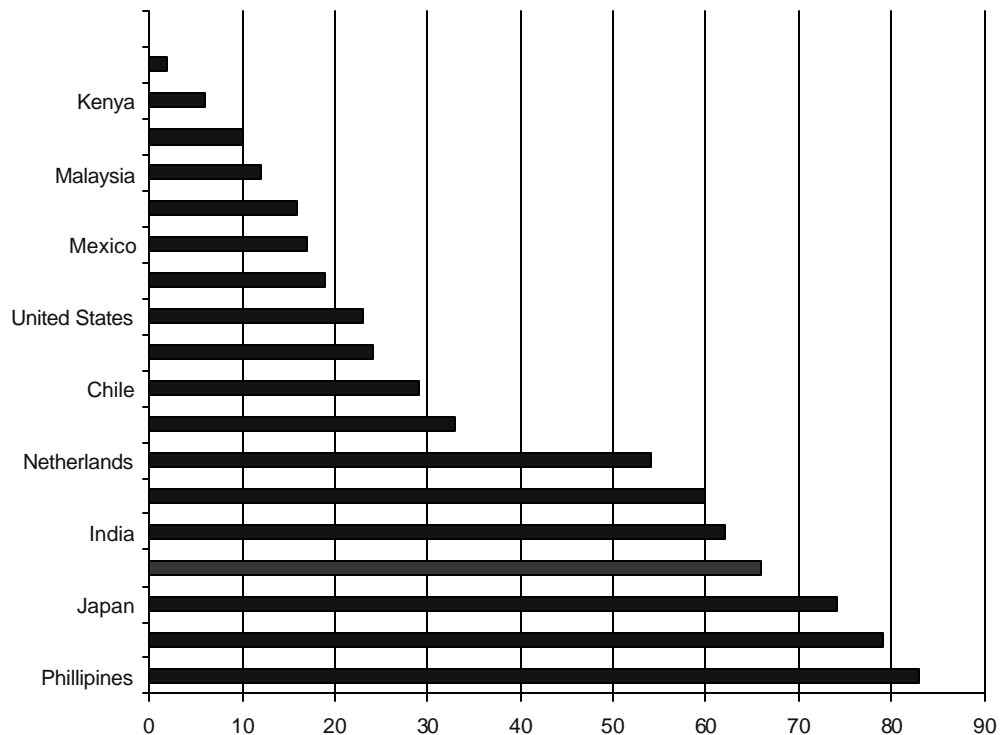
fill, because the OECD simultaneously also increases access to higher levels of education. There is demand, however for entire populations bridging the gap will take generations.

How do we fill the gap with quality education for all? There is another gap which we have focused on increasingly in the latter years which is the production of Ph.D.s a year. A country like Colombia, with 42 million inhabitants, produces approximately 30 Ph.D.s per year to run the country, to run the universities, and perhaps to run your countries, because most of them leave Colombia. This compares to Spain with 5-6000 Ph. D.s per year for a population of similar size. There is a serious catching up to do in terms of the formation of "knowledge leaders". If we look at another trend, expansion of enrollment in tertiary education has grown much faster in low-income, and lower-, middle-income, than in high-income countries, but at the same time, expenditure levels have come down in lower income countries.

Does this mean that the best economy for the United States would be to send all its students to Nigeria? because the cost per student per year would be \$380 instead of \$15,000. This of course does not take the quality issue into account. If, however, we are talking about a global market for advanced human capital where many of the inputs to the higher education system cost more or less the same, there is a very real risk in the developing countries that expansion outpaces investments this leads to a guaranteed result: declining quality. Equipment for example, if anything is more expensive in Nigeria than in Sweden. The opportunity cost of the best professors is probably more or less the same because the market is global. Thus these country's inputs are simply not large enough to satisfy the quality needed for a decent tertiary level education.

Is the solution private enrolment? It is clear that the private sector role is expanding in countries where the tertiary education system is deregulated. Again, in Colombia there is a strong public sector, but also a very open private sector. Approximately 65 percent of the students are enrolled in private institutions. This is at the high end of the spectrum, along with Japan, Korea, and the Philippines, the well-known phenomenon that in East Asia most of the education is private, although a lot of the financing is public. At the other end the spectrum is the Nordic countries, the Netherlands and other small advanced countries. Which have very few students in private tertiary education; privately provided.

