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The Financing of Higher Education and Science in Croatia

by

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THE FINANCING OF THE SYSTEM OF HIGHER EDUCATION AND SCIENCE IN CROATIA[1]

State of affairs, problems and recommendations

Summary

The paper quotes the preliminary results of a scientific research project launched by the Institute of Public Finance in 2003 and still underway. The existing system for financing higher education and science in Croatia is holding up development and developmental processes. In spite of a high level of financial resources available for the financing of tertiary level institutions and public institutes, there is a series of problems the solution of which would help in the construction of a transparent system of public services, open to both users and the public. The main problems are connected to poor institutional organisation, great discretion in governance and decision-making about the allotment of resources, the undefined status of the public tertiary level and scientific institutions as budgetary beneficiaries,poor recording of the number and structure of employees who are financed from the national budget, excessive bureaucracy, and the non-existence of fundamental information about the distribution of resources around scientific and tertiary institutions, projects and scientific areas.

In spite of the objectives announced, as cooperation with the private sector and foreign scientific institutions, tertiary level and public institutes are still very content to be financed from the national Budget while enjoying total autonomy in the way they use their own revenues earned on the market.

For this reason, constant improvement of the institutional organisation and the effectiveness of the work of scientific and tertiary level institutions are required. To achieve such improvement it is necessary to win the agreement of the universities and faculties, the Government, the Ministry of Science and Technology, and the public institutes for the arrangement and reform of the system of financing.

Key words: Croatia, higher education, science and technology, financing, research and development, budget, budgetary users.

Background

From 1996, the institutional organization and the financing of tertiary level and scientific research institutes were laid down in detail. A number of new regulations were adopted, numerous new scientific and higher educational institutions were founded, many institutions had their legal status changed and became budgetary beneficiaries. The national

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budget is still the main source of financing for the work of the tertiary educational institutions and public institutes. But, alongside funds from the budget, scientific and tertiary level institutions can also generate revenue on the market. These revenues are not officially included into the Budget, rather the institutes and institutions are free to make use of them independently and use them to improve their work. In spite of the many changes in Croatia, the evaluation and determination of the realistic legal and financial positions of scientific and tertiary educational institutions have not been carried out. For this reason, according to an analysis of the system of financing, we are attempting to determine the main problems, and also to make suggestions for a more detailed comprehension of the problems of the financing and work of the scientific and tertiary educational institutions.

The analysis covers the period from 1996 to 2002. The results of the first phase of the research show that it is completely essential to carry out a thoroughgoing reform of the existing system of financing, and that without this it will be impossible to carry out a reform of higher education and science. The problems and the proposals are mainly related to technical matters related to the organization and the financing, the improvement of which would create a good basis for implementing a transparent policy in the system of public higher education and science.

1. The thesis of the under-financing of science and higher education

In theoretical and political debates in Croatia it is often said that the investment of financial resources in science and higher education is low. However, almost all financial indicators suggest the conclusion that the financial position of the system of science and higher education is very good. Thus an analysis of the budget of the Ministry of Science and Technology (MST) shows that from 1996 to 2001, financing high education and science from the national budget was increased from 1.4 to 2.4 billion kuna. Together with its own revenues, then, the higher education and science system had about 3 billion kuna in total and represented 1,86 % of GDP (Table 1. and 1.a.). The share of total expenditure on high education (financed from government budget and own revenues) was 1,1 % of GDP in 2001. At the same time, current assets were greater than current liabilities, there was a high level of resources in bank Giro accounts, the amount of loans made was greater than that of loans taken, there were surpluses of revenue from the budgetary sources and from own resources, investments were made in securities, and so on. From 1996, investment in R&D has increased. Total gross R&D expenditure increased from 0.77 of GDP in 1997 to as much as

1.23% in 2000 (Table 2). Investment in R&D has doubled in absolute amounts, and expenditures for R&D have increased, without exception, in all sectors. We should mention that in 2001, 1.2 billion kuna was set aside from the national Budget for scientific research, and that the expenditure of the national Budget for R&D alone came to 0.72% of GDP.

