

The funding of universities in the Netherlands: Developments and trends

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Abstract. Recently, the Dutch Minister of Education, Culture and Science proposed that the funding system of Dutch universities be drastically altered by introducing a system of capacity funding. The intention is to abandon the current (direct) student dependence in funding and, instead, to offer a stable, long-term funds perspective. If this capacity funding is actually adopted, a trend break in the funding system of higher education and research in the Netherlands will occur.

This article describes the developments in the funding of Dutch universities over the past decades and the (expected) developments for the future. With regard to the near future and in addition to the capacity funding intended the author will also discuss other developments anticipated by him.

It will be shown that during the last forty years four “generations” of funding models have been used in the Netherlands. Soon the changeover to the fifth generation will possibly be made. A number of issues will be discussed, such as the introduction (and enlargement) of lump sum funding, elements of output funding (performance based funding) and competition on the basis of quality.

First, some basic characteristics of funding systems in general will be presented. They will be used to analyse the relevant developments in the Dutch higher education allocation systems.

Introduction

This contribution consists of the following elements. First, a general presentation of the characteristics of funding systems will be given. With these characteristics funding systems may be classified and compared, irrespective of their policy areas. Such a classification can also be useful when analysing the developments in the funding systems of Dutch universities. Therefore, the basic characteristics of funding systems will be used in the third and most important part of this article to put several decades of the public financing of Dutch universities into perspective. In the second part the flows of funds Dutch universities receive will be discussed.

The theoretical part of this article could offer a basis for ‘structuring’ (possible) discussions in countries other than the Netherlands about desirable funding systems of higher education institutions.

Funding systems

Public financing of higher education can be shaped in various ways. Choices have to be made when constructing funding systems. This will be discussed in this section.

Funding systems – including those of higher education – can be typified according to three basic characteristics:

- the basis of the funding;
- the way in which the amount of the allowance is determined;
- the way in which the allowance is paid.

Basis of the funding

The basis of the funding is related to a certain phase in the production process. Consequently, two ways of financing can be distinguished:

- *Input funding*. Financial resources are made available to cover distinct cost categories (personnel costs, material costs and investment costs.)
- *Output funding*. The funding is based on achievements.¹

Taking the funding systems mentioned as a starting point, the provider of the subsidy must select one or more funding bases (for instance, the number of registered students, the number of graduates, the number of doctoral dissertations). The essential question is always to find input, process and/or output indicators that stimulate as much as possible the achievement of the policy objectives aimed for.

Amount of the allowance

Two main variants can be distinguished in the way the amount of the allowance is determined:

- *Normative funding*. It is determined on the basis of criteria which are basically applicable to all institutions involved.
- *Reimbursement funding*. It is determined on the basis of the applications for facilities and/or activities submitted to the provider of the subsidy by the institutions and approved by this provider.

Normative funding occurs when price (tariffs) and/or production (volume) have been standardized. It generally assumes sufficient insight into the cost structure of the institutions. However, as regards higher education this insight is limited (see Jongbloed et al. 1994). In reimbursement funding it is the actual

costs that are compensated, insofar as these are subsidizable. This enables a close match to be made with the specific needs of the institutions.

Way in which the allowance is paid

Differences between funding systems may consist in whether the money received may be spent at will or not, given the aforementioned conditions, and whether a possible allowance surplus may be kept or not. In *lump-sum* funding the subsidy is an amount paid in advance for a set period of time. The institution is free to decide in what way this amount will be spent for the achievement of the purposes intended. The institution may also decide that part of the funds will not be used in a certain year but will be reserved. *Earmarked* funds may not be used for alternative purposes. Funds supplied for the purchase of certain equipment may only be spent on that item. Generally, any surpluses must be refunded. Earmarked funding and lump-sum funding may be regarded as two extremes of a continuum. In between, all kinds of gradations of spending freedom may exist (for instance, *line-item budgeting* and *programme budgeting*).

Additional characteristics

The three basic characteristics of the funding systems discussed can be completed with the concepts of *open-ended funding* and *budget funding (ceiling funding)*. Here, it is not so much a matter of a characteristic of the funding taxonomy as such. Rather, it is determined beforehand whether the expenditure is to be bound by an absolute maximum amount (budget funding), or is to be made dependent on the actual demand (open-ended funding).