Private Provision of Tertiary Education (%)



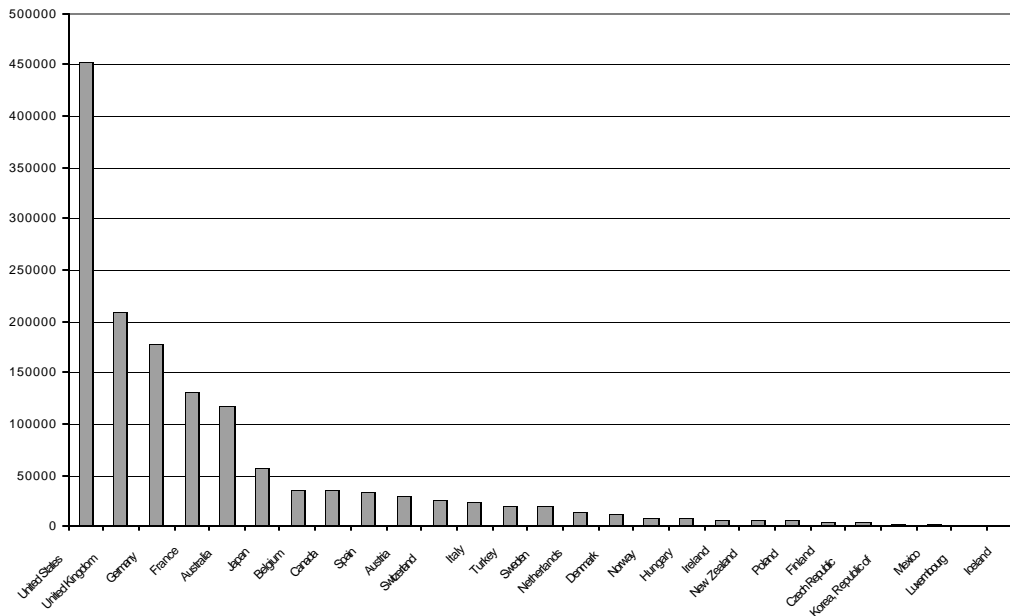
Increased costs and increased demands has translated to a growing equity challenge!
Equity in access is a growing challenge. In Colombia from 1992 to 1997 the enrollment increases in higher education are from the wealthiest families. We see a growing equity gap in most of the developing countries. Clearly there is direct impact of an external macro economic crisis on enrollment in higher education when the market becomes very much privatized as it is in Colombia. We are just putting this as a landmark on the map of the landscape because it is something that a country which will have a stable human capital development needs to counterbalance one way or the other.

Are the global markets symmetric?. Today we have talked about one part of the market: selling and buying educational services. Another market is the labor market, however, the labor market for advanced human capital are closely linked and becoming every day more global. However, the two markets are intertwined. There are also two markets of educational exchange. One internal market for internationalization and exchange of educational services within the OECD and Europe area including the non-OECD countries in Eastern Europe, and another market for sending students from mostly developing countries and buying educational services. The latter is a different kind of market than the one that most of you have talked about. We need to keep it in mind when we move forward into new systems.

Trends in International mobility of tertiary students.

The following data from the OECD⁸, show where the students are in numbers. Of course, most are in the United States and the United Kingdom, but note Australia, with more than 100,000 foreign students. It's very remarkable for a rather small country.

