Higher Education teaching funding methods in other countries

A report to HEFCE by Technopolis

May 2010

Executive summary

1. This study considers the systems for the funding of teaching and learning in seven countries through six case studies – Australia, Spain, Denmark, Sweden, the US (California) and the Netherlands (including the Dutch-speaking region of Belgium for comparison). It was conducted as a consultancy for HEFCE by Technopolis Ltd.

2. Higher Education funding is high on many countries' agendas – particularly the funding of teaching and learning where there have been changes in focus and structure, within Europe and in the wider world, over the past few years. Generally, including in the case study areas, the objectives of such funding are to prioritise stability of funding for Higher Education institutions and to use the funding to steer institutions' activities to meet a range of policy requirements from increasing the quality of teaching and learning to societal issues such as widening access to Higher Education. Typically this prioritisation is taking place within an environment seeking to broaden participation, often while the overall availability of funds is decreasing.

3. Higher Education funding systems are complex mechanisms, in turn operating within complex systems. No one element can be considered in isolation. However, this study looks at examples of how Higher Education funding systems operate across the world and examines the extent to which some of their key or novel mechanisms may be of interest in the English context.

Main features of teaching funding systems

4. With the exception of Denmark, all the systems examined work on the basis of a core block of funding with a set of other measures based on criteria designed to help achieve specific strategic policy objectives. In most countries, the funding formula for the block grant is based on a mixture of specified criteria (input and output related) and historical trends or a mix of specified criteria and negotiations with government authorities. Input-related funding refers to funding based on costs or, for example, numbers of students recruited, whereas output-related funding relates to results, such as numbers of students graduating or course credits completed. These criteria vary in how they are packaged together, but the size of the institution still tends to be the dominant factor. Once the overall funding is calculated, the final use within each institution remains an internal decision. In principle this is similar to the system in England. However, there are many differences in approach and focus, the most striking being that in most cases the trend is an increasing use of output-based systems using performance measures, whereas in England the focus remains more on input measures and competition between institutions.

5. In order to be able to use output measures successfully, institutions need to have a standardised basis for comparison. Increasingly this is the use of credit-based systems. Europe has the European Credit Transfer System (ECTS), which enables standard and comparable measurement between institutions and countries, and there is a similar approach in the US. England has an increasingly standardised approach to the use of credit, but not all institutions use a credit-based system; this may question the manner or extent to which England could use a wholly credit based system.

6. Contestable funding – where institutions compete for a pot of funding – is widespread for funding research, but is less common for teaching and learning. Few examples were found in the case studies. The one example in Australia had problems since it resulted in funding being concentrated in already-successful institutions rather than encouraging improvement across the

board. Several difficulties were highlighted, including the transparency and consistency of the assessment criteria in the complex fields of teaching and learning.

7. A major concern in all the systems was the need to keep institutions' reporting and management burden within reasonable limits, given the inevitable tension between transparency and lightness of load. England has one of the lightest levels of reporting requirements, since performance funding implies more detailed reporting, and often the funding formulas involve the provision of a lot of data. In most cases as much as possible is based on data already collected for other purposes. Where reporting requirements are linked to funding there appear to be few problems. In California (and the US generally), however, the reporting requirements are not directly related and operate for several levels of government, which does cause tension.

8. One of the key policy drivers across the countries studied is the drive to increase participation by under-represented groups. For many of these, for example socially-marginalised groups or women, non-traditional modes of study including part-time study, distance learning and, increasingly, the use of new technologies are more adapted to their circumstances. However, in funding formulae, non-traditional modes of study can be treated in different ways to reflect the different costs and outputs that might be involved. In England funding modes of study other than full-time tends to be dealt with through targeted allocations. This is not the situation for teaching and learning funding in any of the other case studies. A variety of approaches are used including the use of full-time equivalents calculated using the credit-based system or factoring it into the tariff system for funding individual subjects or bands of subjects.

9. In the cases studied – even where the system has more than one type of Higher Education institution – the trend is to introduce a single funding model across all institution types. Several factors have helped this, including the blurring of distinctions between research-orientated institutions and applied institutions throughout Europe through the Bologna Process.

10. Widening participation is a policy priority in most of the case study countries, which have taken various approaches to increasing access, improving graduation rates (especially from those with a disadvantaged background) and to widening involvement in Higher Education. As well as using block grant and targeted allocations, there is increasing use of direct student-focused mechanisms including grants and other forms of income support. Indeed many of the new approaches in the case study countries appear to be targeted at individuals rather than institutions, with the exception of capital funding.

Critical reflections and conclusions

11. The study shows a range of funding models from the wholly performance-based Danish system, through mixed formulas (of varying degrees), to California, where a lump sum of the state budget is allocated to the institution. The models are driven by many cultural and contextual factors and cannot be viewed in isolation. While there is some commonality of policy drivers, these too vary in their relative importance in the different countries studied. It is clear that whatever the funding model, a huge number of external factors have bearing on their construction and focus. These range from wide economic and demographic factors to those related to the structure of the Higher Education system itself.

12. Funding systems are used to steer Higher Education in two main ways: through performance funding and through targeted allocations – which may also be performance based.

The case studies suggest that, particularly in Europe, there is a shift to allocation mechanisms based on performance or outputs. These ensure feedback and permit finer steering of the system. On the other hand, they are more volatile and can make it difficult for institutions to plan for the long term, depending on the performance indicators selected.

13. Targeted allocations based on inputs remain an important instrument for steering institutions towards specific goals, particularly over a longer period. This is reflected in the way they are reviewed and changed, even when seen as successful. Targeted allocations are often used in areas where it is difficult to identify workable output indicators, or in areas of specific difficulties where investment is required. The main disadvantage is that it is difficult to assess whether or not the funding is achieving the results expected unless there is a clear contract or other agreement between the funder and the receiving institution. In addition, the institution has limited freedom in how the funding is used. The overhead for this type of funding is generally low since there is no inbuilt requirement to track output indicators (although it would be good practice). However, where there are several different elements of this targeted funding, the administrative overheads can be high, depending on the implementation mechanism selected, and the potential for double funding exists. Overall, the potential for inefficiencies to creep in is relatively high.

14. Performance-based allocation mechanisms have the potential to bring many improvements to institutional efficiency. As a mechanism it needs to be carefully implemented because it can induce undesirable or perverse effects. This is reflected in how varied the approaches can be to performance funding and associated mechanisms, to counterbalance or augment effects. Most of the performance elements seen in the case studies relate to issues of access and internal efficiencies, with the main focus being internal efficiencies (cost per student, retention, time to graduation). It is still rare to include indicators relating to teaching quality, the labour market or societal needs. There is evidence to support the contention that performance-based allocation mechanisms, particularly those based around time to degree (duration of studies) appear to have increased efficiencies in the cases studied. Performance elements are still small amounts of the budget, with stability in the funding method being achieved through a mix of input and output-based mechanisms. This is also used to counterbalance potential undesirable effects.

15. The use of output-based funding in England would require a consistent set of indicators, such as a standardised credit-based approach. If England wishes to have a Higher Education system where institutions can be rewarded or encouraged to concentrate on certain areas of excellence (such as access for socially-disadvantaged groups, links to the community, links to business, lifelong learning), it could do so through a system similar to that used in Spain, with a menu of performance incentives that an institution can choose from. Working out the weightings for such a system is key to its delivery and ensuring that it reflects real costs rather than costs based on hypotheses.

16. Transition is made easier when the performance element of the funding is kept small and manageable. The larger the amount, the more likely there will be substantial changes in the amount institutions would receive. In England, this type of approach is an unknown quantity. A way of addressing this uncertainty would be through the use of pilots (modelling and parallel running/calculating could also be envisaged).. This would be especially interesting if the performance measures were rewarding elements of institutional excellence that were less linked

to traditional Research Universities and more linked to Universities that spend time and resources embedding themselves in a local and regional economy.

17. Any move towards reporting on outputs requires more data and will increase the burden on Universities, but this can be reduced. England appears to have one of the least burdensome systems of teaching funding allocation, mainly due to its input-orientated criteria. If England were to change its system to include output-orientated indicators in the block funding this would need to be considered in the light of whether an increase in reporting would significantly change the funding allocation for the better and produce the intended results – whatever they may be.

18. Generally, the trend is for performance-based funding to form an increasing part of the block grants to institutions for teaching and learning, for contested funding to be used for research (and some infrastructure projects) and for wider economic and social objectives to be achieved through indirect funding passing to the student and thence to the institutions.

19. In all the cases, the allocation of funding within institutions remains the purview of the institutions themselves – with a few very limited exceptions on funding for specific actions in the field of access.

Introduction

1. The Higher Education Funding Council for England (HEFCE) requested a comparative study of Higher Education teaching funding methods in six other countries (regions). The aim of the review is:

- To undertake a desk-based review to outline the methods for publicly funding HE teaching currently practised in (selected) other countries.
- To consider whether any of these methods might be applicable to the further development of HEFCE's teaching funding method.

2. The final choice of countries (regions) reflects HEFCE's interest in certain methods and approaches to the funding of teaching that are used elsewhere: the use of core and strategic funding, credit-based systems, contestable public funding, low burdens on institutions and multiple funding methods. In addition, the selection included countries that are considered to be international competitors to the UK and also countries for which equity and widening participation are clear policy objectives.

3. This report provides an analysis of the key issues arising from the countries (and regions) studied, reflecting the methods used and also policy priorities. The report looks at whether these other approaches can be considered as future alternatives to enable improvement of the current system. The case studies are at Annex A.

Methodology

4. This study was designed primarily as a desk-based review over a two-month period (August-September 2009), assembling case studies and culminating in a report outlining the results of the research and an overview of approaches taken in the chosen countries.

5. Initial discussions were held with HEFCE to identify specific topics of interest in teaching funding that would influence the choice of countries selected and the main topics within those countries. The factors guiding the choice were varied, covering a range of issues important to HEFCE. The principle was to choose countries where these had been addressed through funding schemes, or where the nature of the schemes enabled them to be examined from these perspectives. These issues included:

- A mix of core funding and other public funding for strategic priorities – showing different ways this might be achieved.
- A balance between public funding and funding from other sources, especially private funding
- Output-based funding systems, particularly the use of academic credits in the construction of funding formulae.
- The use of "contestable" public funding.
- Funding models that do not place high reporting burdens on institutions.
- Funding that suits different modes of study.
- Countries that have several different funding models across Higher Education.
- Examples where equity and widening participation are important policy objectives.
- Countries considered competitors to the UK in the international market.

6. The selection of cases aimed to cover as many of the issues as possible and to select countries where there was adequate information to permit comparison and a discussion of transferability. Starting from an original list of 10 countries, a final list of six was agreed, to which was added the Flemish region of Belgium (completing the Dutch-speaking education area). In some cases Higher Education is a regional or state-level responsibility, or responsibility is split. In that instance the case studies focus on specific regions or groups of regions.

7. The countries (regions) chosen for review are:

- Australia
- California (US)
- Denmark
- The Netherlands (and the Flemish region of Belgium)
- A selection of Spanish regions
- Sweden

8. The six case studies are attached as Annex A.

Main features of teaching funding systems

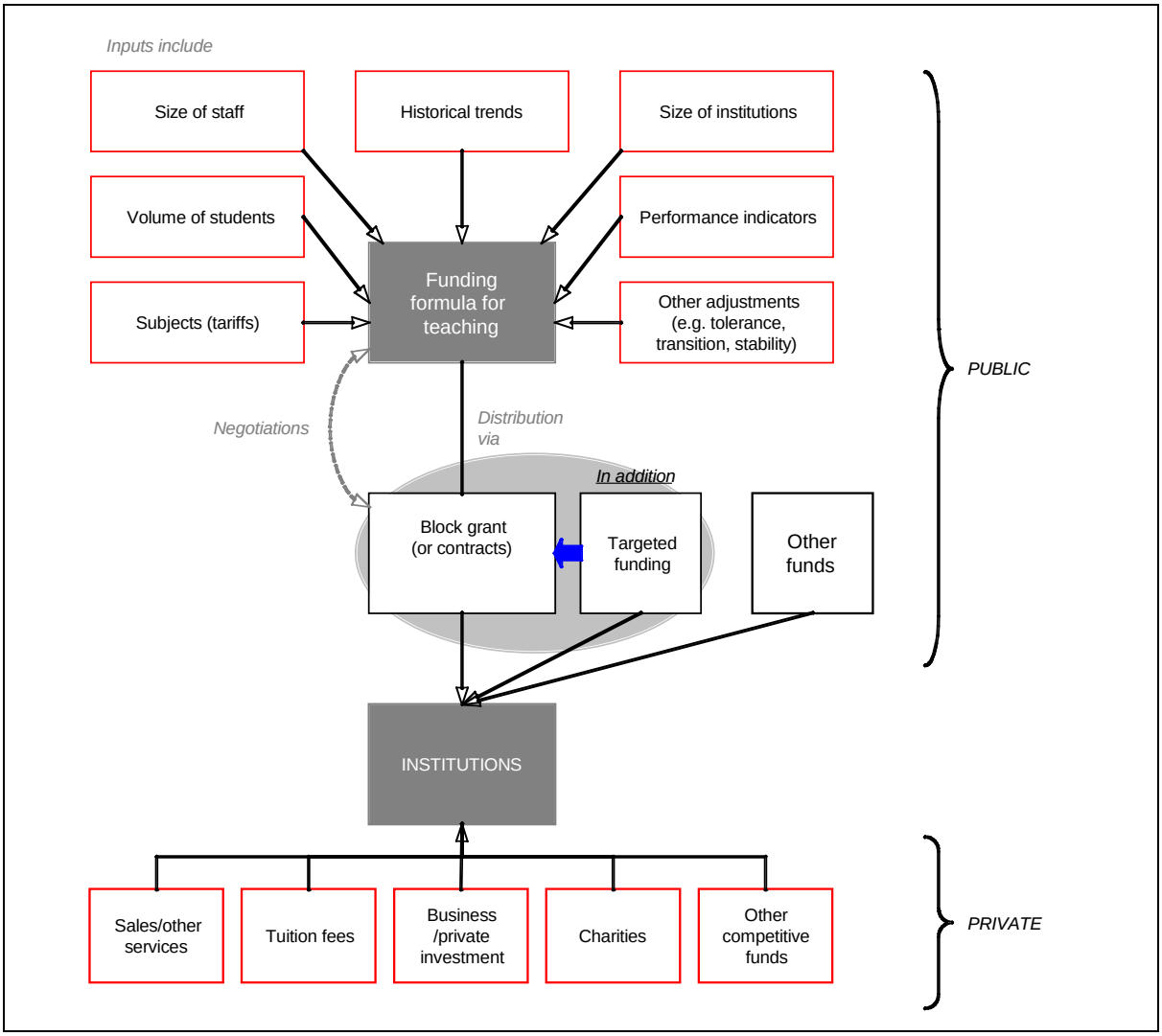
9. There are a range of approaches to funding teaching, and governments have different objectives that they address in the process. In some cases the funding is expressly used to try to steer the system. This section looks at how funding is put together and used and the key points illustrated by the case studies.

The funding models for teaching

10. In all cases Higher Education is funded primarily by the state. The proportion varies but in most cases over 50% of the funding will come from government. This budget is allocated to the institutions in a variety of ways. The use of **block grants** to allocate public funding to institutions for teaching and learning activities is widespread. In general there is a **funding formula** that contains various elements that are put together to calculate the level of the block grant. Formula funding has become the most common basis to allocate block grants to institutions. In a number of countries, block grants also include elements of funding for research.

11. In most countries the funding formula for the block grant is based on a mixture of certain specified criteria (input and output related) and historical trends or a mix between specified criteria and negotiations with government authorities. These criteria vary in how they are packaged together but the size of the institution still tends to be the dominant factor: number of enrolled students, number of first-year students, number of staff or number of academic staff are typical size-related criteria. These size factors are also typically weighted by funding coefficients that intend to reflect costs per student by field of study and are often bundled together into **tariffs** covering a range of subjects. Within the block grants there are a number of other elements that are used in the calculation grant level. Examples of these factors are shown in Figure 1.

Figure 1 The generic elements of a teaching funding model



12. There is a growing use of **performance-based measures** in funding formulas. Countries are now using formula-funding criteria such as the number of degrees awarded or the number of graduates, the number of credits accumulated by students, the number of students completing each year of study and the average study duration or in some cases research and innovation indicators. Some countries include equity objectives in funding formulas, typically through the use of a premium in the funding formula for each student of a given under-represented group. A few countries also use funding formulas in relation to the regional role of institutions or the level of internationalisation.

13. Formula-based funding provides many advantages over other methods. It has enabled institutions to be more flexible with increased institutional cooperation and innovation. Furthermore, it gives transparency to institutional allocations: the criteria for the distribution of funds are typically clear to all involved and allocation no longer reflects ill-founded historical trends or the lobbying power of institutions. Another feature of formula-based lump sum budgeting is that it is delivered directly to public institutions as a block grant and the institutions decide on their internal allocation of resources. This is important in the context of funding in

England where there is a commitment to the principle that institutions are autonomous and hold responsibility for decisions on the use of resources.

14. **Targeted funding.** The allocation of public funding to institutions on a targeted basis to address particular objectives has also become common practice among countries. Examples of specific purposes include improving teaching quality, promoting innovation, fostering better management practices, modernising infrastructure, encouraging partnerships with the private sector, supporting particular fields and improving quality assurance processes. In turn, in the vast majority of countries where targeted funding is used, the allocation takes place on a competitive basis. Targeted funds have the potential to steer institutions towards a better alignment with national economic and social goals. This is the case when funds are allocated to achieve explicit objectives such as the improvement of the quality of educational programmes, the introduction of innovative curricula, the improvement of management practices or the development of partnerships within the region where the institution is located.

15. **Contracts**. In a number of countries the government establishes a contract with individual institutions. The provision of funding to institutions under an explicit contract means that governmental expectations are clear. Contracts lend transparency to the funding system. If valid for a given period it can provide a measure of certainty and stability, which is important for institutional planning. By the same token, it also might permit a considerable degree of flexibility if not excessively prescriptive.

16. Not all funding passes directly to the institutions. For example, in many countries student grants are used to address certain policy priorities that are of interest to this study. Where applicable they are mentioned in the analysis, but analysis of those funding mechanisms does not fall inside the scope of this study.

17. Thus, in all the cases studied, the public funding is made up of elements that are assembled into a block grant, which is then in many cases supplemented by additional targeted funding and by funding which passes to the institutions through the students themselves. The study looks at examples of the different mechanisms for determining these elements.

The teaching funding method in England

18. The teaching funding method in England uses a funding formula to allocate a block grant. Within the block grant there is also some targeted funding. The overall level of block grant is set by the government and so the funding method does not affect the total sum available for distribution.

19. The formula for calculating the grant to each institution is input based. The funding criteria include: the number of students, subject-related factors (price group weighting), fee assumption and London weighting.

20. The targeted allocations are for priority policy areas such as widening participation or for compensating for additional costs of part time student provision, for example[1]. They are provided outside of the main teaching grant and therefore changes in student profile will have a direct and immediate effect upon grant levels. In addition in England there is a tolerance band designed to

[1] For the most up-to-date information see http://www.hefce.ac.uk/learning/funding/

give institutions flexibility in both the nature of provision and to change student volume and mix without further administrative burdens.

21. Thus in England there is a relatively simple system where the majority of the resources are allocated to institutions on a formula basis with a residual sum used to fund strategic development. This is distributed through the independent Funding Council, providing a transparent funding mechanism. Institutions retain the autonomy to allocate the funding internally and the system enables them to plan ahead with reasonable confidence.

Effects of the teaching funding systems on Higher Education

22. Funding models for teaching are generally introduced and adapted to have specific effects on the Higher Education system. There are three broad objectives that most systems will be trying to achieve to some degree.

- Increasing access to and equity in tertiary education as measured by:
  - increasing overall participation rates for students of traditional enrolment age who enter an HEI in the year following their graduation from secondary school;
  - expanding the number and range of lifelong learning opportunities particularly for older students and other non-traditional groups of students including distance learners;
  - reducing disparities in participation rates between students from low and high income family backgrounds as well as other important dimensions of equity such as gender and racial/ethnic group;
  - increasing private sector investment and activity in the provision and support of tertiary education activities.
- Increasing the external efficiency of tertiary education systems by improving:
  - the quality of the education provided;
  - the relevance of programmes and of graduates in meeting societal and labour market needs.
- Improving the internal efficiency and sustainability of tertiary education systems by:
  - reducing or moderating the growth over time of costs per student and improving how resources are allocated, both among institutions and within institutions;
  - decreasing repetition and raising the rates of degree completion.

23. As a consequence, funding systems are a major influential factor on institutional strategies, which work within the system and optimise activities and strategies accordingly. All funding systems will have their strengths and weaknesses. Contextual factors are also very important in explaining why they address some areas and not others.

Overview of the case study countries (regions) and approaches to funding

24. All the funding systems studied are made up of many elements and address several of the priority issues identified. Also to be taken into account are the ways in which the various funding elements interact and the contextual factors surrounding HE funding in the country or region

concerned. These two factors are important in considering the potential transferability of funding mechanisms. Figure 2 lists the case study countries and highlights the points that each country illustrates.

Figure 2 Issues illustrated by the case studies

	Australia	California	Denmark	Flanders	The Netherlands	Spain	Sweden
Core and strategic funding	●	●	●	●	●	●	●
Credit-based system		●	●	●	●	●	●
Contestable public funding	●						●
Balance public/other sources		●				●	
Low burden			❍		❍		❍
Different modes of study		❍	❍	❍	❍	❍	❍
Multiple funding models		●		●	●	●	
Competitor countries	●	●					
Equity and widening participation	●	●	●	●	●	●	●

● Fully covered

❍ Partially covered

25. In order to understand these contextual factors, the table below summarises the general situation in each of the case study countries or regions. More detail can be found in each of the individual case studies attached to this report. Annex B also gives comparative figures on funding from the OECD (2008) showing levels of expenditure on Higher Education, the size of the sector and data on access and graduation rates to provide wider contextual information.

Figure 3 Country system overview[2]

Country (region)	Type of system	Main sources of funding	Main approaches to funding
Australia	Unitary system	Public funds Tuition fees	Core public funding Strategic
California (US)	Three-tier system	Public funds (state and federal) Tuition fees Private funds	Core public funding with performance indicators/ contracts
Denmark	Unitary system	Public funds	Block grant Performance funding Credit-based funding
The Netherlands	Binary system Two funding models	Public funds Tuition fees (small)	Block grant Performance funding Targeted allocations
Belgium–Flanders	Binary system	Public funds Tuition fees	Block grant (small) Performance funding
Spain	Unitary system	Public funds Tuition fees	Block grant Performance funding (variable indicators)
Sweden	Binary system	Public funds	Block grant Performance-based funding Target funding (some)
England	Unitary system	Public funds Tuition fees	Block grant Target funding

[2] See Annex C for the glossary, acronyms and abbreviations

26. From this it can be seen that across Europe there are different approaches to the Higher Education system split between a unitary system, where there is a single type of Higher Education institution, and a binary system that differentiates between academic and vocational HEIs in some way, similar to the situation in the UK prior to the passage of the Further and Higher Education Act 1992. The situation in the US is somewhat more complex involving both federal and state levels. In the case of California there are three levels within the overall public Higher Education system, which is what the case study focuses on, plus another layer of private Universities.

27. Funding falls into two main categories – those countries where the funding is divided between block grants and student fees (which may or may not be subsidised in the form of grants and other supports to individuals) and those where there are no fees. In the case of the US there are also substantial additional private funds attracted to Higher Education. In England there are some but these are highly limited in the case of teaching funding. Tuition fees are important in the US and Australia. Europe, Spain and the UK have the highest levels of private funding, mainly through tuition fees.

28. With the exception of the US where it is much higher, the annual public funding per student in the case study countries is very similar. There has been an increase in overall expenditure in all case study countries from 1995-2005. In most cases the pace of growth has been relatively steady but in the UK there was a 49% growth over the period 2000-2005. In Belgium and the Netherlands, expenditure per student fell due to high increases in student numbers combined with low increases in funding. This increase in student numbers is common across all the countries with the exception of Spain, which has suffered decreasing birth rates[3].

29. Figure 4 shows the level of annual expenditure on tertiary education institutions per student in 2005 in total, excluding R&D activities and in core educational services (that is excluding ancillary services). It reveals, with the exception of the United States, a certain similarity of levels of funding per student received by institutions of tertiary education across selected countries. It is interesting to observe that, if expenditure on R&D activities is excluded, the level of spending per student on tertiary institutions in the United States is more than twice the expenditure in all the selected countries. This huge difference in the financing of Universities makes the comparison between the United States and the rest of the selected countries more difficult. Australia is the next highest country in funding per student excluding R&D, but with an expenditure on core educational services around half of the US one.

[3] Source OECD see Annex B

Figure 4 Annual expenditure on educational tertiary institutions per student (2005)
In equivalent USD converted using PPPs for GDP, based on full-time equivalents

	Total	Excl. R&D	Ed. core services
Australia	14,579	10,199	9,544
Belgium	11,960	8,046	7,725
Netherlands	13,883	8,719	8,717
Spain	10,089	7,182	7,182
Sweden	15,946	8,281	8,281
United Kingdom	**13,506**	**8,842**	**7,793**
United States	24,370	21,588	18,656
EU19 average	10,474	6,990	6,707

Source: Adapted from OECD Education at a Glance, 2008

30. Approaches to student recruitment vary across the countries and these affect not only the funding mechanisms but also the completion rates (both time to degree and proportion of graduations). In the UK completion rates are high, with only Denmark having a higher proportion and the average length of courses is short compared to the rest of Europe. Australia and the UK have the highest proportion of international students taking first degree (Bachelor's) courses. The UK also has a high level of international students on taught Master's courses.

