Financing higher education in Iceland

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Minister, ladies and gentlemen

Introduction

I have been asked to talk about the financing of higher education in Iceland. I will start with an introduction. Following the introduction I will talk about the development of a model for financing teaching at the University of Iceland. Then I will talk about the contract between the University of Iceland and the ministries of education and finance. I will talk about results of the model building and the negotiation process. I will compare the financing of teaching at the University of Iceland to the European situation. Finally I will talk about work that has already started on developing a model to finance research at the University of Iceland, before giving some concluding remarks.

In Iceland there are 8 educational institutions at the university level. In Icelandic there is only one word "háskóli" for the English words university and college and as a result the Icelandic language does not differentiate between colleges and universities. Out of those 8 institutions only the University of Iceland has undergraduate and graduate programs as well as research activities in a wide area of disciplines. The other 7 are more specialized and do not emphasize research to the same extent as the University of Iceland. Table 1. contains a list of the university level educational institutions in Iceland. These institutions receive 2,3% of the state budget in year 2000. The University of Iceland receives 60% of the budget for higher education in Iceland and it serves 66% of the student population. In my talk I will use numerical information relating to the University of Iceland and discuss the system of financing from the viewpoint of that university as it is very representative of higher education in Iceland.

Table 1. University level educational institutions in Iceland

	State contribution	**%**	**Number of students**	**%**
University of Icland	**2.661,6**	**60%**	**6.588**	**66%**
Iceland University of Education	635,3	14%	1.262	13%
University of Akureyri	398,5	9%	581	6%
Icelandic College of Engineering and Technology	263,3	6%	607	6%
Reykjavik University	211,9	5%	490	5%
Hvanneyri Agricultural University College	132,6	3%	72	1%
Iceland Academy of the Arts	105,9	2%	220	2%
Icelandic University College of Business Administratio	58,9	1%	156	2%
Total	**4.468,0**	**100%**	**9.976**	**100%**

Traditionally the financing of higher education in Iceland has been on a historical and an incremental basis. When the State budget bill for the following year was made public in October it became clear that most institutions were to receive what they received for the current year plus an incremental increase that usually was determined by the forecasted inflation. This gave the institutions almost three months to lobby the members of parliament before the final budget was passed shortly before Christmas. Most institutions arranged meetings with the Parliament's budget committee to present their requests for a further increase and often well-wishers of that institution were asked to lobby individual members of parliament. Occasionally an employee of an institution lobbied a member of parliament to gain an increase earmarked for a pet project of his or hers, sometimes without prior consent of the director of that institution. The result often was somewhat erratic. An institution could get an earmarked increase for an activity that the management of the institution did not prioritize.

Figure 1. shows the development of state funding of the University of Iceland in the period 1988-1995 at 2000 prices. The state funding is divided into three components. Firstly the budget according to the passed state budget, secondly funding for construction and maintenance received from the University Lottery and occasionally from the Government and thirdly additional funding from the Government, often to compensate for unexpected cost increases.