In addition, in funding systems the factor 'quality' may or may not be taken into account. In normative funding, quality indicators (for instance, 'weighted' number of publications) may be considered. With regard to reimbursement funding external quality assessment may be considered. If this is the case in higher education, universities – or rather, departments or research groups – will be forced to compete for the appropriation of the scarce research funds.

Another characteristic of funding systems relates to the period of financing. Generally, higher education funds are allocated annually. The level of funding is reassessed each year. However, funding for a longer period is also possible; the amount agreed on earlier is then usually paid annually. Capacity funding – which will be discussed in the following sections – is an example of this.

In the case of financing on several funding bases, volume norms and tariff norms, a funding model (allocation model) is generally used. This is then

called *formula funding* (Ahumada 1990; Darling et al. 1989; Lasher & Greene 1993). A funding model comprises a number of parameters (prices) and a number of variables.

Each funding system comprises a combination of the above mentioned components. During the past 15 years, the financing of Dutch higher education, expressed in terms of basic characteristics of funding models, has shown some important developments:

- the portion of output variables in the funding formulas has increased;
- normative instead of reimbursement funding has been introduced;
- the funds are provided in a lump sum instead of as earmarked funds;
- open-ended funding has been replaced with ceiling funding;
- complex, highly detailed norms have been replaced with broad norms;
- more attention has been paid to competition on the basis of quality.

These developments will be illustrated in the remaining part of this contribution.

Sources of financing of Dutch universities

The financing of higher education can be achieved in two ways, viz., by the government (public financing) or by the user (private financing). Of course, combinations of the two are possible. Public financing of facilities may take the form of either financing the supply (price subsidy to the producer) or the demand (price subsidy to the consumer). Here, too, combinations are possible. In the Netherlands the funding of universities is accomplished through a mix of the two main forms mentioned.

Dutch universities (the producers) mainly receive their income from four resources:

- tuition fees;
- first flow of funds (core funding);
- second flow of funds;
- third flow of funds.

Public funding via the demand side comes from student grants. Student grants consist of two parts, viz., a subsidy (a basic grant, a supplementary grant) and an interest-bearing loan. Whether or not such grants are awarded depends on academic performance and parental income. The basic grant includes a component for the payment of tuition fees. So, the tuition fees are in fact an indirect form of public funding.

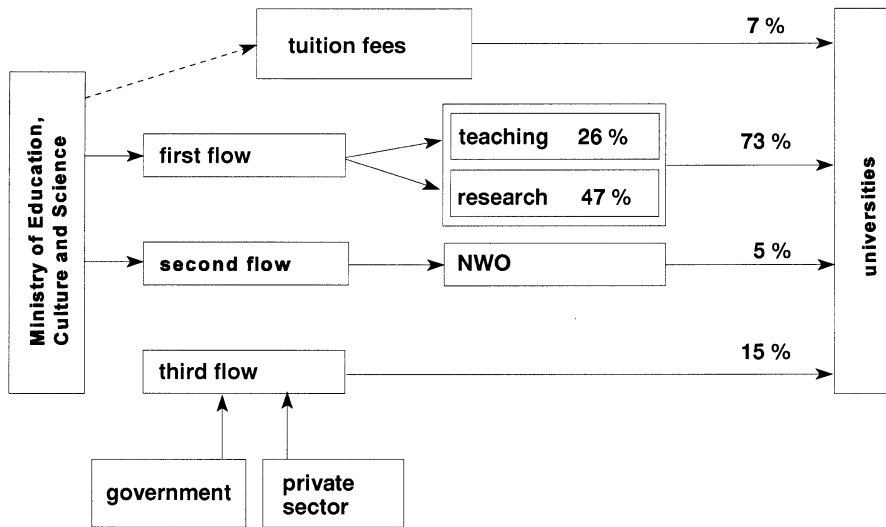


Figure 1. The funding of Dutch universities in flows of funds in 1996.

The income universities receive from the first and second flows of funds constitute *public funding via the supply side*. The core funding consists of a basic contribution, which is allocated on the basis of a model, and some additional, earmarked contributions (specific payments). In 1996 these specific state payments took over 5 per cent of the total government contributions. There has been a steady decrease during the past few years. The second flow of funds is solely made up of specific public payments for projects authorized by a research council (NWO). These grants are allocated on the basis of quality assessment.