Analysis of approaches and key issues

31. This section takes each key issue and analyses how the case study countries and England approach them.

- The use of core and strategic funding in the case-studied countries.
- The increasing use of credit-based funding systems.
- The use of contestable public funding to drive performance.
- Low burdens on institutions.
- Funding different modes of study.
- Countries with multiple funding models.
- Approaches to equity and widening participation and the role of block teaching funding.
- Other links between policy and teaching funds – steering the system.
- International competitiveness – the use of the teaching funding model.

The use of core and strategic funding in the case-studied countries

32. One of the tensions in any funding model is the need to maintain a balance between stability that enables institutions to plan with a degree of certainty and flexible strategic funding that can be responsive to change either in performance or priorities. This is tackled in a variety of ways in the countries examined. Questions arise over the relative proportions of the two elements and whether the performance-related elements should be included in the block grant or be separate funding streams. Figure 4 indicates the main distribution models in each country case study.

Figure 5 Main funding distribution models in the case studies

UK	Block grant including targeted allocations
Australia	Block grant including targeted allocations (premiums) Numerous other competitive grants including quality of teaching, business-industry collaboration, capital development, structural reform, diversity, disability support, equity support, indigenous support
California	Block grant Smaller competitive grants
Denmark	Block grant including performance targets and targeted allocations (taximeter system)
Netherlands	Block grant including performance targets Smaller competitive grants
Spain (regions)	Block grant including performance targets (in some regions this can be up to 19% on outcomes)
Sweden	Block grant including performance targets

33. All of the countries covered use core funding and have some element of strategic funding that is either delivered as part of the block grant or separately. In England, both the main teaching grant and targeted allocations are put together in the block grant and the institutions are at liberty to distribute them internally how they see fit. This is the same for four of the case study countries. The Netherlands, Flanders, Spain and Sweden combine historical-based funding (or a fixed amount) with varying percentages of performance elements. While the UK targeted elements are generally based on input measures, most of the case study countries have performance measures in the block grant to varying degrees. Denmark is the most performance led and the strictest of all the performance models, as there is no room for negotiation.

34. Australia, like England, has no performance targets in its main block grant for teaching. However, it has the highest number of different types of competitive grants that can be awarded to the institutions external to the block grant. It gives premiums for disadvantaged groups and is currently debating additional criteria around retention, which is an ongoing issue. It has an equally wide range of competitive grants for students, which support the same types of priorities. The system is not overly reliant on winning these grants due to the high level of tuition fees, which also gives some stability to the system. The main aims in the Australian system are to ensure quality of educational experience and to improve equity of access to Higher Education. Its current system of supporting this through additional grants to individuals is not considered to be working as well as intended and there are proposals to add some sort of performance target to the block grant. This would be to support, in particular, disadvantaged groups.

35. In Denmark, with 100% public funding, the size of the block grant is linked to the direct results of the institutions and is therefore wholly performance driven. There is no room for further negotiation between institutions and the ministry for additional funding. The system is called the taximeter system and was put in place to improve performance through better completion rates of students. Although the introduction of the taximeter system was not without its problems, it has

led to institutions becoming much more demand driven and results orientated. The main criticism of the taximeter system has been the level of the tariffs for the subject groups rather than to do with the organisation of the system. The effectiveness of the system is demonstrated in the fact that it has led to very high completion rates, the highest of the six case study countries. In addition, it is thought to have been successful in making Universities more responsive to students and improving the management of the education system.

36. Sweden also has a block grant with a performance element that accounts for around 10% of the budget. This forms part of a public service agreement with the government where each institution agrees to a number of targets. It is a relatively stable system and one that has increased competition between institutions.

37. In Spain, all the regions have some core funding and some additional funding. It is the additional funding that varies from region to region and in some cases is driven by a large number of different performance indicators. In Madrid, the funding by objectives portion is, like Sweden, set at 10%. In Andalusia, 19% of the funding formula is performance related, but this is over teaching and research and, as it is quite new, the effects of the model are unknown. Valencia uses an à la carte system for its performance part, which means that Universities choose 15 performance indicators out of a total of 31 on offer. The performance funding element is awarded based on annual improvement rather than excellence. Inviting institutions to choose their indicators is an incentive to pick the worst performing areas with the most room for improvement. Evidence suggests clear improvements have been made, for example in the number of dropouts in Valencia.

38. California is one of the most unusual systems in that it is performance driven, but not linked to direct funding. That is to say there is no real funding formula in place, but there are high levels of accountability to the state. The block grant is therefore not dependent on any of the performance measures, but on negotiation with the state and has been highly dependent on the overall state economy. The proportion of core state funding has been declining over the past few years reflecting general budget cuts across the state. The additional grants mainly cover issues relating to widening participation and the transfer of students from the Community College system into the main University systems. This is a very important central policy for California – ensuring a route to Higher Education irrespective of economic means. The three-tier system has proved successful in widening access to Higher Education. However, there remains an achievement gap in the Community Colleges between students of different ethnic groups and migrant groups. The high levels of accountability result in a large reporting load that is not directly connected to an institution's funding. Reviews of the system suggest the need to clarify the link between performance and funding for the accountability system.

39. The case studies show a full range of approaches, from the main funding being almost entirely through the block grant, leaving institutions free to make internal allocation decisions, to complex systems involving block grants and separate targeted funding where there is less institutional autonomy and a more direct link with policy objectives. The bases for the calculation of the different elements also vary, with some being based mainly on costs (input based) and others being based mainly on outputs and targets.

40. Of the case studies, only Sweden uses conditional funding in its model. This is a portion of the funding that can be held back if the institution does not reach a certain level of performance. In the Swedish case, 10% of the block grant is allocated to the institution via a performance

agreement. Each institution is asked to fulfil a number of objectives such as the minimum number of degrees awarded, the goals for examination results and specific assignments that the institution can define. How the objectives are achieved is up to the institution, not the government. In the longer run, student choice and academic trends also influence the direction of the Universities. If it does not reach its agreed targets or enrolment ceiling, the government may hold back some of this allocated funding. If they underperform they are allowed to “save” the 10% for future years. It can therefore be carried over. If the institutions over-perform they can bank the funds for the years they may underperform (within a three-year period). Overall, the institutions tend to reach their targets and the three-year margin gives them enough flexibility to recuperate losses or readjust funding/targets in future years. That is, the three-year period gives HEIs enough scope to sufficiently plan to reach government targets. Partially related to conditional funding, Australia has some flexibility within the system for the number of students funded by the Commonwealth Grant Scheme if institutions gain more students than the agreed allowance. Some institutions have secured additional funding for over-enrolments. In addition, some supplementary places have been allocated to institutions through a national bidding system.

The increasing use of credit-based systems

41. One of the main issues with calculating grants – whether block grants or targeted allocations – is the choice of units of measurement. While in some cases these are cost based, there is an increasing trend towards the use of credit-based systems. These have advantages in calculating for non-full-time modes of study and for enabling a move to output-based allocations.

42. Credit-based funding systems are widespread in Europe due to the European Credit Transfer System (ECTS). Under this system one academic year corresponds to 60 ECTS-credits that are equivalent to 1,500–1,800 hours of study in all countries irrespective of standard or qualification type. Primarily used as a means to understand and compare degrees, the use of credits has also facilitated the introduction of performance funding in many countries, as it is a standardised and common element understood across institutions. ECTS introduces a level of granularity and a full-time equivalent can be expressed in terms of the number of credits being taken rather than by people and hours/courses.

43. Denmark introduced ECTS quite early on, in 2001. In its main funding system, the “taximeter” system, the funding is paid to institutions based on a tariff (subject specific) per credit. In the Netherlands, 50% of the teaching component of University funding is allocated based on the number of diplomas awarded. This is also measured in full-time equivalents using the ECTS. In the Universities of Applied Sciences in the Netherlands a more complex formula is applied, which combines the degrees (credits) awarded with a calculation of the average time it takes a student to pass its degree (currently set at 4.5 years). The formula also includes dropout rates and an average time it takes to drop out (set at 1.35 years). This formula means that there are two ways to raise funds in the Universities of Applied Sciences – through a permanent rise in success rates or by increasing the number of students. In Spain (Madrid), part of the core funding for teaching activities uses full-time equivalents calculated at a standard amount of 65 enrolled ECTS credits. The Swedish block grant is based on the number of full-time equivalents and annual student performance (ECTS credits passed). These performance-based targets also include the number of degrees awarded (credit based) and goals for levels achieved in degrees.

This credit-based system also appears to enhance institutional competition in Sweden as students choose institutions with good achievement records. In addition, as seen in the case study on Sweden, all degrees are regarded as final qualifications, but with the possibility to continue studying, further facilitating a dynamic relationship between Swedish HEIs.

44. In California there is also a credit-based system, which is used across all three tiers of Higher Education. One reason for this is to facilitate transfer from the Community Colleges to the other two parts of the system (the University of California and the California State University). In practice there are issues with this system as only a certain number of credits can be transferred, not all courses count and in general Community College students are expected to accrue more than the minimum to move on to the next tier of the system. There are moves to make the system more transparent through the new California Articulation Numbering System, which allows cross-referencing of transferable courses. One issue with taking more than the minimum required number of credits is that the total cost of the degree and time in education will increase, therefore reducing efficiency. Through the new articulation system, students can see which courses are transferable and therefore take fewer overall units if they wish to go on to the other tiers of the education system.

45. Using the credit-based system has several advantages, not least that it has multiple uses, thus reducing the data collection burden for institutions. While many institutions in England have credit pointed courses based on a widely used Framework[4] the, there are some variants, some institutions who do not return data at the level of the module and a small number of institutions that do not credit point their courses. In conjunction with other indicators, such as completion rates and length of study, credit can be used to measure and promote efficiency and to measure the achievement of specific objectives such as increased participation of under-represented groups. It can also be used in the setting of tariffs for courses or groups of courses.

46. The existence of an already accepted European standard has provided advantages in the transparency of the credit-based system in use and avoided the need for multiple measurement systems. It is also based firmly in teaching and learning criteria.

The use of contestable public funding to drive performance

47. As well as funding based on normative measures such as size or various measures of costs, some elements of funding are awarded on a competitive basis. This is quite normal in the case of research funding, but less common in the case of teaching funding. How this competitive element is awarded varies, as does the significance of the competitive element compared to the overall core grant.

48. Competitive funding was used in the Australian Learning and Teaching Performance Fund (LTPF) where a pot of funding designed to drive excellence was used. An initial review of the scheme showed that the funding was distributed only to a few top Universities, so improvement gains were limited. Changes were subsequently made to the scheme to widen its coverage and to provide more opportunities for the other Universities. This highlights the importance of the funding objectives and award criteria and the need for a link to clear performance indicators. The new scheme, which will replace the LTPF, will be based on performance indicators that are

[4] See http://www.qaa.ac.uk/england/credit/creditframework.pdf

currently being defined as part of the transition to the new funding arrangements. However, the bulk of the new Australian system is focused on a move to a student-centred funding model such that competition for funds is translated into a competition for students as the main allocation mechanism.

49. The other case study countries do not use the idea of competition for funds as a driver in their funding mechanisms – rather they are moving to performance-based systems, either in part as in Spain or almost entirely as in Denmark, where individual institutions are encouraged to increase their performance on a range of criteria covering teaching quality, efficiency gains and meeting broader social or policy objectives.

50. Funding of this nature is generally only a small part of the overall package and is focused directly on areas of policy importance. In some cases these are related directly to Higher Education issues, such as the promotion of teaching quality (e.g. Australia and the Netherlands) or the inclusion of marginalised groups. Competitive funding for specific curriculum areas is also an example of how this mechanism is used, although it is much more extensively used in research than in the teaching element of funding. None of the case study countries have significant competitive elements used on this basis in the construction of teaching funding.

51. The advantage of this type of funding is that in principle it can be used to steer Higher Education activity to meet wider policy objectives, whether these are directly related to education, such as increasing activity in areas of actual or potential skill shortage, or more indirectly linked, such as focusing directly on specific economic objectives.

52. Disadvantages include the lack of stability of the funding and, from the perspective of the institutions, the fact that the money is often ring-fenced for the specific purpose, limiting the degree of flexibility and academic autonomy.

53. Difficulties may arise over the transparency and consistency of the assessment criteria used in the allocation of funding – and in extreme cases may lead to gaming behaviour on the part of the recipients, or distortions in institutional priorities, with chasing funding becoming more important than the nature of the activities supported.

Burdens on institutions

54. The move to performance-based funding implies an increased importance of reporting against specific criteria. The case studies show different reporting models ranging from the Californian example where there is a complex reporting mechanism that is not linked at all to the funding system, to the Danish system that is entirely output based. There is inevitably a tension between comprehensive and transparent reporting, enabling steering of the system based on results and a realistic reporting burden on institutions.

55. England has one of the lightest levels of reporting requirements across all the case studies. In England, institutions report information annually on the distribution of the current year's student numbers. This provides most of the data needed to calculate the following year's grant for teaching, which is based on the number of students, the broad subject grouping and London weighting, among other factors.

56. The main reason that administrative burdens are higher in the case studied countries is that the formulas involve performance funding. In two case studies (Madrid and Belgium-

Flanders), there have been recent significant changes to the funding formula (and therefore reporting requirements), which in itself creates additional burden (if only during the short period of adjustment). In both cases the regions are using temporary premiums or transition funds to deal with the extra requirements of introducing a new system. The new system in Belgium-Flanders involves multi-annual agreements whereby each institution sets objectives and targets as well as the commitment of the institution to deliver on them and the amount of funding involved.

57. In Spain, although the list of potential indicators against which the institutions report is quite long in many cases, each institution chooses a limited subset linked to its own objectives, so the burden on each institution is limited – or at least they have a degree of input in the compiling of the reporting mechanism. This works well since there is a tendency to choose those where improvements can be made, thus focusing effort on areas of potential weakness.

58. As highlighted in the case study, California has high levels of reporting requirement. One of the reasons for agreeing to the reporting requirements was originally to guarantee a certain stability of funding over time. The University of California and the California State University entered into partnership with the Governor of California through the Higher Education Compact. The agreement was a comprehensive statement of the minimum resources needed to accommodate enrolment growth and sustain the institution to which students seek admission. There are a large number of indicators to report on. Since California is in severe financial difficulty, the state has not been able to honour its pledge for funding and in fact reduced funding to Higher Education in 2009 and suspended the compact.

59. The California Community Colleges similarly established a Partnership for Excellence (PFE) programme in 1998, in which they agreed to exchange more data on specific student outcomes tied to their mission and functions, in exchange for increased funding from the state. This differed from the Universities in that it more clearly linked funding to performance goals and therefore at the outset the Community Colleges were happy to increase reporting levels as it was meant to link to more funds. In the end, the PFE did not deliver as it was intended to and the Community Colleges did not receive the “guaranteed premiums” for hitting targets. As a consequence the system has been replaced with a system more akin to the Higher Education Compact of the Universities, which focuses on six basic performance indicators.

60. Reporting burdens in the US are the subject of much criticism generally – this is not restricted to California – and is partly, at least, a function of the fact that institutions have to report against a series of federal policy criteria that are not linked to funding, which is a state function. The new administration has recently set a new agenda for reporting on performance measurement in the public sector, but it is too soon to say whether or how this might affect the Higher Education sector.

61. Denmark has reporting requirements linked to completion rates. The burden is not considered to be too high by the institutions as its performance indicators only link to the number of students who pass exams so there are not large only small amounts of data to collect. The system has been evaluated and there is evidence of administrative simplifications and new efficiencies within the institutions since the introduction of the taximeter approach.

Funding different modes of study

62. One of the key policy drivers across the countries studied is the drive to improve the participation levels of under-represented groups. For many of these, for example socially-marginalised groups or women, non-traditional modes of study including part-time study, distance learning and, increasingly, the use of new technologies are more adapted to their circumstances. However, in funding formulae these other modes of study can be treated in different ways to reflect the different costs and outputs that might be involved.

63. In England, funding modes of study other than full time tends to be dealt with through targeted allocations. This is not the situation in any of the other case studies. Use of other modes of study is a policy priority in many of the countries and especially in countries with binary systems where there are increasing numbers of part-time students and new methods of learning are being employed. However, it would appear that this is not addressed through formula funding. This may be because it would only make the systems, which in most cases are performance driven, even more complex.

64. In some instances the additional costs (or cost savings) are factored into the credit-based systems through the use of full-time equivalents. There is evidence of the removal of variable calculations for part-time students because of the introduction of the ECTS and the increasing use of credit loads of the institutions in the cost calculations. In addition, credit-based funding allows for much more flexibility in the number of credits a student takes over a certain time period, although this can have a negative effect on funding if the credit is also linked to completion rates.

65. In other cases it is factored into the tariff system for subjects. All the case studies, apart from California, use tariff systems and these differ widely. Sweden has 15 categories[5]. Denmark had 17 different funding tariffs, but recently reduced this to three. Madrid has seven levels of tariffs that relate to the level of "experimentalism[6]" in the subject, which produce cost ratios. Australia uses seven tariffs, which are historically determined with the highest level for medicine and dentistry, lowest for law, accounting and economics. The Netherlands has tied its funding up into a high tariff, a low tariff and one for medicine.

66. In countries that have moved from a large number of tariffs for subjects to smaller numbers, these are often averaged out to include many funding factors, not only administrative loads, but also teaching loads, the normal levels of full-time to part-time students and the costs of teaching equipment, which may differ for different modes of learning.

Countries with multiple funding methods

67. While in all cases the funding of Higher Education is made up of several different components, some countries have different categories of Higher Education institutions that may be funded differently.

[5] Of particular interest in this case is the large sums given to art, design, opera, theatre and media studies – much higher than medicine

[6] For example use of lab work or other high-cost methods of teaching

68. It does not appear that the existence of multiple funding models is used to help shape or reward specific institutional strategies or priorities in any of the case studies. In the case studies, all the unitary systems (UK, Australia, Denmark and Spain) have single funding models as would be expected. Of binary systems (the Netherlands, Belgium Flanders and Sweden), the Netherlands has a dual funding system, but not for much longer. Belgium-Flanders has just migrated to a single funding system and Sweden has had a single funding system for a long time, using one funding method across its Universities and University colleges for teaching. California, as a three-tier system, has a completely different type of funding method that is not comparable in this instance.

69. The move of the binary systems to single modes of funding in recent years (Flanders and the Netherlands) is notable. Flanders has just introduced a single funding method across its binary system and in 2011 the Netherlands will be harmonising the two parts of the Higher Education system and a new funding method will be introduced, with a lump sum including performance criteria and also targeted allocations aimed at specific selected stimulation of HEIs, similar to England. Moving to a single funding method has been facilitated by a number of factors including the blurring of the boundaries between research-orientated institutions and applied institutions and also the harmonisation of degrees throughout Europe through the Bologna process. In many countries the applied institutions are gaining in status and delivering the same degrees as research-orientated institutions, which has led to a need to set comparable rewards in place.

Approaches to equity and widening participation and the role of block teaching funding

70. Widening participation is a policy priority in most of the case study countries, which have taken various approaches to increasing access, improving graduation rates (especially from those with a disadvantaged background) and to widening participation. This is approached in various ways and as well as using the block grant and targeted allocations, there is increasing use of direct student-focused mechanisms including grants and other forms of income support.

71. There are several main approaches taken by HEFCE in England:

- Through targeted funding, HEFCE has directly allocated £141 million to institutions for widening participation in 2009-2010 (for widening access for students from disadvantaged backgrounds and for widening access and improving provision for disabled students). Funding for improving retention also exists as part of another funding stream: the teaching enhancement and student success allocation.
- Through programmes and strategy: Aimhigher is a national programme in the UK that aims to widen participation in Higher Education by raising the aspirations and developing the abilities of young people from under-represented communities. Action on Access is the national coordination team for widening participation in Higher Education, funded by HEFCE. Strategic assessments are used as means for institutions to focus on the strategic development of widening participation. The emphasis is on development, but the submission of a strategic assessment and an annual report on progress is a condition of the receipt of funding for widening participation (the targeted allocation).

72. Overall, the cases studied have taken the following types of approach to improving access and widening participation:

- Through targeted allocations.
- Through performance indicators in the block funding.
- Through additional direct student aid/grants.
- Through other policies and strategies.

Figure 6 Main approaches to widening participation

Country	Targeted allocations	Performance indicators	Additional student aid	Other policies and strategies	Notes
Australia			√	√	Many types of student grants and institutional grants
California	√	√	√	√	
Denmark		√		√	Flexible learning pathways, accreditation of prior learning, no tuition fees
Netherlands	√	√			Targeted for migrants
Flanders	√	√			More flexible learning opportunities
Spain (regions)		√			
Sweden				√	Open access to Higher Education (many routes in)

Targeted allocations

73. As in England, targeted allocations for widening participation and retention are used in California, the Netherlands and Flanders. In California, with its three-tier system of Higher Education, additional targeted funding has been put into the Community College Transfer programme so that more students can benefit from transferring from a Community College to either the California State University or the University of California. This is specifically targeted at those Community Colleges that have high numbers of educationally-disadvantaged students or historically low transfer rates. In the Netherlands, there is a specific fund that has been awarded to several Universities to raise the number of students from migrant backgrounds. The focus is on some of the big cities where the problem is the greatest. In Flanders, although the main method is through block funding performance indicators, there are other targeted agreements to improve access for students from ethnic minorities and lower socio-economic groups. The additional performance agreements are multi annual, giving stability and also allowing for more specific targets to be given to different institutions.

74. The California system has been around longer than the targeted allocations in the Netherlands and Flanders. In California, there are still some issues with facilitating access for disadvantaged groups, but it is improving. However, overall, those students transferring tend to have good rates of completion and transfer students' grades are about the same as those of students who entered straight into the University-level system. In the Netherlands, targeted allocations are only one minor approach to widening participation. The country has been

successful in attracting more ethnic minorities into Higher Education although retention rates are still below average.

Performance indicators

75. Many of the funding formulae covered in the case studies include an element of output-based funding and therefore have performance indicators that drive the budget allocation of the block funding. The Netherlands, Spain (regions) and Flanders have indicators that encourage the retention of students (rewarding completion).

76. In the Netherlands, this mechanism has been successful in reducing dropouts and decreasing the length of study. California has a large number of performance indicators relating to access and retention (there is little evidence of these types of performance indicators being used elsewhere in the US). However, although the institutions have to report on the indicators, they do not link to the budget allocations. California continues to try to improve retention in its system.

77. Spain (regions) and Flanders include other indicators relating to widening participation as part of the block funding including premiums for disabled students, working students and students from under-represented groups. Flanders has seen a significant increase in enrolment since these performance agreements have been in place. However, it is too soon to see the evidence of effects in terms of outcomes.

78. Denmark has some of the best levels of completion rates in Europe and alongside the main taximeter system of performance-driven funding, premiums have been introduced into the funding model to improve incentives for the completion of the Bachelor's and Master's degrees. As a result of this performance-driven funding, institutions in Denmark consider the quality of their teaching programmes to be decisive to their competitiveness. Ensuring that courses are relevant to students and to the labour market is also considered an important factor in Denmark and advisory panels have been put in place to assist University-business collaboration. However, there are no direct incentives in the Danish system to pursue quality and relevance. Furthermore, the difficulty with an entirely performance-related funding model is the significant effect of one poor year of students, which means there is potential instability in the system. The other disadvantage of the system is that it tends to fail less popular courses that hold societal value – which may not fit with some of the wider objectives of the funding system.

79. In Sweden, all HEIs enter into public service agreements with the government. The steering objectives are agreed on an individual level for each institution and so may include equity and access. How these performance targets are met is up to the institutions, but if the institution fails to meet the agreed targets a portion of the funding will be held back.

Additional direct student aid/grants

80. Not all of our case studies include information on the student grant systems, as the main focus of this study is teaching funds allocated to institutions (rather than the individual). However, in the case of widening participation, giving funds (grants or loans) directly to the student is an established way of ensuring access to education. The student loan system in the UK is one that was set up to cover much of the additional costs of Higher Education (tuition fees and maintenance) thus allowing in principle any student from any background to afford Higher

Education. In this discussion it is worth highlighting Australia, which has a large number of direct student aid/grant schemes to facilitate wide access to Higher Education – more than most other countries. The Commonwealth Scholarships Program offers scholarships to students from low socio-economic status backgrounds, particularly indigenous students and students from regional and remote areas. There are also education costs scholarships and accommodation scholarships, both specifically for certain socio-economic criteria. National priority scholarships help those who cannot afford to take more costly priority subjects. There are also a number of specific indigenous scholarships on offer. The State of California has a system of non-repayable Cal Grants for low-income families. Pell Grants (federal aid) are also awarded to low-income students and Federal Supplemental Educational Opportunity Grants (SEOG) are for low-income students with exceptional financial need.