2. The legislative framework

The organisation and financing of higher education and science are regulated by laws, decrees, and many regulations. In spite of the legislative framework being settled, contain many inconsistencies in respect of the criteria for obtaining the status of public institution, the provisions of the regulations overlap, and the status of institutions of higher education and scientific research is not clearly defined. For this reason it is essential to review the legislative framework of higher education and science, with a parallel establishment of the realistic financial position of the scientific institutions or, rather, the determination of the financial impact of the laws that have been applied over the last six years. It is necessary to determine the criterion for obtaining the status of public tertiary educational institution and public institute. It is important to regulate the financing of tertiary educational institutions and public scientific research institutes with a single law, which also goes for the detailed organization and structure of the work of the public institutes. It is particularly essential to indicate sources of financing more clearly. Finally it is necessary to delimit the concepts and status of public establishment and budgetary beneficiary and to determine the criteria through which scientific and higher education institutions acquired the status of budgetary beneficiary and ensure the financing of all their expenditure from the national Budget.

3. The Ministry of Science and Technology

The Ministry of Science and Technology (MST) is the main government institution charged with the organization and financing of science and tertiary level education and the effective functioning of them. Alas, for quite a number of years the MST has been unable to adapt its internal organization to the new conditions of work and operations of institutions within its jurisdiction and to the many changes in the environment (enlargement of the number of tertiary educational institutions, changes in the system of financing etc.). The main problems of the MST are linked with the organization (poor structure of employees,

inadequate computerization, poor financial management and lack of further professional training.).

It is essential to adjust the organization of the work of the MST to financing in terms of programmes. It is important to lay down the criteria for hiring, with an emphasis on successful carrying out of the work and less on the mere formal spending of eight hours on the job. Through a determined system of rewards, the employees should be given incentives to carry out their tasks as effectively as possible. On-going professional training has to be provided through the organization of seminars addressing the needs of each job description. Work has to be done on the computerization of the MST, on the systematisation of the basic information, and on the constant upgrading of the database. These changes will lead to realistic financial decisions making.

On the other hand, it is still debatable whether too much authority and too great an administrative burden for all matters have been transferred to the MST, which has not been able to carry them out. This particularly refers to the governance of the tertiary educational institutions, and the governance and determination of the status of the public scientific research institutes. For this reason new barriers are showing up, in the form of excessive formal – but not financial - autonomy in the universities, and of the statuses of the institutions of higher education (faculties, polytechnics and school of higher learning) and public institutes.

3.1. MST consultative bodies

Consultative bodies in plenty of cases are more of a formal character, some of them very rarely meeting, and it is quite dubious to what extent they do really assist the MST in the performance of its work. There is plenty of evidence to show the weak organisation and ineffectiveness of the work of the consultative bodies. Thus from 2000 to 2002 the National Science Council met just once, and the Prime Minister, who is also the chairman of the Council, was not present. In 2002 the Government abolished the Financial Support to Higher Education Council. For them really to work and to be of use to the MST, consultative bodies have to be activated that must not be of a merely formal character, and the effectiveness of their work to date must be monitored.

3.2. Internal control and auditing

It was not until 2000 that internal control was established in the MST, the objective being to check the regularity of the spending of budgetary resources and financial operations. The problem is the still weak team construction of internal control and the scope and quality of the checks carried out. It is necessary to build up a team in the Department of Internal Control that will in the forthcoming period in particular have to deal with the control of all major transfers from the MST to higher education and scientific research establishments. The internal control department will have to collaborate actively with the Government Auditing Office.

3.3. Transparency and management of the budget of the MST

For many years now the national budget has not been a good instrument for the analysis or the determination of the realistic distribution of budgetary money. Unluckily from 1996 the system of financial reporting was not set up in such a way as to make possible the acquisition of a realistic insight into the financial position of individual budgetary beneficiaries. The decision-makers in quite a number of cases did not take into account any information about the claims or the liabilities of budgetary beneficiaries. There is a constant confusion in the classifications and there have been many modifications to the regulations about accounting records of transactions (business events), which have not assisted the improvement of the transparency of the Budget.