Private funding mainly consists of payments of tuition fees by students and payments by companies or individuals for services rendered (contract research, contract tuition, other services). The total income of universities from contract activities is called the third flow of funds. This also partly stems from public means, because the government, too, acts as a client.

In recent years the ratios between the flows of funds as depicted in diagram 1 have changed considerably. This is chiefly caused by the strong growth of the third flow of funds and the substantial increase in tuition fees. At present it is being considered to reinforce the second flow of funds at the expense of the first. In addition, there is an ongoing discussion on whether the first flow of money should be fed more by the consumers of higher education.

Public funding of Dutch universities during the past decades

In this section, the method of financing Dutch universities over the past decades will be examined. The (likely) shape of the funding in the near future will also be discussed. Only the core funding will be dealt with.

ATOOM and ITT

Until 1960, the universities were funded on the basis of reimbursement. No funding model was used. Consequently, there was some room for negotiation between the government and the individual universities. Since then, the funding of operational means has been directly linked to the number of registered students. This link was established in the so-called *ATOOM-model* (in Dutch: *Ambtelijk Technisch Overleg Over Middelenverdeling* or Official Technical Consultation on the Distribution of Funds). By means of this model, a total amount for personnel funds and one for material funds were determined per institution. These amounts were paid to the universities as a lump sum. However, the universities were not authorized to use personnel funds for material costs or vice versa.

In 1978, in succession to the *ATOOM-model*, the *ITT-model* was introduced. (In Dutch: *Intentionele Taakstelling en Toewijzing* or Intentional Objective and Allocation). An important reason for the introduction of this new model was found in the fact that the government wanted a less direct link between research funds and the number of students than was stipulated in *ATOOM*. In the *ITT-model* this link was less strict. The budget for personnel costs was no longer fully student dependent, but also included a basic amount insensitive to the number of students, the “fixed floor”. The variable part of the budget was determined by the number of (Full Time Equivalent) standard-course-length students instead of by the total number of registered students. This change stems from the fact that not all registered students take part in the education process with the same intensity. The variable budget was the result of the number of personnel, calculated by multiplying the (pre-set) student/staff ratios by the number of students demanding education.

PGM

In 1983 *PGM* (the Positions-Funds-Model, in Dutch: *Plaatsen-Geld-Model*) was introduced to succeed the *ITT-model*. The aim was to end the situation in which the activities ‘research’ and ‘services rendered to the community’ were funded as a percentage of the amount set for teaching. They should be (largely) independent of the number of students. In addition, there was a

need to distinguish between a volume component (number of personnel) and a price component (average personnel costs).

PGM comprised two parts, viz., the *Positions-model* (volume component) and the *Funds-model* (price component). The Positions-model, in turn, consisted of two sub-models:

- a sub-model for the calculation of the number of positions for academic staff, WP-staff (in Dutch: *WP-plaatsen, Wetenschappelijk Personeel*);
- a sub-model for the determination of the number of non-academic staff, NWP-staff (in Dutch: *NWP-plaatsen, Niet Wetenschappelijk Personeel*).

The sub-model for the WP-positions again consisted of two parts, viz., the A-part (teaching) and the B-part (research). The A-part was largely defined by the normative relations between objectives and means. The *number of standard-course-length students* was the main funding basis. Furthermore, a fixed floor was used. The B-part (conditional research funding) was independent of student data and not normative. In this part a national research objective was determined and positions for academic staff were to be financed on the basis of the proven quality of the research. For this purpose a system of ‘conditional research funding’ (In Dutch: *VF, Voorwaardelijk gefinancierd onderzoek*) was created.

In the second sub-model of the Positions-model the full-time equivalent number of non-academic staff was determined by linking the number of NWP-positions to the number of WP-positions by means of NWP/WP-norms. When the number of personnel per university had been determined, this could be converted into a total budget for personnel costs via the Funds-model; in this model average personnel costs were used. This budget was provided as a lump sum.

The budget for current material costs was determined by means of the OLM-model (In Dutch: *Overige Lasten Model* or running costs model). Here the running costs were distinguished into fixed costs and normative costs (e.g., tariff per m²). The fixed costs were paid by the government on the basis of reimbursement and were earmarked. The normative costs were mainly related to PGM-results. They were paid to the institutions as a lump sum.

