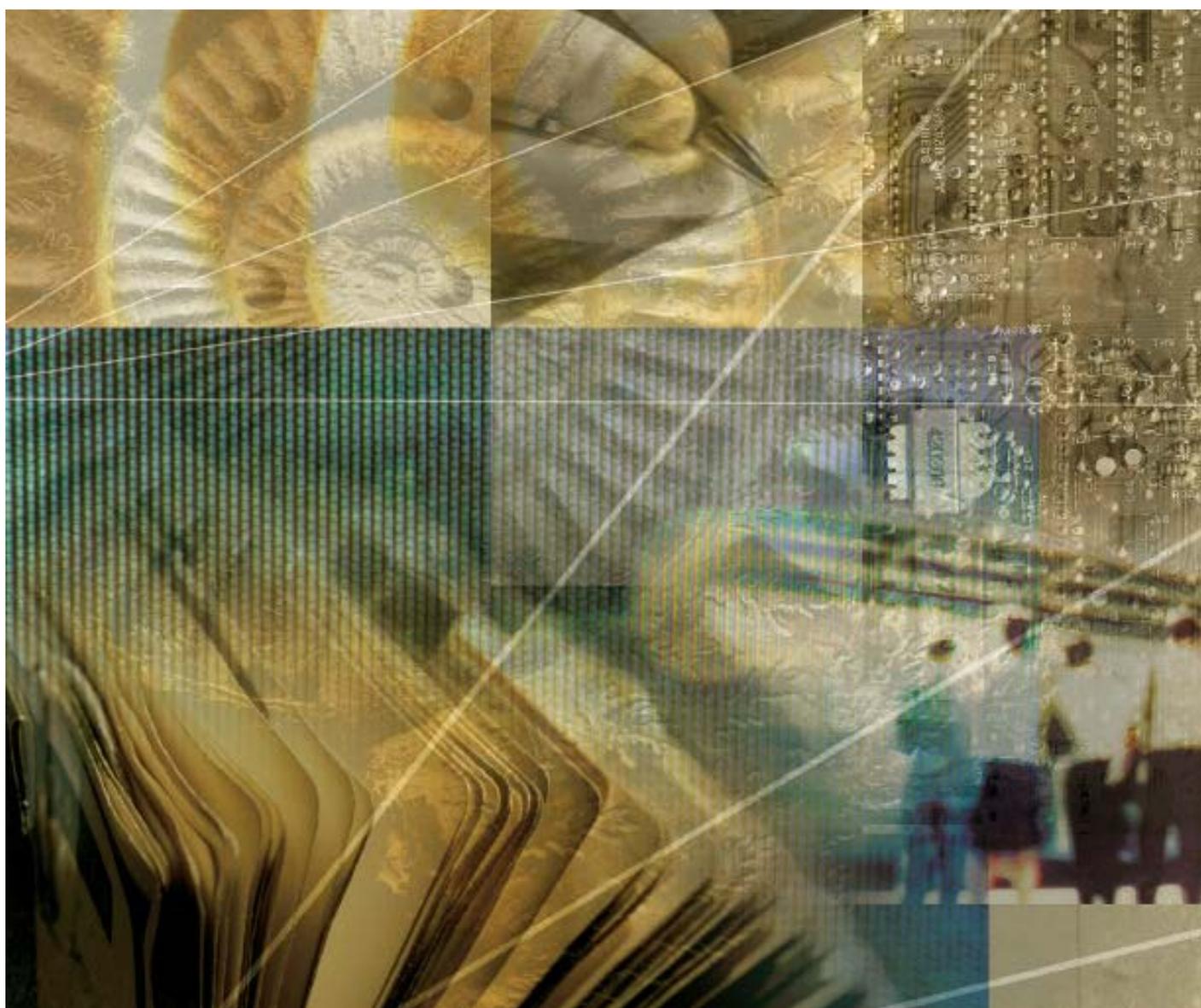


The politics of steering by numbers

Debating performance-based funding in Europe

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Preface

Written as part of a project on funding as an instrument in European higher education policy funded by the Norwegian Ministry of Education and Research, this report looks at performance-based funding systems in five European countries. The literature review on which the report draws was developed as part of an international IMHE/OECD project on Funding Systems in Higher Education. Norwegian participation in this project was also funded by the Ministry of Education and Research. Agnete Vabø, Per Olaf Aamodt, Gunnar Sivertsen and Bjørn Stensaker have contributed their comments to the report, which was written by project leader Nicoline Frølich.

Oslo, January 2008

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Executive summary

How is direct public funding for higher education allocated from the state to HEIs? Which are the primary objectives of the changing funding policies? What implementation problems and pitfalls are there?

Funding policies

The different types of allocation mechanisms for state funding for higher education institutions can be categorised as either negotiated allocation or formula-based allocation. Performance indicators may form the basis for both allocation mechanisms, as well as for discussion about the amount of funding to be awarded in negotiated allocation. Performance indicators are often utilised as the parameters in formula-based allocation, which may be based on input parameters as well.

The UK (England), Belgium (Flanders), France, Denmark and Finland have all introduced performance-based funding, following the trend of replacing historically-based funding with a funding system that emphasises the performance of the HEIs. England and Flanders implement formula-based funding systems, while Denmark, Finland and France allocated funding on the basis of formulas and negotiations.

The cases do, however, differ from country to country. One main difference is the extent of experience the country has with performance-based funding. Another is the extent to which the funding system is based on transparent formulas or on negotiated contracts between the state and the HEIs. England has the most comprehensive and complex system – the Research Assessment Exercise (RAE). The country also has the most experience with performance-based funding for HEIs. France, Denmark and Finland all implement contracts or performance agreements between the state and the HEIs. Flanders has introduced research funding based on inter alia the number of research publications, and Denmark is expected to do so as well. Flanders is revising its funding model.

Primary objectives

The primary objectives of performance-based funding are improved efficiency, accountability and quality. These are high on the political agenda in England, Denmark and Finland, and Flanders is in the process of introducing performance-based funding to achieve this golden standard.

Implementation problems and pitfalls

The literature on performance-based funding reviewed for the purpose of this study emphasises the impacts of performance-based research funding. It addresses concerns about the implications of the new social contract for research according to which public accountability is to be increased despite an ensuing lack of trust. These concerns have been

voiced most loudly in England, although they clearly exist in France, Denmark and Finland where a shift in funding mechanisms is underway. The model to be implemented in Flanders aims at improving “value for money”; thus the impacts of the new social contract for research may arise there as well.

To relate input to performance while establishing acceptable, reliable and uncontested measures of the performance of HEIs is a main issue in the literature. Related issues include institutional autonomy and the HEIs’ response to funding policy, as well as the reallocation of funding within the institutions. The impacts of the performance-based funding model in England have been profound. The internal impacts of the funding models in Denmark and Finland vary to some extent, and Flanders has not yet implemented its proposed new funding model.

The problem of accurately measuring performance is treated at great length in the literature on performance-based funding for higher education. The English debate draws attention to two particular fears: the mainstreaming of research and the manipulation of research outputs. In Denmark the issue of quantity over quality has been the focus of repeated evaluations of the Danish funding system. In Flanders a main objective is to strive for justified data and indicators in order to increase the transparency and acceptability of the proposed model.

Lessons to be drawn

Based on our review of performance-based funding in five European countries, we suggest that four main lessons can be drawn: Performance-based funding

- is introduced in order to achieve similar objectives in different national contexts
- provokes a debate in which improved public accountability is opposed to lack of trust
- requires that there is a clear link between funding policy and the activities in which HEIs are engaged, however the HEIs response do differ
- presupposes distinct measures of performance, however these are not easily agreed upon.