The situation with the MST budget is similar; this too does not facilitate any determination of the structure of expenditure, the nature and purpose of the many transfers for scientific research work or the distribution among the individual scientific and tertiary level educational establishments. One of the weaker (though not the weakest) links in the MST chain is the recording of transactions (business events) in the budget of the MST, and the determination of the size and structure of the available revenue and expenditure of budgetary beneficiaries that are part of it. This is the result of poor financial management, which is made visible in the poor transparency of the budget of the MST and the impossibility to consolidate the budget or the financial reports of budgetary beneficiaries in the jurisdiction of the MST.

It is essential to improve the transparency of the budget and to consolidate the financial reports of all the budgetary beneficiaries in the MST jurisdiction, as well as to strengthen the system of financial reporting. The MST should be able to have the right to seek more detailed information about its budgetary beneficiaries' own revenue and sources of financing. Even without recommendations from the Ministry of Finance, the MST should

draw up a budget in terms of programmes to enable the determination of the structure of costs (labour costs, material costs and so on) according to individual programmes, or according to projects within programmes. This programme budget should be adopted for at least a three-year period.

3.4. Budgetary beneficiaries of the MST

Since 1996, the number of scientific and tertiary level institutions that are budgetary beneficiaries has been constantly on the increase. Numerous new tertiary level institutions and institutes have been set up, and some of the institutes have changed their legal status from public company to budgetary beneficiary. Partially, status change is the result of the unresolved position of these institutions after 1990, and partially the consequence of a desire to ensure stable sources of revenue under the aegis of the state. All these institutions, alongside the resources from the national Budget, are able to derive revenue from the market. Alas, practice shows that some of the institutions of higher learning do not meet the basic legal conditions for carrying out an activity. And yet, in the whole of the period, the criteria for obtaining the status of public tertiary level educational or scientific research institution have not been defined.

It is essential to determine the real number of scientific and tertiary educational institutions that are budgetary beneficiaries. It is also essential to analyze to what extent they meet the basic criteria for carrying out their activity, and to determine the number and structure of employees and the real operational expenditure (salaries, employer's contributions, material costs and so on).

3.5. The relation between the Treasury and the MST

Scientific and higher education institutions are not entirely included in the Treasury system or payments from the Single Account of the Treasury (SAT). One of the reasons is the institutions' own revenues, which until 2002 the Ministry of Finance had no control of. The problem here is that the payments for much expenditure are carried out from the accounts of institutions that are not part of the SAT payment system. It is abundantly obvious that the MST has to decide what it is going to undertake in the coming period with respect to financing science and higher education. The transition to the SAT is a technical question for the Finance Ministry, while for the MST it is a question of the further financing of scientific

and tertiary educational institutions. The MST and Ministry of Finance must ensure that all payments from the national Budget are carried out from the SAT and must include all transactions that are financed from the national Budget into the Treasury / payments from the SAT system. The allotment of funds to individual scientific and tertiary educational institutions has to be defined according to an estimate of the realistic needs and the size of the institutions' own revenue generated on the market.

4. Financing from the national Budget and own revenue

Some of the tertiary educational and scientific institutions can be said to be on the very verge of the budgetary system. These institutions' own revenues exceed the level of funds transferred from the national Budget. All the expenditure of these institutions, as budgetary beneficiaries, is financed from the national Budget. As well as funds from the national Budget, institutions are able to generate revenue of their own on the market (from their basic and other activities) which they distribute according to a criteria laid down by the Finance Ministry and the MST, mainly for the improvement of the work. Revenues from the institutions' own activities (basic and other) have not been clearly defined. It is absurd that the problem of financing should be regulated by regulations or bylaws of a lower legal level. Also observable is the cross-over of new educations of higher learning and new scientific institutes into the budgetary system. Unfortunately, this entry into the system is not accompanied with clearly defined criteria for the acquisition of the privileged status of budgetary beneficiary.