Other policies and strategies

81. Other policies and strategies for widening participation include specific targets, flexible learning, recognition of prior learning and in some cases the central focus of Higher Education is access to all. In Denmark, a great deal of attention is given to widening participation through flexible learning pathways and there is a national framework for the recognition of prior learning. In addition, broad access to the first cycle of education is provided through reserving a certain number of places for those who do not meet the formal admissions criteria. There is a goal that by 2015, 50% of young people should complete a Higher Education degree. Specific actions are being implemented to increase the recruitment of young people from non-academic/non skilled backgrounds. Denmark also uses a variety of teaching methods to suit non-traditional learners.

82. The Dutch government has set a similar goal to Denmark that 50% of the labour force (aged 25-44) will have a Bachelor's degree by 2050. It has also set a goal of further reducing dropout rates – a 50% reduction by 2014. Widening participation in the Netherlands is mainly being dealt with through flexible learning paths and shorter nominal study paths.

83. Australia has a target of 20% of undergraduates being from low socio-economic backgrounds by 2020. The government is also focusing on access and outcomes for indigenous Australians.

84. The Swedish system stands out as having very low barriers to access with little history of elitism in Higher Education; widening participation has not generally been a specifically prominent policy. The system is designed to encourage access and to avoid 'dead-ends' in education; it should be possible to start in Higher Education from all other forms of education.

85. In California, the California Master Plan for Education was introduced in the 1960s and set out to integrate the mission of all three parts of the post-secondary education system, which means that students are encouraged to move onwards and upwards through the system. The idea behind the system is that there is a route through education regardless of economic means and each person is expected to reach his or her highest potential. The articulation between the three parts of the Higher Education system in California is a key focus of the Master Plan and California remains one of the most equitable systems of public Higher Education in the United States. However, it is also a state with one of the highest numbers of ethnic minorities and it acknowledges that although numbers are improving, there is still a long way to go – across the whole of the education system – to encourage retention of students from ethnic minority groups.

86. Overall, strategies for widening participation rely on a range of different funding elements to stimulate both the supply and demand sides. Beyond the funding, many other supporting activities from curriculum design to provision of childcare facilities require consideration. In the case of supply-side measures, these cover the full range of funding types from block grants to specific targeted funds. The weight of these measures is dependent on the relative importance of the issue – ranging from very high on the policy agenda as in the case of Australia or California, to much lower profile as in Sweden where it is embedded in the overall approach. It is difficult to assess the success of these funding measures because the degree of integration makes it difficult to isolate the effects of the funding measures in isolation – not least because it has also been proved that there is also a need to address the issue in the earlier stages of the education process. Much of the success being related to the instrument mix and the context, transferability is difficult to predict.

International competitiveness – the use of the teaching funding model

87. There is a growing emphasis on the internationalisation of Higher Education (or globalisation) with more countries setting policies and strategies in place. The issue has two aspects – to improve mobility in national students, which is related to educational quality and potential economic competitiveness, and to become more attractive to international students, which at least in the UK model, relates to institutional income.

88. However, with the exception of Spain, there are no funding models that include performance indicators or targeted allocations to encourage further internationalisation. In Andalusia, the performance indicators include language capabilities, mobility programmes, the number of international students and staff and the number of international projects. There are some national mobility programmes both for students and teachers. Mobility programmes for students are well established across Europe – both national schemes and at European level through Erasmus and the Marie Curie Actions at postgraduate level. It should be noted that while the UK is a destination for many mobility actions, the level of placements to other countries is relatively low.

89. Sweden also has a national mobility programme for teachers and students and funds to improve the system's comparability with other international institutions. The Swedish Ministry of Education and Research has also initiated a Forum for Internationalisation (2008). It aims to improve coordination between authorities and organisations that support and work for the internationalisation of Universities and University Colleges. These are all recent initiatives with as yet little evidence of their effectiveness.

90. Denmark has a long-running strategy that stresses the need to give more students the opportunity to study abroad during their time at University and to include a global perspective within the teaching element of Higher Education courses.

91. One of the main ways of improving internationalisation is through teaching courses at undergraduate level in English. The Netherlands has a growing number of Universities that are teaching modules in English. This is also increasingly common in Sweden and Denmark. Indeed, it is a growing trend across Europe.

92. For nations where English is the national language, institutions are focusing on improving their international reputation and diversifying missions to set themselves apart from other countries. Australia is particularly well placed to meet the growing demand in Asia for an international education. However, this relies on Australia having a good reputation and international standing. It has led to policy drivers in standards of educational attainment and high standards for institutional and course accreditation. Australian Education International (AEI) is the international arm of the Australian government, which coordinates the policy agenda in this area.

93. The UK is facing increasing competition from European nations that are taking a growing share of the foreign student market. If courses are being taught in English, then quality is an aspect that needs to be highlighted to set institutions apart. Since overseas students represent a significant proportion of the fee income in the UK, a decline in numbers would put additional pressure on the remainder of the funding system.

94. Only in one instance studied is internationalisation explicitly built into the funding model – particularly as it concerns teaching and the curriculum. On the other hand, income from overseas students is an increasingly important element of funding for all the institutions and to some extent drives some of the initiatives, particularly for quality and the recognition of quality both in international rankings and in general awareness.

Critical reflections on funding methods

95. Tertiary education has traditionally been funded by means of two distinct types of operation: direct funding to institutions and indirect funding via financial support to students. Direct funding corresponds to around 84% of total public expenditure in Europe, whereas indirect funding represents around 16% of total public expenditure on tertiary education.

96. Almost all countries attach priority to direct funding. Some do so more markedly than others: in Spain, for example, over 90% of total public expenditure in tertiary education is paid directly to educational institutions. At the other extreme, in Denmark direct funding accounts for under 70% of total public educational expenditure on tertiary education.

97. The important question is how public resources should be channelled into HEIs. Public funds must be granted to Higher Education institutions in such a way that effectiveness, efficiency and quality are promoted. In this regard, funding tools that have been experimented with in some countries are the following:

- *Formula-based funding*. In many countries public funds are delivered to institutions as a lump sum based on a set of variables related to costs, but also to basic outcomes. These experiences have shown a positive effect on institutions and on their results.
- *Performance funding*. Performance funding is the generalised way for funding research, but it is less usual for funding teaching activities. In some countries a portion of the funds granted to Higher Education institutions are linked to the achievement of certain standards, which were previously agreed between public authorities and institutions. The results of these experiences are also very positive.
- *Competitive and targeted funds.* Generally speaking, research is financed under criteria of competition among institution, departments, research groups or individuals. However, these mechanisms are not in general translated to the core activity of Higher Education institutions, the teaching and learning activities. Financing targeted teaching activities or setting up programmes for financing educational activities in a competitive way among institutions, while already happening in a number of countries through formula, performance and contract funding is still not generally a major element of the funding mix.

98. Even in the current climate, there is a large spending gap between the US and Europe in the field of Higher Education. To close the gap would involve committing significant additional funds, securing in particular substantial increased investment from the private sector. At present, Universities of our main competitor countries (Japan, Australia, Canada, the US and Korea) have far more substantial means than those of European Higher Education institutions. As remarkable as the funding gap is the difference in the origin of the funding-sources between European and Non European countries. Private resources are higher in almost all of our main competitors.

99. The study shows a range of funding models from the wholly performance-based Danish system, through mixed formulas (of varying degrees), to California, where a lump sum of the state budget is allocated to the institution. The question is whether methods in the funding of teaching used in other countries may be applicable to further developments of HEFCE's teaching funding model and, if so, how they might be implemented.

100. Clearly the models are driven by a number of cultural and contextual factors and cannot be viewed in isolation. While there is some commonality of policy drivers, these too vary in their relative importance in the different countries studied. It is clear that whatever the funding model, there are a huge number of external factors that have significant bearing on their construction and focus. These range from wide economic and demographic factors to factors related to the structure of the Higher Education system itself. While the examples studied in other European countries have many similarities with the UK system, especially following the Bologna reforms[7], there remain significant differences from the English system – not least in institutional governance. This, together with the fact that as yet the full effects of the majority of these reforms have not yet been evaluated, means that it is relatively difficult to assess the applicability of individual instruments within the mix to the English situation.

101. This is particularly the case in California, where a strong post-secondary education system and (until recently) the high level of investment by the state has driven the success of the system to an extent that could not be replicated elsewhere without significant cultural and financial changes. The high level of private funding in the US is another major difference from the European system – even for England, although the UK has the highest rates in Europe.

102. Funding systems are used to steer Higher Education in two main ways: through performance funding and through targeted allocations – which may also be performance based. The case studies suggest that, particularly in Europe, there is a shift to allocation mechanisms based on performance or outputs. These ensure feedback and permit finer steering of the system. On the other hand, they are more volatile and can make it difficult for institutions to plan for the long term, depending on the performance indicators selected.

103. Targeted allocations based on inputs remain an important instrument for steering institutions towards specific goals, particularly over a longer period of time. This is reflected in the way that they are reviewed and changed, even when seen as successful. Targeted allocations are often used in areas where it is difficult to identify workable output indicators, or in areas of specific difficulties where investment is required.

104. The necessary degree of stability in funding for institutions, which still retains flexibility to improve efficiencies, quality or access, is often achieved through a balance between input-based and output-based funding mechanisms. In many cases this is achieved through the manner in which the overall formula is calculated. These formulae can be relatively complex and involve a number of variables, as well as some fixed elements.

105. Setting the policy priorities of the countries against the funding priorities shows that there is a reasonable degree of congruence[8] between policy objectives and funding mechanisms. A summary is set out below.

[7] In particular the move to a system based on the Bachelor's/Master's structure

[8] This is based on the available information and therefore subjective in nature

Figure 7 Focus of targeted allocations and performance indicators in funding models combined and linked to policy drivers

Country	Access			Internal efficiencies			External efficiencies		
	Widening participation	Retention of target groups	Lifelong learning	General retention/ success	Staff related	Resource allocations	Quality in teaching	Labour market / international	Relevant programmes to target
Australia	🗐 ■	🗐 ■		■		■	🗐 ■	■	■
California (US)	🗐 ■	🗐 ■	■	🗐 ■		🗐 ■	🗐 ■		
Denmark	🗐		🗐 ■	🗐 ■			■	■	■
The Netherlands	🗐 ■	🗐 ■		🗐 ■		🗐	■	■	🗐 ■
Belgium (Flanders)	🗐 ■	🗐 ■	🗐 ■	■		🗐 ■			
Spain	■		🗐	🗐	🗐	🗐 ■	🗐	🗐 ■	🗐
Sweden	■			🗐			🗐 ■	■	🗐 ■

🗐 Funding priority ■ Policy priority

106. It will be noted that there are some policy priorities without funding priorities, such as in the area of external efficiencies. Here the policy priorities tend to be dealt with through non-monetary approaches rather than through funding to institutions, especially in the area of internationalisation and in some countries, widening participation. Where there is a funding priority without notable policy drivers this is generally due to either implicit policies embedded within the national or regional systems or, in the case of Spain with its regional systems, policies that may be stated at the regional level rather in national law. In these cases there is not a direct link between the funding level and the level responsible for policy.

107. England has a funding formula that counts students and uses price groups for subjects. It uses targeted allocations awarded on input rather than output data to support important or vulnerable features of HE, in accordance with key policy initiatives. In the case studies, only Australia uses input-based criteria alone in its funding formula. However, the overall proportion of public funds is much lower than in England, and the Australian student grant system is diverse.

Targeted funding

108. Targeted funding tends to be used when the objectives are to influence long-term changes, or where it would be difficult to provide adequate performance-based indicators. The advantage of this funding system is that it enables a degree of “pump-priming” in areas where the results may be slow to manifest – for example in attracting new or disadvantaged groups into Higher Education or to foster the development of curricula in new or emerging areas. It also provides a degree of stability as the funding can be provided or earmarked for a longer period than some performance systems are designed to cope with.

109. The main disadvantage is that it is difficult to assess whether or not the funding is achieving the results expected unless there is a clear contract or other agreement between the funder and the receiving institution. In addition, the institution has limited freedom in how the

funding is used. The overhead for this type of funding is generally low since there is no inbuilt requirement to track output indicators (although it would be good practice). However, where there are several different elements of this targeted funding the administrative overheads can be quite high, depending on the implementation mechanism selected and the potential for double funding exists. The potential for inefficiencies to creep in is relatively high.

110. Overall, however, there remain occasions when this type of funding used in a strategic way can contribute significantly to policy objectives.

Performance-based funding

111. Performance-based allocation mechanisms have the potential to bring many improvements to institutional efficiency. As a mechanism, it needs to be carefully implemented because it can induce undesirable or perverse effects. This is reflected in how varied the approaches can be to performance funding and associated mechanisms, to counterbalance or augment effects.

112. Performance-based funding relies on indicators. The following diagram shows the types of indicators that are present in the performance funding formula in the case studies[9], based on the three main reasons for steering a system: access, external efficiencies and internal efficiencies. The table below shows where the performance indicators have been used in the case studies, with the relative importance of the indicators in the funding mix.

Figure 8 Types of performance indicators in performance funding[10]

Country	Access			Internal efficiencies			External efficiencies		
	Widening participation	Retention of target groups	Lifelong learning	General retention/ success	Staff related	Resource allocations	Quality in teaching	Labour market issues	Relevant programmes to target
DK				√√√					
NL				√√√					
BE-FL	√	√							
ES			√	√	√	√	√	√	√
SE				√√			√		√

113. Most of the performance elements seen used in the case studies relate to issues of access and internal efficiencies, with the main focus being internal efficiencies (cost per student, retention, time to graduation). It is still rare to include indicators relating to teaching quality, the labour market or societal needs. In Spain, with its large number of performance indicators, some of which are non-compulsory, there is a greater variety and this allows institutions to play to their main strengths in the Higher Education market. Performance elements are still small amounts of the budget. The only other example where learning and teaching performance was rewarded was in Australia, through its learning and teaching performance fund. This funding has now been

[9] California does not use any element of performance funding.

[10] The more ticks there are denotes how important this type of performance indicator is in deciding the level of funding.

stopped under the new government, a political decision rather than performance related, as the last review in 2008 highlighted how the fund had driven change and improved student outcomes measured through performance indicators. However, a new version of the funding mechanism is being introduced, the first stage being the development of a set of performance indicators.

114. There is no universally accepted measure of teaching quality in England. While it is accepted that quality is high in some institutions, not all institutions collect data on this issue and what is collected is not necessarily consistent across institutions. In order for teaching quality to be the subject of one or several performance indicators there would need to be a better common understanding of quality in teaching and learning.

115. There is evidence to support the contention that performance-based allocation mechanisms, particularly those based around time to degree (duration of studies) appear to have increased efficiencies in a number of the case-studied countries (the Netherlands, Denmark and Spain). In Denmark, all funding is based on completion of credits by students and there is a resulting high completion rate. Similarly, in the Netherlands, the ECTS credits are used in the funding formula and there has been an increase in students, an increase in retention and a decrease in duration of studies. In Valencia, there is clear evidence of improvements at the institutional and system levels in areas such as retention and duration of studies.

116. The undesirable effects of using these performance indicators (such as perhaps decreasing quality as a trade-off for shorter periods of study) appear to have been counter-balanced in the case of the Netherlands, Spain and Sweden through the use of both input and output-orientated indicators in the funding formula as well as through quality assurance systems. In Denmark, where there are no input indicators, the issue of there being no direct incentives to pursue quality and relevance was raised in the 2005 evaluation of the taximeter system. In spite of concerns, Denmark has the highest completion rates of all the countries case studied, so that objective at least is achieved.

117. It is still not clear what the effect of performance indicators is on access and widening participation. There are still too many other mechanisms used and countries tend to take a multi-modal approach to this issue. Belgium-Flanders has taken the most comprehensive approach to this through performance funding, but it is a new system and therefore the effects are as yet unknown. At the moment England mainly uses targeted allocations and policy strategies.

118. In general, performance funding only relates to a part of the block funding. Denmark is an unusual system with the whole of its block grant being formula and output based. It would be unlikely that this approach would be desirable in other countries. Although the range across the case studies is 0% performance-related to 100% performance-related funding, it remains more likely to be in the range of 10%-20%. Where the performance funding is only linked to a small part of the overall budget it reduces the risk of substantial income changes and allows time for institutions to review and re-orientate. If the aim of introducing performance funding were to close down underperforming institutions, a system more akin to the Danish one but with added quality control would be the most useful.

119. The use of performance indicators does potentially involve an increase in the administrative burden of the system, since it requires the collection of the data required to allocate the funding. Nevertheless, the use of well-designed and streamlined indicators (especially ones that can have more uses than simply driving funding) can reduce this significantly.

Implications for funding in England

120. English Universities are known for their diversity of missions and therefore this brings debate regarding the introduction of performance indicators. To reflect this, a flexible system of performance indicators would be more advisable than a few indicators that are not relevant to all institutions or missions, or a large number of indicators, many of which will not reflect the institutions' success or failure.

121. At the moment England has no output-based indicators in its teaching funding model. If these were to be introduced, the main issues to consider are:

- What type of performance measures would be most desirable?
- How much of the budget should be steered by performance?
- How to use credits in a system in which there is not complete uniformity of use?
- How to deal with a transition to performance-based funding?
- The balance of reporting versus performance?

122. If England wishes to have a Higher Education system where institutions can be rewarded or encouraged to concentrate on certain areas of excellence (such as access for socially-disadvantaged groups, links to the community, links to business, lifelong learning), it could do so through a system similar to that used in Spain, with a menu of performance incentives that a University can choose from. Working out the weightings for such a system is key to its delivery and ensuring that it reflects real costs rather than costs based on hypotheses.

123. How to use credits in the system that is not completely uniform in usage The ECTS is increasingly used as a standard measurement in performance funding in Europe for both input and output funding. It is used in the measures to reward completion and retention and also to facilitate funding for part-time students. Because of the use of 60 credits per year and each credit having a certain number of hours of study attached, the overall load on the institution can be measured in full-time equivalents by adding up the number of credits taken and dividing by 60.

124. The use of credits in California, although not directly used in the funding formula, does allow a seamless integration of the three parts of its Higher Education system, with units being understood and useable across the colleges and Universities (with some caveats).

125. Many, but not all, UK/English institutions use credits. The credits are not generally those of the European Credit Transfer System, although are usually comparable to them. Parallels may be drawn to European credit-based systems where credits are used to denote completion of each year. Another point of similarity is the possession in Europe and England of a three-cycle system (Bachelor's, Master's and doctorate degrees). Without universal use of a credit-based system in England it may be difficult to simplify the funding formula to deal with full/part-time and 'flexible time' students. It would also be difficult to introduce transparent success criteria that relate to sub-elements of diplomas or degrees if introducing output-orientated indicators relying on credits.

How to deal with a transition to performance-based funding

126. Introducing a new system and at the same time ensuring some degree of stability is difficult to achieve. In Madrid, when the new performance-based funding model was

implemented, it led to shifting of funds between the institutions. It highlighted imbalances in the old historical funding model where many of the more “active” institutions in terms of teaching and links to the community were under funded in comparison to the more traditional Research Universities. In order to counterbalance this, transition funding was put in place.

127. In some countries that have a desire to merge institutions (or faculties) there have been additional incentives put into place either to merge completely or to reduce the number of overall courses available during transition.

128. Transition is no doubt made easier when the performance element of the funding is kept small and manageable. The larger the amount, the more likely will be significant changes in the amount institutions would receive. In England, this type of approach is an unknown quantity. A way of addressing this uncertainty would be through the use of pilots. This would be especially interesting if the performance measures were rewarding elements of institutional excellence that were less linked to traditional Research Universities and more linked to Universities that spend time and resources embedding themselves in a local and regional economy. (Other methods that might assist in a introducing a changed regime would be extensive/parallel modelling prior to change over.)

The balance of reporting versus performance

129. Any move towards reporting on outputs requires more data and will increase the burden on Universities, but this can be reduced to a minimum. England appears to have one of the least burdensome systems of teaching funding allocation, mainly due to its input-orientated criteria. Therefore if England were to change its system to include output-orientated indicators in the block funding it would need to be considered in light of whether an increase in reporting would significantly change the funding allocation in England for the better and produce the intended results – whatever they may be.

130. The main focus of performance funding in other countries is to increase internal efficiency. According to OECD figures, the UK is comparatively efficient in “cost to produce a graduate” due to our short degree programmes. This would not therefore be the main driver for change in the English system.

131. That leaves two other main reasons for steering funding in Higher Education:

- Increasing access to and equity in Higher Education (participation, lifelong learning, different modes of learning, private investment).
- Increasing the external efficiency by improving quality and relevance (in meeting societal and labour market needs).

These are issues which are currently dealt with, to some extent, through targeted allocations in England. If performance indicators were built to link to these objectives, the data could be collected through the Higher Education Statistics Agency (HESA). It is also likely that many of the indicators are already collected through HESA and it would not therefore lead to additional reporting requirements overall.

Conclusions

132. Over the past 10 years, Higher Education, particularly in mainland Europe has undergone a massive change with the reforms under the Bologna Process. These have resulted not only in changes to the curriculum, but to funding and institutional governance. This has not been the case in the UK to nearly the same extent, since these types of reform were undertaken some time ago. In the US, also, there have been factors that have radically affected how the Higher Education system is funded, or how the funds have been allocated. In Australia this major change is also currently under way. In all cases, though, there is a search for a more effective funding mechanism that will improve the efficiency of the system, enhance quality and at the same time increase access for targeted under-represented groups.

133. All the resulting funding mechanisms use a combination of methods, with the focus between fixed and variable elements being quite different between countries studied. All the systems acknowledge a need to balance the stability required for forward planning and the flexibility needed for steering Higher Education to meet policy needs. They also require a system where the costs of implementation are not disproportionate to the benefits attained.

134. As funding is, in the end, a finite resource, any distribution system is by nature competitive to some extent – the example of California shows that where funds are not available, agreements become nullified. The major difference between the systems highlighted in the case studies and the contested funding approach is that under the performance-related systems the institutions basically compete with themselves to improve, whereas the contested system, as used in the funding of research, is based on competition between institutions (or departments or research teams). The example of Australia showed that in the case of teaching and learning, this resulted in funding being limited to a small group of already good Universities rather than going to raise standards in a wider group, leading to a revision of the terms of the scheme. In the case of Spain, the ability to select performance indicators where improvements could be made relatively simply meant that effort was addressed to areas of weakness.

135. This suggests that in both cases careful targeting and judgement criteria are crucial. However, the success of the taximeter system in Denmark shows that performance-based systems are a viable method of funding. The complexity lies in defining a small set of accepted indicators that can be used to drive the system without imposing a major burden on either the institutions or the administration.

136. Generally the trend therefore is for performance-based funding to form an increasing part of the block grants to institutions for teaching and learning, for contested funding to be used for research (and some infrastructure projects) and for wider economic and social objectives to be achieved through indirect funding passing to the student and thence to the institutions.

137. In all the cases the allocation of funding within institutions remained the purview of the institutions themselves – with a few very limited exceptions on funding for specific actions in the field of access.

Higher Education teaching funding methods in other countries

Annexes

A: The Six Case Studies

B: The General Trends in Tertiary Education Funding (OECD figures)

C: Glossary, Acronyms, Abbreviations

ANNEX A: Case studies on Higher Education teaching funding methods in other countries

Introduction

1. The first annex contains the six case studies for the comparative study of HE teaching funding methods in six other countries. The case studies are:

- Australia
- California
- Denmark
- The Netherlands (with reference to Flanders)
- Spain
- Sweden

2. These case studies were chosen in consultation with HEFCE. The methodology is set out below. Overall they set out to illustrate some of the following points of interest:

- Countries where public funding is provided as a core amount, with other funding for strategic priorities.
- Funding methods that are credit based or easily adapted.
- "Contestable" public funding.
- A balance between public funding and other sources of funding.
- Low burdens on institutions.
- Funding that suits different modes of study.
- Countries with more than one funding model due to different missions or nature of provision.
- Competitor countries for international students.
- Equity and widening participation.
- Any systems where they operate clawback.

3. The format of the case studies is the following:

- **Introduction**: Why the country has been chosen, which of the key issues of interest to HEFCE it demonstrates, any important historical or contextual issues, other interesting aspects of the country/state/region.
- **Brief overview of the Higher Education landscape**: System structure.
- **Policy drivers**: Main government priorities for Higher Education.
- **The teaching/ funding approach**: General funding principles, the main features of the system, the formulas, any other priority funding mechanisms.
- **Evidence of effects of the methods**: Review of any data on outcomes relating to the funding formula.

Methodology

4. This study was designed primarily as a desk-based review over a two-month period (August-September 2009), assembling case studies and culminating in a report outlining the results of the research and an overview of approaches taken in the chosen countries.

5. The study therefore involved the following steps:

- Initial discussions with HEFCE about the requirements of the study including issues of interest in respect of teaching funding models.
- Selection of countries to be studied.
- Research on the selected group of countries.
- Analysis of the teaching funding methods, emergent issues and transferability of funding mechanisms.
- Production of the final report.

These steps are described in more detail below.

6. Initial discussions with HEFCE: The first stage of the project involved developing an understanding of HEFCE's current teaching funding method, the Transparent Approach to Costing for Teaching (TRAC(T)), and also a discussion about the main issues of interest to be explored through international comparators. A number of issues for investigation were put forward, in respect of characteristics of methods and policy priorities that could potentially be addressed through a teaching funding method.