Data limitations

The literature reviewed for the purpose of this study focus on performance-based funding of research. Thus our discussion has this emphasis too. The national case studies do however dispose issues related to performance-based funding of education as well as performance-based funding of research. Moreover, the HEIs’ primary task is to fund the whole range of HEI activities, and they do in general respond to state funding policies in an autonomous fashion, implementing internal allocation devices which reallocate the funds according to their specific needs. We suggest they pay less attention to the explicit funding source (research or education). More empirical investigation is needed to fully explore these strategies.

We do not enter the debate on New Public Management and research and higher education policies in general, which would enable us to discuss more thoroughly the management philosophy behind the changes of state funding policies. Entering the debate on New Public Management and HEIs would also give more prominence to the critique of the philosophy of which funding policies are part. Still, focusing on funding policies more narrowly gives already ample evidence of the challenges associated with these changes.

We do not contextualise the literature. The lack of contextualised analysis of the literature on which we base our conclusions softens the conclusions' basis. More analysis is needed to take the specific strengths and weaknesses of the literature into account. However, since the literature is drawn from a well-acknowledge literature base, we find it sufficient strong for the purpose of this study.

There are clear limitations regarding the empirical basis of this project. The main body of information comes from Erawatch inventory reports (Erawatch 2006a; Erawatch 2006b; Erawatch 2007), OECD thematic reviews of higher education (Clark 2006; MoE 2005; MoET 2006) and a recent IMHE/OECD report on funding systems for higher education (Strehl et al. 2007). All in all, since we rely on written documentation, our empirical basis is not completely up-dated. These policy processes are ongoing in all of the countries; personal interviews with key informants would have allowed us to update the material. In order to strengthen the description of the national policies we have added information gathered from secondary analysis of literature.

1 Introduction

1.1 Main question

This report investigates the current relationship between the state and higher education institutions (HEIs) in Europe by looking into state funding policies for research and higher education. Governments are increasingly searching for value for money in higher education policy. Formula funding and output-based funding are among the most widely used instruments, although contracts and performance agreements are also frequently employed (Geuna and Martin 2003a; Strehl et al. 2007). In this report we ask: How is direct public funding for higher education allocated from the state to HEIs? Which are the primary objectives of the changing funding policies? What implementation problems and pitfalls are there?

We describe the allocation mechanisms for funding from the state to the HEIs. These are not merely technicalities; rather they are instruments designed to contribute to fulfilling research and higher education policy objectives. We discuss concerns relating to the objectives of improved efficiency, accountability and quality, which are also linked to the new social contract for research. Furthermore, we explore the multi-task dimension of HEIs, the problem of measuring performance, and the issue of control and lack of trust.

We do not distinguish strictly between performance-based research funding compared to performance-based funding for education for two reasons: Firstly, generally HEIs enjoy autonomy in allocating funding for the main activities research and teaching. The HEIs' internal allocation models do thus not reflect the state policies fully. The HEIs confront the challenge of funding their tasks and activities, to a lesser extent this means responding to specifically performance-based research funding or performance-based funding of education. Second, we draw on the literature which discusses the introduction of performance-based funding in research and higher education in order to list the challenges HEIs meet as they implement performance-based funding. Since this literature mainly discusses performance-based research funding, our discussion as well has this emphasis. Still we do point to issues related to performance-based funding of education, for example in the case of Denmark who has had performance-based funding of education for several years. Also the case of Belgium does emphasize performance-based funding schemes for education.

We do however not enter the debate on New Public Management and research and higher education policies in general, which would enable us to discuss more thoroughly the management philosophy behind the changes of state funding policies. Entering the debate on New Public Management and HEIs would also given more prominence to the critique of the philosophy of which funding policies are part. Still, focusing on funding policies

more narrowly gives already ample evidence of the challenges associated with these changes.

1.2 Empirical focus

We look specifically at policies in the UK (England), Belgium (Flanders), France, Denmark and Finland where the two main types of funding schemes – output-based formula funding and research management by contracts – are employed.

Although funding to HEIs is allocated by a funding body in the UK, we have included the country in our discussion because in many respects the UK can be said to have a radical funding policy based on research publications. Belgium is currently revising a funding policy based on a bibliometric approach (Arnold et al. 2006; Debackere and Glanzel 2004). In France measures are being taken to move away from funding via contracts between the universities and the state towards competitive research funding (Erawatch 2006a). From 2008 the basic grants to Danish universities will be allocated on the basis of the universities' ability to achieve objectives stipulated in development contracts (Schmidt et al. 2007b). In Finland public research funding is increasingly being based on the recommendations of a high-level advisory body, the Science and Technology Policy Council of Finland, and emphasis is being placed on quality and societal impacts (Erawatch 2006b).

1.3 Documentation

The documentation process for this report consisted of two parts. In the first part we analysed the literature on HEI funding with special emphasis on the literature that deals with performance-based funding in higher education. In order to gather the literature, we conducted the following searches in the Thompson ISI database:

- University* AND higher education* AND funding*
- Research* AND funding* AND (college* OR university college* OR hochschul*)
- University* AND research* AND funding*
- Performance indicator* AND research*.

All in all 873 articles were found in the database.

Our literature review had two primary aims: to identify categorisations of different types of funding systems for higher education and to examine the debate on the main issues relating to performance-based funding. These include efficiency, accountability and quality; the new social contract for research; the multi-task dimension of higher education institutions; the problem of measuring performance; and the issue of control and lack of trust.

We do not contextualise the literature. The lack of contextualised analysis of the literature on which we base our conclusions softens the conclusions' basis. More analysis is needed

to take the specific strengths and weaknesses of the literature into account. However, since the literature is drawn from a well-acknowledge literature base, we find it sufficient strong for the purpose of this study.

In the second part of the documentation process we gathered material on funding for higher education in the five countries. The main body of information comes from Erawatch inventory reports (Erawatch 2006a; Erawatch 2006b; Erawatch 2007), OECD thematic reviews of higher education (Clark 2006; MoE 2005; MoET 2006) and a recent IMHE/OECD report on funding systems for higher education (Strehl et al. 2007). Thus there are clear limitations regarding the empirical basis of this project. In order to strengthen the description of the national policies we have added information gathered from secondary analysis of literature. Adjusting to the limited resources at our disposal, the main empirical basis of the national policies in England, Belgium and Finland consists of national reports written to OECD. The complexity of the national funding policy discourse is probably only to a certain extent communicated in these reports. The data for Denmark stems for a national research based report, providing the analysis with a broader view on the Danish development. Still the Danish data was collected in 2005, which means they are not completely updated. The French funding policy proved to be challenging to describe, since currently the OECD report on tertiary education for France is not yet published. The French case is based on the Erawatch report.

The purpose of the empirical analysis is to describe the allocation mechanisms in the five countries and to explore how the main concerns relating to performance-based funding are reflected in the policy debate in these countries.

2 Value for money – the debate on performance-based funding

The shift from incremental funding for higher education to formula funding and output-based funding has triggered a major debate on the impacts and intended and unintended consequences of these funding mechanisms. In order to structure the different arguments, we have distinguished between five main topics. These do, however, overlap to some extent.

2.1 Efficiency, accountability and quality

The state is increasingly allocating funding to HEIs on the basis of performance indicators. Improved efficiency, accountability and quality in higher education are the primary objectives as well as the main justifications for performance-based funding. As such they make up the problem description on which the shift in funding mechanisms rests.

In the literature reviewed for the purpose of this study it is asserted that efficiency may be improved by establishing a focus on performance. According to Taylor and Taylor (2003: 78), performance indicators can serve to heighten pressure on academics to invest greater effort in the activities measured and rewarded by the indicators. The authors argue that motivation by extrinsic monetary rewards will inspire staff to work harder or more efficiently if they expect their behaviour to result in the desired outcomes, in this case the receipt of extrinsic rewards. They also assert that a competitive atmosphere can be created by establishing tied grants, i.e. performance-based funding schemes. Thus financial reward systems can be combined with and strengthen the traditional academic reward system (acknowledgement and reputation), thereby applying disciplinary pressure on academics to make their exertions more efficient.