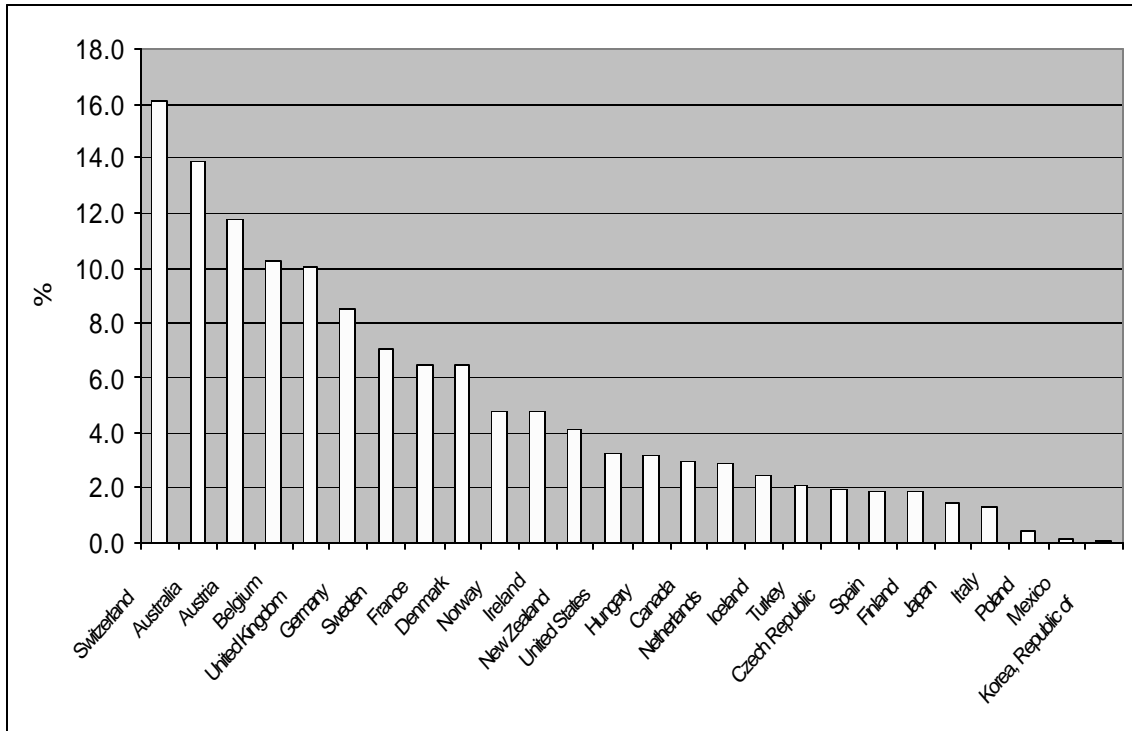
Number of foreign students in tertiary education in OECD countries by host country, 1999, (OECD)



Among all these countries you will not find any developing country. If we even try to dig up the data, we would have difficulties in showing them, because of few foreign students studying in other developing countries. If we then look at foreign students in the OECD as a share of the total enrollment then we note a difference.

⁸ see also OECD, 2002: International Mobility of the highly skilled

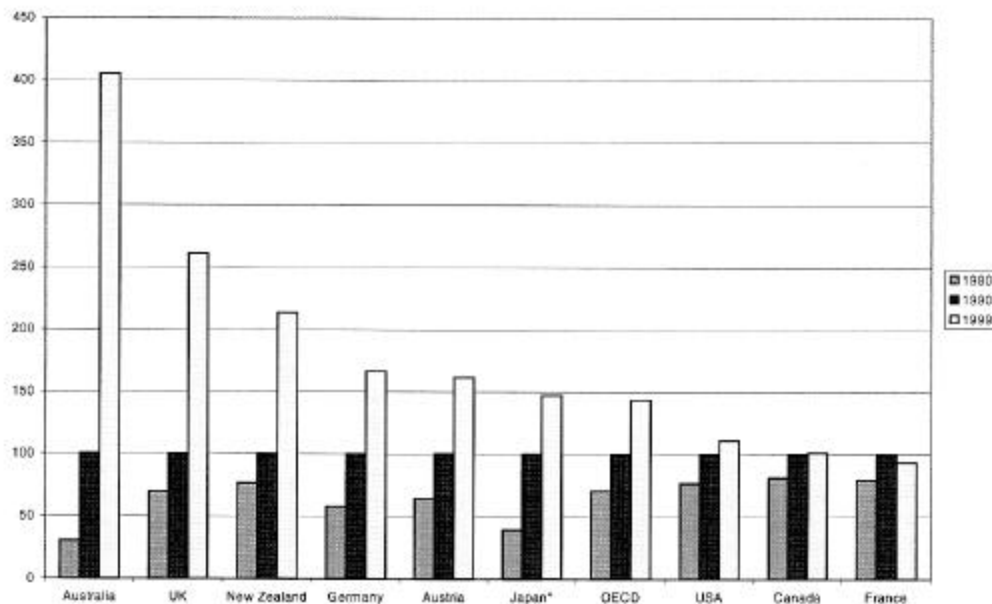
Foreign Students
share of total tertiary enrolment in host country, 1999 (OECD).