Figure 9 Key issues selected by HEFCE

Issue	**Further explanation**
Countries where public funding is provided as a core amount, but with other funding for strategic priorities	Cases where strategic money is used in different ways.
Credit-based funding methods	Cases where academic credits are used in the funding criteria.
"Contestable" public funding	Cases where they are permitted to hold back a proportion of funding if, for example, targets are not met.
A balance between public funding and other sources of funding	Cases where there is a significant proportion of private funds.
Low burdens on institutions	Cases where the reporting is not considered burdensome by institutions.
Funding that suits different modes of study	Cases where funding is adapted to either full-time or part-time students or different types of learners (lifelong learners, returners etc).
Countries with more than one funding model	Cases where systems have different funding models across Higher Education, especially if there are different priorities.
Competitor countries for international students	Cases where the country is considered an international competitor to the UK.
Equity and widening participation	Cases where equity and widening participation are policy objectives and how this is approached.

7. For each issue of interest, a selection of countries was proposed and discussed in order to ensure that the final choices would cover as many of the issues as possible and provide the right level of information to be able to permit comparison and discussion on transferability.

8. Selection of countries to be studied: An initial selection of 10 potential countries was put forward, though discussion with HEFCE and based on the above criteria.

- Australia (AU).
- California (US-CAL).
- Canada (CA).
- Denmark (DK).
- Finland (FI).
- Flanders (BE-FL).
- The Netherlands (NL).
- Norway (NO).
- Spain (ES).
- Sweden (SE).

These 10 countries were further investigated and discussed in order to come up with a short list in consultation with HEFCE. **Figure 9** illustrates which countries (regions) cover which selected issue.

Figure 10 Initial country selection by issue

	AU	US-CAL*	CA	DK	FI	BE-FL	NL	NO	ES	SE
Core and strategic funding	●	●	●	●	●	●	●	●	●	●
Credit-based system		●		●	❍	●	●	●	●	●
Contestable public funding	❍									●
Balance public/other sources		●	●						●	
Low burden				❍			❍			❍
Different modes of study			❍							
Multiple funding models		●	●		❍	●	●		●	
Competitor countries	●	●	●							
Equity and widening participation	●	●	●	●	●	●	●	●	●	●

● Fully covered

❍ Partially covered

*There was discussion over the need to include the US. However, there are 50 different funding models, one for each state and therefore it was decided to look at one state in detail.

9. Research on the selected group of countries (regions): Further research was undertaken into the 10 selected countries (regions) culminating in the following final choice:

- Australia.
- California in the US.
- Denmark.
- The Netherlands (with additional information on the performance funding in Flanders).

- A selection of Spanish regions (Madrid, Valencia and Andalusia – Spain has 17 funding models).
- Sweden.

10. Following the final selection of the case study countries, a template was developed identifying the key issues and headings to be addressed for each of the six case studies, guiding the research phase:

- **Introduction**: Why the country was chosen, which of the key issues of interest to HEFCE it demonstrates, any important historical or contextual issues, other interesting aspects of the country/state/region.
- **Brief overview of the high education landscape**: System structure.
- **Policy drivers**: Main government priorities for Higher Education.
- **The teaching funding approach**: General funding principles, the main features of the system, the formulas, any other priority funding mechanisms.
- **Evidence of effects of the models**: Review of any data on outcomes relating to the funding system and its components.

11. The case studies show a wide variety of approaches to funding teaching in Higher Education. As such, although the case studies respect the general outline of the template, in some instances there is not specific comparable information across the chosen methods.

12. Analysis of key issues emerging and transferability of methods: On the basis of the country studies and the key issues to be addressed, an analysis of the studies across the various criteria was carried out. In addition to an analysis of approaches, other policy drivers were identified for further discussion.

13. Production of the final report: This report presents the analysis of the key issues arising as well as supporting information on the teaching funding models.

14. The following key issues are discussed in detail using the case study examples:

- The use of core and strategic funding in the case-studied countries.
- The increasing use of credit-based systems.
- The use of contestable public funding to drive performance.
- Low burdens on institutions.
- Funding different modes of study.
- Countries with multiple funding models.
- Approaches to equity and widening participation and the role of block teaching funding in delivering these.
- Other links between policy and teaching funds – steering the system.
- International comparators – the use of the teaching funding model.

Case Study 1 Higher Education funding for teaching in Australia

Introduction

1. The Higher Education system in Australia is large in terms of student numbers and diverse in terms of types of institution. It has a strong international reputation and serves a large contingent of international students. The contribution of funds from the public purse has declined both in proportion to other sources and in real terms over the last two decades, in part as a result of a significant increase in student numbers over this time period. The increase in reliance on student contributions and the decline in public income have caused some concern around student participation, in particular equity of access to Higher Education and the quality of teaching and learning outcomes; issues that are currently being addressed in new policy initiatives.

2. The Australian Higher Education system has an impressive international reputation; nine of Australia's 39 Universities appear in the Times Higher Education World University Ranking 2008. It is a well-evaluated system and so there is a good body of evidence on both its strengths and weaknesses.

3. OECD indicators show that Australia spent 1.6% of GDP in 2005 on Higher Education, which is above the OECD average. The increase in expenditure between 1995 and 2005 was mostly private expenditure – mainly student contribution to tuition fees. The Higher Education Contribution Scheme was introduced in 1989 to support the expansion of University enrolments during the 1990s by shifting a substantial proportion of the cost of Higher Education from the Commonwealth (government) to students. Since then the number of private HE providers has grown substantially and the proportion of funding for public Universities coming from other sources has also grown. Today, there are 70 private HE providers, and public Universities receive about 55% of their payments from the Commonwealth.

4. Australia is an interesting case study example with regards to the following key issues:

- Core public funding with strategic funding for priorities.
- Methods of dealing with contestable public funding.
- Competitor country.

The last major reform of the system was in 2003 after a major review. The Government's 2003 reform package, 'Our Universities: Backing Australia's Future', set out a 10-year vision of Australian Higher Education, investing more than $2.6 billion additional funds in the sector. The reforms were intended to establish a partially deregulated system of Higher Education, in which individual Universities were enabled to capitalise on their particular strengths and determine the value of their course offerings in a competitive environment. There was a renewed emphasis on learning and teaching outcomes and a framework for research and teaching in which all funding is competitive or performance-based. New arrangements for increased access to student financing was set out to further encourage lifelong learning and equity of access to Higher Education, with greater access for disadvantaged groups. Since then a review in 2008 continues in the same vein. This new reform agenda introduces a move to a new student-centred funding

system from 2012, following a transition period. Various competitive, conditional and performance-based funding mechanisms have been introduced as a substitute for increasing the base grants for teaching and research to the public Universities.

Overview of the Higher Education landscape

5. The Australasian Higher Education sector is made up of Universities and other Higher Education institutions. Other Higher Education providers are bodies that are established or recognised under the law of the Australian government, state, or territory. In Australia there are 39 Universities, of which 37 are public institutions and two are private. In addition there is one Australian branch of an overseas University, four other self-accrediting Higher Education institutions and over 150 non-self-accrediting providers accredited by state and territory authorities. The latter are a diverse group of specialised and mainly private providers including colleges and other institutions that offer vocational courses and training. Providers must be approved by the Minister for Education before receiving public grants for the institution or its students and are subject to quality and accountability requirements.

6. Decision making, regulation and governance for Higher Education are shared among the Australian government (the Commonwealth), the state and territory governments and the institutions themselves. By definition within Australia, Universities are self-accrediting institutions and each University has its own establishment legislation (generally state and territory legislation) and receives the vast majority of its public funding from the Australian government through the Higher Education Support Act 2003. The Australian government has substantial financial and policy responsibility for Higher Education, while state and territory governments retain major legislative responsibility.

7. Eligibility for public funding is set out in the Higher Education Support Act 2003 in which institutions are separated into three tables (A, B, and C) to designate funding. Table A institutions are eligible for all Australian government grants, and their students can receive all forms of assistance. Institutions listed in Table B are eligible for some grants for particular purposes and students can receive the government loan for tuition fees called FEE-HELP. In addition, some private providers have been approved to receive FEE-HELP for their students.

8. State and territory governments are responsible for the administration of University legislation, accrediting new Universities and accrediting Higher Education courses offered by non-self-accrediting institutions. Universities are self-accrediting and are responsible for accrediting their own programmes.

9. In 2006, the total number of students enrolled in tertiary education was 1,040,153 of a total population of 20,605,488, (around 5%) of which 217,055 were not Australian citizens. By 2008, the number of students at public Universities had grown an extra 2.6% to 1,020,003. Domestic students increased to 771,932, up 2.0% from 2007. The total number of enrolments for indigenous students from 2007 to 2008 increased by 1.7%.

10. The length of study for undergraduate and graduate programmes in Australia is similar to the length of study for equivalent qualifications in the UK. The standard Bachelor’s degree takes three to four years full time, at an average cost of study of AUD$10,000 – AUD$13,500 per year.

There are, however, a range of other options at undergraduate level:

- A professional degree – four years, which includes practical training.
- A combined/double degree for which students take two subjects in a shorter time than if the two programmes were completed independently, around five years.
- A two- year Graduate Entry degree in specified disciplines normally for professional preparation.
- A Bachelor's (honours) degree. The honours degree involves research preparation during an additional year of study. In contrast with the UK system, the majority of students take a Bachelor's degree without honours.

11. Postgraduate programmes are divided into short graduate certificates and graduate degrees including Master's and doctorate courses. The Graduate Certificate/Graduate Diploma takes six months to one year full time; this requires a Bachelor's degree or advanced diploma for entry. These are designed for specific vocational purposes. Master's degrees take one to two years full time and require a Bachelor's degree or graduate diploma for entry. Doctoral degrees take three to four years full time and require a Master's degree or relevant employment experience in the field. There are two pathways to a doctorate degree; either a research doctorate through supervised research, or a professional doctorate that includes combinations of course work and research.

12. Australia has a participation rate in Higher Education of 60%, one of the highest among OECD countries and higher than the UK where the rate is around 45%. In spite of the high participation rates and access initiatives there is still relatively poor representation of some groups in Higher Education and significant policy discussion surrounds the need to support non-traditional student groups. As a consequence, improving access remains high on the political agenda. Historically, between 40%-50% of the student population has relied on some level of income support. In recent years, the number of students in the groups that get support has grown, but the number of support places has reduced. The number of students on income support has declined from about 160,000 in 2001 to 148,000 in 2007, while the pool of potential recipients has increased slightly over this period.

13. Entrance into an Australian Higher Education is determined by the entrance requirements set by individual providers. Providers make offers to final-year high school students (year 12), predominantly on their Higher Education ranking achieved after standardisation of year 12 scores. Some students may have a further opportunity to demonstrate their ability by undertaking student aptitude tests. Mature age entry may be based on additional criteria such as work experience and recognition of prior learning. Some courses may have other criteria such as submission of a portfolio or an audition. Students may also access Higher Education units through Open Universities Australia on an open access basis and with no education prerequisites. Students may then use the successful completion of such units as credit towards an award from a range of Higher Education providers.

14. Recognition of prior learning including non-formal and informal learning is a stated objective in Australia. The Australian Qualifications Framework contributes to assisting access to

Higher Education, by covering a set of qualifications linking school, vocational education and training (VET) and Universities. The framework allows students to move between levels of study and institutions and receive credit towards a qualification for knowledge and skills gained through previous study, training or work.

15. International students who need to improve their English language skills may take an English Language Intensive Course for Overseas Students (ELICOS). These short courses are offered at a range of Universities and VET institutes in addition to private English language centres. Non-award foundation courses of up to one year prepare international students whose academic background does not meet the minimum academic requirements for entry into a University undergraduate course.

Policy drivers for Higher Education

16. A recent review of Australia's Higher Education has prompted a new focus on internationalisation, demand-driven Higher Education provision, a renewed focus on greater access and equity of access to Higher Education and a diversity of missions among Higher Education providers.

17. Internationalisation: Australia sits in an advantageous position as a developed, English-speaking nation, within the broad Asia region. It has the capacity to meet the growing demand in Asia for an international education. However, this relies on Australia having a good reputation and international standing and has led to policy drivers in standards of educational attainment and high standards for institutional and course accreditation.

18. Demand-driven: In2009, the deputy Prime Minster announced that by 2024, 40% of Australian 25 to 34-year-olds will have a Bachelor's level or above qualification. From 2020 Universities will be funded on demand, offering a Commonwealth supported place for all students accepted onto a programme in order to prevent institutions growing too quickly at the expense of quality education. A new national regulatory and quality agency for Higher Education will be established to support this process.

19. Access and equity: Australia has a target of 20% of undergraduates being from low socio-economic backgrounds by 2020. The government is also working with the Indigenous Higher Education Advisory Council (IHEAC) to improve Higher Education access and outcomes for indigenous Australians.

20. Mission-based approach: In the 2009-2010 budget, the government announced it will agree mission-based compacts in 2010 between the Commonwealth and each University. These will come into effect in 2011. These will define an institution's particular mission and describe how it will fulfil that mission and contribute to the Australian government's policy objectives. Compacts will contain agreed targets for improvement and reform, which will trigger reward payments.

The funding method

21. This section sets out the main funding method for teaching activities in Australian Universities.

22. Government funding support for Higher Education is provided largely through the following schemes:

- The Commonwealth Grant Scheme (CGS), which provides for a specified number of Commonwealth-supported places each year (to the institution).
- The Higher Education Loan Program (HELP) which makes arrangements for providing financial assistance to students (to the institution via the student).
- The Commonwealth Scholarships (to the student).
- A range of grants for specific purposes including quality, learning and teaching, research and research training programmes (to the institution).

23. The proportion of public funding accounting for the costs of Higher Education as a whole has gradually declined over recent years from around 60% in 1996 to 40% in 2004. Furthermore, the number of students has grown dramatically in Australia from around ¼ million in 1974 to over a million today. This has coincided with an increase in the share of student contributions to the costs of Higher Education, accounting for 22% in 2004. In addition, Australian students pay some of the highest fees in the world for places at public Universities, but they have access to income-contingent loans to remove any up-front costs. The fees are paid directly to the Higher Education institution and the student can take out a Higher Education Loan Program (HELP) loan for assistance, which means that they are not required to repay their loan until their personal income exceeds the minimum threshold for compulsory repayment.

24. The student contributions for Commonwealth-supported places in each discipline area are currently capped, while there is no upper limit on the amount charged for domestic or international fee-paying students. The Australian government started to phase out domestic fee-paying undergraduate places at public Universities from 2009.

Funding allocation in the Universities

25. The Australian government has primary responsibility for public funding of Higher Education. The Department of Education, Employment and Workplace Relations (DEEWR) is the Australian government department with responsibility for administering this funding and for developing and administering Higher Education policy and programmes. The funding system in Australia is currently undergoing change, following the review of the system. This case study is based on the system in 2009, but reflects the planned changes.

26. The Commonwealth Grant Scheme is the main funding mechanism in this section. It provides the major portion of funding for teaching and learning in Australian Higher Education. Acting in a similar way to a block grant, the government has funding agreements with each eligible Higher Education provider to deliver a specified number of Commonwealth-supported places in particular course disciplines.

27. The Commonwealth Grant Scheme (CGS) supports the provision of undergraduate and some non-research postgraduate Higher Education places. The government provides funding to each HEI based on an agreed number of supported places each year. The amount of funding per student varies for different disciplines, which are organised into clusters. All citizens of Australia and New Zealand and permanent resident visa holders are eligible for Commonwealth-supported places. In addition to Commonwealth-supported places, there are also fee-paying places. However, Universities must fill their Commonwealth-supported places before offering fee-paying places to domestic students.

28. The weighted contributions for the different discipline clusters have been allocated by the Commonwealth government; these have been derived largely on an historical basis.

Funding calculations in the Universities – the Commonwealth Grant Scheme

There are seven funding clusters grouping different types of programme of study:

Funding cluster	Commonwealth contribution (AUS $) 2009
Law, accounting, administration, economics, commerce	$1,709
Humanities	$4,743
Mathematics, statistics, behavioural science, social studies, education, computing, built environment, other health	$8,389
Clinical psychology, allied health, foreign languages, visual and performing arts	$10,317
Nursing	$11,517
Engineering, science, surveying	$14,664
Dentistry, medicine, veterinary science, agriculture	$18,610

29. The Commonwealth Grant Scheme offers additional funds to provide extra support for institutions for the following reasons:

- Regional loading for providers with regional campuses in recognition of the higher costs they face as a result of location, size and history.
- Enabling loading for places in courses that prepare a person to undertake a course that leads to a Higher Education award.
- Medical student loading for Commonwealth-supported places in a medicine course of study, completion of which would allow provisional registration as a medical practitioner.

30. There is also some provision for dealing with contestable public funding in Australia, as in recent years there has been some relaxation of the rules relating to institutions meeting their student load targets within negotiated funding agreements. Some institutions have secured

additional funding for over-enrolments. In addition, some supplementary places have been allocated to institutions through a national bidding system.

Other funding agreements

31. In addition to the Commonwealth Grant Scheme, institutions receive public funds through a number of other funding arrangements including, until 2009, a performance-related initiative called the Learning and Teaching Performance Fund and a number of funding initiatives to support students and access to Higher Education.

32. The Learning and Teaching Performance Fund (LTPF) was introduced in 2006 to reward Universities for excellence in learning and teaching for undergraduates. Over four funding rounds it has provided over AUS $300 million. 2009 was the last year of the programme due to a change of government and public sector cost cutting. The LTPF was an evidence-based reward programme. Universities receiving a reward were entitled to use it as they saw fit. However, almost all of the Universities that have received LTPF funding have used it to support learning and teaching. The LTPF was introduced because it was recognised that Australia needed a large-scale performance-based incentive for excellence in learning and teaching to promote the overall quality of the sector and to recognise that excellence in learning and teaching alongside the delivery of research excellence in terms of contribution to Australia's tertiary education system. The main measures used to assess the teaching and learning experience are student responses to official questionnaires including a Course Experience Questionnaire (CEQ) and a Graduate Destinations Survey (GDS), as well as attrition and progress data collected by DEEWR.

Table 1 Weightings applied to individual LTPF indicators

Indicator	**Weighting**
Student satisfaction	**Percent**
CEQ generic skills	17.91
CEQ good teaching	18.52
CEQ overall satisfaction	18.90
Outcomes	**Percent**
GDS full-time employment	11.48
GDS further full-time study	10.49
Success	**Percent**
Student attrition inversion – commencing	10.65
Student progress – commencing	12.26

33. Until 2008, the LTPF was competitive between institutions, and tended to be distributed to only a few of the top Universities. Reform of the fund saw the last year (2009) reward over 30 Universities in Australia with additional funds. In 2008, the changes made to distribution

accompanied a pledge by the government to provide continued support to this type of incentive.

34. The LTPF was evaluated in 2008, before it became clear that the funding would be stopped. It was evaluated favourably overall, with evidence to suggest[11]:

- It focused attention on learning and teaching in a way that is driving change.
- It resulted in national dialogue about learning and teaching quality.
- It highlighted the need for robust, reliable national indicators.
- It improved information flow between staff, students and the public.
- It gave out substantial funding.
- It possible improved student outcomes.

One of the main problems highlighted was the issue of inadequate performance criteria for learning and teaching, which make it difficult to award the funds fairly and consistently.

35. There are a number of other funding initiatives in place to improve access and participation:

- Funding to support equity and access initiatives including the Equity Support Fund, the Disability Support Fund, Additional Support for students with disabilities and the Indigenous Support Fund.
- Contestable funding for a Workplace Productivity Programme[12].
- A Diversity and Structural Adjustment Fund.

Evidence of effects of the method

36. There is a large body of evaluation evidence that discusses the effects of the Higher Education funding model in Australia. Over the last 20 years the public policy directions relating to the financing of Universities and other Higher Education providers have changed significantly. Universities have sought new sources of income in response to the relative decrease in public funds per student and as a result of the relaxation of constraints around the enrolment of fee-paying local and international students. This has allowed expansion in the Higher Education system within constrained public outlays. The evaluations have found that productivity and efficiency gains have been achieved in the public Universities, principally by limiting public funding per student for tuition and general operating purposes, but also through targeted productivity programmes.

37. Financial pressures on teaching have been increasing in recent years, as the level of funding per student has declined. The 2008 review highlights that student-to-staff ratios are unacceptably high. Most Universities increased student-staff ratios by 57% from 1990 to 2007. Academic staff are working longer hours, having fewer opportunities for one-to-one contact with

[11] An evaluation of the Learning and Teaching Performance Fund: Department of Education, Employment and Workplace Relations September 2008

[12] This is a collaborative programme that requires an industry contribution of at least 10%, and is designed to raise the skill level of people already in the workforce to address the skill demands placed on industry sectors

individual students and reducing their involvement in research. Data presented on student satisfaction shows that this has affected the quality of the student learning experience.

38. A government review of Australian Higher Education in 2008 found that Australia is slipping in OECD rankings for the proportion of the population with degrees and predicted (in 2008) that by 2010 the supply of people with undergraduate degrees would fall short of the demand. This is driving policy plans to boost participation rates, particularly with regard to participation from disadvantaged socio-economic groups, which has been static or falling over the last decade. However, Australia demonstrates high participation rates in comparison with the EU average and the UK. The review also expressed concern that the quality of the educational experience is declining and that established mechanisms for assuring quality nationally need updating.

39. The Review of Australian Higher Education recommended a number of targets and changes for the future. These included targets for greater numbers of people attaining degrees and greater participation of low socio-economic status students. The review also states the need for more student support with all domestic students holding the entitlement for a Commonwealth-subsidised place, alongside the suggestion that institutions should have freedom to enrol as many students as they wish. The review underlined a need for greater funding for teaching and more support for rural areas. In order to enhance quality it was suggested that a proportion of funds allocated to institutions should be allocated on the basis of performance against specific targets for teaching and equity. The need for diversity in institutions was also addressed to allow each institution to play to its strengths.

40. An evaluation of the Learning and Teaching Support Fund by DEEWR showed that the LTPF has proved effective and had achieved its aims to focus attention on learning and teaching and had initiated national dialogue. In particular the LTPF funds have been used to support teaching and learning even though this is not a condition of the allocation. The programme has also highlighted a need for robust national indicators to assess quality in teaching and learning. However, the evidence stated that the fund had “possibly” improved student outcomes. The LTPF as such has been discontinued under the current reforms. However, it has been replaced by new performance funding of 2.5% of current teaching and learning grants. These will be introduced in 2012 following transitional arrangements and definition of performance indicators.

Efficiency in the Australian system

41. In the late 1990s Australia developed a quality assurance framework for Higher Education. However, it is now thought that an updated quality assurance system is needed. The review on Higher Education in Australia recommended improving and updating the quality assurance framework. A new accreditation, quality assurance and regulatory framework will be put in to place to address these recommendations, including the establishment of a Tertiary Education Quality and Standards Agency (TEQSA).

42. The current policy and funding framework have not led to significantly more equitable Higher Education outcomes in Australia. In 2004, the Commonwealth Scholarships Program was introduced. In 2008 it provided about $118 million worth of scholarships to students of low socio-economic status, rural and indigenous students. However, this program does not appear to have

helped improve access for these key groups. The total amount spent on this comes to 1.2% of the government spending on teaching in Higher Education. Many under-represented groups require substantial additional support to undertake their studies successfully and institutions have had to cross-subsidise funding from other activities in order to deliver such services.

Table 2 Proportion of students from under-represented groups, 2007

Group	2007 participation rate % in Higher Education	Proportion in general population	2007 participation ratio
Non-English speaking background	3.8	3.7	1.02
Students with disabilities	4.1	8.0	0.51
Rural/regional	18.1	25.4	0.71
Remote	1.1	2.5	0.44
Low SES	15.0	25.0	0.60
Indigenous	1.3	2.2	0.59

Participation ratio of 1 indicates appropriate representation of the equity group in the student population
Source DEEWR

Future funding

43. The report on Higher Education in Australia (2008) recommends greater investment in a new Higher Education system to provide highly-qualified graduates for Australia to compete in the global market. The government has proposed new Higher Education financing arrangements with the aims to:

- Provide the resources, entitlement and choice to enable an increase in the numbers of people with Higher Education qualifications to meet attainment targets.
- Contain costs for students and improve income support for those in need so that they can complete their studies.
- Attract and retain academic staff and reduce student-to-staff ratios to improve the quality of the learning environment and outcomes.

44. From 2009 the policy on full-fee-paying students in public Universities changed, with public Universities unable to enrol new undergraduate domestic fee-paying students.

For further reading

Administrative information for providers: Commonwealth Grant Scheme DEEWR 2008
OECD Thematic Review on Recognition of Non-formal and Informal Learning. Country Background Report, Australia 2007
Australian Government Review of Australian Higher Education Final Report 2008

An Evaluation of the Learning and Teaching Performance Fund: Department of Education, Employment and Workplace Relations September 2008
Transforming Australia's Higher Education System DEEWR 2009

Case Study 2 Higher Education funding for teaching in California

Introduction

1. The US has a complex Higher Education landscape including strong private sector Universities, public Universities, state Universities and colleges. Higher Education funding and tuition policies are within the jurisdiction of 50 state governments of the US and there is a wide diversity in both state government funding and fee policies across the states. Overall decisions on financing are made in the context of prevailing economic conditions, tax structures and competing budgetary priorities. However, within this system, there are a number of mechanisms used to steer the system through the use of performance contracts in many cases.