Budgetary constraints in public funding have given rise to a need for better accountability. Demeritt (2000: 309) observes that “a growing chorus of voices is demanding that science, like other publicly funded services, be made publicly accountable and prove its value for money”. This call for improved public accountability is a major reason why academic inquiry is increasingly being conceptualised in terms of research outputs (Demeritt 2000: 310). Consequently, he argues that “contemplation without publication counts little in budget allocations for hiring and promotion committees” (Demeritt 2000: 310). He also asserts that the effects of the new social contract for science are potentially far-reaching and may reshape the social norms of academic practise (Demeritt 2000: 324) by inter alia prioritising “safe” research (Demeritt 2000: 320).

Improved quality in higher education is the golden standard of performance-based funding. Geuna and Martin (2003b: 295) agree that performance-based funding can increase efficiency in a short period of time and that it may also enhance accountability. They note

that in addition to improving efficiency, performance-based funding can improve quality by rewarding success. They argue that performance-based funding offers mechanisms with which to link the HEIs' performance to policy, thus providing a way to shift priorities across fields as well as a rational method of moving resources from less well-performing areas to areas where they can be used to greater effect (Geuna and Martin 2003b: 296 - 298).

2.2 Multi-task organisations

Performance-based funding is heavily debated despite the attractiveness of its objectives. One aspect of the debate deals with the multi-task character of the university organisation. According to the literature, the special character of the HEIs has to be taken into account in order to achieve improved efficiency, accountability and quality. The main message is that "performance-based funding works, but in order for it to work it has to be applied internally at the HEIs". The literature addresses the impacts of performance-based funding as well.

Leifner (2003: 478) points to the fact that universities are complex organisations in which faculty members possess specialised knowledge about their activities that administrators do not share (Clark 1983: 25). Activity is therefore difficult to monitor, particularly at the level of research groups and individual scholars but also at the institutional level. Leifner (2003: 478) asserts that performance-based funding can be implemented to avoid a situation in which agents take advantage of the fact that their efforts are hard to control and reduce their activity.

Taylor and Taylor (2003: 72) note that for performance indicators to have an impact on the individual academic, they must first be adopted by the university, thereby affecting the internal policies of the institution and departments. They find that when the government is the main funding agency for the institution, it is likely that the government funding mechanisms will be replicated at the institutional level in order for the institution to maximise their funding. This is because the mechanisms by which HEIs receive their funding have a powerful influence on their internal resource allocation mechanisms (Williams 1992: 26).

Leifner (2003: 470) agrees that changes in funding systems will likely have a major impact on the behaviour of the universities as well as on their internal processes of resource allocation. He points out that it has been documented that HEIs respond to changing mechanisms of resource allocation (Liefner 2003: 470; Mace 1995; Schmidlein and Taylor 1996; Wagner 1996). Furthermore, funding sources and budgeting methods differ greatly between different higher education systems, and universities tend to react based on the way they receive external resources. He finds that universities in systems which allocate public funding on a competitive basis use market-like approaches internally (Liefner 2003: 476), and that corresponding methods of performance-based budgeting can

be observed within universities (Leifner (2003: 478). He underscores that performance-based funding reinforces incentives for academics to work hard and in line with the targets set by the administration. The maxim is that if universities, departments or individual academics perform well they will enlarge their future budgets. Correspondingly, if they are less successful they will receive less funding. According to (Liefner 2003: 478), agents that have been rather inactive before the introduction of performance-based resource allocation will have to step up their pace of activity.

The literature identifies further implications of the multi-task character of the HEIs. Johnes (1999) shows that the university can be viewed as a cascade of principal-agent relationships between alumni, managers, administrators and faculty. He believes that internal cross-subsidisation at HEIs is not necessarily a bad thing for three reasons: firstly, technology differences mean that the relationship between funding input and teaching and research outputs will differ across subject fields; secondly, the costs faced by one department and the activities of another department are not necessarily symmetrical; and thirdly, the principal may value the outputs of various agents differently (Johnes 1999: 509).

The HEIs' internal views on expected impacts of performance-based funding vary as well. Leifner (2003: 481 - 482) finds that all his interviewees expect a large increase in the quantity of applied research carried out as well as an improvement in quality. They expect the quantity of basic research to decrease slightly or remain stable. Scholars in favour of performance-based funding expect the quality of this research to improve while those opposing performance-based funding expect it to deteriorate.

Finally, the impact of performance-based funding due to the special character of the HEIs is itself a topic of debate. Leifner (2003: 485) finds that the only decisive factor for a university's long-term success is the quality of its academics, although the qualifications and motivation of its students are also important. The form of resource allocation is less important; its direct effect on success is viewed as very limited. The majority of the interviewees agree that well-qualified people tend to respond less to financial incentives, working instead according to their individual motivation and scientific interests. Leifner (2003: 486) concludes that universities with a large number of highly qualified and motivated faculty will be successful regardless of the form of resource allocation.

2.3 The problem of measurement

One argument in the debate on performance-based funding highlights the need for accurate measurement of the output or performance of HEIs. This line of argument is related to concerns regarding the management philosophy (New Public Management) on which performance-based funding is based. Barnetson and Cutright (2000: 277) note that there is very little written about performance indicators from explanatory perspectives; authors either ignore how performance indicators affect organisational behaviour or implicitly

assume that organisations are rational and that performance indicators mediate between outcomes and goal-setting. Taylor and Taylor (2003: 73) point out that according to neo-classical economics, performance indicators provide the most efficient path for the allocation and distribution of scarce resources to achieve optimal outcomes in academia. They add, however, that neo-classical economics makes no attempt to analyse the internal behaviour of the organisation, which is assumed to be efficient.

Johnes (1996: 19) asserts that HEIs are multi-product firms with multiple objectives. He finds that there is an overall lack of agreement about the objectives, inputs and outputs of HEIs. Nevertheless, he acknowledges that there is general agreement that the outputs of universities can be sorted into the following categories: output from teaching activity, output from research activity, output from consultancy, and cultural and social outputs. The inputs can in turn be categorised as: raw materials; labour services; human capital services; physical capital services; consumables; institutional characteristics; and environmental factors. It is, however, extremely difficult to find appropriate quantitative measures of both input and output (Johnes 1996: 21). Geuna and Martin (2003b: 296 - 298) posit that obtaining reliable and comparable information is costly and that indicator-based systems require accurate and reliable data.

The problem of accurately measuring performance highlights several limitations and pitfalls of performance indicators – including limited data availability – identified by Layzell (1999: 237). He notes that diverging policy opinions about what is important to measure may result in too many indicators and that there is also the danger of conflicting goals. Johnes (1996: 19) points out that the development of a large number of performance indicators may give rise to the problem of interpreting a vast amount of information. Consequently, each performance indicator will make only a limited contribution to decision-making if it offers a conflicting view of an HEI's efficiency or performance.

Layzell (1999: 238 - 240) asserts that the lack of a policy framework within which to designate key indicators and how they should be measured results in bothersome data collection and endless reporting activities. Taylor and Taylor (2003: 74) note that performance indicators may promote “a more is better” mentality, with less concern for the quality of the research being carried out. According to the authors, this threat is heightened when the indicators do not reflect the true dimension of work performance or when the scores are set unrealistically high, compelling individuals to manipulate their behaviour to meet the required standards. They emphasise that while reporting is a necessary component of the accountability mechanism, duplication in reporting is counterproductive for efficiency maximisation.

Problems also arise when quantitative indicators are implemented without qualitative measures which are accompanied by a discussion of what is measurable (Layzell 1999: 238 - 240). Taylor and Taylor (2003: 73) argue that one problem is that value is assigned to what is measurable and that what has been assigned value is reviewed for accountability

and funding. Consequently, a heavy dependence on quantitative indicators may result in HEIs overlooking activities or qualities which are hard to measure and intangible – but of equal or greater importance.