It is necessary to lay down the kind of jobs that tertiary educational and scientific institutions can carry out on the market, to unite the provisions of finance regulations in a single law to define the financing of tertiary educational and scientific institutions, and to define the criteria for the acquisition of status of budgetary beneficiary and the ability to have expenditure financed from the national Budget.

4.1. Records of transaction (business events) - accounting

All public tertiary educational and scientific institutions are financed from the national Budget. Notwithstanding this, many institutions do make money on the market - money that has the character of entrepreneurial income. For this reason it is debatable what kind of accounting to use. As budgetary beneficiaries they must adhere to the provisions about the

running of budgetary accounting. Non-profit making institutions (that also have revenue of their own) run non-profit making organisation accounting. The dilemma remains about to what extent to stick to these regulations, and whether to keep records about a business activity (transactions) within the institution according to the rules for enterprises. As a result of the unclearly defined status, difficulties arise in determining the manner of records for business events (transactions). This obvious discrepancy in the records of business events (transactions) has to be settled, their real status being determined.

4.2. The status of public scientific research institutes and their employees

There are three kinds of public institute in Croatia: 1) public; 2) public scientific research and 3) public institutes owned or co-owned by the Republic of Croatia that are set up as companies. All three kinds of institute are actually public and are financed from the national Budget, either through the MST or through other competent ministries. Public institutes are financed via individual competent ministries. A public scientific research institute is financed via the MST, and corporate institutes via other ministries, but on a commercial basis. It is unclear, in connection with this third kind of institute, whether, like entrepreneurs, they should pay any profit they make into the state budget or whether they can use it to improve their work. Independently of the status, many institutes organised as companies cross over and become part of the MST, thus ensuring the financing of their expenditure from the national Budget, while at the same time making money from their own business activities. And of course, now their own revenue is not taxable, because the institutions have acquired the status of budgetary beneficiaries. An additional problem is that the MST has still not determined the number of people employed in institutes whose salary bills it finances. For institutes can finance some scientists with their own revenue. In spite of this undefined status, the MST has for a number of years financed some of the employees (mainly research fellows) and material costs of corporate institutes, although they have not been within the competence of the MST.

It is necessary clearly to demarcate public institutes that carry out a public service as support to ministries and scientific research institutes. The Government and the MST must set out clear criteria for the acquisition of the status of scientific research institute, which should be founded on defined priorities in scientific research activity and a vision of the development of science. The real number of permanent and part-time employees of

institutions and the number of persons financed by the institutions' own revenues have to be determined.

4.3. Non-profit or profit-making institutions

Are all the non-profit institutions that have an auxiliary function in the work of higher education and science really non-profit making? This is a basic dilemma that shows up with certain non-profit making institutions, such as students' centres. The government subsidies the board and lodging of students, while the student centres (SC) make revenue of their own that exceeds most of the funds transferred from the Budget. As non-profit making institutions, the SC are not taxpayers and the profit made can be used for improving the work. In spite of that, the state still covers losses and has to bail them out if they incur debts. The problem is in the determination of the real price of the costs of the student standard of living. Nothing has changed for many years within the SC organisation. For this reason it is essential to determine the real costs of the work of the students' centers, the structure and number of employees, the burden in the performance of the work and the number of users of the service. The possibility of privatising part of the work should be considered. Also of providing for the work of internal control to check up on the spending of transferred budgetary funds, and it is necessary to draw up financial operation plans for one and the next two years.