Figure 1. Governmental funding of the University of Iceland, 1988-1995

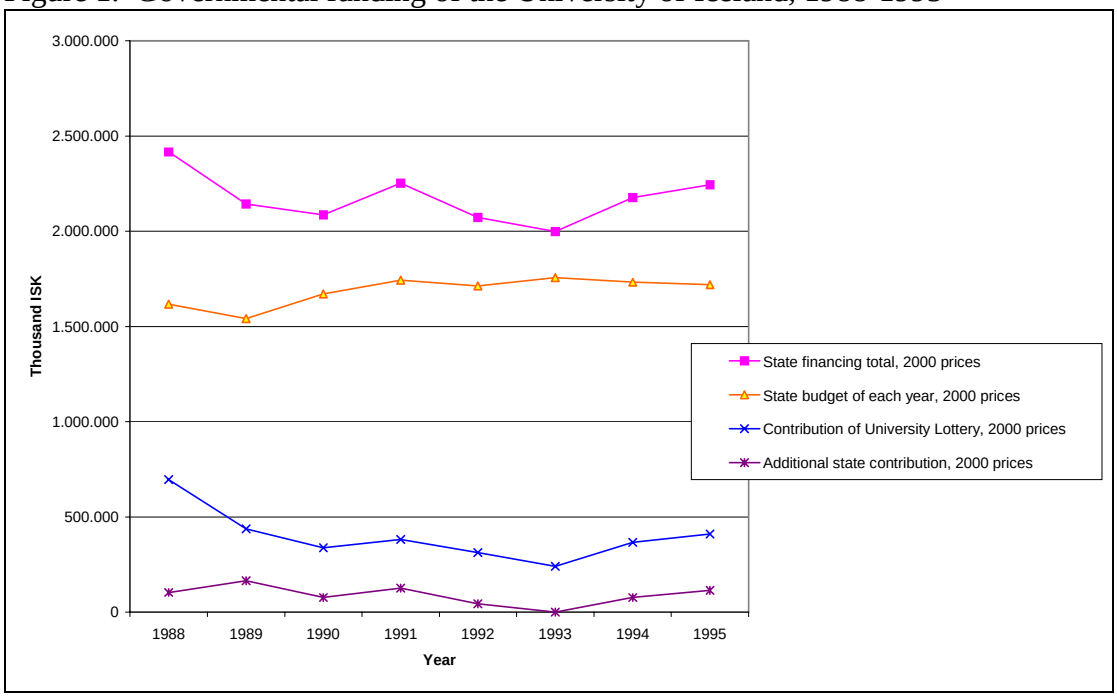


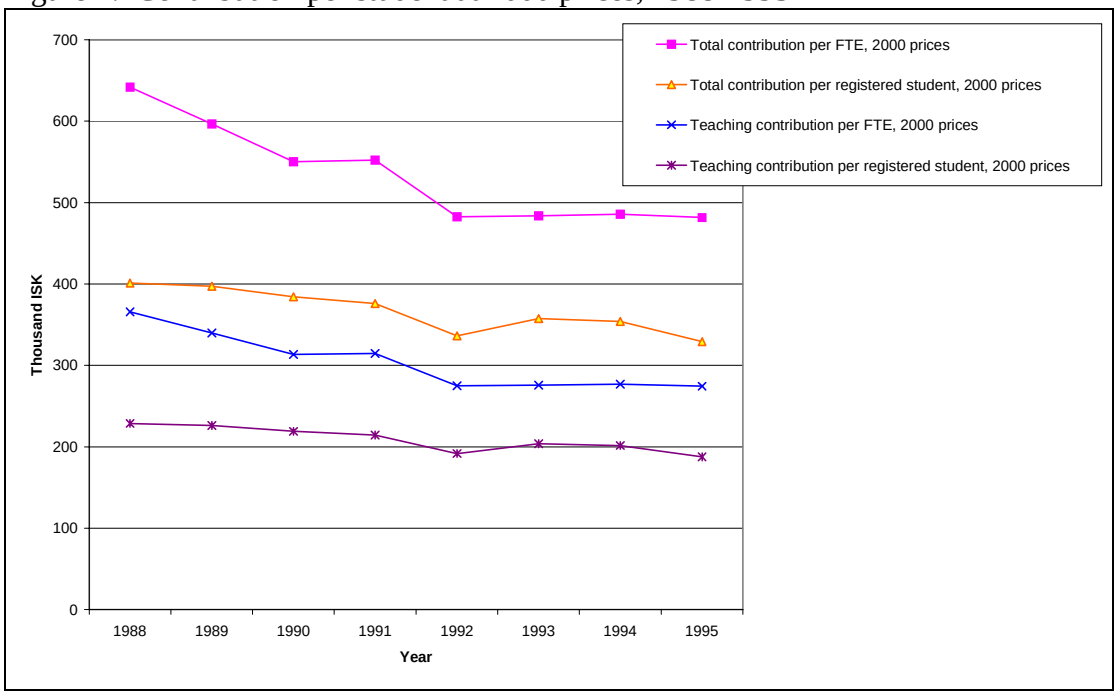
Figure 2 shows the state contribution at 2000 prices both per registered student and per a full time equivalent student over the period 1988-1995. A full time equivalent student is assumed to take examinations in subjects amounting to 30 credit hours, which is equivalent to 60 ECTS units. In the figure one can both see the total state contribution per student as well as the teaching portion of the state contribution per student. In both instances the contribution decreases over this period.

The period 1988-1995 was very difficult financially for the University of Iceland. State funding decreased by 7% while the number of registered students increased by 30%. The result was that the contribution per registered student decreased by 25% and the contribution per FTE decreased by 18%. During this period the university officials tried to compare state funding at the University of Iceland to university funding in other countries in order to convince the Government that The University's budget should be increased. This was to no avail as it was not too difficult to maintain that salaries and taxation were different in Iceland than the countries used for comparison and therefore the comparison was biased.