Butler (2003a: 39) reports that the mid-1990s saw the first distribution of research funding to Australian universities based on a formula encapsulating a number of performance measures (graduate student numbers or completion rates, research income and publications). Many universities reinforced the sector-wide signals by allocating the funding received under these programmes to the departments or even to the individuals who earned them. According to the author, the result has been entirely predictable – publication output has increased dramatically in the last decade. She observes that because quality is not rewarded there is little incentive for academics to strive for publication in the top journals and that the largest rise in publication has been in journals at the lower end of the impacts scale.

Ho (1998) documents that academics in Hong Kong universities are being urged to increase their research output. Results indicate that their publication output is about the same as academics in other countries in many respects. He asserts that pressing academics to publish more may raise publication figures in the short term, but it will not necessarily increase output in the long run.

The use of bibliometric data is a means of comparing the research productivity and scholarly impact of individuals, work groups, institutions and nations within and between disciplines. According to Najman and Hewitt (2003), the ways in which ideas are exchanged and information is disseminated differ among the disciplines, resulting in diverse publishing and citation patterns. The authors maintain that questions will need to be asked about the extent to which disciplines should and are able to modify their patterns of research activity in order to meet performance criteria (Najman and Hewitt 2003: 77).

Taylor and Taylor (2003: 75) argue that performance indicators may encourage standardisation and discourage diversity and innovation in terms of operations and outcomes. Similarly, the efficiency benefits supposedly associated with performance indicators may not be realised because of a number of problems, such as a focus on quantity over quality rather than on quantity *and* quality. Leifner (2003: 478 - 479) asserts that researchers will tend to avoid projects with a high chance of failure, concentrating on activities where success can be expected in order to meet funding formula criteria. Geuna and Martin (2003b: 296 - 298) believe that since performance-based funding encourages competition, it may also encourage the homogenisation of research and discourage experiments that take new approaches by rewarding “safe” research. A system in which publication is a key criterion promotes “publication inflation” and maintains the status quo. Leifner expects that a completely performance-based research funding system will lead to a reduction in basic research, which has a high chance of failure, and consequently to an

increase in applied research, where the outcome can be defined in advance (Liefner 2003: 481).

According to Layzell (1999: 238 - 240), there is also the problem of spending too little time and exerting too little discipline and patience when developing indicators that can enable a funding system to be sustainable in the long run.

Finally, Johnes (1996: 20) asserts that when evaluating the performance of any organisation it is essential to recognise and take into account the fact that at least some of the inter-organisational variations in output are a consequence of variations in the quantity and quality of available inputs.

2.4 Control and lack of trust – a new social contract for research

In addition to the more technically oriented issues described above, there is concern that these funding mechanisms imply a shift in the values that underpin academic work. Some authors, such as Demeritt (2000: 320), make the point that the economic rhetoric of competition, investment and value-added does not deviate much from traditional disciplinary practises for establishing research priorities, allocating resources and validating knowledge claims. According to him, peer review remains largely unchallenged as the principal mechanism for deciding such matters and disciplinary standards still play an important role (Demeritt 2000: 320). Bence and Oppenheim (2004: 66) note that given the subjective nature of peer review and the as-yet unmeasured influence of perception and reputation, it is debatable how reliable these assessments can be as a measure of quality.

Harley and Lee (1997) observe that research selectivity is seen as part of the general trend towards “managerialism” in higher education both in the UK and in other countries. Managerialism based on performance indicators and hierarchical control has been contrasted with collegiate control-based and informal peer review. They point out, however, that an analysis of the academic labour process has idealised collegiate relations at the expense of professional hierarchies and intellectual authority relations.

Harley and Lee (1997) find that the existence of lists of core mainstream journals that are believed to count most in the periodic ranking exercise poses a serious threat to academic freedom and diversity, institutionalising the control which representatives of the mainstream exercise over both the academic labour process and the job market. In this way, managerialism is combined with peer review to outflank resistance to new forms of controlling academic labour, while at the same time reinforcing disciplinary boundaries through centralised systems of bureaucratic standardisation and control.

One critique addresses the value base of the philosophy on which performance-based funding has been established. Taylor and Taylor (2003: 72) note that performance

indicators based on outputs and outcomes are maintained as solutions to the problems of avoiding government interference in the internal management at the institutions and of making the institutions (which are primarily dependent on government funding) accountable to external parties such as the state and the local community. The authors also point out that performance indicators are perceived as a weapon of control.

Thus the lack of trust associated with performance indicators represents a serious problem. According to Taylor and Taylor (2003: 72), apart from the financial cost of implementing monitoring systems these systems may reduce employee enthusiasm and effort. It is assumed that there is a positive utility associated with being able to perform on a voluntary basis (i.e. possessing job autonomy) and a negative utility from being monitored. The authors assert that beyond a certain point monitoring sends a message that the employee is not completely trustworthy, and that extensive monitoring may result in decreased effort on the part of the employee because too much pressure causes performance to deteriorate. They emphasise that the introduction of more rules and paperwork may signalise that academics are not to be trusted. Perceptions about a lack of trust will in turn lead to suboptimal outcomes as the parties will pit themselves against each other in a self-defeating game (Taylor and Taylor 2003: 74). Harley and Lee (1997: 1430) make the point that the “new” academic may come to be reconstituted in terms of what is needed to gain a high rating, rather than in terms of independence and creativity of thought. Knowing the appropriate response to gain rewards, the new academic will calculate what needs to be done and do it. De Meis et al. (2003: 1141) argues that the pressure to publish is leading to an exaggerated degree of competitiveness, propagating a cultural distortion where scientometrics prevails over knowledge and where mental suffering is making up for the lack of funding.

Linked to the problem of lack of trust in researchers is the problem of lack of trust in leaders. According to Barnetson and Cutright (2000: 289), the belief that increasing objectivity through quantification of outcomes and linking resource allocation to outcomes will enhance organisational efficiency is consistent with the mechanical model of organisational functioning. The authors argue that few academic leaders resist the introduction of performance indicators despite their potential negative effects on institutional autonomy. This may in part stem from the leaders’ recognition of the overwhelming support for policy instruments that function in market-like ways and in part because it is very difficult to critique the implementation of performance indicators without being perceived as a person who is breaking with the discourse.

2.5 Looking at state funding policies

The literature reviewed for the purpose of this study provides lenses through which we may look at the actual changes of state funding policies for HEIs. The literature point out primary policy objectives as well as the shifting justifications on which HEIs’ funding are based. More over the challenges of relating HEIs’ output to the inputs of teaching, learning

and research are highlighted in this literature. We learn about the problems and pitfalls attached to the process of gathering valid data on which to measure performance. Finally several unintended consequences are discussed.

3 Performance-based funding in Europe

3.1 Introduction

In the past two decades funding for research and higher education has undergone a number of changes (Geuna 1999). Three main changes have been identified. Firstly, the state is increasingly allocating funding for research through competitive arrangements, consequently reducing the amount of funding allocated directly to the HEIs. Secondly, the share of funding derived from student fees and private funding is growing. Finally, funding to the HEIs is to a greater extent being rewarded on the basis of performance-based indicators rather than on historical criteria (Lepori et al. 2005: 485). Lepori et al. (2005: 485) point out that these changes have been interpreted as an attempt on the part of the state to use financial incentives to more systematically control HEIs and to improve efficiency and quality by creating direct links between the level of government allocations and the level of performance of higher education (Jongbloed and Vossensteyn 2001; Geuna and Martin 2003).