4.4. Tertiary level institutions and employees

It is possible to determine the total number of tertiary educational institutions in Croatia but, strangely, not the number of full-time employees. Two official sources (the GAO and the MST) show different numbers of employees (Tables 3 and 4). It is interesting that institution of higher education have a major reliance on part time workers when they carry out their work, and the emoluments for these workers are provided in the national Budget. According to information from the GAO the number of part-time workers increased from 365 in 1996 to 2,700 in 2001. An additional problem is that some of the tertiary educational institutions do not fulfill the basic legal criteria for carrying out their work and work as branches of particular faculties. It is essential to determine the real number and structure of employees in higher education, and to what extent the employees meet the requirements for being able to work in higher education, as well as to determine the real teaching load and the necessary number of workers for carrying out jobs in higher education. The MST and

consultative bodies have to adhere to the criteria for giving permission for the performance of this activity and to determine which institutions of higher learning do not meet even the basic conditions.

4.5. Linking institutions of higher learning into a system

Tertiary educational institutions function according to the principle of separate vessels. All of them formally speaking are autonomous. The institutions of higher education are financially independent of the universities. The four universities are theoretically and formally autonomous, but not financially.

Dilemmas appear about whether the universities should be financially autonomous so that the financing of higher education is ensured with the universities as mediators. The faculties are financially independent so that it is reasonable for them to wonder about their future structure (linking of several faculties in one university) and their future roles. Hence the main problems are connected with determining the future status of the universities and faculties. It is hard to get any inside view of the financial operations of the faculties, and determine what the allotment of financial resources according to disciplines is.

It is hence necessary to set the financing of the programmes and activities of institutions of higher education on a firm footing. The Government and the MST should determine the current number of institutions of higher learning. In agreement with the faculties, financing should be shifted to university level. Universities, in collaboration with the MST, should coordinate the financing of tertiary level institutions. The formal autonomy of the university has to be provided through sources of financing and financial management. It is necessary to determine the real distribution of the funds from the budgets of the universities, and to lay down the criteria for the granting of funds based on performance (pursuant to cost estimates, salaries, material costs and capital investment).

5. Scientific research work

Notwithstanding the distribution of funds for the activity of scientific research, even in the individual scientific regions there is still no record of the number of contracts made for scientific research projects and topics, or total costs of research carried out. A particular problem is in evaluation and the determination of the criteria according to which funds for given projects and topics are transferred. There is also the problem of the making of proposals

for expenditure plans meant for the work of scientific research, the evaluation of proposals, and the control and supervision of their actual implementation all being delayed. The quality of the final evaluations of research work that has been carried out is also dubious.

It is necessary to: 1) improve the records about funds that have been spent for scientific research work, 2) insist on the systematic measurement of the quality (evaluation and monitoring) of proposals of research programmes, 3) analyse the size of expenditure in given disciplines and the structure of the costs and 4) lay down the criteria and purpose of resources transferred for scientific research work. The MST and the consultative bodies need to ask project leaders to give a detailed explanation of expenditure. Particular attention has to be devoted to systematic monitoring and evaluation of the effects of research and constant supervision of the quality of work and rewards in line with scientific and scholarly achievements.

5.1. Scientific research programmes

In 1996, the first National Scientific Research Programme was adopted (NSRP); this laid down the priorities for scientific research and also earmarked resources for financing projects and topics of scientific research. Unluckily, after three years, no new NSRP has been passed, rather the financing of scientific programmes again consists of financing of ongoing scientific research activities that is not founded on a systematic vision of the development of science and established priorities of scientific research based on quality. It is true, however, that not even the 1996 NSRP was founded on any strategy or vision of scientific development.

It is necessary to give a clear definition of scientific research work and to make a strategic document determining research priorities based on quality. Science strategy has to be based on a systematic investigation of the existing status and financial position of institutions of science and higher education. It is necessary to adopt a new NSRP based on the strategy. The organisation and structure of the institutions working on the implementation of the programme have to be defined according to this programme. Also needing definition is a system of evaluation and of rewards for results of work on scientific research projects.