Instinctively we would think the United States would be on the top of this list, although it is not. It is more or less in the middle of it because there are so many students that move within the North American continent.

Where has the increase in foreign students in the OECD countries been?

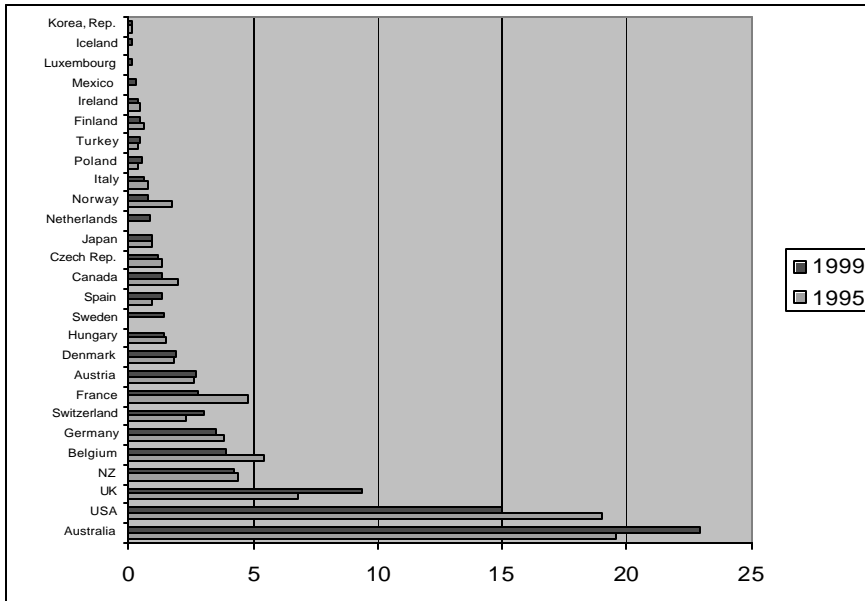
Increase of foreign students in OECD 1980-1999 (OECD)



Again, the first column is Australia, then the U.K., and New Zealand. If you look at the 1990 curve, this is actually normalized to 1990 numbers, but there has been a huge expansion in certain countries; much, much larger than in other countries.

If we look at foreign students in the country per student from that same country abroad we note at one end of the spectrum Korea. Korea is sending many more students abroad than it receives. At the other end, we have Australia that receives many more students than it is sending abroad. In the middle, we have Japan, which is more or less balanced, and Belgium, among the smaller European countries is doing very well in terms of internationalization.