2. Due to the complexity of the national system, this case study looks at one state, California, in detail. California has a three-tier system of Higher Education and was heralded as one of the best state Higher Education systems in the United States. Five of the campuses of the University of California appear in the Times Higher Education World University Ranking 2008.

3. California sets itself apart from other states through its long-running Master Plan for Higher Education which has been in place since the 1960s. This Master Plan is about setting up a route to Higher Education for all regardless of economic means. It is only academic proficiency that governs attainment and each person is expected to reach his or her highest potential. The three-level system was put in place so that each part of the system could be excellent in its own right and cater for different needs.

4. This case study was chosen to illustrate:

- Widening participation (access for all).
- Core public funding with performance indicators.

5. In spite of the system's success, it remains costly and California itself has suffered greatly in the last few years in terms of its available budgets for Higher Education. As a consequence there have been substantial budget cuts in 2009. This case study explains the system of Higher Education today, the types of performance contracts that are agreed in the system and the impacts and potential impacts of the current cuts in budget imposed on the state.

Overview of the Higher Education landscape

6. The State of California has a three-tier system of public Higher Education: The University of California (UC), the California State University (CSU) and the California Community Colleges (CCC). In total they admit over three million students per year. California also has hundreds of other private colleges and Universities, including many religious and special-purpose institutions. Notable private Universities and colleges include Stanford University, the University of Southern California (USC), the University of San Francisco (USF), Santa Clara University, St. Mary's College and the California Institute of Technology (Caltech) (which administers the Jet Propulsion Laboratory for NASA).

Table 3 System overview

Institution	Number	Student/year
University of California	10 campuses	208,000
California State University	23 campuses	400,000
California Community Colleges	109	2.5 million

7. The University of California (UC) is the main research University system. Students enrol on four-year degree programmes. UC has exclusive jurisdiction in public Higher Education for doctoral degrees (with the exception that CSU can award joint doctorates with UC and some teaching doctorates) and for instruction in law, medicine, dentistry and veterinary medicine. The California State University system's main emphasis is on teaching and workforce preparation. It also enrols students on four-year degree programmes, offers Master's programmes and, as mentioned, some joint PhDs with the University of California. The California Community Colleges are the largest providers of Higher Education. The Community Colleges supply workforce training and basic skills education, prepare students for transfer to four-year institutions and offer opportunities for personal enrichment and lifelong learning. Students enrol at Community Colleges for two-year programmes and this can count as the first two years of a University education.

8. According to the State Higher Education Finance figures for 2008, full-time equivalent enrolment in California stands at 1,731,754 for 2008, up 5% in the last five years.

9. At the University of California and the California State University study is measured in units – in broadly the same way as credits are used in Europe. One hundred and eighty units are required to be awarded a degree.

10. At the University of California about half of the students admitted graduate in 12 or fewer registered quarters. They are able to do this by taking full academic loads each year and by not exceeding the 180 units required for graduation. Some students, however, do take more total units — for example, students with double majors, students who change majors after having already made substantial progress and students in majors that require more units to graduate. In addition, some students take more time by taking lighter loads in some quarters, often because they are working part-time. In recent years, campuses have worked to increase the average number of units taken during a term and reduce excess units taken over a student's career, enabling more students to graduate in four years and making room for other students. At the California State University there are even lower graduation rates than in the University of California with only 13% in four years, 36% in five years and 47% in six years.

11. In 2008, approximately 97% of UC undergraduates were full-time, just over 50% were female. In the California State Universities, 25% take part time loads. In Community Colleges, 75% are part-time. A large percentage (around 50%) of Community College students were above the age of 25.

12. The three-tier system is designed to encourage access to anyone capable of achieving in Higher Education. Overall, just over 50% of high school leavers go on to college or University in California. The University of California offers places to the top 12.5% of high school graduates in California. There is also a need to have completed a minimum number of academic courses at high school. California State University offers places to the top one-third of high school graduates; there is also priority admission for those who have completed a degree at a Community College. The California Community Colleges are to admit any student capable of benefiting from instruction and generally admit any resident of California who graduated from high school. The credits awarded at the Community College are transferable to the other tiers of the system. A maximum of 70 credits can be transferred across[13]. In itself it provides a lower-cost entry into the Higher Education system.

Policy drivers for Higher Education

13. California's public education system is administered at the state level by the Department of Education, under the direction of the State Board of Education and the Superintendent of Public Instruction. Policy for Higher Education is driven by the Master Plan for Higher Education and the Higher Education Compact. In addition, the California Performance Review (CPR) looked at aspects of the education system. The Post Secondary Education Commission in California has the role of integrating policy, fiscal and programmatic analyses about California's entire system of post-secondary education.

14. The Master Plan has been California's blueprint for Higher Education since the 1960s. It helps integrate the missions of all three levels of education to meet the educational needs of Californians. It sets out the principles that the top third high school graduates automatically gain entry to UC or CSU and all remaining students "capable of receiving instruction" gain entry to the Community Colleges. The Master Plan was last revised in 2002.

15. The main policy drivers set out in the Master Plan are: access for all (many routes to degree), excellence, low-cost tuition (good student aid). Teacher quality is also a focus. Up until recently, enrolment growth was also a priority, but the recent budget cuts have made this more difficult. In addition the California Performance Review (CPR) offers recommendations on improved efficiency of the education system and enhanced preparation of the workforce.

16. Access for all: Set out in the Master Plan and complemented by other initiatives undertaken by the Post Secondary Commission, access for all is an important central aspect. The Community College transfer function is an essential component of this commitment. Under the Master Plan, UC and CSU set aside upper division places for and give priority in the admissions process to eligible California Community College transfer students. In addition, access and equity for all students in Higher Education continues to be a high priority for the California Postsecondary Education Commission. Recent work in this area has focused on students with disabilities as well as lesbian, gay, bisexual and transgender (LGBT) students. The commission formed an Access and Equity for All Students Advisory Committee in spring 2008 to

[13] In the US, one hour of undergraduate credit equals one hour of lecture and two hours of homework, while one hour of graduate credit equals one hour of lecture and five hours of homework

discuss challenges faced by these students, the data available and recommendations to expand opportunities and improve outcomes.

17. Excellence: Both the California State University and University of California systems entered into partnerships with the Governor of California through the Higher Education Compact. The funding agreement is a comprehensive statement of the minimum resources needed to accommodate enrolment growth and sustain the institution to which students seek admission. In addition, the agreement is a statement of the state's expectations in terms of accountability and performance, based on measures that have historically been important to both the state and the Universities. In addition, the California Community Colleges established a Partnership for Excellence (PFE) programme in 1998, in which they agreed to exchange more data, on specific student outcomes tied to their mission and functions, for increased funding from the state. Originally billed as a 'pay for performance' programme, the PFE evolved into a mechanism to attract increased funding to the system. This system had its problems and has since been replaced and simplified.

18. Low-cost fees and tuition: In the original Master Plan, there was long-term commitment to the principle of tuition-free education to residents of the state. Because of budgetary reductions, fees have been increased and used for instruction at UC and CSU in recent years, but fee increases have been accompanied by substantial increases in student financial aid. They remain lower than fees at comparable institutions in other states.

The funding method

19. California does not have a funding model in the classical sense. The approach to the financing of public postsecondary education remains primarily one of negotiating increases over the base budgets negotiated in previous years. It is based on an historical rather than an analytical model and reflects different levels of General Fund allocation per full-time equivalent student. However the Higher Education system is still subject to performance contracts, which are outlined below. In recent years, as highlighted, all three systems have entered into partnership agreements with the Governor and Legislature to stabilise the portion of General Funds they receive annually. In addition, California tuition fees represent some of the lowest in the US. However, they are going to increase substantially in response to the budget cuts. The Governor's budget raised fees at UC by 9.3% and at CSU by 10% for 2009-2010.

Table 4 Tuition fees in California 2009

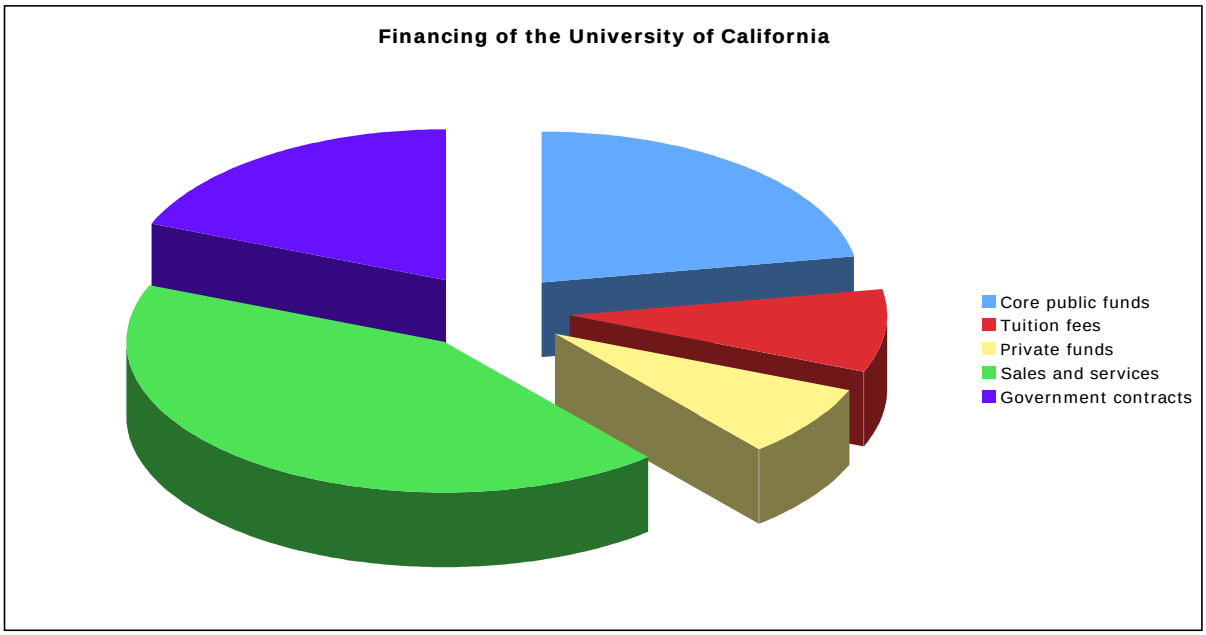
Institution	**Fees**
University of California	$8,700 per year
California State University	0-6.0 units $2,334 per year 6.1 or more $4,026 per year Non residents – maximum $11,160 per year*
California Community Colleges	$600 full-time student $4,809 non resident

*This is subject to change

Funding allocations and calculations

20. The General Fund budget for Higher Education in total for 2009/10 is $12.1 billion, 12% of the state General Funds. The University of California has seen a 20% reduction in state funding since 2007/8. The California Community Colleges have local funding as well as State funding.

21. Not all budget summaries are easily accessible or comparable. The first chart shows the breakdown of funds for the University of California which has operating revenue of $19.6 billion. Around 22% of the funds are core public funds with a further 19% in federal government contracts and grants. It is difficult to define the difference between public and private funds as they come from a variety of sources. Overall in comparison to other states it is a highly subsidised education system.



22. The following table gives an overview of the budget summaries from the CSU and the Community Colleges. State general funding increases to 64.2% in the Community Colleges with an additional 28.2% of local revenue.

Table 5 Budget summary for teaching in the California State University system and the Community Colleges 2009/10[14]

	CSU	CCC
State General Fund appropriations	43.9%	64.2%
NET Ed Fund[15]	3%	0%

[14] http://www.cpec.ca.gov/FiscalData/FundingTable.ASP

[15] NET Ed Fund consists of system-wide resident student fees and non-resident tuition charges, overheads from foundation contracts and grants, non-governmental college work study, independent operations, miscellaneous, unscheduled and unallocated funds and other revenues

Local revenue	0%	28.2%
Student fee revenue	21%	4%
Lottery	0.7%	2.3%
Cont Ed Revenue[16]	2%	
Other	29.5%	1.3%

23. Direct state funding is allocated to the system in three main ways – as set out in the Higher Education Compact:

- **Basic budget support**: This is to compensate for salaries, maintenance and inflation. This was meant to increase around 4% per year.
- **Core Academic support needs:** Annual budgetary shortfalls in state funding for other instruction and research support for core areas of the budget critical to maintaining the quality of the academic programme.
- **Enrolment**: The state was to provide funding for this enrolment growth at the agreed-upon marginal cost of instruction as adjusted annually.

24. As well as other one-off funds, depending on the state's fiscal system, the Higher Education Compact gave provision for funding for other initiatives agreed by the University systems and legislature.

25. Under the Higher Education Compact, the Universities agree to maintain and improve where possible performance outcomes in a variety of areas. The University provides a report to the administration and the legislature on its progress in these areas every November. There are a large number of performance measurements, which were initially put in place in the compact to guarantee a certain level of funding but there is no particular penalty in place for not reaching objectives. They are used by the state as evidence of performance of the Higher Education system overall.

[16] Continuing Education Revenue Fund: Revenue generated by fees from the following non-traditional programmes: concurrent enrolment, extension and external degree

Table 6 Performance measures set for the University of California

Efficiency in graduating students	Number of undergraduate degrees awarded, other degrees, persistence and graduation rates, average time to degree for undergraduates, percentage of graduating undergraduates who accumulate excess units required for degree, number of undergraduates admitted who leave in academic difficulty, number of undergraduates admitted as CCC transfer students who leave in academic difficulty
Utilisation of system-wide resources	Student faculty ratios, salary data, honours and awards, technology transfer, research funding
Student level information	Total enrolment, new CCC transfer, % admitted by exception, progress of CCC students
Capital outlay	UC and CSU provide five-year capital outlay plans

26. The California State University system provides different indicators for each campus, but in general they cover the same issues as the University of California and relate to: quality, access, progression to degree, persistence and graduation (including CCC transfers), areas of special state need, relations with K-12, completed remediation, facilities utilisation.

27. The Community Colleges report under the system of Accountability Reporting for the Community Colleges (ARCC). Indicators include: Annual number of transfers and rate to four-year institutions, graduation, annual number and percentage of baccalaureate students graduating UC and CSU who attended a Community College, increase in total personal income as a result of receiving a degree/certificate, basic skills improvements, state participation figures, progress, persistence.

28. The allocation of the funding across the system is regulated by the institutions. Budgets are allocated in general according to sizes of campuses, student numbers and based on the previous year's budget.

Other funding agreements

29. In 2006-2007, State funds totalling $2 million were added to the funds already provided for Community College Transfer programmes to identify, prepare, support, and enrol more CCC transfer students at UC campuses in pursuit of baccalaureate degrees. The focus of the effort is on Community Colleges with high numbers of educationally-disadvantaged students and historically low transfer rates to UC. The new funds provide more advisors at each of the campuses to facilitate transfer. Another key component of the initiative is the development of the UC Virtual Transfer Centre website providing improved guidance.

30. The state did pledge to allocate $100 million per year for performance improvements in the Community Colleges, increasing annually and called "Performance for Excellence" (PFE). This came to an end in 2006. There were many issues affecting its implementation. In the beginning,

the performance outcomes, which were proposed by the Community Colleges, were frustrated by the inability of the state to honour increases in the budget for reaching targets. As a consequence, PFE money was being distributed to each college as an entitlement rather than a reward for performance.

Evidence of effects of the method

31. The funding allocated to Higher Education in California is at the mercy of the state budget and it is entering turbulent times. The 20% reduction in the state budget to the University of California has led to a rise in tuition fees, and to employees committing to between a 4%-10% reduction in salary. The University is trying not to let it affect enrolment.

32. The Higher Education Compact shapes the accountability reporting of the system and, in 2009, the UC Accountability Report provided the first comprehensive assessment of the University's progress in meeting key teaching, research and public service goals across its 10 campuses. It includes 131 individual indicators across 15 categories, assessing progress in areas like undergraduate success, financial aid, diversity, sustainability, research and budget. Most of the indicators present data for individual UC campuses as well as for the system as a whole.

33. The main finding from the 2009 report indicates that:

- More than 80% of UC freshmen graduate in six years, which is more efficient than the public research Universities of the elite American Association of Universities (AAU) (74%), but slightly less efficient compared to private AAU Universities (89%). Having said that, a higher-than-average proportion – 37% – of UC undergraduates are first generation college-goers.
- The costs of undergraduate education at UC have increased substantially in the last decade and as a result the UC has recently established a Blue and Gold Opportunity Plan to ensure students from all backgrounds are aware of scholarship opportunities.
- Although undergraduate education experience was reported to be varied – a specially designed curriculum to encourage critical thinking was believed to contribute to more than 75% of undergraduate students aspiring to further professional or graduate education.
- With regards to life long learning a number of University extension programmes provide opportunities for 300,000 individuals every year.
- In terms of diversity, the UC, however committed, admits there is still some way to go. UC freshman classes contain proportionally fewer under-represented minorities than the general population.
- The state appropriation is the most important source of finance. It totals almost $3 billion every year, accounting for close to 60% of UC’s instructional needs.

34. The Community College transfer function is an important component of the system in California and it is facilitated by the fact that credits are meant to be equal and transferable to the University system. It is also a way of facilitating access by many types of disadvantaged groups to the University system. In spite of its success in helping to reduce gaps in participation, the California Performance Review still highlights some issues. On average Community College

transfers complete more units than necessary for a Bachelor's degree because the state's public Universities do not always accept certain credits. In a state where the public Higher Education system is heavily subsidised, this has an impact not only on students who are eager to complete their degrees, but also on the state's limited financial resources.

35. In addition, nearly three-quarters of the high school graduates from ethnic minorities who continue their education beyond high school choose a local Community College as the point of initial enrolment. However, the Community Colleges, which serve a student body that most closely reflects the diversity of California, struggle with persistent indications of achievement gaps in the success rates of white and Asian students compared with those of other ethnic groups and between those of immigrant and non-immigrant students, in key areas. Transfer rates and the rates of earning associates' degrees are lowest for black, Latino and Native American students – with the lowest rates evident for part-time students from these groups. Latino immigrant students have the lowest transfer rates of any group, immigrant or non-immigrant, irrespective of whether they attend part-time or full-time.

36. However, those that do transfer do really well in the University system, with results that are very similar to those entering the University system straight from high school. Data from the UC, for example, shows more than a third of CCC transfer students graduate within two years and 83% earn a UC degree within four years (equivalent to six years for a freshman entrant). More than 90% of CCC transfer students persist to a second year and on average take 7.4 quarters at UC to complete their degree. Transfer students' UC grade point averages upon graduation are about the same as those of students who entered as freshmen.

The ability to start at a Community College and transfer to a four-year University course is crucial for many students in California. Transfer students prove to be very successful at going on to obtain their degrees. However, the transfer system remains extremely confusing for many Community College students. The courses taken at the Community College need to be recognised by the University system and it may be expected for the student to take extra classes. There is a maximum number of credits that can be transferred (70) and in general, transfer students to the CSU accrue around 81 units on average and those going into the CU, around 90. In order to try to make the system more transparent the California Articulation Numbering System was introduced which, for example, allows cross referencing of transferable courses. There is a call to improve this articulation as students should be able to take fewer units to obtain a place at CU or CSU, thus saving money.

From the California Performance Review (2004)

37. The accountability reports for the California system are lengthy with a substantial number of indicators being collected. This is a time-consuming process for the institutions, which is not directly related to a funding increase, but nevertheless provides solid evidence of the progress the system is making. The problems encountered by the Community Colleges and the Performance for Excellence system have been addressed and Community Colleges now focus on six basic performance indicators (under the ARCC, the performance management system).

38. The Master Plan has worked well in California, but is also self critical and the 2002 review indicated a number of areas that need to be worked on, particularly in regard to access to Higher Education for all. As well as the Community College transfer function, there is a call for the CSU and UC to continue to admit up to 8% and 6%, respectively of students of non-traditional criteria (for example, part-time or mature students, or students who have children, are single parents or who do not have a high school diploma). There is a recommendation in the 2002 Master Plan that: The state's accountability framework for postsecondary education should be improved by the modification and expansion of the 'partnership' budget approach, currently applied to the University of California and the California State University system, to include all postsecondary education, clarify the link between performance and funding and adopt realistic alternatives for times of revenue downturns. This is clearly an area which needs to be addressed.

39. In response to policy, the state still has different levels of control over the three parts of the system. It has the least control over the University of California, which is an old land grant University[17]. Any policy priority of the legislature, as expressed in statute or resolution, is regarded as binding only if the University of California Regents, by resolution, agree to adopt or concur with the state's priorities. The California State University is neither protected by the state constitution as a public trust nor affected by the separation of state and local education agencies as the Community Colleges are. Consequently, it has been subject to far greater control by the legislature in the conduct of its affairs and deployment of its budget. It is not clear how much this impacts on progression, but it undoubtedly does. This fact has generated great stress within the California State University system over the years and prompted a concerted effort by the Board of Trustees to achieve increased flexibility in the conduct of its affairs in exchange for being held accountable for providing evidence of the system's responsiveness to and achievement of state policy priorities.

For further reading

The Master Plan for Higher Education in California
http://www.ucop.edu/acadinit/mastplan/mp.htm
University of California Accountability Report (2009)
CSU Accountability reporting http://www.asd.calState.edu/accountability/index.shtml
Developing a Statewide Higher Education Affordability Policy (6/2006)
Performance Indicators of California Higher Education, 2001 (4/2002) Summary
Policy for Progress: Reaffirming California Higher Education Accessibility, Affordability, and Accountability into the 21st Century (4/2000)
Update on the Governor's Proposed 2009–10 Budget (1/2009)
www.universityofcalifornia.edu/news/compact/compact.pdf
California Performance Review http://cpr.ca.gov/
Key organisations:
California Post-secondary Education Commission
California Community College Chancellor's Office

[17] Land grant Universities are institutions designated by the state legislature to receive the benefits of the Morrill acts of 1862 and 1890. Nowadays this relates to a system of colleges and Universities managed by the states, but subject to certain broad federal policy stipulations

Case Study 3 Higher Education funding for teaching in Denmark

Introduction

1. The Higher Education system in Denmark takes one of the most radical approaches to teaching funding out of all the case study countries. Most of the teaching funding, which is delivered as a block grant, is linked to the success rates of students.

2. Denmark places a high priority on Higher Education and has one of the highest completion rates of all the countries examined in this study (81%). With the high tax rates in the country, all Danes are entitled to student grants for Higher Education from the age of 18, regardless of their socioeconomic position, with a graded rate depending on their income. Three of the nine Universities appear in the Times Higher Education World University Ranking : the University of Copenhagen (48th place), Aarhus University (81st place) and the Technical University of Denmark (133rd place).

3. HEIs are publicly financed and state regulated. The total public and private expenditure on tertiary education, as a percentage of GDP was 1.7% in 2005, with 1.6% from public sources and 0.1% from private sources.

4. The Danish Higher Education system illustrates the following key issues examined in this study:

- Core public funding with strategic funding for priorities.
- A credit-based system.
- Equity and widening participation.

5. The Higher Education system in Denmark has recently been through a process of mergers with 12 Universities being reduced to eight. The financing of Danish Higher Education has also gone through a number of changes since 2006. The level of financing of Higher Education is an important issue in Denmark and has been characterised by economic decentralisation and an increased application of activity-steering incentives. The University Act 1993 introduced economic decentralisation, re-emphasised in the University Act 2003 with the intention of promoting economic responsibility and making better use of resources. It is in this context that the “taximeter” system has been introduced and adapted.

Overview of the Higher Education landscape

6. The Higher Education system in Denmark comprises a University sector, a college sector and a professionally-orientated Higher Education sector. The University sector includes nine Universities and 13 specialist institutions for studies such as architecture, art and music. Institutions in Denmark hold a high degree of autonomy in conducting their activities. However, all institutions and new courses must all be accredited by the government. Around 45% of young people enter Higher Education and around 32% of the population hold a Higher Education qualification. The sum of net entry rates for a single year of age in Denmark according to the OECD statistics was 58.9 in 2006, having grown steadily from 52.2 in 2000.

7. Universities offer research-based study programmes leading to Bachelor's degrees (three years), Master's degrees (two years) and "Candidatus" (PhDs five to eight years). The college sector constitutes around 100 specialist institutions. Together with the professionally-orientated Higher Education sector, it offers professional (AP) degrees after two years of study or professional Bachelor's degrees after three to four-and-a-half years of study.

8. Denmark uses the European Credit Transfer and Accumulation System (ECTS), for course units which include course descriptions containing learning outcomes and workload. Typically student workload ranges from 1,500 to 1,800 hours for an academic year and one credit corresponds to 25-30 hours of work. The use of the European Credit Transfer System became mandatory throughout Higher Education in Denmark in 2001, introducing a universal credit-based system. It is used in the University and the college sectors.

9. The Danish system of Higher Education is characterised by having a broad representation from all societal groups and a long tradition for the encouragement and strengthening of equal participation. Many strategies are in place to support wide participation. This includes: the provision of flexible learning methods, recognition of prior learning, lifelong learning initiatives and specific support for students with low incomes and non-traditional learners. Higher Education is also free and admission is based purely on academic (or artistic) criteria. All students of Higher Education are entitled to substantial student grants and loans provided by the Danish state. Furthermore, a long-established system of continuing/adult education subsidised by the state provides opportunities for lifelong learning and a continuous professional and personal development for the individual at Higher Education level. All Danes from the age of 28 are entitled to public support for continuing education, with a reduction of the grant depending on income. There are also no tuition fees for EU students (or students with equivalent rights), but the institutions charge for students external to the EU.