Model building at the University of Iceland

As a result it was decided in the University of Iceland that a different methodology was needed. It was decided to study thoroughly the funding of universities in several countries, including the Nordic countries, the UK and Australia. Data was collected and finally it was decided to build a model for the financing of the University of Iceland based on a Swedish funding system that came into operation in 1993. The number of classroom hours was to be the same as in Sweden with some adjustments and costs evaluated using Icelandic prices and salaries.

Figure 2. Contribution per student at 2000 prices, 1988-1995



The main building unit of the model was a group of 30 FTE's, named an A-box. In order to compensate for the small number of students in many disciplines a B-box was defined for 15 students, a C-box for 10 students and a D-box for 6 students. The main inputs into the model were the following:

- Seven tariff categories:
  - Humanities, theology, law, business and economics
  - Social sciences
  - Nursing
  - Mathematics and computer science

  - Science, engineering and pharmacology
  - Medicine
  - Dentistry
- The number of working hours for an A-box, i.e. the number of working hours necessary to provide enough teaching services for a group of 30 students to complete 30 credit hours was the same as in Sweden. The number of working hours for the B-, C- and D-boxes were sufficient to give the same number of lectures as for an A-box, but classes given in smaller groups were not repeated.
- If the number of FTE's was above 30 but less than 60, the additional working hours to those of an A-box only sufficed to give repeated classes, but the lectures were not repeated until the number of FTE's exceeded 60.
- The number of teaching assistants was the same as in Sweden per box.
- General operating costs per A-box was the same as in Sweden, proportional for the B-, C- and D-boxes.
- Specific operating costs per A-box was the same as in Sweden, proportional for the B-, C- and D-boxes.
- Overhead for general administration was 13,6%, the same as in Sweden.

The main difference between the model for the University of Iceland and the Swedish system was, the cost adjustment made due to the very small number of students in many disciplines and the marginal contribution used when the number of FTE's exceeded the box size but did not reach double the box size.

The work on the model started in 1993. In 1994 the preliminary model was presented to the University Council, which approved further work on it. In the fall of 1994 the model was presented to the ministries of education and finance. Following that presentation discussions between the University of Iceland and the ministries on financial matters were colored by the existence of the model. Once the model was presented within the University of Iceland, opposition arose, which delayed serious talks between the University and the ministries. In April 1996 the University Council agreed to start discussions with the ministries on future financing of the University based on the model. By this time the difference in views of the University and ministries on the cost of university education had diminished. Even if a contract was not in place, the University budget was increased in real terms because of the model. Several meetings were held discussing the model until the spring of 1998. At that time the Ministry of Education came to the conclusion that it would be desirable to use one model to determine State contributions for all the institutions offering higher education in Iceland. To do this the model developed by the University of Iceland could not be used as it was too complicated and in a way custom tailored to the structure of the University of Iceland.

A contract for teaching at universities in Iceland

The ministries proposed to use the Swedish system with minor adjustments. The new proposal did not take into account the small number of students in many disciplines and the marginal contribution was dropped. In the Swedish system the average class size consists of 30 students as an A-box in the model developed by the University of Iceland. The discussions continued and an agreement was drafted. It took longer than expected to come to a final agreement as in July 1998 The State Salaries Committee

(Kjaranefnd) decided on salary increases for full professors. The University of Iceland and the ministries did not agree on the financial implications of that verdict and therefore did not agree on the average salary that should be used in the model. In late September 1999 the Minister of Education proposed a solution of that dispute to the University. This led to the signing of a three year contract between the University of Iceland and the ministries of Education and Finance on October 5th 1999.

The main points of the contract are the following:

- Seven tariff categories:
  - Humanities, theology, law and social sciences
  - Nursing
  - Mathematics and computer science
  - Science, engineering and pharmacology
  - Medicine
  - Dentistry
  - Education
- The University of Iceland provides education to a maximum of 4300 FTE's. A maximum for each tariff category is specified.
- The State contribution to cover all teaching costs, including the cost of facilities, is based on the number of FTE's in each tariff category, the annual contribution/FTE in each category and the m^2/FTE in each category. From the total contribution is subtracted; salaries of 4 visiting professors, 87% of the fees paid by the FTE students and the financial costs and maintenance of 27.000 m^2 already financed by the University Lottery. The calculation of the contribution is shown in figure 3. If the real number of FTE's differs from the forecasted number of FTE's the contribution is revised at the end of each academic year. The classroom hours are the same as in Sweden, but unit costs take into account real costs in Iceland.
- During the three years covered by the contract the University of Iceland shall emphasize:
  - Utilization of information technology and distance learning
  - Education and graduation of potential science teachers
  - Reorganizing policies set by the University Council concerning financial management and personnel management
  - Implementing a formal quality system in accordance with guidelines set by the Ministry of Education
  - Developing an information dissemination system.