5.2 The statistical coverage of the Croatian Bureau of Statistics and collaboration with the MST

Since 1996 the Croatian Bureau of Statistics (CBS) has been improving its statistics and the coverage of legal entities and the research and development activity, adjusted to international OECD methodology (*the Frascati Manual*). Still, a lasting problem for the Bureau and for users of its information is its incomplete coverage of legal entities, for some legal entities do not supply the Bureau with statistics. The MST also sends the Bureau information about legal entities that are grounded on a register. Nevertheless, the MST has to regularly update this register and provide the Bureau with precise information on time. An additional problem for the Bureau is its shortage of staff and funds for carrying out any comprehensive and detailed investigation. The Bureau (R & D department) should be directed a larger amount of funds and should at the same time develop an effective team, with increased staffing, in this department. All legal entities that carry out scientific research should be obliged by statute to send in data at the right time.

5.3. Internal and external linkage

Data about investment in science show a lack of cooperation and self-sufficiency in the financing of scientific research. Investment from the private sector is very low, and collaboration of state scientific institutions with the private sector is poor. Also negligible are cooperation with foreign countries and revenue acquired in collaboration with foreign countries. Scientific institutions of the state sector and of higher education (mainly state owned) preponderantly rely on the state as the main banker (Table 5). As a result, in the state and higher education sector (state in the broader sense) and also in most scientific areas, there is an unfavourable cost structure in which labour costs dominate (Figure 1). Unluckily, this is the rule in spite of several exceptions from a few areas of science. Science in Croatia is too heavily reliant on the state as chief financier, and shows no interest in any major collaboration with or financing from foreign sources. Hence collaboration with the private sector needs enhancing; it should be provided with scientific programmes and research in which the private sector would have an interest. Collaboration with foreign countries is a must not only as a significant source of financing but also as a means for the valorisation and real evaluation of science. Both of these should show how much Croatian science and education are worth on the market.

6. Status and assets of foundations

Since 1995 it has been possible in Croatia to set up foundations; these could become an interesting source of financing and stimulation of science and higher education. From an analysis of the statutory framework it has been seen that branches of foreign foundations in Croatia do not have the status of legal entity. The legal entity is the founder, the headquarters of which is abroad. In spite of the law that has been passed, the status of the foundation has not been clearly settled, because by definition of its assets it would seem that they can carry out some entrepreneurial activity. It is necessary to liberalise the concept of the foundation, to more clearly define it with a better definition of the assets of the foundation, and to study the practice regarding foundation legal status in other countries. The assets of the foundation have to be clearly defined, because now, according to all the criteria, the foundation can carry out entrepreneurial activities.

6.1. The National Foundation for Science and Higher Education

There is also a definition problem in the newly founded National Foundation for Science and Higher Education in which the criteria for transferring parts of the profit of the public corporations to the assets of the foundation are not clear. An additional problem is the institutional confusion about defining the governing board of the foundation. And in spite of funds being provided in the national Budget, the Foundation has still not started working.

The assets of the Foundation and the criteria for transferring part of the profit of the public companies to the assets of the foundation have to be defined more clearly. The members of the governing board must be appointed and the basic purposes for which the Foundation was founded must be put into practice.

7. Scientific institutions in the taxation system

As public establishments, institutions of higher education and public institutes are budgetary beneficiaries and have not been founded to make a profit. Still, all these institutions have the opportunity to make a profit on the market and to acquire income via carrying out commercial activities (Table 6). It is still not clear whether these institutions, as legal entities, can be liable for the payment of corporate income tax and valued added tax. The Tax Administration (TA) can, according to an estimate of the institutions' own revenue, rule that the institutions are indeed liable to pay both these taxes. The problem lies in the unclear legal status of the scientific and higher education institutions, which does not allow for the

determination of a tax status. The collaboration between the TA and the MST is poor, because the TA does not have information about the size of the institutions' own revenue and the financial position of the scientific institutions, which is a basis for determining of the tax status.