Apart from funding on the basis of PGM and OLM the first flow of funds had a separate investment budget and a large number of specific payments. In the early nineties the number of specific payments was drastically reduced.

PGM was in fact a highly complex model; it that became increasingly complicated due to subsequent refinements. Moreover, PGM lacked a transparent incentive structure. As a result it became the target of increased criticism in the late eighties. After extensive discussions and consultations with regard to

possible alternatives, it was finally decided to introduce a new funding model, *i.e.*, the HOBEEK-model.

HOBEEK

Since the 1993 budgetary year a new model, the *HOBEEK funding model*, has been used. The model consists of three parts, *viz.*, teaching (23%), research (64%) and “interweavement” (13%). The allocation is the result of a formula, which is based on norms (prices, tariffs) and funding bases (number of registered students, diplomas, doctorates).

Compared with other countries the research part of the core funding in the Netherlands is relatively high. On the other hand, the proportion of total public research income Dutch universities receive on the basis of competition and quality assessment (second flow of funds) is extremely low.

The calculating rules used in HOBEEK are not spending rules but purely allocation rules. So, the principle of spending freedom applies to all the government contributions (investment budget included). The allocation rules determine how the budget for higher education, set under the terms of the Education Budget, will be divided among the universities. These rules have been considerably simplified and reduced compared with the previous Positions-Funds-Model.

Teaching budget

The funds involved in teaching are allocated on the basis of two quantifications (funding bases), *viz.*, the *number of registered students* and the *number of Master’s degrees* issued. Each registered student is funded for a period of time which can, at the most, equal the normative duration of the course.

The quantitative data are multiplied by the funding tariffs. Two tariffs are used:

- NLG 5,000 for students and degrees in the alpha (arts) and gamma (social sciences) clusters;
- NLG 7,500 for students and degrees in the beta (science), medical, technical and agricultural clusters.

These tariffs are net prices. The universities are allowed to keep the tuition fees that they receive from their students, which contrasts with the funding under PGM.²

The use of the basic formula ‘price times output’ results in a (calculated) budget that is higher or lower than the available means. Therefore, a correction factor (teaching factor) is applied, so as to prevent overspending or underspending.

Compared with PGM, HOBEEK recognizes only two tariffs instead of six. Furthermore, these prices are no longer based on (a vain attempt at estimating) the actual costs. Another difference is that HOBEEK does not have fixed floors.

Research budget

The research part of the model comprises four components:

- a basic allowance (15%);
- a part for doctorates and designers' certificates (9%);
- a part for research schools (0%);
- a part for strategic considerations (76%).

The volume of the *basic allowance* has been nationally established at a fixed percentage of 15 per cent of the research budget. Its allocation is pro rata to the volume of the teaching budget per institution. Approximately 9 per cent of the research funds are allocated on the basis of the number of actual *doctorates and designers' certificates*. Fixed subsidies are used for this:

- NLG 60,000 for doctoral dissertations in the alpha (arts) and gamma (social sciences) clusters;
- NLG 120,000 for doctoral dissertations in the beta (science), medical, technical and agricultural clusters;
- NLG 100,000 for designers' certificates.

A sealing-off mechanism has been created, through which surpluses or shortages within the model can be counterbalanced to prevent an open-ended situation within an otherwise fixed macro budget for the whole of the teaching and research objectives in higher education. This is done by means of the strategic considerations component in such a way that an increase in the number of doctorates and designers leads to a decrease in the strategic considerations component and vice versa.

For the time being the *research schools* component remains void. The idea is that when in a few years' time a crystallized and balanced system of research schools has been developed, the HOBEEK taxonomy will include a subsidy for each recognized research school a university incorporates.

At the introduction of HOBEEK the nationally determined volume of the *strategic considerations* component (76 per cent of the national research budget) was initially allocated as a 'residual item', so that the 1993 budget did not result in additional or decreased budgets per individual institution. For the years following 1993 it was resolved to treat this component as a residual item, still, but only for the macro budget and not for the individual universities any more. Reallocations amongst institutions were intended to

take place on the basis of considerations of quality and social relevance. However, it remained unclear in which manner these concepts were to be put into practice. Consequently, there has been no reallocation of funds under HOBEEK.