Following the signing of the three year contract for financing teaching at the University of Iceland, the Minister of Education and the President of the University signed the following statement:

"Both parties agree that for academic purposes research is in no way less important than teaching at the University of Iceland. Because of this the Minister of Education and the President of the University will work together on a contract for financing research. The work shall be done parallel to the budgeting process for 2001."

Figure 3. Calculation of State contribution to the University of Iceland

	Number of credits	FTE's	Contribution per FTE	m^2 per FTE	Teaching-contribution	m^2 needed
Humanities and social sciences	70.620	2.354	276	6,6	649.704	15.536
Mathematics and computer science	4.560	152	459	7,4	69.768	1.125
Nursing and physiotherapy	12.390	413	514	8,1	212.282	3.345
Education	1.170	39	496	6,6	19.344	257
Science, engineerimg and pharmacology	18.900	630	663	10,2	417.690	6.426
Medicine	7.770	259	913	14,6	236.467	3.781
Dentistry	1.140	38	1.524	25	57.912	950
Total	**116.550**	**3.885**			**1.663.167**	**31.421**
Lottery financed facilities for teaching (m^2)						**27.000**
Rented facilities for teaching (m^2)						**4.421**
Cost of rented facilities					**35.065**	
Total contribution for teaching					**1.698.232**	
Salaries of 4 visiting professors					**5.000**	
87% of the fees of 3.885 students					**84.499**	
Net contribution					**1.608.734**	

The results of model building and negotiations

It is clear that a considerable effort has been put into negotiations of a teaching contract both by the ministries and the University of Iceland during the last 5 years. Figure 4. shows the development of state funding of the University of Iceland in the period 1995-2000 at 2000 prices. The state funding is divided into three components as in figure 1. It becomes immediately clear that the financial situation at the University of Iceland was a lot better during this period than during 1988-1995. The total State contribution increased by 45% while it decreased by 7% during the earlier period.