3.1.1 Funding systems

This report concentrates on the “first funding channel” for allocations to higher education. According to Lepori et al. (2005), there are in all four main funding channels, the first of which is funding allocated by the state directly to the HEIs. The HEIs can often freely reallocate these resources among the faculties and departments according to internal priorities. Lepori et al. (2005) summarise the allocation mechanisms utilised by governments to distribute funding from the state to directly the HEIs (Kaiser et al. 2001; Benninghoff et al. 2005):

- Negotiated allocation based on historical criteria. It is more or less taken for granted that allocations for the coming year will remain at the level of the previous year and that the repartition of the increase will be negotiated.
- Negotiated allocation based on input or performance indicators. Allocations depend to some extent on certain indicators, but there is no automatic formula. This model is usually combined with the model above.
- Formula-based allocation. A mathematical formula is employed to calculate allocations to the individual institution based on a set of indicators. These indicators are:
 - Enrolments or degrees
 - Research outputs, for example measured by the results of an assessment (such as the Research Assessment Exercise in the UK)

The second main funding channel comprises grants and contracts from the government, i.e. funding for research projects or other specific activities, mostly for a limited period of time

and allocated directly to specific subunits (such as laboratories). Examples include grants awarded on a competitive basis by research funding agencies, European framework programmes, and contracts from the public administration for research or services.

The third channel encompasses grants, contracts and donations from private companies. Such funding is normally allocated by companies directly to research institutes on a non-competitive basis. Private charities are located in a border zone. In some countries, such as the UK, they play an important role in certain sectors and in many cases adopt competitive application processes similar to those used by research councils.

Finally, there is funding provided directly by the students in the form of tuition fees for attendance to curricula or different types of courses. Fees for undergraduate students are generally fixed by the state, while fees for postgraduate education are often set by the HEIs.

3.2 Funding systems in Europe

In this report we review the funding mechanisms applied to direct allocations for higher education. The UK (England), Belgium (Flanders), France, Denmark and Finland have all introduced performance-based funding, following the trend of replacing historically-based funding with a funding system that emphasises the performance of the HEIs. The cases do, however, differ from country to country. One main difference is the extent of experience the country has with performance-based funding. Another is the extent to which the funding system is based on transparent formulas or on negotiated contracts between the state and the HEIs. England has the most comprehensive and complex system – the Research Assessment Exercise (RAE). The country also has the most experience with performance-based funding for HEIs. France, Denmark and Finland all implement contracts or performance agreements between the state and the HEIs. Flanders will be introducing research funding based on inter alia the number of research publications, and Denmark is expected to do so as well.

3.2.1 Five similar but different funding systems

The different types of allocation mechanisms for state funding for higher education can be roughly categorised as either negotiated allocation or formula-based allocation.

Performance indicators may form the basis for both allocation mechanisms, as well as for discussion about the amount of funding to be awarded in negotiated allocation.

Performance indicators are often utilised as the parameters in formula-based allocation, which may be based on input parameters as well.

The funding systems discussed in this report fall under one of the two categories above. England and Flanders implement formula-based funding systems, while Denmark, Finland and France allocated funding on the basis of formulas and negotiations.

England's formula-based funding system allocates funding for teaching based on inter alia the number of students (input) while funding for research is based on peer review of inter alia research publications (output) submitted to the RAE.

Until recently, Flanders implemented a formula-based funding system based on the number of students (input) and the number of publications and doctoral degrees awarded (output). The country is in the process of devising a new funding system that will include bibliometric data (output) as well as the number of students (input) and the number of credits (output).

Denmark allocates funding for teaching based on an output formula where the output is the number of students who pass exams. In addition, the HEIs have agreements (negotiations) with the government regarding strategic priority areas and measures to be implemented in order to meet targets.

Finland also combines negotiations based on three-year annual plans with formula funding allocated according to the number of Masters' degrees and doctoral degrees awarded (output).

France uses a funding system based on unit-cost pr. student (input) and agreements between the government and the HEIs based on the strategic plans of the HEIs (negotiations).

3.2.2 England

In England funding for research and funding for teaching are separated (Frølich and Kallerud 2003; Smeby 1998), and the Higher Education Funding Council for England (HEFCE) has the responsibility for awarding both. Funding for teaching and learning is primarily allocated on the basis of the number of students completing components of their academic programmes, with a supplement for widening participation. In addition, the HEFCE awards a small percentage of overall funding to fulfil government guidelines for specific initiatives (Clark 2006: 63).

Funding for research is allocated on the basis of the Research Assessment Exercise (RAE). The aim of introducing this research evaluation method in the late 1980s was to provide a mechanism for allocating funding to HEIs based on research quality. The University Grants Committee, a forerunner of the HEFCE, devised the exercise, now called the Research Assessment Exercise (Clark 2006: 42). The RAE was carried out in 1992, 1996 and 2001, and the next is due in 2008¹.

¹ <http://www.hefce.ac.uk/research/assessment/>

In the RAE all the university departments are assigned to a panel of experts. The panels are discipline-based and consist of peers working in the various research fields (Clark 2006: 42 - 43). The quality of each department is assessed on the basis of the number of staff members, evaluations of the work of active researchers, the number of publications, the number of researchers in training, details on research income, a description of research strategies and the research environments, and several indicators of excellence (Geuna and Martin 2003a: 282). Each department is rated on a scale from 1 to 5*, which is used by the HEFCE to determine funding (Geuna and Martin 2003a: 282). According to the OECD review, the RAE is based on common objectively defined standards and a common set of information submitted by the HEIs, although there is variation between the disciplines in the detailed approach and assessment criteria (Clark 2006: 42 - 43).

Although the RAE has been widely debated², the OECD review identifies three main (positive) impacts (Clark 2006: 42). Firstly, the RAE has had a positive impact on research quality because it describes *the quality of research*. The RAE itself is described as providing comprehensive information about the quality of research, as well as drawing attention to the very best research. The report also states that the RAE is seen as a driver for sustained improvement in quality and is generally perceived to have a significant positive impact. The second positive impact is that the RAE has encouraged the HEIs to take a rigorous approach to developing and implementing their own research strategies. The third is that the RAE has enabled the government to maximise the return from limited public funding and that it has provided a basis for allocating funding for higher education in line with government policy.

The OECD report points out that the RAE has also been the subject of some criticism (Clark 2006: 42). Concerns have been raised that it favours established disciplines over new and interdisciplinary research, particularly applied and practice-based research, and that it places an undue administrative burden on the HEIs. The RAE has also had a negative impact on HEIs, encouraging them to manage their research strategies and shape their submissions in order to achieve the highest possible ranking (Clark 2006: 43 - 42).

Another argument is that the cost of running the exercise does not justify the outcome (Clark 2006: 42). In 2000 a report by PA Consulting commissioned by the HEFCE concluded that the HEIs were experiencing heavy demands from externally-imposed accountability requirements (PA 2004: 3). The OECD review refers to a suggestion (consult DFES 2006; HMT 2006) that similar assessments could be achieved more readily by reference to the number of citations in selected journals or to success in obtaining research council grants (Clark 2006: 42). According to the OECD review, the government's approach is to continue to concentrate research funding because experience has demonstrated that this achieves more effective output (Clark 2006: 42). In the national fiscal budget proposal in March 2006 the government announced that it will be initiating a

² Consult for example the literature reviewed for the purpose of this project.

consultation process concerning preferred options for a metrics-based system for assessing research quality that would replace the Research Assessment Exercise (*loc. cit.*).

According to the review, it is generally assumed that the RAE will be conducted in 2008 as planned unless an alternative system has been devised and is widely accepted, and there is clear institutional support for early implementation (*loc. cit.*).

3.2.3 Flanders

The funding system currently in place in Flanders is based on a formula that combines inputs and outputs. The formula calculates one-half of the funding allocated to the HEIs. The main input comprises the universities' student enrolments, the number of doctoral degrees awarded and the number of teacher training certificates awarded. The other half of the core funding is based on historical calculations and is regarded as a fixed amount independent of the number of students (MoET 2006: 59).