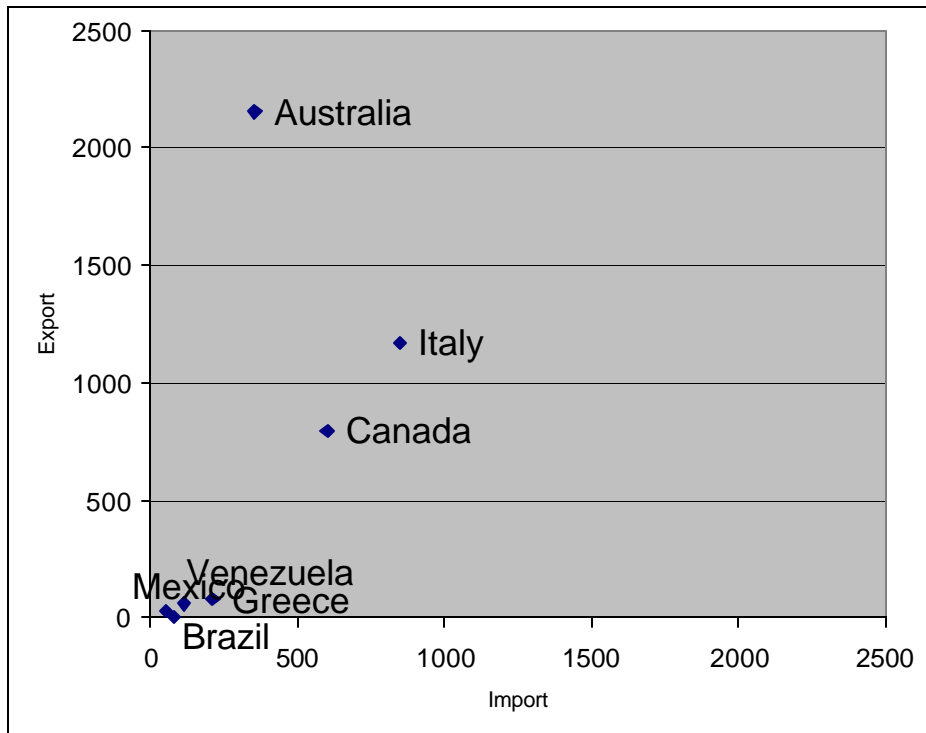
Foreign per Domestic Student Abroad (OECD)



ket. It seems like students coming to the e of distance education, interesting development, untries.

If you look at the trade balance in educational services, two countries cannot be in this screen; that is the U.K. and the United States. Both the U.S. and the U.K. export educational services many times what they receive but the U.K. imports very little. They would be in the group of countries in the corner, if we only looked at imports.

Trade in Educational Services year 2000 and US\$ Mi



Some lessons can be learned. Knowledge is a critical determinant of economic growth and quality of life, and knowledge is transformed into goods and services through a country's national innovation system. We also know that good science and higher education is probably international. I would also add that trained human brains are the most effective knowledge transfer and adaptation mechanism. Now we see that the market for tertiary education and advanced human capital are becoming global. The demands are everywhere and the returns to investments in knowledge and skills are very substantial, but nations do not play this market on a level playing field. The stronger have the advantages.

What should be done? First, of course, the countries need to take a close look at their own domestic regulations, and then move into the international mode, and GATS could be one of the instruments for fair trade in knowledge services. Nations should improve policies, and institutions should be empowered to have autonomy and accountability in a free market. Second, the critical importance of supporting human resources and management capacities should be recognized. It is a concern that a country of more than 40 million people only produces 30 Ph.D.s per year, this is simply not sustainable in a competitive open market, so something has to be done about that.

Third, funding sustainability by ensuring public-private interaction should be encouraged. We should have the public intervene when that is necessary but leave the space open for the private sector to be there whenever possible. We should probably also work on cost recovery because there are high private returns to tertiary education. Of course, poor students cannot pay for themselves upfront, but maybe later in their lifetimes they will have a chance. We should look at combinations of student loans and repayment and scholarships to find a way to finance the system. We are looking at the private financial market to fund student loans which are then paid back by those who can pay it...We should aim at merit and scientific rigor through competitive

mechanisms, peer review and so forth. We should try to establish linkages from productive and the knowledge sectors to the basic research, and also to the international knowledge base.

What is the World Bank's role? if the IMF is in charge of the checking account, the World Bank is the mortgage company. The Bank looks at the longer term. The World Bank is owned by more than 180 countries, and our mission is to assist our client countries to reduce poverty and improve living standards through sustainable growth, economic growth, and investment in people. The latter is important for this meeting. We have some experience from working in the human development sector, and in this particular case, from working on higher-education and science and technology projects in all regions of the world. At the moment the most active portfolio in this area is in Latin America, because this continent is in the position of being able to become an active partner of the knowledge economy.

The policy the Bank has as an institution is to develop comprehensive strategies and policies for higher education in conjunction with science and technology. The actions the Bank intends to take are to work with the countries, provide technical assistance and loans, and to promote international best practices in funding within their higher-education and science and technology systems.

In conclusion, I will cite one of my past colleagues. I am a biologist. "It is not the strongest species that survive, nor the most intelligent, but the ones most responsive to change." This was Charles Darwin, of course.

Thank you.