Figure 4. Governmental funding of the University of Iceland, 1995-2000

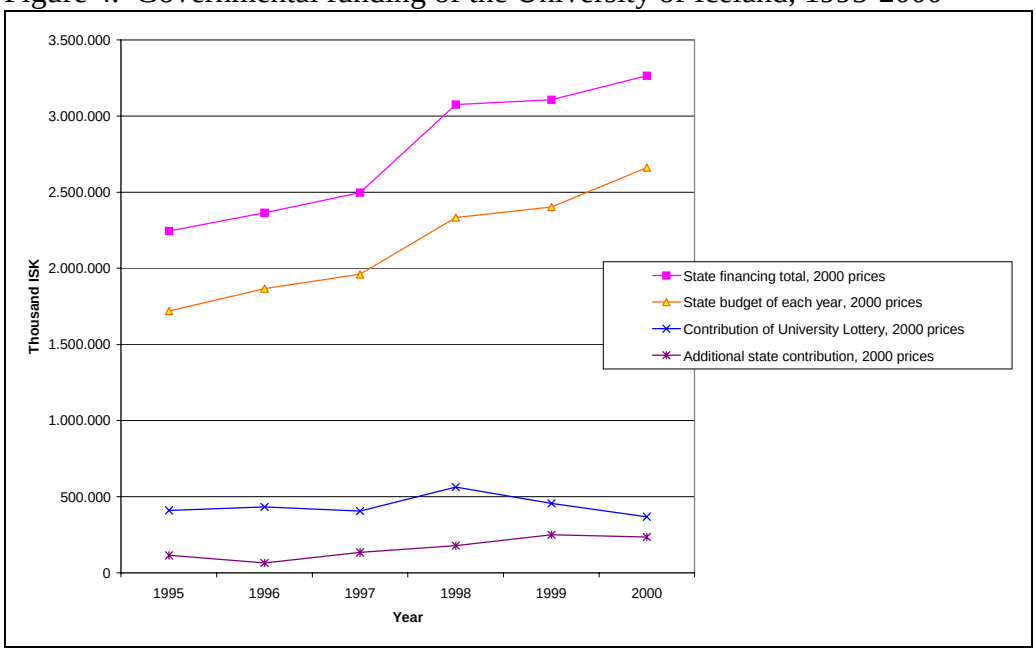


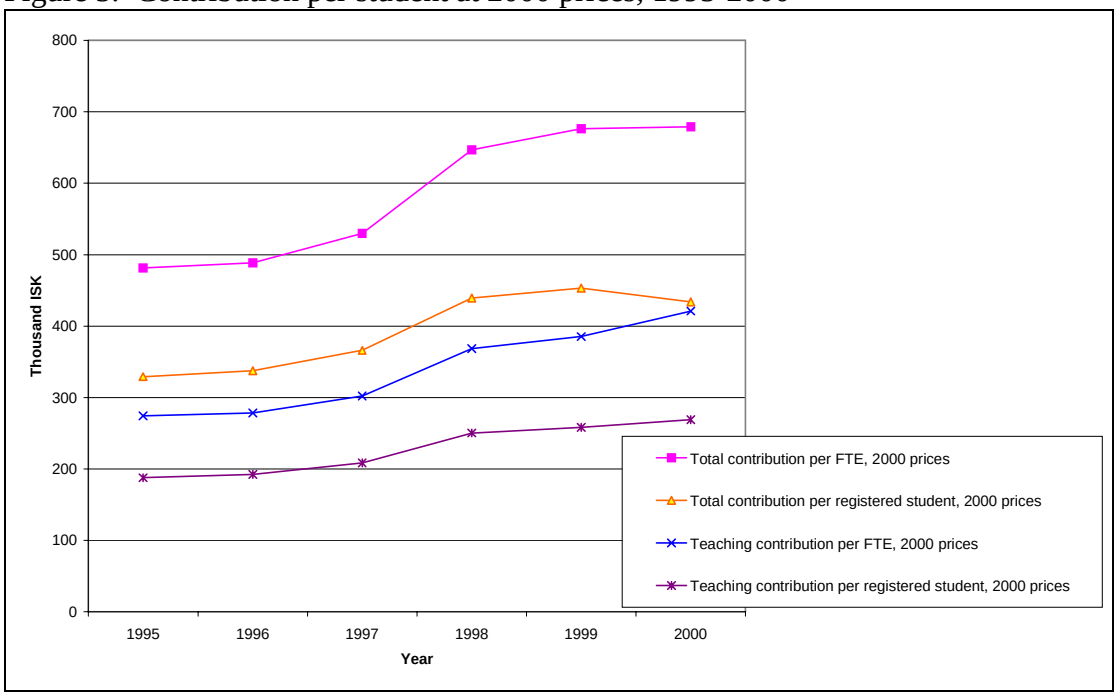
Figure 5 shows the State contribution at 2000 prices both per registered student and per FTE over the period 1995-2000. In the figure one can see the total state contribution per student as well as the teaching portion of the state contribution per student. The total contribution per registered student increased by 32% (1988-1995,-18%), the total contribution per FTE increased by 41% (1988-1995,-25%), the teaching contribution per registered student increased by 43% (1988-1995,-18%) and the teaching contribution per FTE increased by 53% (1988-1995,-25%)

It is difficult to pinpoint the most important explanation of the change that took place in 1995. Three changes happened simultaneously;

- A new government came to power in 1995 with a new minister in the Ministry of Education.
- The economic recession that started in 1988 came to an end and the recovery of the economy started.
- The preliminary financing model developed by the University of Iceland was used in discussions about the University budget and it was imminent that eventually a contract would be agreed upon.

There is strong proof that any one of those explanations would not have been sufficient. There is even a strong indication that the State contribution to the University of Iceland would not have increased nearly as much had not the work on the financing model taken place.

Figure 5. Contribution per student at 2000 prices, 1995-2000



The University of Iceland compared to the European situation

To summarize the present situation in Iceland, data from the University of Iceland has been added to the tables included in Mr. Maassen's report "Models of Financing Higher Education in Europe".

Table 2 shows a comparative overview of the funding of universities in seven European countries in addition to Iceland. It should be mentioned that the ministries of education and finance in Iceland have as of now only signed contracts with the University of Iceland and the Iceland University of Education although they plan to reach similar agreements with all the educational institutions at the university level in Iceland.

The University of Iceland gets a lump sum and then it is the University's responsibility to allocate it to different activities of the University. This seems to be the most common way, except in Germany.

The University of Iceland has an annual budget within a three-year contract like in Sweden. The financing of teaching and research is separated like in most of the other countries. Output is the basis of funding for teaching like in Denmark and partly in Sweden. Capital funds are integrated into the lump sum similar to that in Sweden, The Netherlands and the UK.