Interweavement budget

One of the starting points at the introduction of the HOBEEK funding model was the idea that the prices in non-university higher education and university education should be equal. However, the implementation of this idea would have resulted in a decrease in the new teaching budgets for all Dutch universities. Therefore it was stated that anything making universities more expensive than polytechnics must be attributed to their scientific character (*teaching based on research*). For universities the interweavement of teaching and research leads to additional costs for education. Therefore, an '*interweavement component*' (teaching-related research) has been included in the government allowances for universities.

Summarizing, it may be said that HOBEEK recognizes four funding bases (students registered, degrees, doctorates and designers' certificates), to which different prices are linked. A large part of the research budget has been allocated on the basis of historical data rather than norms or quality. The total budget that is allocated to a university is the sum of the three components teaching, research and interweavement.

Capacity funding and other future developments

In the 1996 Higher Education Plan 'HOOP' (in Dutch: *Hoger Onderwijsplan*) of the Ministry of Education, Culture and Science it is stated that in the years to come the intake of first-year students will decrease considerably. According to the report, this development should have consequences for the funding system of universities. It is not deemed desirable to increase participation in university education. Therefore, institutions should not be stimulated to increase their numbers of students, as they are under HOBEEK. It is proposed to introduce a form of *capacity funding*. The essence of this will be that the government contribution per university is determined beforehand for a longer period of time. The aim is to offer the institutions a stable funds perspective which will enable them to counterbalance the declining intake.

The exact shape of the ministerial plans is not yet known. Soon a policy document will be issued. The policy plans will certainly include terms to be decided between the government and the individual institutions about the total teaching and research capacities to be funded. Consequently, it is to be

expected that financing will no longer be model dependent. Per institution the government will try to gain control through funding, for instance, by coming to agreements on the specific 'mission' of an institution. Because of this, the spending freedom of the universities could in fact become somewhat less. For Dutch universities, at first, the changeover from HOBEEK to capacity funding will not result in a change in available resources.

In accordance with the ministerial plans, the teaching capacity will be degree dependent instead of student sensitive. The rationale behind this choice is to stimulate a timely relegation to other courses or institutions if it is obvious that the student's chances of success at university are small. It is the intention to come to capacity agreements (including a matching financial perspective) for a period of 10 years. The funding will be provided as an 'advance' for output still to be achieved (allowance in advance). So far, the amount of the funding has been established based on output already achieved (allowance in arrears). The aim was to introduce the new taxonomy on 1 January 1997. However, this appeared to be too optimistic. Therefore, as an interim measure the minister based the 1997 budget on that of 1996. Most probably, the same will happen in 1998.

Through their organized interest group (VSNU), the universities have indicated only a partial agreement with the new funding plans. They fear that the government is not only striving for (quantitative) capacity agreements, but also for a stronger hold on the universities in bilateral agreements on qualitative issues. Furthermore, the universities reject a method of funding that is fully student-independent. However, the aim of promoting stability in funding is whole-heartedly endorsed by the universities, albeit that it should be implemented in a different way. To what extent this criticism is justified also depends on the way in which the ministerial plans will be concretized.

Apart from the anticipated introduction of contract funding, in the author's view a number of other interesting developments in the field of university funding may manifest themselves in the decade to come. These changes are mainly the result of an expected (further) development of the Dutch university system in the direction of a decentralized, market-oriented system. The following developments are likely to take place:

1. The allocation of (a part of the) research funds on the basis of competition and quality assessment by independent experts; for instance, by 'filling' the hitherto void HOBEEK component for research schools and by actually putting into practice the concepts of quality and social relevance in relation to the HOBEEK strategic considerations component. Because of this, main line research funds which, to date, have been largely fixed per institution, will be reallocated. This could also be accompanied by a reinforcement of the second

flow of funds at the expense of the first. All in all, the major part of the total of the core funding will be subjected to the 'threat' of reallocation. At present this applies to under 50 percent.

The granting of research funds from the first flow on the basis of competition and quality assessments may imply at the same time an erosion of the spending freedom of the institutions. Certain resources will be solely allocated for specific research projects. It is conceivable that the spending freedom will be further reduced by the bilateral agreements that are part of the capacity funding intended.

Possible reallocations among Dutch universities as a result of the developments described above could be contrary to the policy of financial stability for the years to come. The perspective of financial stability will probably only be realized with regard to the teaching funds.