10. Broad access to the first cycle of Higher Education programmes is also provided through a quota system, which is laid down in the legislation regarding admission. A certain percentage of admissions are reserved for applicants who do not meet the formal admission criteria such as grade point average and certain combinations of academic subjects from qualifying studies. Access through exemption from formal admission criteria is given on the basis of an individual assessment of the applicants' profile and experience by the institutions. In such cases, a number of objective criteria are considered such as work experience and prior learning. The legislation states that these criteria may not include age and must be made publicly available.

Policy drivers for Higher Education

11. Higher Education is under the authority of the Ministry of Education in Denmark, which is responsible for short and medium-cycle Higher Education. Some additional programmes come under the remit of the Ministry of Cultural Affairs. There is legislation to cover the aims and framework of education, funding and, in some cases, curricula, exams and staffing.

12. The main policy drivers for Higher Education policy in Denmark are laid out in the Government's Globalisation Strategy, launched in April 2006 (Progress, Innovation and Cohesion

Strategy for Denmark in the Global Economy). The strategy contains 350 specific initiatives, which together entail extensive reforms of education and training programmes as well as research and entrepreneurship. In April 2005, the government set up a Globalisation Council comprising representatives of all sections of society to steer the process of change.

13. The main policy drivers highlighted in the Globalisation Strategy for Higher Education include: globalisation, lifelong learning, quality and professionalisation in Higher Education and the "third mission" of Universities to engage with society, in particular with businesses. These points are expanded on below.

14. Globalisation of Higher Education: Globalisation has many meanings and in this instance is closely aligned to internationalisation and widening participation. The strategy calls for a higher proportion of the population to complete a University education, in a country that is already doing well in this respect, with a goal to move from around 32% to 50% by 2015. As part of this, HEIs are going to be obliged via development contracts and economic incentives to take steps to retain students. The strategy also stresses the need to give more students the opportunity to study abroad during their time at University and to include a global perspective within the teaching element of University courses.

15. Lifelong learning: There are existing measures in place to ensure that opportunities for lifelong learning are open to people in Denmark and Universities run a range of courses to facilitate this process. The Globalisation Strategy states that "everyone should be engaged in lifelong learning".

16. Quality and professionalisation in Higher Education: The Globalisation Strategy advised the development of "new profession-orientated and practice-orientated education programmes", which are now under way in the college sector. The process of introducing new degrees and also the development of old ones is supported by a comprehensive quality assurance system. Denmark was one of the first countries in Europe to set up a national system for external evaluation of Higher Education.

17. University-business relations: University-business relations is a key area for development in Denmark and the Globalisation Strategy sets out that, "Universities should establish employer contact panels that ensure systematic dialogue with employers regarding the study programmes' quality and relevance for society". Two key areas highlighted to support this process are: to set up a collaboration programme to strengthen cooperation between educational institutions and companies and also to introduce greater flexibility in short-cycle Higher Education programmes in relation to the needs of the labour market. As a consequence, Higher Education internships of at least three to six months have been made compulsory in Denmark for students in the first cycle and are allocated ECTS points. Denmark has also introduced advisory panels of users at all institutions, as well as local educational panels. In order to introduce a new course, Universities need to demonstrate labour market research that shows there is a requirement for the course.

The funding models

18. This section sets out the system for funding Higher Education in Denmark. The Danish financing system is under rapid change. All aspects of the existing system have been recently

reformed or are expected to be reformed in the near future. This includes the funding formula for teaching, the basic grants for research and also the external competitive grants for research.

19. The majority of funds for teaching in Higher Education in Denmark come from the government and there is no tuition fee charge for domestic students. Tuition fees have been introduced for foreign, non-European students and for some courses tailor-made for adult education and the needs of the entrepreneurial sector. In addition to the basic grants for research, the Universities have considerable revenues partly in the form of subsidies from research councils, the EU, private foundations and donations.

Funding allocation and calculations in the Universities

20. Danish Higher Education institutions receive all funds for teaching directly from the government. The government allocates money to teaching through what is called the taximeter system. The taximeter model is an “activity” level-determined grant.

21. It goes to institutions in three lots: for teaching; building and maintenance; and administration. Each lot has its own associated formula.

22. The teaching formula is mainly based on the success rates of students (directly to the number of students who pass exams). Therefore the money follows the student. Institutions do not receive any funding for students who do not pass or complete their courses. The main indicator used for the funding formula of the teaching taximeter system is the European Credit Transfer System (ECTS) credit that became mandatory in all HEIs in 2001. In addition there is an associated tariff for the type of subject. The taximeter model is also used in research. Depending on their level of research activities, Universities receive between 30% and 50% of their funding through the taximeter system for teaching purposes. There is no private sector funding for Universities for teaching, but there is a small amount of private funding for research.

Table 7 Taximeter tariffs 2006

Taximeter appropriation	Approximate prices in thousand DKK (2006 prices)
Technical education	100
Science education	90
Health education	100
Human and art education	45
Social science education	40

23. The tariffs for each subject are changed each year. They were originally based on an estimate of cost, but these rates are checked periodically against the basket of costs that they intend to cover. Currently the actual values vary from €3,240 to €4,350 in humanities and social sciences, to €5,587 to €8,307 for natural science, technical and health science. The Universities have autonomy with regards to how the funds are distributed within the institution once they are allocated.

24. Recently, the system has also introduced premiums into the model to enhance incentives for better performance. A premium for the timely completion of a Bachelor's degree has been introduced and a premium for the completion of a Master's degree is being considered. A premium for early starters may be introduced with the aim of reducing the average completion age in Denmark.

Other funding agreements

25. In 2007 an agreement between the government and the workers' and employers' organisations was concluded that, among other things, set up economic incentives to increase participation in lifelong learning. The state grants for a number of diploma programmes (further education at Bachelor's level) was increased in order to lower the participation fees. Also State Educational Support for Adults (SVU) was reinstated for short subject-specific courses. State Educational Support for Adults offers course applicants the opportunity to receive instruction without substantial loss of income.

26. The Danish government also set concrete goals in its Strategy for Denmark in the Global Economy to provide better advice for students through their course of study, to adjust the teaching methods further to the needs of the students and to support participative learning. For implementing these aims, a total of DKK 213 million was earmarked for 2007-2009 for developing teaching methods, for continuing/in-service didactical training of teachers and for improving student advice.

Evidence of effects of the method

27. The taximeter system is generally considered to function well and has been evaluated a number of times with overall positive outcomes. However, certain areas of criticism persist and although no new model has been defined, further changes are expected in the near future.

28. The taximeter system was first evaluated in 1995 and no negative trends were found in the evaluation. The second evaluation, in 1998, again had a generally positive outcome and found that, as a result of the reform, the management of the education sector had improved considerably, resulting in an increased focus on "value for money". It was shown that institutions considered the quality of their teaching programmes to be the decisive factor in the competition process. This affected colleges more than the Universities who were also in receipt of substantial research funds. Further evaluations, in 2004 and 2005, resulted in similar conclusions. However, in a stakeholder survey in 2006, although found that overall there was a generally positive attitude towards the taximeter principle, a quarter of respondents disagreed that the system was functioning well and a third of respondents thought the system should be replaced with another system. A number of problems identified by the evaluation were:

- There are no direct incentives to pursue quality and relevance. On the contrary, some state that the system has the opposite effect.
- The element of competition is limited, not least as a consequence of a lack of transparent information for students on course results. This weakens the incentive mechanisms.
- The system tends to fail less popular courses that are perhaps important from a societal perspective.

- A bad year in terms of students can have financial effects on institutions for years to come.
- Significant dissatisfaction with the actual tariff rates. The basic rates have been repeatedly cut during the last decade and there is also, according to stakeholders, a lack of balance and clear rationale in the allocation of the rates between different educational fields. However, a share of the reductions in the rates has been returned to the Universities in the form of special funds.

29. Despite these criticisms of the taximeter system and the use of performance-based criteria, a similar system for funding basic research grants was implemented in 2008, and future plans continue to link University funding to performance parameters. The plans for the taximeter system are to simplify it considerably, in particular to address the criticism of the difference in rates between subject areas.

30. Although there is no direct link between the funding system and institutional strategies, the funding system does have an impact on institutional strategies in several ways. First, the taximeter system steers the institutions towards the preferences of the students. The taximeter system is intended to cause user-friendly behaviour towards students. In order to achieve the highest grants, Universities need motivated, qualified students who pass their exams and complete their education in the prescribed time period. Key arguments for the system have been to promote efficiency, induce HEIs to be more results-orientated and customer-focused, to link allocation of grants to educational production, avoid erosion of standards, introduce a system that is fair, transparent and automatic and promote quality-competition among HEIs.

31. However, there has been dilution of the incentives of the taximeter system, as funds can be used for anything once they have been awarded to the institution, therefore funds can be distributed to teaching, research or joint costs.

32. The taximeter system also has indirect links with quality assurance. Quality assurance is ensured by ministerial approval of new programmes and institutions, external examiners and an evaluation system. Institutions must follow general regulations concerning teacher qualifications, award structures, study programmes and quality assurance.

Future funding issues and trends

33. As a follow-up to the Danish Globalisation Agreement from 2006, the government has in 2008, inter alia, introduced a new taximeter bonus model for the Universities. The model implies that approximately DKK 500 million a year is to be divided between the Universities from 2009. The criterion for distribution is students' completion speed. From 2010, a new basis of distribution is being introduced for allocating core funding for Universities, which makes use of quality criteria to a higher degree.

34. The Danish Globalisation Strategy also resulted in the establishment of stronger colleges and Academies of Professional Higher Education through the merging of existing institutions. As a consequence, a new model for the allocation of core funding has been introduced from 2008, by which core funding is allocated to institutions according to three objective criteria: a basic

criterion; an activity-based criterion; and an area-based criterion. From 2009, core funding is being introduced for the Academies of Professional Higher Education.

35. The focus on broad representation in Higher Education was emphasised in 2006 by the government setting the goal that at least 50% of all young people should complete a Higher Education programme in 2015 (the Danish Government's 'Strategy for Denmark in the Global Economy'). This aim was followed up in a report from a panel of experts appointed by the Minister for Science, Technology and Innovation, which in January 2008 presented a number of recommendations regarding future challenges for Higher Education in Denmark. Among other things, the panel recommended that specific action is taken to increase the recruitment of young people from non-skilled/non-academic family backgrounds in particular.

36. The Minister of Science, Technology and Innovation has since launched a campaign aimed at decreasing the negative effects of social heritage with regards to the participation in Higher Education by appointing a committee to identify the main obstacles to equal participation in Higher Education and generate concrete proposals for relevant initiatives. The result of the committee's work finished in 2008 and the Ministry earmarked DKK 20 million for research projects.

37. In addition, future plans include a move to more tuition fees for foreigners and stronger incentives in the allocations of the State Educational Grant and Loan Scheme.

For further reading

Denmark's contribution to the 2008 Joint Council / Commission Report on the Implementation of the work Programme "Education and Training 2010" 2007
Rates of return and funding models in Europe: Final report to the Directorate-General for Education and Culture of the European Commission 2007
Progress, Innovation and Cohesion Strategy for Denmark in the Global Economy 2006

Case Study 4 Higher Education funding for teaching in the Netherlands (with additional information on Flanders)

Introduction

1. This case study covers the Netherlands (in detail) and appended is an overview of aspects of the Flemish system to showcase its performance-based funding formula. The main case study only relates to the Dutch system.

2. The Netherlands has a system that is recognised for consistent quality of Higher Education across its institutions. There has been an ongoing move towards decentralisation with self-regulation at the institutional level and the government "steering from a distance". However, the institutions remain financially dependent, in the main, on the government. The quality is maintained through national regulation and a rigorous quality assurance system. The main feature of the funding system is that it combines historical funding with performance-based funding.

3. Its University system is world-renowned, 11 out of its 13 Universities are in the top 200 of the Times Higher Education World University Ranking 2008. (The UK has 29 in the top 200, but there are over 190 institutions, many of which do not feature). Also in the 2006/7 OECD review of Dutch tertiary education, the main strengths of the Dutch Higher Education system are reported to be strong institutions, strong research-intensive Universities and a good quality assurance system.

4. The Netherlands, like the UK, appears to be successful in spite of spending a low level of GDP on research and teaching (compared to the OECD average). The Netherlands spends around 1.3% GDP on teaching (1.0% in the UK). 1.0% of the GDP comes from the public purse leaving contributions from private sources at 0.3%.

5. The Netherlands was chosen as a case study to illustrate examples of :

- A performance-based funding system.
- A credit-based system.

6. In the last 15 years, Dutch Higher Education has introduced modifications and reforms in many different parts of its system. There have been structural reforms, with respect to the length of study (the BAMA – Bachelor's, Master's structure), introduction of quality assurance and accreditation, funding reforms, modernisation of management and governance and the development of internationalisation policies. Due to the increasing numbers of students there has been a rise in the overall budget for Higher Education. However, Universities have their doubts that this amounts to any actual increase in funding per student.

Overview of the Higher Education landscape

7. The Higher Education System in the Netherlands consists of 13 Universities (WO) and 46 Universities of Applied Sciences (also known as Hogescholen – HBO). The Universities and Universities of Applied Sciences are self-regulated autonomous institutions. All institutions are individually responsible for the quality of their education and obtain accreditation (proof of quality of the programme) from the independent accreditation organisation NVAO (Dutch Flemish

accreditation organisation). All degree programmes must be evaluated according to established criteria to obtain accreditation. Only accredited programmes are eligible for government funding.

8. The Universities of Applied Sciences distinguish themselves from other Universities in a number of ways. They are described as vocational Universities and focus on professional education rather than scientific research. Their education schemes do include the awarding of Bachelor's and Master's, but they do not have the right to award PhDs. They only have the right to promote themselves as Universities of professional education external to the Netherlands.

9. The Universities enrol around 220,000 students per year and the Universities of Applied Science around 370,000 per year. The size of both sets of institutions has grown rapidly in recent years (after a slowdown in the Universities in the 1990s). The change from the old to the new system of cycles in 2002 (BAMA)[18] means that the number of Bachelor's graduating in 2007 is lower than under the old system, but is increasing.

10. In the research Universities, almost all Bachelor's programmes have an official duration of three years. Most Master's take one year. Technical and medical programmes are longer. The degree is made up of "credits" and these correspond to the ECTS (European Credit Transfer System). Under Dutch law one credit represents 28 hours of work and 60 credits represents one year of full-time study. Therefore 180 credits are necessary to complete a Bachelor's degree (BA/BSc) in a University. In the Universities of Applied Sciences the Bachelor's programmes are for four years and require the completion of 240 credits (there are no Master's at Universities of Applied Sciences).

11. In the Universities of Applied Sciences, Associate Degrees were initiated in 2006 with the objective of exploring the demand for short-cycle education of two years. It represents 120 credits and forms part of the Bachelor degree if students wish to continue.

12. Exact figures for the time taken to graduate is reducing in the Netherlands. The statistics available suggest that the average time to pass a Master's has decreased to five-and-a-half years in Research Universities, but the figures will relate to the old system of a four-year degree (Key Figures 2003-2007 Education, Culture and Science). In Universities of Applied Sciences, the average time to complete a Bachelor's is 4.6 years.

13. Most students in Dutch Higher Education enrol full time. The Universities have around 94% full-time students and the Universities of Applied Sciences have around 80% full-time students.

14. Secondary school education after the age of 12 prepares students for either vocational education or Higher Education and this shapes the entry requirements as there are several different school leaving certificates. Access to Universities in the Netherlands is open for all students with a pre-University school-leaving certificate (VWO) or a Universities of Applied Sciences (HBO) "propaedeutic" certificate, which is awarded after successfully completing the first year of study. In some cases, the Universities of Applied Sciences graduates may be exempt from certain parts of the University programme. Older applicants may be accepted after passing an entrance examination if they do not have the right level of certificate. Access to the

[18] BAMA is similar to the UK system with a three-year Bachelor's and two-year Master's programme. Before that the Netherlands had a longer first degree, which led straight to a Masters.

Universities of Applied Sciences is open to those who have a vocational school leaving certificate or a pre-University school leaving certificate (the so-called HAVO, MBO or a VWO). There is also an entrance examination for anyone over the age of 21 or those who do not have the appropriate certificate. The Netherlands has done well at attracting ethnic minority students into Higher Education. Over the period from 2003 to 2007, the proportion of (Western and non-Western) ethnic minority students entering Higher Education rose to nearly 30% of the total number of first-year students. In the research University sector, this figure is a few percentage points higher; in the Universities of Applied Sciences it is slightly less.

15. Although Bachelor's degrees and Master's degrees are awarded from both parts of the binary system and on paper represent the same level of qualification, there is little flow between the Universities and the Universities of Applied Sciences after the first year.

Policy drivers for Higher Education

16. The Ministry of Education, Culture and Science is responsible for all legislation pertaining to education. The main legislation in the Netherlands is the Dutch Higher Education and Research Act (WHW), which came into force on 1 August 1993. It regulates Higher Education, teaching hospitals and academic research in the Netherlands. The new Act, which has its origins in the 1985 policy document 'Autonomy and Quality in Higher Education', propagated the philosophy of steering from a distance and autonomous educational institutions. The idea of a contractual relationship was cemented in 2004 where the government expressed the desire to establish a system of performance-based agreements between the ministry and the individual Universities. The Higher Education and Research Act was complemented by the Higher Education and Research Plan (HOOP), which in 2007 was replaced by a single long-term Strategic Agenda for Higher Education, research and science policy that sets out targets in these areas.

17. The main policy drivers in the Netherlands are around improving and increasing access, reduction in dropout rates, better quality, excellence and internationalisation. Underpinning all these drivers is the aim to continue to improve the efficiency of the Higher Education system. The new strategic agenda also emphasises the third mission – to interact with the labour market. These main policy drivers are expanded on below.

18. Improving and increasing access: The Dutch government has in the context of the Lisbon goals expressed its aim of increasing the participation in HE and rise in the educational level of the population. As a reaction to the advice by the Dutch Educational Council (Onderwijsraad 2005; Kaiser and Weert 2006) the Dutch government formulated the objective for the coming decades: in 2050, 50% of the labour force in the age group of 25 to 44 should at least have a Bachelor's degree.

19. Reduction in dropout rates: According to the New Strategic Agenda for Higher Education there needs to be greater academic success for students. Reducing dropout among students in Higher Education is an integral part of an ambitious learning culture. The goal is to achieve a 50% reduction in dropout in Bachelor's degrees by 2014. An interim assessment will be made in

2011, when the dropout reduction must be 30%. The success rates of immigrant students must also be improved.

20. Greater quality and excellence: According to the New Strategic Agenda for Higher Education the basic quality is to be maintained. In addition, more students should study more than just the basic programme. Differentiation in education and intensive supervision are very important in this respect. An important consideration in the case of quality improvement is the training level of tutors. There will be a basic target for the number of higher professional education tutors with at least a Master's-level qualification (90%, of which 10% should have doctorates).

21. Internationalisation: This is high on the political agenda and the relatively smooth and quick transition to the BAMA structure was undertaken in the belief that this was essential for competing internationally. It makes the system more transparent, flexible and open. The Netherlands has indeed seen a huge increase in international students, not least due to the fact it teaches many courses now in English. The BAMA structure is being evaluated on the criteria of innovation, flexibility, freedom of choice, international recognition, mobility and connection to the labour market (2008).

22. The third mission: The Strategic Agenda for Higher Education emphasises the need for better links between education, research and the labour market. Proper interaction between courses, research and employers will improve the quality of education and professional practice.

The funding method

23. This section sets out the funding models applied to the public funds for teaching for both the Universities and the Universities of Applied Sciences. The Dutch Higher Education system receives a high proportion of its funding from public funds. In addition students pay nominal tuition fees at a flat rate. In 2008 this was €1,565. Other funding comes from research, the European Framework Programme and other contracts.

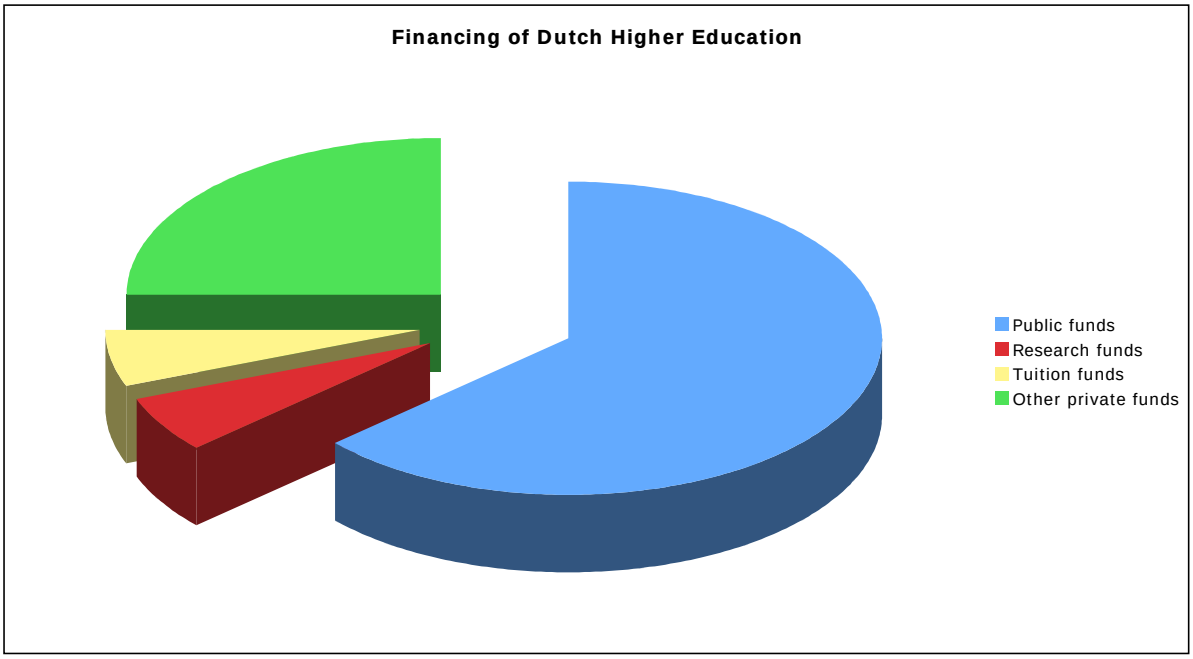
24. Over the years there have been a number of adaptations to the funding system, but the principles have remained the same: to increase success rates and shorten time to degree completion. Briefly in the 1960s, government funding was mainly based on the number of students. In 1983 the 'Places Money Model' was introduced, which made a distinction between funding of education, research and societal provision of services. Since 1992 Universities have been funded based on their performance, using both numbers and diplomas achieved. A newer performance funding model was introduced in 2000. This system was then replaced again in 2002 by the Bachelor-Masters model of structure and funding (BAMA). The BAMA model is be replaced in 2011 by a new model, harmonising the funding of both parts of the binary system (the Universities and the Universities of Applied Sciences).

Funding allocation and calculations in the Universities

25. The funding for Universities flows straight from the ministry to the HEIs in the Netherlands. The government determines the total budget for the University sector. This is fixed with no reference to performance indicators. The basic core funding for teaching is allocated to both the

Universities and the Universities of Applied Sciences (HBO)[19]. Both parts of the sector receive a lump sum from the government. For 2009 this was approximately €5.6 billion. Universities of Applied Sciences received €2 billion and Universities €3.6 billion. The resources, to be spent according to each recipient institution, are to be used for both exploitation of education and research, as well as for accommodation. The government takes into account the number of students of each organisation; thus the resources are distributed among the Universities based on an educational part, a research part and a part for the University hospitals. Both types of University receive the same unit of resource for teaching.

26. Universities receive additional financial resources for contract research via the Netherlands Organisation for Scientific Research (NWO): €0.3 billion in 2008 in addition, €0.7 billion in 2008 came from the private sector, European Union and other funds. It is possible to use a (small) part of the contract activities for education purposes, for example to integrate (scientific) education and research. Universities of Applied Sciences also receive additional resources for contract activities, but in the main it is the Universities that benefit from private funding, since this is where research is concentrated, not the Universities of Applied Sciences.



[19] The current system is different for Universities and the Universities of Applied Sciences, but they will merge in 2011

Table 8 Breakdown of funding by type of institution

Source	University	University of Applied Sciences
Public funds	66%	67%
Contract research	16%	2%
Contract teaching	2%	4%
Tuition	6%	17%
Other contract	1%	2%
Other public	0%	1%
Other	9%	7%

Source: CBS Statline 2007

27. In Universities the allocation method is known as the PBM or PBM/BAMA model (Bachelors Masters model) and has been in operation, with modifications, since 2004. It is a distribution model and is not open ended (i.e. it is determined proportionately by the allocation of the budget from the ministry). The budget is divided into three components. One component is for education (40%), one component is for research (44%) and one is for medical education and research (14%). Each component is given to the Universities as a fixed part and a performance part.

28. For education, the fixed part accounts for 37% of the budget and is based on historical levels[20]. The rest (63%) is performance based and is measured through new entrants and through degrees awarded. The Universities, however, are allowed to spend their total sum of money how they want against their own priorities (lump sum system).