Table 3. Comparative overview of the funding of universities in seven European countries **and Iceland**

	Budget form	Budget period	Teaching and research	Basis of funding for teaching	Capital funds	Different tariffs for teaching by subject group
Iceland	**Lump sum**	**Annual budget within 3-years contract**	**Separated**	**Output**	**Integrated**	**yes**
Denmark	lump sum	1 year transferable	Separated	Output	Separated	yes
Flanders	lump sum	1 year	Separated (partly integrated)	Input	Separated	yes
France	lump sum	1 year	Separated	Input	Separated	yes
Germany	line item budgeting	1 year	Grundmittel integrated	input	Separated	No (no tariffs used)
Netherlands	lump sum	1 year	Partly integrated	Mix of input and output	Integrated	yes
Sweden	lump sum	Annual budget within 3- years contract	Separated	Mix of input and output	Integrated in lump sum	yes
UK	lump sum	1 year	Separated	input	Integrated into current funds	yes (reductions per subject category)

Source: CHEPS, 1998.

Different tariffs are used for teaching by subject groups like in most of the other countries except Germany and to some extent the UK. The structure of the financing system now in use in Iceland therefore seems to be in line with the structure used in many other European countries.

Table 4 shows major sources of income of universities in Iceland and seven other European countries as a percentage of total income. 78% of the income at the University of Iceland is considered to come from public funds even if some of it is earned by the University's run Lottery to finance new construction and maintenance of buildings. Only France, The Netherlands and the UK have a lower percentage.

At the University of Iceland only 2% of the funding comes from The Research Council which is much lower than the average in Europe. In Denmark this percentage is 16% while in Sweden it is 14%. Clearly the possibility of funding research in Iceland from Research Council grants is not nearly as good as in other Scandinavian countries.

At the University of Iceland fees account for 3% of the total, but it has to be borne in mind that the income from fees reduces the State contribution. Other contract activities provide the University of Iceland with 8% of its funding and other income accounts for 11%. The conclusion is that the University of Iceland has been quite successful in finding sources of funding, other than public funds, to finance its activities.

Table 4. Major sources of income of universities as a percentage of total income (1995/96**), Iceland (98)**

Source	DK	Fl	F	G	Nl	S	Eng	**IS**
Public funds	94%	ca.90 %	60%	97%	70%	96%	57%	**78%**
basic public funds	78%	ca.74 %	-	84%	66%	82%	41%	**76%**
Research councils	16%	ca.16 %	-	13%	4%	14%	5%	**2%**
(tuition) fees	0%	ca. 5%	9%	0%	7%	0%	24%	**3%**
Contract activities	3%	-	31%	3%	15%	4%	11%	**8%**
other income	3%	ca. 5%	-	-	8%	-	19%	**11%**
Total	100%	100%	100%	100%	100%	100%	100%	**100%**

Source: CHEPS, 1998.

Public funds can also include part of the tuition fees, as is the case in England. It has to be noted that other income may also include contract activities for governmental bodies at all levels.

- = no data available

Table 5 shows the characteristics of the staff structure in Iceland and seven European countries. In Iceland 61% of the staff is academic. Only Sweden has such a high ratio of academic staff. At the University of Iceland the low percentage of non-academic staff has the effect that academic staff does not utilize its time as effectively as would be possible if more support from non-academic staff was available.

At the University of Iceland full time staff is 69%. Only Germany has a lower percentage of full-time staff. Part of the explanation for the University of Iceland is that a large part of the faculty of medicine works full time at the hospital "Landsspítali – háskólasjúkrahús".

At the University of Iceland 82% of the academic staff is tenured and 18% on temporary contract. This is very similar to the situation in Denmark. In Iceland as in France 57% of the time of academic staff is spent on teaching. This is similar to the situation in Denmark but considerably higher than in Germany, The Netherlands, Sweden and the UK.

The staff structure at the University of Iceland seems to be very similar to the structure in Europe. What could be improved upon in Iceland is the percentage of non-academic staff. Additionally the teaching load of academic staff seems to be unusually high compared to other European countries.