2. The continuous budgetary tightness of the government and also its changing role will lead to a further decrease in public funding of university teaching and research. Conversely, private funding (absolute and relative) will increase. This will be especially apparent from a (further) rise in tuition fees and from a (continuous) increase in contract income (third flow of funds). There is a possibility that further restrictions will be imposed on the basic student grant or that it will be abolished altogether. In the past few years the basic grant has been decreased considerably, which has resulted in higher loans.

The increase in income from tuition fees and contract activities has been considerable in the past decade. In the 1984/85 academic year the tuition fees amounted to NLG 898 per student. In 1996/97 they ran up to NLG 1937. Contract income rose from NLG 235 million in 1983 to NLG 783 million in 1993. All amounts mentioned are expressed in constant prices.

3. To stimulate competition and a market-oriented approach, the institutions will be allowed to determine their own tuition fees. In addition they will possibly also be empowered to charge different tariffs per faculty or discipline. A first step has been taken with the ministerial decision to allow universities to determine their own tuition fees for auditors at the start of the 1996/97 academic year.

4. The call for quality improvement (value for money) becomes increasingly louder. This will affect both the allocation of research funds and of teaching funds. With regard to teaching the funding will become more student independent. This will also be the case with the capacity funding that is to be introduced. The capacity funding proposed is, however, mainly the result of the aim to unlink funding from the decreasing intake of students in the years to come. At the same time, universities will be allowed to use stricter selec-

tion criteria which means that students with a lower qualification might be excluded. Possibly, student grants will be provided by the institutions instead of by the government.

5. The necessity of ongoing education will keep the discussion alive about the financing of the first flow of funds from the demand side (vouchers). However, it should be kept in mind that its specific shape is often more important than the underlying principle idea (see Jongbloed, Koelman & Vossensteyn 1992). On the face of it a voucher system seems attractive because it provides individuals with a very high degree of flexibility and it forces institutions to do all they can to meet the highest possible standards of quality. On closer examination, however, it presents major obstacles; in particular a lot of paperwork and an unpredictable education participation.

Conclusions

Above attention has been paid to the main characteristics of funding systems. Furthermore the most important developments in Dutch higher education finance have been mentioned and illustrated. These developments can be considered as changes reflected in various generations of funding models (Hazeu & Lourens 1993). So far four 'generations' of models have been used. Probably the changeover to the fifth will be made soon.

In essence, the *first generation* is characterized by earmarked input funding on the basis of reimbursement. In fact, no model is yet used. The *second generation* (ATOOM and ITT) may be typified as input funding (using a model) on the basis of norms with a limited spending freedom. The *third generation* (PGM) offers a new aspect. There is a certain output orientation (success rate, doctorates). Compared to the second generation, the spending freedom for the universities has increased considerably. The *fourth generation* (HOBEEK), too, comprises a mix of input (students) and output norms (degrees, doctorates and designers). However, the set of norms is much simpler and more transparent than the highly complex PGM norms. Furthermore, the extent of spending freedom has become maximal.

The tendency in funding up to and including HOBEEK is a development in the direction of total spending freedom and an increasing output orientation on the basis of simple norms. Student dependence in funding remains considerable. A major part of the research funds is still allocated to the universities on the basis of historical data and not on norms and/or quality assessments, so that reallocations are not under discussion.

As a consequence of the planned introduction of capacity funding probably essential changes will occur in the near future. The input character of the fund-

ing of teaching will largely or completely disappear. Funding will mainly or solely occur on the basis of the number of degrees and of bilateral agreements. Consequently, dependence on student numbers will (practically) disappear. Agreements about funding for a longer period of time will be made. The yearly budget per institution, barring political intervention, will be established for a period of five or ten years (contract funding). Thus, Dutch universities are being jofferred a stable budget perspective for a number of years. Formula funding will disappear. The volume of the funding will partly depend on the results of the negotiations between the government and the individual universities. Because of this, the spending freedom of the universities could in fact become somewhat less.

Notes

1. In the literature a third form of funding is often distinguished: throughput funding. This funding system occurs when the government allocates funds for the 'throughput': the teaching process. The proceedings or the activities of an institution to achieve certain objectives (for instance, the turnout of graduates) are funded. In our view, throughputs can be traced back to inputs in most cases.
2. If the interweavement component (teaching related research), the basic allowance for research (indirectly linked to the number of students) and the tuition fees are taken into account, universities receive NLG 10,230 and NLG 14,220 per student respectively.

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