According to Debackere and Glanzel (2004: 265), changes are being implemented in the Flemish funding system which *inter alia* aim to improve (research) performance. In Flanders there has been increasing focus on basing funding for higher education on objective, quantifiable and repeatable decision parameters. It has been the explicit objective of the government to include bibliometric data when allocating funding to universities in order to encourage Flemish researchers to improve their performance (*loc. cit.*). The BOF-key has functioned since 2003 (Arnold et al. 2006: 15).

A new funding model is to be introduced in 2008, and will combine formula funding and contracts. The formula comprises three components: a fixed amount; a variable amount for teaching based on the number of students enrolled (converted to the number of study points – input) and on the number of credits and degrees awarded (output); and a variable amount for research (only for the universities) based on the number of Master's degrees and doctoral degrees awarded and the number of publications and citations (gathered from the ISI database) (MoET 2006: 62 - 63).

In addition to the lump sum, the funding model will cover multi-annual agreements between the Ministry of Education and Training and the individual HEI. These will set out agreed objectives and targets, formalise the commitment of the institution to achieving these, and stipulate the amount of funding to be allocated.

According to the OECD review on tertiary education in Flanders (MoET 2006), the new model will encompass several objectives for teaching and learning as well as for research. These include enabling the HEIs to enhance their innovative capacity, increasing the inclusion of students from ethnic minorities, and encouraging the HEIs to develop more flexible learning paths and educational programmes that are better suited to mature and employed students. Academic standards will be sustained, and the efficiency and overall quality of the higher education system will be improved by pooling capacity and expertise

and developing joint study programmes. The administrative burden will be contained as well (MoET 2006: 62 - 63).

3.2.4 France

France has employed contractual arrangements between the state and the HEIs since the beginning of the 1990s (Chevaillier 1989: 65), and has applied funding formulas for allocations to higher education since 1968 (Chevaillier 1989: 69). In the late 1980s a formula based on standard cost pr. student was introduced, with funding awarded in the form of a block grant which the institutions were free to spend “as they pleased” (Chevaillier 1989: 70). Since 1991 there have been contractual arrangements between the state and the institutions based on strategic plans developed by the institutions themselves. Funding for research has been part of these contracts since 1996 (Chevaillier 1989: 71 - 72). Competitive research funding currently represents a marginal share of government spending on R&D. This share is expected to increase in the future and the academic community is watching closely to see whether the increase will be implemented to the detriment of funding to research structures (Erawatch 2006a).

3.2.5 Denmark

Denmark has utilised a funding system that separates funding for teaching and funding for research in institutional block grants since 1994 (Geuna and Martin 2003a: 288). The HEIs are funded through the taximeter system, which links allocations directly to the number of students who pass their exams (Schmidt et al. 2007b: 4). A recent OECD report (Schmidt et al. 2006) outlines the Danish funding model and its objectives. According to the report, the intention of the Danish taximeter system is to promote efficiency and induce the HEIs to become more result-oriented and customer-focused. The aim is to reward HEIs that have more students and better results while avoiding the erosion of academic standards. The system is described as simple, fair, transparent and automatic, and a primary objective is to promote quality competition among the HEIs (Schmidt et al. 2007b: 8). The OECD report also refers to several (positive) impacts of the Danish funding model. The management of the higher education system has improved considerably, resulting in an increased focus on “value for money”. Unprofitable activities have been more rapidly discontinued, and the HEIs have improved their adaptability and ability to implement new initiatives and are more inclined to provide good service to their students. The HEIs themselves maintain that quality of the educational programmes is the decisive competitive factor (Schmidt et al. 2007b: 9 - 10). The system has clear advantages as it sets out direct demands for quantity and indirect demands for quality (Schmidt et al. 2007b: 13).

The OECD report notes that there is substantial room for improvement of the taximeter system as there are currently no direct incentives to pursue quality and relevance (Schmidt et al. 2007b: 13). The competition component is too limited because there is a lack of information on the educational programmes for the students. The system tends to fail to support less popular courses, and a bad year in terms of “student production” will have

financial effects for the individual HEI for years to come. There is also a limited degree of freedom, and conditions for changing research direction are difficult (loc.cit).

Research funding in the form of block grants is allocated to the institutions as a lump sum, and is primarily calculated on an incremental basis (Schmidt et al. 2007b: 5). According to the OECD report, the basic research grants enable long-term planning at the HEIs, allowing them to initiate research which cannot be financed in other ways (Schmidt et al. 2007b: 5 - 6). The grants are vital for implementing structural change and ensuring the quality of basic research, and they offer the flexibility needed to adapt to changing conditions and new research and innovation.

The OECD report finds, however, that the basic research grants lack direct incentives for efficiency, relevance and societal impact, and that there are no mechanisms in place to ensure funding for the highest quality research (Schmidt et al. 2007b: 14). Moreover, allocation of resources based on historical grounds makes it difficult for more recently established HEIs to build a strong research base and become competitive (loc. cit).

3.2.6 Finland

In Finland institutional funding is comprised of core funding, funding of national tasks, funding of national programmes, project funding and performance-related funding (MoE 2005: 63 - 66). In 1994 the Ministry of Education introduced a system known as Management by Results in which a small portion of every budget is based on a performance assessment. In 1998 the implementation of three-year agreements was adopted. These specify the outcomes which each university is expected to achieve and are updated on an annual basis. Core funding is formula-based, basic funding for teaching is based on the number of Master's degrees awarded, and basic funding for research is based on the number of doctoral degrees awarded. Project funding is earmarked by the government, while performance-based funding is based on quality and impact indicators (Geuna and Martin 2003a: 288).

According to the OECD review on tertiary education (MoE 2005: 64) in Finland, the objective of the government is to keep core funding for higher education as stable as possible and at a level that covers most operational expenditures. The formula for these allocations has been designed to be highly transparent and predictable (loc. cit.). Since the late 1990s a certain share of funding to the universities has been allocated on the basis of performance, thereby rewarding the universities for quality and efficiency and providing incentives to further develop operations (MoE 2005: 64) . The performance criteria are related to policy objectives (loc. cit.).

3.3 Primary objectives

Proponents of performance-based funding promise improved efficiency, accountability and quality. It is believed that accountability and quality will improve when linking funding to performance becomes of way of linking performance to policy, which can shift resources from less well-performing areas to areas where they can be used to greater effect (Geuna and Martin 2003a). Furthermore, it is asserted that performance-based funding schemes can create a competitive atmosphere in academia, thus becoming a source of disciplinary pressure on academics to exert effort more efficiently (Taylor and Taylor 2003).

These objectives are clearly high on the agenda in the three countries that implement performance-based funding systems. England, Demark and Finland report that they achieve these objectives, at least to a certain extent. Flanders – which will soon introduce a system in which performance-based funding plays a more prominent role – is striving to achieve them as well.

The English funding system is intended to increase efficiency. The argument is that concentrated research funding fosters more effective research output (Clark 2006: 42). Accountability is a main objective as well. Importantly, the RAE provides comprehensive information about research in the UK, and also forms a basis for research allocations in line with government priorities (*loc. cit.*). The RAE is also intended to improve research quality, and it is (according to the OECD report) generally agreed that it has had a significant positive impact on the quality of research in the UK (*loc. cit.*).

Efficiency, the safeguarding of quality, and accountability are the primary objectives of the Danish funding system. The taximeter system is designed to improve efficiency while safeguarding academic standards (Schmidt et al. 2006: 8). Improved management of the HEIs has led to increased focus on “value for money”, which contributes to greater efficiency in the Danish higher education system. The taximeter system encourages the HEIs to implement change more rapidly and launch new initiatives (Schmidt et al. 2006: 9 - 10). The funding system is also intended to enhance accountability and to give the HEIs incentives to become more user-friendly vis-à-vis the students (*loc. cit.*). The HEIs themselves consider the quality of their teaching programmes to be the decisive factor in the competition among them (Schmidt et al. 2006: 9 - 10). Moreover, the basic research grants ensure the quality of basic research (Schmidt et al. 2006: 8). Research activities also influence accountability and efficiency, as a small portion of research funding is activity-dependent, and further changes regarding activity dependency are expected to be implemented (Schmidt et al. 2006: 8).