Table 5. Characteristics of the staff structure in West-European universities **and Iceland**

Characteristics	DK	Fl	F	G	Nl	S	Eng	**IS**
Academic staff	53%	56%	55%	44%	51%	61%	-	**61%**
Non-academic staff	47%	44%	45%	56%	49%	39%	-	**39%**
Full-time staff	80%	77%	-	61%	73%	-	87%	**69%**
Part-time staff	20%	23%	-	39%	27%	-	13%	**31%**
Tenured academic staff	80%	-	90%	-	73%	-	-	**82%**
Temporary academic Staff	20%	-	10%	-	27%	-	-	**18%**
Time spent on teaching	55%	-	57%	33%	47%	44%	40%	**57%**
Time spent on research	45%	-	43%	67%	53%	56%	60%	**43%**

Source: CHEPS, 1998.

The general structure of the University of Iceland seems to be very similar to that of other European countries. The same applies to the financing system already implemented for teaching at the University and will probably before the end of 2000 also apply to the financing of research activities.

Still it has to be borne in mind that the parameters of the model used to finance teaching were obtained from Sweden, where the average class size is 30. Table 6 shows the average number of University of Iceland graduates with undergraduate and professional degrees in 1998 and 1999.

Table 6. The average number of graduates in 1998/99

Business Administration	120	Geography	19	French	10
Nursing	88	Theology	18	German	9
Law	75	Philosophy	18	Icelandic for foreign students	9
Teacher's certificate	40	Economics	17	Civil and environmental engineering	9
Psycology	36	History	17	Physics and geophysics	8
Medicine	35	Education	17	Odontology	7
Biology	32	Electrical and electronic engineering	15	Librarian's certificate	7
Computer Science	30	Food science	15	Danish	6
Mechanical and industrial engineering	29	English	14	Spanish	6
Social Anthropology and folkloristics	29	Chemistry and bio-chemistry	14	Geology	6
Sociology	26	Social worker's certificate	14	Mathematics	5
Political Science	23	Journalist's certificate	14	Russian	4
Icelandic	21	Library Science	13	Swedish	1
Physiotherapy	19	School consellor's certificate	13	Latin	1
Comparative literature and linguistics	19	Pharmacology	12	Italian	1

On average 941 candidates graduated in those two years with undergraduate and professional degrees. In addition 57 candidates graduated on average with a master's degree in 27 different disciplines.

In only 8 fields of specialization are there more than 30 graduates. In 15 fields of specialization there are 10 or less graduates. The question arises if parameters used in much larger countries can be used to design a funding system for higher education in Iceland, a micro society with only 280.000 inhabitants. Another legitimate question is whether a small University like the University of Iceland should provide education in areas that attract very few students.

In Sweden, according to Mr. Maassen, some measures are taken to guarantee that "unpopular" studies can be undertaken. In his report Mr. Maassen says "The education contract also provides for extra resources intended for special tasks, for instance, for giving courses in "small" programs such as Egyptology, seismology and Celtic languages or for developing courses in new fields, e.g. environmental technology."

When the contract between the University of Iceland and the ministries of Education and Finance is revised I believe it is necessary to find ways to compensate for the diseconomies of scale that exist at the University of Iceland and all other institutions at the university level in Iceland.

A contract for research at the University of Iceland.

Recently representatives of the University of Iceland and the ministries of Education and Finance met to start discussions on a contract for the financing of research at the University of Iceland. On the agenda are five main topics:

- The present situation both concerning the financing of research at the University of Iceland and the scale of research activities at the University.
- Which research oriented institutions that receive State contributions from the State budget but are affiliated with the University of Iceland should be more integrated with the University? (The Science Institute, The Institute for Experimental Pathology, The Árni Magnússon Institute, The Institute of Lexicography, The Icelandic Language Institute, The Sigurður Nordal Institute and The Place-name Institute of Iceland)

- To what extent should the research policy of the University of Iceland reflect the research policy of the present government?
- What methodology should be used to evaluate the financial needs of research activities at the University of Iceland?
- What is the relationship between research and teaching, particularly on the graduate level, at the University of Iceland?

It seems likely that both parties would like to develop a model for financing research at Icelandic universities that is as simple as possible. Representatives of the University of Iceland have collected data on the financing of research in several European countries. At full fledged research universities it seems to be very common that public funds for research are approximately of the same magnitude as public funds for teaching up to the master's level. The third pillar for the financing of universities in Europe seems to be grants from research councils and other funds as well as income received for other contracted research, diverse services and continuing education.

Representatives of the University of Iceland have therefore proposed that basic public funds for research at the University should equal public funds for teaching. Additionally the University should aim at raising 50% of the basic public funds from other sources.