29. To avoid fluctuations in financial flows, two-year moving averages used to be used for measuring the number of degrees and new entrants. Now it is the number of degrees awarded two years previously that determines the allocation. This is measured in full-time equivalents using the ECTS credits. Funding tariffs are given to new entrants and also for the diplomas awarded. There are two categories for new entrants, three categories for BA diplomas and three for MA diplomas.

30. Depending on the type of study there are two different weights for new entrants and three for degrees. The three tariffs for BAs and MAs are as follows:

- Low – arts, humanities, law, social sciences and languages.
- High – science, engineering, agriculture and medicine (including dentistry, pharmacy and veterinary science).
- A separate high tariff for medicine.

[20] The government has asked the Advisory Council for Education (Onderwijsraad) to advise about a new rationale for these agreements looking at possible ways to make agreements more flexible, depending on national priorities (and proven quality). This issue has not been resolved

31. The tables below set out the educational component of funding with the tariffs attached and the research funding allocated to teaching.

Table 9 PBM/BAMA Teaching component of funding

PBM component	Tariff base	Share in lump sum
New entrants	€3,900 high €2,600 low	13%
Diplomas	€11,500 BA low €17,300 BA high (excluding medicine) €20,800 BA medicine €5,800 MA low €8,700 MA high (excluding medicine) €31,200 MA medicine	50%
Basic allocation	Historical	37%

Table 10 PBM/BAMA Research funding linked to teaching

PBM component	Tariff base	Share in lump sum
Basic allocation	€2,700 BA low €4,000 BA high €8,000 BA medical €5,400 MA low €8,000 MA high €16,000 MA medical	15% of the research budget

Funding allocation and calculation in the Universities of Applied Sciences

32. For the Universities of Applied Sciences, funding is only based on teaching load. In addition, for those specialising in performing arts, funding is based on the number of first-year students admitted. Teaching load is a function of the following:

- The number of enrolled students.
- The number of Bachelor's degrees awarded.
- The number of years graduates have been enrolled.
- The number of dropouts.
- The number of years dropouts were registered in the institution.

33. There are two funding tariffs for full-time students: one for a programme with a strong practical character and one, 20% lower, for a social science character (so-called gamma) character. There are also slightly higher rates for students in teacher training. There used to be six profiles and, until 1998, part-time students were funded at 75% but have subsequently been raised to the same level as a full-time student. The funding rates are not applied to the number of registered students, but to an estimate of the teaching load ("student demand"). The teaching load is a multiplication of enrolment and a "dynamic demand factor".

34. Dynamic demand factor is equal to:

[DG x 4.5 + DO x 1.35] / (TG or TD) – 0.35

DG = the number of degrees (credits) awarded the previous year
DO = the number of students who have dropped out (during the previous year)
4.5 = normative funding period for graduates (4.5 years)
1.35 = normative funding period for dropouts (1.35 years)
TG = total period (in years), which graduates have been registered before graduation
TD = total period (in years), during which dropouts have been registered.

35. The dynamic demand factors can be interpreted as the ratio of the normative funding periods and the actual registration period for graduates and dropouts. If graduates or students who drop out take longer to leave, the University of Applied Sciences will receive less funding. (This is not a formula used in the Universities, only the Universities of Applied Sciences). The institution therefore has two ways of raising funds:

- Through a permanent rise in success rates.
- Through a rise in student intake.

Other funding agreements

36. The Ministry of Education, Culture and Science made agreements with HE institutions in the four big cities of Amsterdam, The Hague, Rotterdam and Utrecht in order to raise the number of students with a migrant background and their study success. A total budget of €4.5 million was made available over a period of three years (2006-2008). In addition in 2008, €4 million was made available to increase success rates in migrant students and the amount will rise to €20 million a year in 2011. The ministry made direct agreements with the institutions about targets and ambitions over a six-year period from 2008 to 2012.

37. There are also competitive funds for encouraging excellence in teaching and a competitive fund for encouraging innovations in the curriculum. For example, the Sirius Programme was established in 2008 to address this issue. All Higher Education institutions (Research Universities as well as Universities of Applied Sciences) were invited to submit a plan for the promotion of excellence, either independently or in collaboration with other institutions. The largest portion of the Sirius budget was earmarked for the Bachelor's programme that was launched in 2008 (€48.8 million). The Master's programme, with a budget of €12.2 million, starts in the spring of 2010. These funds provide an incentive aiming at inspiring the top 5% of students to achieve excellence. The programme has a double focus. On the one hand, on institutions' goals, its vision for the whole institution and the performances it wishes to achieve (including the feasibility of those performance targets). On the other hand on the learning function of the programme as a whole. Sirius aims to build up a community of participating and interested institutions oriented towards the gathering and sharing of knowledge. The Sirius Programme gives Universities the freedom to define the concepts of ‘excellence’ and ‘excellent student’ according to their own profile and vision. It takes a performance-oriented approach: agreements are made individually with each institution regarding their intended achievements in the programme. One of the most important criteria in assessing applications is the extent to which these achievements are a) new, and b) higher.

Evidence of effects of the method

38. The Dutch performance-based system has led to a reduction in dropout rates and a decrease in the duration of study. At the same time as the system was introduced, the number of students increased and the basic funding from the government did not increase. This has led to an even more efficient system. This type of mechanism steers Higher Education Institutions to use internal instruments for performance monitoring and budgetary discipline.

39. The output orientation of the funding models using credits and new entrants was put in place specifically to stimulate this greater efficiency in Dutch Higher Education, to put more effort into the success rates of students and to reduce the time to achieve a degree. There was a fear that this might lead to a reduction in quality. However, this has always been counter balanced by the elaborate quality assurance system in place in the Netherlands.

40. The use of credits as a measurement for the performance-based mechanism is considered successful as a means of quantifying study periods. The fact it is based on the ECTS makes its quantification clear. There still remains an issue over the transferability of these credits between the Universities and the Universities of Applied Sciences. However, this is a practical issue rather than a theoretical one since the size of any credit is set out in law. The new government is currently debating whether the Netherlands should move from a binary to a unitary system and this will bring this debate to the fore.

41. Although the performance funding is in place and well established, it is not combined with performance contracts /multi-annual agreements. This had been a suggestion in the past. HEIs were asked to set down in a 'letter of intent' to the government on how it would go about contributing to the national targets. The idea was to fine tune the strategic plans of HEIs with national priorities by dialogue between government and HEIs. This did not work out due to:

- The absence of agreements on concrete indicators/targets per HEI.
- Low political commitment.
- Neither positive (extra budget) nor negative (sanctions) financial incentives.

42. In terms of widening participation, the Dutch system does not use its core teaching funds, but uses policies around flexible learning paths and shorter nominal study paths to encourage this. There are, like in the UK, extra funding pots for particular needs, in this case for encouraging migrant populations in certain areas of the country. The Netherlands has been successful in attracting more ethnic minorities into Higher Education although there remains a problem with retention rates.

43. Other changes that have affected the financial position of Higher Education institutions include the growth of the sector and also redundancy policies that were introduced into the system in the 1990s to be the responsibility of the Higher Education institutions. Since the 1990s Higher Education institutions have been allowed to introduce their employment terms and conditions (rather than that of the civil service), which has made them more flexible as employers.

Future funding

44. In 2011 the system of Universities of Applied Sciences will be harmonised with the new University (education) system. The education part will be calculated based on (1) number of students (60%); (2) number of obtained degrees (20%) and (3) a fixed amount (20%). This is still under discussion. The fixed amount is based on the education facilities that are offered by the organisation and is distributed by fixed percentages per organisation. The distribution of the research part, (design and development among Universities of Applied Sciences) and support of medical education and research will also be divided on student numbers and degrees granted.

45. There will be a shift towards agreements and more incentives with a focus on the performance of HEIs. The government is investigating whether, next to formula funding (lump sum), a second flow of money (aimed at specific/selective stimulation of HEIs) could be a good additional instrument.

46. There was, for many years, an ongoing debate into voucher-based funding, introducing demand-driven education in the Netherlands. This is not being introduced.

Performance funding in the model of the Flemish region of Belgium (Flanders)

47. Flanders has a small Higher Education system (due to the size of the country). However, there are some interesting mechanisms in place in terms of performance funding that are worth highlighting. Again it is a binary system of Universities and University colleges. The Department of Education and Training policy division is responsible for policy development, regulations and policy evaluation. There is an executive agency for Higher Education and adult education responsible for the payment of the salaries of the teachers and the professors.

48. From January 2008, a new funding model came into operation covering the whole of the Higher Education system. There is a formula-based block grant for teaching and research as well as performance agreements to achieve a higher level of participation of specific student groups.

49. The components of the funding formula are:

- A fixed amount of funding, about 8%-15% depending on the size and the profile of the institutions, taking into account economies of scale.
- A variable amount for teaching.
- A variable amount for research (only in Universities).
- Different weights for different disciplines.
- Temporary premiums for closing down study programmes and merging programmes between institutions.
- Premiums for: students from under-represented groups; disabled students; working students; provided the institution also has special provision.

50. Apart from the lump sum, the funding model will have multi-annual agreements between the government and each Higher Education institution, stipulating agreements of objectives and targets as well as the commitment to deliver them and the amount of funding involved.

51. The performance agreements cover an increase in participation of specific groups and an incentive for institutions to support student achievement and progression and to improve academic success (in terms of completing credits and gaining a qualification), especially the achievement and success of students from more vulnerable backgrounds.

52. Some of the aims of the funding model are to widen participation, enable flexible learning paths and improve efficiency by pooling capacity and expertise. One of the crucial issues for Flanders was to find the right balance between input-based funding and output-based funding.

Evidence of effects

It is too early to see any evidence of effects from the new funding model. However, at the same time, Flanders has seen a huge increase in enrolments in the last decade. Literature suggests this is due to the Flemish tradition of having open access policies. It may also be that relatively high unemployment rates and relatively high levels of HE expenditure have contributed to these high enrolment rates.

For further reading

The Dutch Strategic Agenda for Higher Education, research and science policy. November 2007
Bakker, Mervin (2007) Same goals, different strategies. Funding Higher Education in England and the Netherlands: Perspectives: Policy and practice in Higher Education, 11:2,33-39
Jongbloed B (2005) Higher Education Funding in the Netherlands: Recent Developments IAU Horizons – World Education News
Jongbloed B (2008) Funding Higher Education: A view from Europe : Prepared for a seminar Brasilia October 2008
Streul, F, S Reisinger and M Kalatchan (2007), Funding Systems and their Effects on Higher Education Systems, OECD Education Working Papers No 6, OECD Publishing

Case Study 5 Higher Education funding for teaching in Spain (regions)

Introduction

1. The Spanish Higher Education system is run through the autonomous regions of Spain. This regional system has resulted in the country having 18 different funding models. What these funding models have in common is that they are highly democratic. The consequence of this is that regional governments are using the funding system as the main tool for steering Higher Education (jointly with quality assurance that also has a regional dimension). This is, however, why both quality assurance and funding models have reached a good level of development in Spain and as such are interesting to showcase. Spain has also undergone significant changes under the recent Bologna Process and has harmonised its degree structures through the introduction of the three cycles and the European Credit Transfer System.

2. In 1985, the total funding for Higher Education stood at 0.54% of GDP and in 2000 reached 1.2 percent of GDP, falling back to its current value of 1.1% of GDP[21].

3. The case study on the Spanish funding system looks in depth at one of the 18 funding systems in Spain and reviews another couple of interesting examples. It has been chosen to illustrate:

- A publicly-funded system.
- A credit-based system.
- A system steered by performance indicators.

4. The Spanish Higher Education system experienced rapid growth in the last three decades and has transformed into a mass Higher Education system enrolling a high proportion of secondary school graduates. Very recently, the system has entered a period of enrolment stability due to the nation's overall population decrease. During this period of growth, a complete legal and structural revolution deeply transformed the entire Higher Education system. In funding, the regions were originally given budgets through negotiated annual increases; this was followed by the introduction of pluri annual models (lasting over several years) and then successively all the regions have essentially adapted this approach to the present day. This case study gives an overview of the Spanish Higher Education landscape and policy drivers before looking at the funding models of Madrid, Valencia and Andalusia.

Overview of the Higher Education landscape

5. Higher Education in Spain consists almost exclusively of Universities. Currently, there are 74 Universities, 50 public and 24 private. They are distributed throughout the country, but the biggest and most important cities have the highest number of Universities, those being Madrid, Barcelona and Valencia. They are under the jurisdiction of the autonomous regions of Spain.

[21] While this represents an important increase in resources made available to the Universities, an important part was dedicated to funding new infrastructure for covering the shortage of buildings and equipment

6. There are around 1.5 million students enrolled, 10%in private institutions. The proportion of students enrolled in long-cycle courses (including those enrolled in second cycle programmes, that is, Master's degree studies) has decreased in the last few years, from 63.2% in the 1996-1997 academic year to 56% in the 2006-2007 academic year. During the same period, the proportion of students enrolled in short-cycle courses increased by 4.3%.

7. The total number of students enrolled in Universities dropped 6.4% between 1996-1997 and 2006-2007. The humanities and the experimental sciences suffered the largest drops (14.9% and 28%, respectively) (Ministry of Science and Innovation, 2007). The overall participation levels in tertiary education are around the OECD average. In 2006, 43% of a single-age cohort could expect to enter a tertiary-type A programme in Spain at some point in their lives, below the OECD average of 56%.

8. There have been a number of changes as a result of the Bologna Process. 2005-2006 marked the introduction of the first Master's degrees and doctoral programmes that were fully adapted to the European Higher Education Area – EHEA (the introduction of ECTS, learning outcomes, qualifications framework). Spain uses the ECTS credit system, which is implemented in law with the total number of credits for a degree being between 180 and 240. The government sets out the conditions for degree equivalence across Spanish Universities, establishes how foreign Higher Education degrees or titles should be validated, determines how professional experience is to be recognised academically and regulates the validation process between the University and non-University sectors of Spanish tertiary education.

9. Formally, all Universities have a similar structure and scope as a consequence of traditional rigid State regulation. In principle, all may deliver programmes of any level and are engaged in research activities, though in practice there are many differences among institutions, especially in the case of private Universities, which are less research orientated.

10. The first Bachelor's degree fully adapted to the EHEA only began in 2008-2009, with 163 new degrees (titulaciones oficiales). These are distributed in five branches of teaching: humanities, experimental sciences, technology (engineering), health sciences, social sciences and law. However, not all the autonomous communities and Universities offer the same official degrees. The total offer of undergraduate official degrees in Spain, by branch of teaching, is as follows: 1,101 in the social sciences and law, 789 in technology (engineering), 355 in the humanities, 241 in the experimental sciences and 215 in the health sciences (Ministry of Science and Innovation, 2007).

11. Under current conditions, an individual in Spain can expect, on average, to spend three years in tertiary education, slightly below the OECD country mean of 3.1 years.

12. The Higher Education system has become a mass and open system enrolling a high proportion of secondary school graduates. Although recently, the system has entered a period of enrolment stability due to a substantial birth rate decrease. After finishing academic secondary education, students have to pass an entrance exam if they wish to enter University programmes. The main goal of this entrance exam is to control standards of educational achievement in the

secondary schools, public and private. About 85% of students pass this exam in the first round in June of each year and an additional 65% in the September round.

13. Students who pass the exam receive a total score (selectivity score), which is the mean score obtained in the entrance exam and the average score obtained in the last two years of secondary education. The selectivity score is used to assign students to programmes depending on their preferences and the availability of places. The Council of Universities agrees annually on the number of students to be accepted at each University based on the available resources and on the expected demand. Also, each University, based on proposals from faculties, establishes the number of students to be accepted each year and a minimum selectivity score for each programme. Some programmes that are in lower demand have neither minimum scores nor a limited number of places. Both figures, the number of students and minimum score, are the result of a complex agreement between the faculties, the demand for each programme and the general policy of the University in accordance with the previous agreement of the Council of Universities.

14. Students apply for several programmes in different Universities and rank a long list of programmes according to their preferences. Each programme selects the students with the highest scores among those who have ranked that programme as their first choice. If the places offered by the programme are not filled, students who demanded the programme as a second choice are selected, and so on. Eventually, almost everybody is matched to some programme in a University.

Policy drivers for Higher Education

15. The HE system was totally regulated by the State until 1983. In 1983, the University Reform Act (LRU) was passed, resulting in a profound transformation in the Spanish Higher Education system. The LRU main changes were:

- Universities became autonomous entities.
- Responsibility for Universities was transferred to regional governments.
- Institutions began to receive public appropriations from regional governments as a lump sum and to have wide-ranging capabilities in allocating funds internally.

16. Another consequence of the LRU was the democratisation of the internal structure of Universities. The power over crucial decisions was transferred to collegiate bodies, where non-academic staff and students were present in a considerable number (roughly, one-third of the members). The University senate had considerable power, including the election of the rector (vice-chancellor). Boards with large numbers of members made the decisions on faculties and departments and elected deans and heads of departments.

17. Although the regional governments have responsibility for their Universities in financial and organisational matters, the tradition of national diplomas and civil servant staff has remained and the central government still has the capacity to establish general rules for curricula and staff salaries or duties (across all public Universities) and bears the responsibility of accrediting the study programmes.

18. Spanish Universities now face a new operating environment, involving:

a. a new legal framework, which was drawn up by the central government towards the end of 2001 (Ley de Ordenación Universitaria, hereafter referred to as LOU);

b. the agreement among all European governments for transforming the structure of Higher Education in European countries (the Bologna Declaration); and

c. the decreasing number of students as a consequence of the dramatic decline in the nation's birth rate.

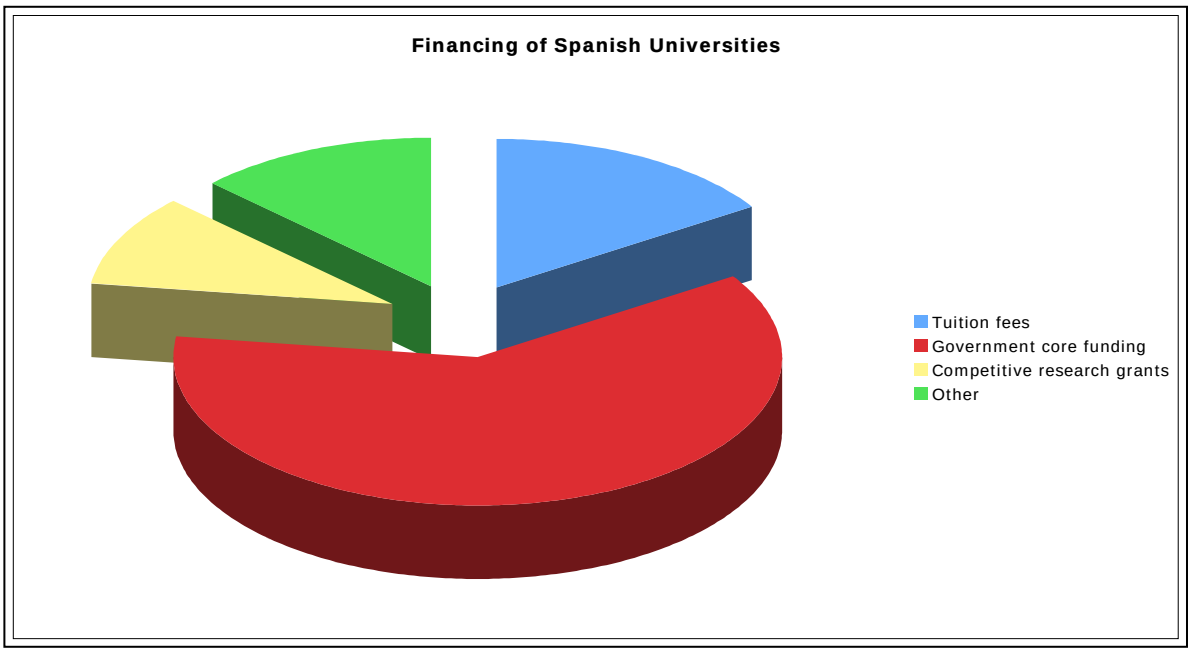
The funding method

19. Before the LRU, expenditure in public Universities was merely an item in the central government budget. Under the current financial model, regional governments grant funds to Universities as a lump sum. Universities are free to allocate these funds internally. However, Universities control neither the main expenditure item (salaries, which are mostly determined by the central government) nor the main sources of income (public allocations and tuition fees, which are established by regional governments).

Funding allocations

20. All regional models have basically two parts: the core funding and additional funding. The core funding models vary by regions, but they are based on the number of students and the estimated costs of teaching although there are slight differences by region. The second part (additional funding) varies from region to region and in some models there are interesting approaches that deserve to be considered. Some models, mostly in smaller regions with one or two Universities, are rather simplistic and are generally based on historical reasons, number of students and on yearly negotiations between University leaders and regional authorities. Other models (in regions with several Universities like Catalonia, Andalusia, the region of Madrid, Castile and Leon, the region of Valencia) have funding models that are rather sophisticated. They are formula based and performance indicators are normally included in the models.

21. Regional appropriations to Universities fund both teaching and basic research activities. Nevertheless, the main source for funding research comes from national and European funds and they are obtained in a competitive way. The difference between Universities in getting competitive funds is substantial due to different research traditions and the ability of the academic staff in obtaining these competitive funds.



22. In the next section we present in detail the model of the region of Madrid because it is the newest model developed for a region and to some extent an improvement of other regional models. Additionally, we present an example of a performance funding model from other regions (Valencia and Andalusia).

The Madrid funding method

23. The regional model of Madrid was developed in 2007 and it is planned to run up to 2013. It was established after an agreement between the regional government and the six public Universities in Madrid, which count among them some of the most influential and prestigious Universities in Spain.

The Madrid model states that:

"The main purpose of the model is:

- To establish a system for distributing funds based on objective, transparent and equitable criteria.
- To regulate the distribution of funds through variables related to capacity, activity and quality improvement objectives of the Universities.
- To define, develop, implement and operate an information system that allows monitoring of all variables considered."

24. The third point, common to many regions, is a way of making public Universities share basic data on performance. With the same purpose, the Catalan government, for example, has created a sophisticated information system on-line where all the public Universities have to introduce the data used for the funding formula and these data are visible in real time for the rest

of the Universities. This is an example of how a funding system, with the agreement of the Universities, could be used for monitoring and benchmarking basic performance of public Universities. The Madrid model, as in most cases, is applied to fund current costs. Buildings and big investments in facilities are funded under specific investment plans.

25. The Madrid model is composed of three blocks:
Core funding: To finance core activities (teaching and research) with 85% of total funds, distributed as follows:

- 70% for core teaching activities.
- 30% for core research activities.

Funding for objectives: Intended to encourage improvements in the areas considered strategic, with an amount of 10% of total funds.
Funds for unique needs: Commitments to fund specific and unavoidable elements not included in the goals for core funding and goals, with an amount of 5% of total funds.

26. The third element is set out for the transition phase in the early implementation of the model. The previous regional model was based on historical trends and led to a number of inequalities that the new model set out to reduce. However, any change leads to potential winners and losers and so in effect this is a “tolerance fund” set up as a way of managing this transition period.

27. Funds are distributed in proportion to the share of the “teaching activity” (TA) of each University in respect of the teaching activity of the public system as a whole. The teaching activity for each University is based on both the teaching costs and the number of full-time students’ equivalent (FTE).

28. The number of full-time students’ equivalent (FTE) is a standard amount of 65 enrolled credits. The total number of students for financial matters is just the total number of enrolled credits divided by 65. In other regions, 60 is the standard and since a Bachelor’s programme is 240 credits the last criterion is more reasonable. Nevertheless, as the Madrid model is a distribution model of the available funds, the number of credits used for defining a full-time student is not so relevant.

29. The teaching costs of each University is its capacity to teach measured by a standard cost model valid for all Universities, based on academic and non-academic staff costs, standard current expenditures and maintenance of teaching infrastructures. The average teaching cost per FTE has four components: academic staff costs, non-academic costs, other current expenditure costs and cost of maintenance of infrastructure and equipment for teaching. These costs are normative and are the same for all Universities, depending only on the level of “experimentalism” of the discipline.

30. In principle, these average costs are normative. That is, it should be estimated by the regional government based on the need of teachers, other personnel and equipment needed for developing teaching activities under pre-established standards of quality. There is also a proper calculation of standard costs and the model of Madrid started with costs based on the average of the actual costs of the six Universities. In other regions with older models, standard costs are

calculated based on estimations of the "theoretical" needs for delivering courses at a certain level of quality (considering aspects such as student-teacher ratio, teacher-other personnel ratio, size of course, academic level of teachers, proportion of elective courses in a study programme, available square metres per student and so on).

31. In the Madrid model, standard costs are the same for different levels of programmes. In other regions, Bachelor's and Master's programmes have different standard costs because the quality requirements are different and more demanding for Master's programmes.

32. With regard to "experimentalism", seven levels are used (from studies such as medicine to less demanding programmes such as humanities). The levels and their multiplying factors for costs are the following:

Level "experimentalism"	1	2	3	4	5	6	7
E_k (cost ratio)	1.56	1.51	1.47	1.30	1.17	1.09	1.00

33. Therefore, the teaching activity cost in University is equal to the result of multiplying the teaching standard cost by the number of FTE in each level, taking into consideration the cost ratio for each type of student.

Other parts of the funding formula

34. The other main part of the funding model is "funding by objectives". These funds are designed to stimulate improvements in strategic areas. The total amount for the whole system is 10% of the total public funds budgeted each year. The distribution of these funds is done in proportion to the value given of the performance objectives of each University in relation to the average score attained by the public University system as a whole.