It is necessary to do away with the criteria for the distribution of own revenues acquired on the market, i.e., the provisions of the regulations that define the purpose of these funds, since they are anyway used for the advancement of the work. In this way one of the restrictions related to the determination of profits tax would disappear. In budgetary beneficiaries among whom there is a difference in revenue and expenditure, it is necessary to determine the magnitude of the profit made. The profit made can come only from an institution's own resources, since budgetary resources can be spent only within the year for which they were granted. Because of the ability they have to generate income, budgetary beneficiaries might keep records about that part of their revenue that they do generate on the market according to the principles of entrepreneurial bookkeeping, and the part of their funds that they obtain from the Budget according to budgetary bookkeeping.

Collaboration between the TA and the MST has to be strengthened. Via the Finance Ministry, the TA has to have an influence on the MST to ensure the sending of prompt information about the magnitude of own revenue, and the number of institutes and employees of higher learning and scientific research institutes. The TA must (according to the provisions of the Corporate Income Tax Regulations) determine which among such institutions are taxpayers, i.e., which of them must file returns for profit tax and VAT. Budgetary beneficiaries should adapt to the provisions of the law and show in their budgetary accountancy a tax base that is as realistic as possible. Profit should be defined as the difference between revenue generated through the performance of an economic activity, and the expenditure for the performance of this activity.

Conclusion

It is clear that the existing system for financing science and higher education is not transparent. For this reason constant improvement of the institutional structure and the effectiveness of the work of the scientific and high schools institutions is required. The main thing is to understand that the existing system of financing is a brake on development and developmental processes in the system of higher education and science. Decision-makers in particular must have a vision of the development of science and higher education based on a

settled strategy and on scientific priorities based on quality, as well as an evaluation of the status and financial position of the institutions. It is necessary to have a consensus at the level of university and faculty, Government and the MST and the public institutes, and a will for the final definition and reform of the system. Ongoing education of all those involved in the reform of higher education is necessary, from the decision-makers to the public, so that they should understand the importance of the reforms carried out. All actions aimed at retaining the existing status will be a step backward, away from the desire to build a system that is open to the public. For this reason the construction of a better system of higher education and science is a duty and an obligation to future generations who will live in, work on and develop this system.

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Appendix:

Table 1: Available financial resources for higher education and scientific research institutes from 1996 to 2001

in million kuna

Year	Total	%	From Budget	%	Own revenues	%
1996.	1.448	100	1.129	78	266	22
1997.	1.693	100	1.297	77	333	23
1998.	2.058	100	1.650	80	407	20
1999.	2.291	100	1.803	79	449	21
2000.	2.637	100	2.029	77	522	23
2001.	3.147	100	2.381	76	644	24

Source: Financial reports of MST, 2002.

Table 1.a.: Total financial resources for higher education and scientific research institution as % of GDP

Year	Total revenue	From Budget	Own revenues
1996	1,34%	1,05%	0,25%
1997	1,37%	1,05%	0,27%
1998	1,31%	0,98%	0,30%
1999	1,62%	1,27%	0,32%
2000	1,73%	1,33%	0,34%
2001	1,86%	1,41%	0,38%

Source: Financial reports of MST, 2002.

Table 2: Expenditure for R&D as percentage of GDP in the period from 1997 to 2000

	Gross expenditure for R&D (GERD)	Expenditure of business sector on R&D (BERD)	Higher education expenditure for R&D (HERD)	Government expenditure on R&D (GOVERD)
1997.	0.77	0.25	0.26	0.26
1998.	0.71	0.25	0.27	0.19
1999.	0.98	0.43	0.34	0.21
2000.	1.23	0.56	0.41	0.27

Source: R&D Survay in 1998, 1999, 2001, CBS, Zagreb, 2002

Table 3: Number of employees in the higher education and science system according to CBS data

	1996.	1997.	1998.	1999.	2000.	2001.
1.HE institutions	10,389	11,360	10,504	n.d.	11,985	12,413
1.1. Full time	9,024	9,391	9,744	9,532	9,905	9,713
1.2. Part time	365	979	820	n.d.	2,080	2,700
2. Public institutes	1,390	1,380	1,478	1,453	1,463	1,478
Total (1+2)	10,779	11,750	12,042	n.d.	13,448	13,891
Total (1.1 and 2) not inc. part-time staff	10,314	10,771	11,222	10,985	11,368	11,194