Enhanced quality, efficiency and accountability are the primary objectives in Finland as well. Performance-based funding rewards the quality and efficiency of the HEIs, and also provides incentives for further development (MoE 2005: 65 - 66). The fact that performance-based funding is allocated according to policy objectives improves

accountability in the Finnish system, as does the fact that core funding is allocated to HEIs on the basis of a transparent and predictable unit-cost formula (loc. cit).

The Flemish government also aims to increase quality, efficiency and accountability. The introduction of performance-based funding based on bibliometric data is intended to strengthen research performance (Debackere and Glanzel 2004: 265). The new funding model is designed to enable the HEIs to improve the efficiency and overall quality of the higher education system by pooling capacity and expertise (critical mass). In order to enhance accountability, the funding model will be based on valid, reliable, verifiable and comprehensive data (MoET 2006: 62 - 63).

3.4 Shifting justifications

In the literature on performance-based funding, funding schemes are linked to what is being called a new social contract for research. Some observers claim that the push to demonstrate that society is receiving value for money is part of this new social contract according to which curiosity-driven research is increasingly being made accountable (Demeritt 2000). The literature identifies contested aspects of performance-based funding, such as the fact that performance indicators have been seen as a weapon of control and that perceptions of a lack of trust may lead to under-performance and less effort exerted on the part of the faculty (Taylor and Taylor 2003). Moreover, it is asserted that leaders' performance and institutional autonomy may deteriorate when performance targets are set (Barnetson and Cutright 2000).

Concerns regarding the negative impacts of the new social contract for research are raised in the empirical documentation for this report. In England the individual faculty member's awareness of ongoing surveillance and control – which is important for resistance – is outweighed by the knowledge that individual resistance will have little impact on the hegemony of the mainstream and great impact on individual careers (Harley and Lee 1997). It is pointed out that many researchers have reacted to the RAE with compliance, neglecting research which does not offer immediate payoff in terms of publication (Harley and Lee 1997). One conclusion is that the new social contract for research favours those research methods that are most likely to generate commercial and economic benefits (Demeritt 2000).

The funding systems for higher education employed by France, Denmark and Finland have caused a shift in the relationship between the state and the HEIs. This shift may be said to be related to the new social contract for research insofar as the intention is to improve “value for money” and public accountability of the HEIs. In France there are contractual agreements between the state and the HEIs based on strategic plans developed by the institutions themselves (Chevaillier 1989).

In Denmark research funding is dependent on the volume of teaching and external research income (Geuna and Martin 2003a), although institutional funding for research is still generally allocated on an incremental basis (Schmidt et al. 2007a). However, the use of basic grants has been criticised because they do not provide direct incentives for efficiency, relevance and societal impact nor do they involve mechanisms that award funding to the institutions that produce the highest quality (Schmidt et al. 2007b: 10). Moreover, it has been suggested that the development contracts ought to be linked to basic grants in the future (Schmidt et al. 2007b: 12).

Finland employs a system of management by results based on three-year agreements that specify the outcomes for each university and which are updated on an annual basis (Geuna and Martin 2003a). The formula used to allocate core funding to the universities covers teaching and research activities. In addition, there is funding for national tasks and programmes and project funding earmarked to meet national priorities (MoE 2005).

The proposed Flemish model aims to improve the policy relevance of higher education and therefore may also be related to the new social contract for research. One of the primary objectives of the funding model is to enable HEIs to enhance their innovative capacity (MoET 2006: 62 - 63). The model will grant awards on the basis of the number of students in strategically important disciplines (mathematics, science and technology) (*loc. cit.*). In addition to providing a lump sum, the model will cover multi-annual agreements between the Ministry of Education and Training and the individual HEI. These will set out agreed objectives and targets, formalise the commitment of the institution to achieving these and stipulate the amount of funding to be allocated (*loc. cit.*).

3.5 Relating output to input

Performance-based funding of higher education requires measures of performance that are valid, reliable and generally accepted. The literature on performance-based funding discusses the challenges related to developing measures of this kind. One challenge is that universities are multi-task organisations, which means that relating input to output is not a straightforward task (Johnes 1996). In addition, performance indicators must first be adopted by the university and incorporated into the internal policies of the departments if they are to have an impact on the individual academic (Taylor and Taylor 2003).

According to the literature, HEIs respond to changing allocation mechanisms and adjust to government funding policies (Liefner 2003: 470; Mace 1995; Schmidlein and Taylor 1996; Wagner 1996).

Our empirical documentation confirms that this is true for England where the RAE has “encouraged HEIs to take a rigorous approach in developing their own research strategies” (Clark 2006: 42). It has had a profound effect on the funding of university research, and the relationship between qualitative and quantitative indicators of research performance has been a topic of ongoing debate (Bence and Oppenheim 2004). Nevertheless, concerns have

been expressed that the RAE places an undue administrative burden on the higher education sector (Clark 2006: 42 - 43). It is seen as a government-led push for tighter fiscal control over public services at a time of severe resource constraints (Harley and Lee 1997). Only in well-established heterodox departments where the possibilities for social support are high does the RAE seem to have had little impact on the individual academic's work and identity (Harley and Lee 1997).

The internal impacts of the funding systems in Denmark and Finland vary. It is noted that the HEIs in both countries have a certain degree of freedom to reallocate state funding according to their specific policies and priorities, and therefore the incentives embedded in the funding system can be adjusted when the HEIs design their strategies.

In Finland the performance-based funding criteria are the same throughout the agreement period, with emphasis on centres of excellence, which are designated on the basis of evaluations and which highlight the quality aspect. Universities can decide independently whether to direct allocations to their centres of excellence or to use them for internal performance-based funding (MoE 2005: 65 - 66).

In Flanders there seems to be less discussion about institutional autonomy. The proposed funding model encompasses all the HEIs and does not distinguish between overall policy objectives and institutional responses to them. Furthermore, the model allows the HEIs to assess the financial consequences of their policy decisions (MoET 2006: 62 - 63).

3.6 Valid data and unintended consequences

One main theme in the debate on performance-based funding is the challenge of correctly measuring the outputs of HEIs, for which accurate and reliable data are crucial (Geuna and Martin 2003a). Several pitfalls are discussed, such as the consequences of data limitations due to data availability (Layzell 1999) and the problem of having too many and possibly conflicting measures (Johnes 1996). Linked to the problem of handling vast and overly complex information is the problem of a lack of a policy framework within which to set key objectives (Layzell 1999).

A second group of challenges is related to the impacts of the performance indicators on organisational behaviour. Performance indicators may promote a "more is better" mentality with less concern for the quality of the research being carried out (Taylor and Taylor 2003). There is also the threat that value will be assigned to what is measurable, which might lead to less concern for qualities that are hard to measure and intangible (Taylor and Taylor 2003). Thus performance-based funding may give rise to a problematic focus on quantity rather than quality (Taylor and Taylor 2003). Scores may be set unrealistically high, compelling individuals to manipulate their behaviour to meet the required standards (Taylor and Taylor 2003). Related to this is the fear that performance-based funding encourages the homogenisation of research by rewarding "safe" research

(Geuna and Martin 2003a; Liefner 2003; Taylor and Taylor 2003). There is also the question of whether the individual disciplines will be able to modify their patterns of research activity in order to meet performance criteria (Najman and Hewitt 2003).

Some of these concerns are addressed in the literature. In England special attention is being focused on two issues: the mainstreaming of research and the manipulation of research output to be submitted for publication and for peer review in the RAE. Performance-based funding is said to entail the blunt equation: research – publication – evaluation – funding (Bence and Oppenheim 2004). However, this simplified equation is to a great degree dependent on subjective decisions regarding where to place research output, which journals to choose, and how to rate and assess these journals. In the end, the RAE may influence the pattern of submission to academic journals (Bence and Oppenheim 2004).