At this time it is impossible to say what the outcome will be. In all likelihood the contract will contain the following points:

- The research policy of the University of Iceland and the Ministry of Education.
- Areas of research activity that the Ministry of Education wants the University to work on for the duration of the contract.
- State contributions to research at the University of Iceland for the duration of the contract and how those are indexed to changes in salaries.
- Control of research output and the implementation of a formal quality system in accordance with guidelines set by the Ministry of Education
- The legal relationship of the University of Iceland with research oriented organizations.

When the contract for financing teaching at the University of Iceland was signed in October 1999, the Minister of Education and the President of the University expressed their hope that a contract for financing research would be in place in year 2000 so that its content can be reflected in the 2001 State budget. I believe that both parties still have the intention to make this possible.

Conclusion

Using models to evaluate the cost of higher education seems to be the norm in Europe. In my opinion there is no doubt that this system is much better than the old historic and incremental system. For governments is it easier than before to get institutions of higher learning to respond to government policies and in all likelihood improving the quality of higher education gets a much higher priority than before.

Considerable effort has been made in Iceland to develop such a model for the cost of teaching in order to determine reasonable State contributions to the different educational institutions. There is no doubt in my mind that this has been necessary to bring the financing of higher education in Iceland up to the European level and it will have positive effects on quality of higher education as well. Still some revisions have to be made to compensate for the diseconomies of scale in Iceland and a contract for the financing of research is awaited.

There is one question though that I believe we have to consider. How is Europe doing in the global competition and what can be done to improve Europe's performance. In many fields there is no doubt that the gap between Europe and the United States and Japan is widening.

Many of the American Universities are very strong financially. For example; Harvard University has an endowment of 30 billion US dollars. Several American universities have started to sell franchises to Europe and actually all over the world as well. European students are very much willing to pay high tuition to be able to study e.g. Business Administration at those American franchises in Europe. Is it possible that in order to make it possible for European universities to compete in the global market, tuition is necessary both to strengthen the universities' financial position and to make the students more demanding, thus raising quality?

Recently the British government asked MIT to come to the rescue of Cambridge University, considered to be one of the most prestigious universities in Europe. Asian governments are pouring funds into universities. Two months ago I was in Singapore and visited a technical college that emphasizes quality and productivity in all their study programs. In that college only three students had to share each computer, while at the University of Iceland thirty students share each computer. That college has recently received a grant of 10 million US dollars from the Singaporean government to purchase automatic equipment frequently used in the metal industry and automatic equipment to manufacture computer chips.

I am afraid that even if the European system for financing higher education is fairly efficient it is not particularly effective when it comes to transforming European society and closing the gap between Europe and the United States and some Asian countries. The European system is efficient and quite good to maintain a status quo. We have to consider how the system can be improved so that it responds to opportunities and threats in an effective manner.

According to the Nobel prize winner Robert M. Solow, 25-50% of economic growth is based on research and development in which institutions of higher learning play a very important role. If Europe is to have an economic growth similar to that of other regions of the world it will have to improve the quality and effectiveness of its higher education.

Everyone is talking about the learning society. It is assumed that the so called learned societies will in the future be able to provide their citizens with a higher standard of living and a greater quality of life than the non-learned societies. Iceland is basically a low tech country, rich in natural resources. In Iceland high tech has been used to produce fairly low tech products and services. Until now this has sufficed to give

Icelanders a standard of living that is one of the highest in the world. Will this be sufficient in the future?

I don't think it will. In order to transform Icelandic society from one based on natural resources into one based on knowledge I believe that a major change has to take place. I don't believe that our present models for financing teaching and research at institutions of higher education will do the trick.

I believe that the number of graduates in Science and Engineering from the University of Iceland is not high enough. This low number makes it very difficult for elementary schools and high schools to hire qualified teachers for science subjects. As a result high school graduates are neither very interested in science nor very interested in those subjects. The consequence is that the number of students in those subjects at the university level declines even more. In view of the fact that the disciplines that are believed to affect our future more than others are information technology, biotechnology and material science, I don't think this situation is acceptable.

For the transformation of Icelandic society into a learned society I believe very strongly that it is of utmost importance to increase the number of graduates with master's and doctoral degrees. The present number of graduates with those degrees is not acceptable and action has to be taken.

A model for financing teaching at the University of Iceland has already been beneficial for the University, it increases efficiency and will undoubtedly lead to better quality of educational programs. Even if the system is output based there is a very strong intention at the University of Iceland to make sure that the incentive to increase output will not lower standards at the University. The model alone though will not be sufficient to maximize the effect the University can have on the Icelandic society's leap into the information age.