Source: Government Auditing Office, 2002

Table 4. Total employees in the science system according to MST figures

	2000.			2001.			2002.		
	Legal entities		Full	Legal entities		Full	Legal entities		Full
Institutions	Total	AD	Time	Total	AD	Time	Total	AD	Time
1. Higher education	95	89	10.100	95	90	10.547	100		
Universities	4	4	167	4	4	171	5		
Faculties and art academies	63	62	9.237	63	62	9.606	66		
Polytechnics	7	7	168	7	7	217	7		
School of higher learning	15	11	387	15	12	407	15		
Libraries	6	5	141	6	5	146	7		
2. Public institutes	28	23	1.679	28	24	1.770	32		
Total (1 + 2)	123	112	11.779	123	114	12.317	132		

Source: MST 2002

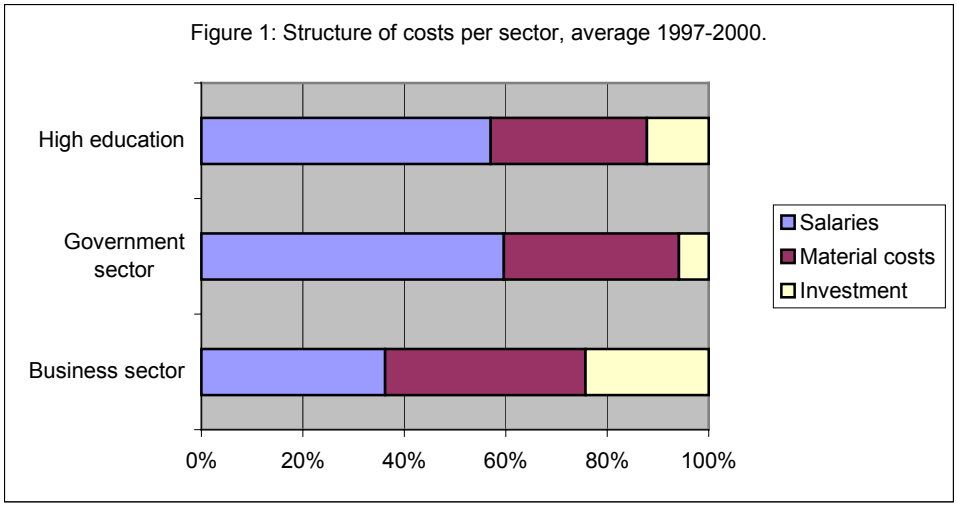
AD – available data about institutions for which the number of full time employees is presented

Table 5: The structure of sources of financing for government R&D in the broader sense (government sector and high education)

in million kuna

	1997.	%	1998.	%	1999.	%	2000.	%
Own funds	114.2	18	111.3	17	141.5	17	159.5	16
State and local administration	442.5	68	451.4	71	580.7	74	811.6	78
Private and public firms	37.9	6	63.2	10	45.9	6	50.6	5
Other domestic sources	10.1	2	5.6	1	12.5	2	4.1	0
Foreign countries	42.4	6	6.2	1	7.7	1	8.1	1
Total	647.2	100	637.7	100	788.4	100	1,034	100

Source: CBS, 2002



Source: CSO, 2002.

Table 6: Scientific institutions' own revenue from 1999 to 2001, in million kuna

	1999.	2000.	2001.	Total 99-01
1. HE Institutions	390.5	453.4	520.9	1,364.8
Faculties and art academies	347.4	386.1	437.2	1,170.7
Polytechnics	21.2	37.5	49.2	107.9
School of higher learning	21.9	29.8	34.5	86.2
2. Public institutes	48.3	64.5	73.5	186.3
Own revenues total (1 + 2)	438.8	517.9	594.4	1,551.1

Source: Financial reports of MST, 2002.