In Denmark the issue of quantity over quality has been a key topic in the debate on performance-based funding. Early on the Danish ministry in charge of the taximeter system acknowledged the risk of a decline in quality as a consequence of the output-based funding system (Schmidt et al. 2007b: 5). To counterbalance the erosion of academic standards, an evaluation centre performs regular evaluations of the educational programmes, and there is a longstanding system of external examination (*loc. cit.*). The strengths and weaknesses of output-based funding have been discussed repeatedly with regard to the taximeter system, and a number of evaluations and investigations have been carried out during the last decade (Schmidt et al. 2007b: 9 - 10). It has been argued that since the taximeter system is a funding system, regulating the quality of education is not its main aim and that quality should be safeguarded by other measures. Nevertheless, the debate on quality is often linked to the taximeter system (*loc. cit.*).

As for the Flemish model, another issue is under debate, namely the need for accurate and reliable data in order to promote the acceptability of the model. The new funding model aims at justifying variations in funding to HEIs by objective differences such as the mission, profile and size of the institutions (MoET 2006: 62 - 63).

4 Concluding remarks

4.1 Lessons related to performance-based funding

There are four lessons to be drawn concerning performance-based funding of HEIs based on our review. Performance-based funding is introduced in order to achieve similar objectives in different national contexts. The primary objectives of performance-based funding are improved efficiency, accountability and quality. These are high on the political agenda in England, Denmark and Finland, and Flanders is in the process of introducing performance-based funding to achieve this golden standard.

Performance-based funding provokes a debate in which improved public accountability is opposed to lack of trust. The literature on performance-based funding addresses concerns about the implications of the new social contract for research according to which public accountability is to be increased despite an ensuing lack of trust. These concerns have been voiced most loudly in England, although they clearly exist in France, Denmark and Finland where a shift in funding mechanisms is underway. The model to be implemented in Flanders aims at improving “value for money”; thus the unintended impacts of the new social contract for research may arise there as well.

Performance-based funding requires that there is a clear link between funding policy and the activities in which HEIs are engaged, however the HEIs response do differ. To relate input to performance while establishing acceptable, reliable and uncontested measures of the performance of HEIs is a main issue in the literature. Related issues include institutional autonomy and the HEIs’ response to funding policy, as well as the reallocation of funding within the institutions. Our documentation reveals that the impacts of the performance-based funding model in England have been profound. The internal impacts of the funding models in Denmark and Finland vary to some extent, and Flanders has not yet implemented its proposed new funding model.

Performance-based funding presupposes distinct measures of performance, however these are not easily agreed upon. The problem of accurately measuring performance is treated at great length in the literature on performance-based funding for higher education. The topic is not discussed to the same extent in the material reviewed for the purpose of this study. The English debate draws attention to two particular fears: the mainstreaming of research and the manipulation of research outputs. In Denmark the issue of quantity over quality has been the focus of repeated evaluations of the Danish funding system. In Flanders a main objective is to strive for justified data and indicators in order to increase the transparency and acceptability of the proposed model.

4.2 Funding as instrument

The funding systems discussed in this report aim to improve efficiency, accountability and quality. Is it, however, possible to achieve greater efficiency *and* accountability *and* quality in a single (funding) system? Brennan and Shah (2000) argue that performance-based funding systems are seldom linked to evaluative schemes dealing with issues of quality. Salmi and Hauptman (2006) point out that while performance-based funding does enhance efficiency, its ability to improve quality is less convincing because the task of developing measures of quality for incorporation into formulas and calculations is much more difficult. Nevertheless, enhancing efficiency and improving quality are among the primary objectives of the funding systems discussed here.

Efficiency is strictly speaking a technical term referring to productivity: the relationship between how much is produced using how many resources (Riise 1986). Efficiency increases if more is produced for less or if the same amount is produced with fewer resources. Efficiency does not, however, refer to the value (i.e. the quality) of the amount produced. Still, efficiency may be regarded as valuable. If this is the case, efficiency may end up being mixed up with quality in the political rhetoric in which performance-based funding is situated.

Furthermore, some of the difficulties in merging efficiency and quality may stem from the variety of meanings attached to the concept of quality in higher education (Gornitzka 2003). Solid, original, relevant and useful are among the criteria applied to define quality in research (Gulbrandsen and Langfelt 1997). The concept of quality in higher education has at least five different meanings, including: uniqueness and excellence; standards that need to be fulfilled; relevance; efficiency; and the ability to change and develop (Harvey and Green 1993). Furthermore, quality in higher education may refer to: the quality of curricula; the quality of teaching; the quality of management; the quality of learning or student outcomes; and the quality of organisational structures (Stensaker 1998).

If quality is to be rewarded by funding schemes, it has to be defined. Will the funding schemes reward excellence, uniqueness, originality, relevance, usefulness, necessary standards, efficiency, change and development, teaching quality, quality of management, quality of learning, and/or quality of organisational structures? By communicating which dimension of quality is to be rewarded, it is made clear that priority is only placed on some, not all, aspects of quality.

Although the objective is to reward quality (or some aspects of quality) and efficiency, the literature reviewed in this report gives ample evidence of the pitfalls and problems associated with designing measures of quality and efficiency. Two main problems are that value is attached to what is measured (or measurable), thereby steering behaviour, and that it is very difficult to develop valid measures of quality and efficiency.

4.3 Funding and evaluation of quality

Clearly all the funding systems discussed in this report aim to reward quality in some sense, although the way in which funding is linked to the evaluation of quality differs. The RAE explicitly links peer review and funding. In Denmark an evaluation centre (EVA) has been established and several evaluations of the taximeter system have been conducted. The issue of whether the taximeter model has had a detrimental effect on the quality of student outcomes of learning is a topic of ongoing debate, although the evaluations have not documented such an effect. The Finnish and Flemish models take quality as given to a certain extent and reward it (or some of its characteristics) by including specific indicators in their formulas.

Thus the policy solutions in these countries can be divided into two groups: those that fund quality based on evaluations of quality, as is the case in England; and those that take quality as a given and reward it on the basis of indicators incorporated into the funding formula, as is the case in Denmark, Finland and Flanders.

4.4 Funding and metrics

The introduction of a funding system based on metrics has been proposed in both England and Flanders, and Denmark is working on this as well. Finland and France do not employ such a funding mechanism. There are several arguments in favour of funding systems based on metrics, including increased transparency, accountability and quality. In England one important argument is that the RAE (which also aims at improving transparency, accountability and quality) generates a heavy administrative burden. Flanders is also interested in containing the administrative cost of performance-based funding. Denmark aims at stating clearer demands for quality and providing incentives for research production. Nevertheless, it would be wrong to say that transparency, accountability and quality are not primary objectives of French and Finnish higher education policy even though these systems are not based on metrics. The French funding system implements contracts based on the HEIs' strategic plans, while the Finnish system rewards other quality aspects such as doctoral degrees awarded and centres of excellence.

4.5 Diverging solutions, converging debates, new questions

The empirical material reviewed for the purpose of this study reveals different ways of designing performance-based funding systems. The discussion of vital topics such as efficiency, accountability and quality, issues relating to the new social contract for research, the special organisational characteristics of the HEIs, and the problems of measurement has yielded one question: Do the impacts of these funding systems converge though their details differ? Our review of the discussion tempts us to answer yes it does. Why so? We suggest that the technicalities of these funding mechanisms cannot override their symbolic dimension. The rhetoric promoting New Public Management is evident in

all these policy solutions. This management philosophy has been heavily critiqued in academic circles. Thus the impacts at the discursive level may be stronger than the technicalities would suggest. Further investigations should profit from relating HEI funding policies and their implementation more broadly to both transformations in HEIs, the role of academics and contemporary public administration policies.

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