35. The Madrid model established the following strategic goals:

- Goal 1: Improvement of the educational offer (indicators based on the match between actual demand and offer of study programmes).
- Goal 2: Improvement in the performance of the teaching activities (indicators based on delays and dropouts).
- Goal 3: Matching labour market needs (indicator based on employment of graduates).
- Goal 4: Educational renewal and use of new technologies (indicators based on numbers of work placements and expenditure on new technologies).
- Goal 5: Improvement in the staff academic qualification (indicator based on proportion of staff with PhDs and full-time personnel).
- Goal 6: Lifelong learning activities (indicator based on resources from LLL courses).
- Goal 7: Improvement in the quality of services (indicator based on a satisfaction survey).
- Goal 8: Research outcomes (indicators based on number of "sexenios[22]", research funds and number of doctoral theses).

[22] These are awards given to professors for research performance

36. The performance for each goal is calculated as a weighted average of the set of several indicators considered for each goal. The performance for each University is calculated as a weighted average of the percentages of performance for each of the strategic goals. The performance of the whole system is calculated in a similar way. The 10% of the regional budget for Universities is allocated to each University depending of the share of each University in the total performance in the whole system.

Evidence of effects of the method

37. The first year of implementation of the model was 2007 and as such it is too new to comment further on the effectiveness or advantages and disadvantages. The results are interesting because it highlighted the original imbalances in the historical funding model. Many of the more active Universities were underfunded in comparison with the more traditional institutions. For example, the Universidad Complutense, the biggest and oldest University in Madrid, was an institution whose research and teaching activity was far below average. At the other extreme is the case of Universidad Carlos III, a newer and smaller University, with both teaching and research activity far above the average. The new funding system is helping to balance this situation after the transitional period where the implementation is done in a staged way.

	Teaching	Research	Objectives
Universidad de Alcalá	109,72%	112,82%	98,91%
Universidad Autónoma de Madrid	96,04%	133,76%	101,25%
Universidad Carlos III de Madrid	109,14%	155,67%	99,45%
Universidad Complutense de Madrid	89,17%	82,88%	112,27%
Universidad Politécnica de Madrid	106,00%	86,94%	103,76%
Universidad Rey Juan Carlos	122,46%	76,65%	98,02%

Performance funding in the model of the region of Valencia

38. The region of Valencia with five million inhabitants has five public Universities funded by the regional government. In 1994, the plan for funding the Valencian University system was put into practice. This was a pioneering system at the time. It broke with the traditional systems used to finance Spanish Universities and had wide-ranging effects on funding. The funding programme was developed in two stages: 1994-1998 and 1999-2009.

39. The model has two main components: core funding and performance funding. This overview refers to the 1999-2009 model, which is still in practice.

40. One of the second model's most innovative contributions was the introduction of goal-orientated funding using a series of indicators. The general aim of this funding was to introduce improvements in the internal management of Universities, so that quality standards improved over and above the standards required for obtaining basic funding. The maximum amount of funding available via this procedure was 10% of total current funding.

41. The model featured 15 strategic objectives. Six of these were teaching-related, three were research, one was related to LLL, one to employment, one to innovation, one to management and two to culture. These objectives were measured using 31 indicators.

42. One important feature of this goal-orientated funding is that it is in fact a funding à la carte because each University negotiates with regional government which 15 indicators (out of 31) it is going to take. As the funding is related to the annual improvement in the agreed indicators, Universities select those where the institution is weaker because in these cases there is more room for improvement. In this way, the performance model is not financing "excellence" but "improvement".

Evidence of effects of the method

43. There is clear evidence of improvements at institutional and system level, especially in those areas more problematic such as dropouts or delays in the duration of the studies where Valencian Universities are performing better than the Spanish average. Research outcomes are another area where improvements are remarkable, and Valencian Universities are also above the average and in some cases in outstanding positions. In a recent world ranking measuring the impact of academic publications the five Valencian public Universities are among the first 13 in the country (in a total of 74).

Performance funding in the model of the region of Andalusia

44. Another interesting case of funding based on objectives is the region of Andalusia in Southern Spain, with nine public Universities and eight million inhabitants. The last funding plan (2007-2001) fixed criteria for funding Universities with this distribution of the funds:

For teaching and learning activities:	60%
For research and innovation activities:	30%
For innovative reforms:	10%

45. The funding plan also set up the following strategic objectives:

- To support educational innovation.
- To increase the employability of graduates.
- To develop entrepreneurialism in students and academic staff.
- To incorporate ICT to all areas of academic life.

- To improve internationalisation.
- To increase the participation of women in all aspects of academic life.
- To increase research performance.

46. For supporting these objectives, funds in each block (teaching, research and reforms) are distributed based on outcomes under the following criteria:

- Teaching and learning outcomes (10% of the total funds for teaching activities, which means 6% of the total funding).
- Educational innovation (measured by the percentage of students enrolled in courses that have implemented a programme of innovation and introduction of ICT): 2.5% of the funds for teaching.
- Staff quality (based on staff qualification and student satisfaction surveys): 2% of the funds for teaching.
- Efficiency (based on the average duration of studies and employability of graduates): 2% of the funds for teaching.
- Bilingualism (based on percentage of students with a high score in TOEFL and percentage of students in mobility programmes in any foreign language): 1.5% of the funds for teaching.
- Quality of postgraduate programmes (based on percentage of students enrolled in Master's programmes with a quality label): 2% of the funds for teaching.
- Research outcomes (10% of the total funds for research activities, which means 3% of the total funding).
- Researchers' individual performance (based on publications, research grants, contracts, doctoral theses): 2.5% of the funds for research.
- Researcher group performance (based on an assessment of the research groups): 2.5% of the funds for research.
- Research fund raising (based on research grants and contracts): 3% of the funds for research.
- Technology transfer (based on spin offs and researchers working in companies): 2.5% of the funds for research.
- Gender (based on percentage of women as leaders of research projects): 0.5% of the funds for research.
- Innovative reform outcomes (100% of this block is based on outcomes, which means 10% of the total funding).
- Level of implementation of ICT in University services: 3% of the total funding.
- Level of implementation of management based on processes and competences: 3.25% of the total funding.
- Level of internationalisation of the University (based on international students, international projects and staff mobility): 2% of the total funding.
- University-Business partnerships (based on graduates establishing enterprises after graduation, cooperation of staff with business): 1.5% of the total funding.
- Gender (based on percentage of women as managers): 0.25% of the total funds.

47. In summary, 19% of the funding in the region is based on outcomes, the biggest proportion among the Spanish models and probably one of the highest in Europe for public funding. Such a

detailed model with so many performance indicators represents a real plan of the regional government for steering Universities without interfering directly in the institutions. The model is rather new and the effect cannot be assessed yet, but it will be very interesting in the near future to analyse the effects.

Case Study 6 Higher Education funding for teaching in Sweden

Introduction

1. A case study of the Swedish HE funding model is ultimately describing a system characterised by financial dependency on the state, with few other sources of income, but with extensive autonomy awarded to HEIs in the decision-making process. Representative of the system are the financial freedom held by HEIs, a high degree of competition for students between institutions and – simultaneously – the authority government agencies exercise when guarding the quality of education. Although the system is sometimes criticised, it appears stable and value for money.

2. It is a well-regarded system of Higher Education: four out of 14 Swedish Universities are in the top 200 world Universities according to the Times Higher Education World University Ranking 2008: Uppsala University in 63rd place, Lund University in 88th place, Chalmers University of Technology in 162nd place and the Royal Institute of Technology (KTH) in 173rd place.

3. OECD at a Glance 2008 indicates that Sweden spent 1.6% of GDP on tertiary education in 2005. Of that total, 1.4% came from the public purse, leaving contributions from private sources minimal at 0.2%.

4. Sweden was chosen as a case study to illustrate examples of:

- A publicly-funded system.
- A credit-based system.
- Methods of dealing with contestable public funding.
- Equity and widening participation.

5. Sweden has seen two sets of HE system reforms in the last three decades: in 1977, the system was transformed from a binary system to a unitary one, comprising academic, vocational and professional programmes of varied lengths. A 1993 reform mainly wanted to strengthen the independence of HEIs in relationship to the parliament and government, encourage diversification and an increase in quality within HEIs, as well as to better accommodate student demands.

Overview of the Higher Education landscape

6. The Higher Education system in Sweden consists of 14 Universities and 22 University colleges (högskolor). There are also three private institutions: Chalmers University of Technology, Jönköping University and the Stockholm School of Economics. The HE institutions are independent authorities, answerable directly to the government. In addition, there are also a number of independent education providers (enskilda utbildningsanordare) that have signed agreements with the Swedish government. Mainly, institutions provide a broad selection of freestanding courses, but a smaller number of the independent education providers have government permission for only one or a few HE degrees.

7. A University is distinguished from a University college as it may award research degrees. Having said that, a University college may also have a licence to award research degrees in one agreed area of study. Since 1997, Sweden has created three new University colleges, four University colleges have been granted the status of University and a number of regional colleges have been incorporated into the national HEI system.

8. In the autumn of 2007, 322,000 students were enrolled at Swedish HEIs (as well as 17,300 doctoral students). Figures from the Swedish National Agency for Higher Education indicated that out of the total of 322,000 registered students (first and second cycle), 278,000 were full time.

9. Sweden has implemented changes to its HEI system brought on by the Bologna study structure (in 2007). These changes included the introduction of a diploma supplement (attached to a diploma) and a new educational and degree three-cycle system. Students can also pursue three-year professional degrees. First and second cycle Higher Education is provided in the form of courses. These may be grouped into programmes where individual student choice will vary. Higher Education students may also combine different courses to tailor-make a degree. A course syllabus is required for each course and a curriculum for each programme. In addition, each course must specify educational levels and intended learning outcomes.

10. Student workload is measured in ECTS (European Credit Transfer System) and there is a credit system in place. A full-time student is expected to generate 60 HE points (högskolepoäng), where 1.5 points is the equivalent of 40 hours (for 40 weeks per year) of studies.

11. According to the National Agency for Higher Education, a Bachelor's degree should take three years to complete, with a Master's degree having a duration of one or two years. A PhD is said to take four years to complete. The OECD calculates that the average expected time a student is enrolled in Higher Education in Sweden is 3.7 years. However, when looking exclusively at female students, this increases to 4.5 years. Female students are in the majority in Sweden – roughly 63% of the student population.

12. The Swedish system is designed to encourage access and to avoid dead-ends in education; it should be possible to start in Higher Education from all other forms of education. The Higher Education Act specifically highlights that all HEIs are to actively encourage and broaden recruitment to Higher Education. Having said that, with little history of elitism in Higher Education, widening participation has not generally been a specifically prominent policy, compared to, for example, the implementation of e-learning, which has been more widespread.

13. The Higher Education system has two groups of eligibility: (1) general/basic and (2) additional specific requirements. General/basic eligibility is required for all Higher Education courses. Many courses also involve the second group of requirements. General eligibility, which is the same for all first level Higher Education, is attained either by a) completing an upper secondary programme (obtaining a pass grade or better in courses comprising at least 90% of the credits required for the programme) (b) people who "are at least 25 years old, who have been employed for four years and have a command of English and Swedish corresponding to that obtained by completing a national upper secondary programme". Specific requirements are

expressed in terms of upper secondary school qualifications in specific subjects, and vary according to the specific Higher Education field. Restricted admission is used for all study programmes and courses.

14. Another route is the Swedish Scholastic Aptitude Test (Högskoleprovet) administered by the Swedish National Agency for Higher Education. This is a standardised test used to increase candidates' chances to be admitted to Higher Education in Sweden. The test is administered twice a year every year. Annually, around 75,000 potential students register for the test. The results are used to select candidates. At least one third of student places are filled using Högskoleprovet.

15. Should Higher Education candidate students fall short on all of the above requirements, there are two other main ways of complementing their eligibility:

> 1) Individuals over the age of 19, who wish to study at an HEI in Sweden and who have completed a three-year secondary education, can turn to the municipal adult education authority (Komvux) to complement any lacking qualifications or subjects they would need to apply for their preferred HEI course. Komvux studies, following International Standard Classification of Education (ISCED) standards, are equivalent to regular secondary education, but the curricula have been adjusted to accommodate adult learners. Courses are free of charge for students, although they have to pay for course materials and in some cases for sitting exams. Students can also retake a subject they need a higher mark for; however, this type of learning must be done independently without direct tutoring.
>
> 2) Swedish NGOs, county councils and regions also provide access to Higher Education – as well as lifelong learning – through the Folk High School (Folkhögskolan). There are 148 Folk High Schools in Sweden, the first having been established in 1868. They are separate from the education system, but individuals who have passed relevant studies at a Folk High School are deemed to have basic eligibility for Higher Education. The length of the studies required depends on the extent of the student's previous studies and work experience.

16. Diplomas from all official HEIs are of equal value, based on the principle that students with adequate qualifications from any part of the Higher Education system should be able to move on to doctoral studies. All degrees are regarded as final qualifications, but with the possibility to continue studying. There are generally no intermediate qualifications.

Policy drivers for Higher Education

17. Higher Education institutions (HEIs) are governed by the Higher Education Act, which regulates the relationship between the state and HEIs, while simultaneously ensuring their independence to conduct research. State agencies have responsibility for aspects of Higher Education that in other countries rest with central government ministries. The ministries will generally determine policy, while major reviews and analyses would be executed by agencies – mainly the Swedish National Agency for Higher Education – under the authority of the Ministry of Education and Research (with the Ministry of Agriculture being the main authority for the Swedish University of Agricultural Sciences).

18. Today, the main policy drivers revolve around quality and excellence in HEIs, as well as increased competition. Internationalisation is also high on the agenda. Historically, Higher Education policies have always encouraged issues of equal access for all and it has not been necessary to focus on this as an issue, although the massification of Higher Education has been a policy focus. There is also a growing emphasis on what is known as “the third mission” – an obligation to interact with the wider community. Higher Education is generally ascribed a significant role in the development of Swedish society in a range of respects, by local, regional and national authorities as well as by local business communities. Notably, no funding allocated to HEIs is earmarked for this regional role. Finance with regional objectives is sought from public authorities and foundations. These points are expanded on below.

19. Massification: An articulated goal under the social democratic Göran Persson government (1994-2006) was that 50% of school leavers under the age of 25 would continue into Higher Education every year. In order to achieve this, funding to create close to 16,000 new full-time student places was made available. This policy partly reversed in 2007 – with exceptions made in the areas of medicine and dentistry – when a conservative coalition under Fredrik Reinfeldt won the national election. Instead, direct state funding per student was increased, while at the same time the maximum cap funding reduced, effectively spending more money per individual student, but on fewer students.

20. Quality and excellence: There are goals of developing more Nobel Prize-quality Swedish scientists and of increased competition between Higher Education institutions. Also since 2007, Swedish Higher Education institutions have been invited by the University Chancellor to nominate departments, study programmes or other to become a Centre of Excellence in Higher Education. When selecting a department, study programme, or organisational unit for the award of Centre of Excellence in Higher Education, Högskoleverket (Swedish National Agency for Higher Education) uses quality aspects, rather than fixed criteria, in the assessment process. These quality aspects are presented as statements about what constitutes excellence in education. By using quality aspects rather than fixed criteria, the award is able to: include non-traditional and innovative units; avoid becoming too normative; allow the department, study programme, or organisational unit to define its own factors of success.

21. Internationalisation: The emphasis on the internationalisation of Higher Education is in line with other European countries – Denmark and the Netherlands for example. In particular, Swedish policy indicates the country wants to see an even greater intake of students from outside of the EU, EEA and Switzerland. To accommodate internationalisation in general, English-taught courses have become more common at Swedish HEIs and this is growing. Internationalisation implies striving for high quality in both Higher Education and research to increase competitiveness. A government proposition published in April 2009 suggested that free, strong and internationally competitive institutions should be achieved by, among other things:

- Increased student mobility: a SEK10 million stipend programme for student exchanges between Swedish students with students outside Europe (2010-2011).
- Increased teacher mobility: a SEK20 million pot (2010-2012) made available to HEIs promoting teacher mobility.

- Implementing a three-cycle system that is internationally compatible
- Marketing and informing the international community of Swedish HE (SEK4 million for 2009-2010).
- Student and application fees for candidates outside the EU/EEA and Switzerland.

The Swedish Ministry of Education and Research has also initiated a Forum for Internationalisation (2008). It aims to improve coordination between authorities and organisations that support and work for the internationalisation of Universities and University colleges.

22. The third mission: Government directives to HEIs with regard to labour market needs are channelled through a general requirement to collaborate with the surrounding community and to take into account both student and labour market demand in planning programmes. There are also more detailed requirements in terms of target numbers for some of the professional degrees. Outside the regular Higher Education sector, HEIs may also enter into contract education with a third party, for example an employer. The contract gives the institution the right to award marks and course certificates within specialised areas, which may count as equal to an equivalent course within the HE system. Contract courses are subject to the same quality controls as regular Higher Education courses and degrees.

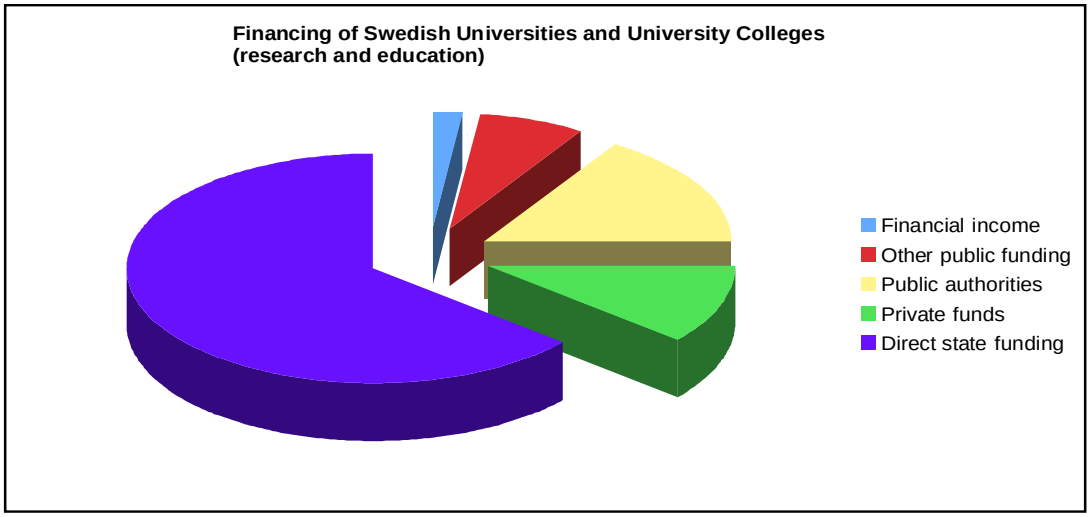
23. Perhaps only indirectly relevant to this case study, it is worth noting that state-funded research generally takes place within HEIs in Sweden. However, when comparing the Swedish HEI funding system with the Swedish public spending on research system, Higher Education funding is more equally spread out between the relevant institutions. In research funding, eight HEIs receive 90% of public funds, allocated on a competitive basis. HEIs, on the other hand, receive an equal amount of money for their students, although they have to compete with each other for students.

The funding method

24. This section sets out the funding models for teaching in Sweden that are derived from government funds. Sweden does not charge a tuition fee for students, although as the above-mentioned government proposal suggests, a charge for students enrolling at Swedish Universities from outside the European Economic Area might be implemented in the future. As most publicly-funded research is conducted within the HEI system in Sweden, there is often a blurred line between funds allocated for research and funds allocated for Higher Education and teaching. For example, public foundations may award research funding to HEIs that end up indirectly benefiting teaching as well as research.

Funding allocation and calculations in the Universities

25. Swedish HEIs are mainly financed by public funds. Figures from 2007 show that 86% of Higher Education was financed by public money, out of which 64% was direct government funding (SEK32.1 billion). The public purse also financed Higher Education through a number of public authorities (SEK8 billion). Higher Education also receives funding from regional and local authorities, state-owned foundations and public bodies like the EU institutions. These sources allocated SEK3.5 billion to Swedish Higher Education in 2007. For research and doctoral degree levels, less than half of the funding originates directly from the State allocation system.



26. As private funds are mainly allocated to research and doctoral level degrees, public funding tends to favour new Universities and state University colleges, as these are generally more focused on teaching as opposed to research. Teaching in Higher Education also indirectly gains from funding provided for research as it includes investments into the general infrastructure.

27. The budget is decided by the parliament, after a government proposal. The direct government funding is allocated to Swedish HEIs based on (1) the number of full-time students and (2) annual student performance. A full-time student is expected to generate 60 Higher Education points (högskolepoäng). The annual student performance is the performance-based measurement used for the allocation of public funding to compensate HEIs for students who have completed their expected number of credits for the year. The Ministry of Education and Research also discusses the budget allocation with all HEIs. The institution's faculties can use the allocated state funding as they see fit.

28. The size of direct government funding is dependent on the area of study. There are 15 categories in Sweden with some of the largest funding going to opera, theatre and media. The funding amount per area is an estimate, calculated by the government, of how much it will cost each HEI to educate a student in this field. There is, however, also a funding cap limiting the availability of funds for each individual institution. The funding cap is unique to each HEI, and is set by the government through the public service agreements.

Table 11 State funding per subject in 2009 (in SEK)

	Per full-time student	Annual performance equivalent
Humanities, social sciences, theology and law	20,866	18,315
Natural sciences, engineering, technology and pharmacology/pharmacy	47,926	40,417
Health Sciences /nursing	50,952	44,130
Odontology	42,135	49,083
Medicine	56,937	69,257
Education	33,260	39,171
Other	38,489	31,266
Design	135,810	82,745
Art	192,805	82,775
Music	117,166	74,082
Opera	279,220	167,033
Theatre	270,000	134,484
Media	275,535	220,715
Dance	189,891	104,926
Physical education and sports	98,952	45,791

29. All HEIs also enter into public service agreements / funding targets agreements with the government. These are agreements between the government and individual HEIs and spell out steering and priorities for the next budget year. How objectives are achieved is up to the individual HEI, not the government. However, if an institution does not reach its agreed performance or enrolment ceiling, it will not receive the full funding amount originally made available – the government may hold back some allocated funding. If an HEI exceeds their funding cap, they will not receive any further funding, but they would be allowed to save 10% of their excess performance for future years should they underperform.

30. The following are the objectives for the public service agreements:

- A minimum number of degrees to be awarded during two three-year periods.
- Preliminary goals for the number of examinations in these degrees for the next three years.
- The minimum number of annual full-time student equivalents for the fiscal year for the University or University college as a whole and as required for specific fields.
- The maximum total remuneration for annual full-time students and the annual performance achievement.
- Special assignments that may lead to specific, additional remuneration.

31. Overall, decision-making in Swedish Higher Education is largely decentralised and delegated to individual institutions, including quantitative planning of the education on offer. Longer-term students' choice and trends influence the quantitative development of most courses and programmes.

Evidence of effects of the method

32. Sweden's current funding model has been in place since 1993. The country has in the last decades seen a very large increase in student numbers: in 15 years the Higher Education system has grown from 150,000 students to 350,000 and in the last decade, there has been a significant expansion of student places outside the traditional University regions.

33. As the HEI system has grown bigger, the administrative burden has increased disproportionately vis-à-vis public funding. This is something that institutions have commented on, but as public institutions, HEIs are tied to regulations stating that as part of the public sector, they must align with industrial growth. That is, the Swedish public sector must match efficiency savings done by the national industry and are hence not allowed to increase administrative spending beyond this framework.

34. There appears to be a reasonable consensus that the credit-based system is beneficial as it enhances competition between HEIs for students, a policy the current administration appears keen to continue, both on a national as well as an international level.

35. With regard to the cap on funding, because it can be used over a three-year period, Universities can over-perform or underperform in that period and carry over financing. This gives them some degree of stability and flexibility. Overall this has meant that Higher Education Institutions tend not to lose money.

36. The funding system is evaluated by the National Agency for Higher Education in Sweden. As the agency is a public institution with real legal powers, the organisation is in a position to enforce genuine improvements to HEIs that slip in terms of quality. Quality assurance work is performed on a course/programme level – seemingly making overall evaluations of the system sparse. Evaluations are conducted using criteria and goals developed within the Bologna process framework.

37. The main indicators are:

- Teacher competency: including number and proportion of teachers available and their opportunities for competency development.
- Educational environment: including critical and creative aspect
- Infrastructure.
- Curricula and steering documents: including alignment of curricula in relation to the system of qualifications, as well as teaching, course literature, examination and course results.
- Securing course objectives.

38. The current quality assurance system was first used in evaluations stretching between 1995 and 2002. In the longer term, the agency also takes student perception of the course (including after graduation), employment possibilities and employer perception of the programme and graduate knowledge into consideration. A possible new system of quality assurance is currently being investigated by the National Agency for Higher Education.

For further reading

OECD. Education at a Glance 2008
OECD / Swedish National Agency for Higher Education. Thematic Review of Tertiary Education: Country Background Report for Sweden. 2006
Swedish National Agency for Higher Education. National qualifications framework for Higher Education in Sweden. 2008.
Swedish National Agency for Higher Education. Högskolans ekonomi 1997-2007 – vad har hänt?
Swedish National Agency for Higher Education. Universitet & högskolor: Högskoleverkets årsrapport. 2009.

ANNEX B: General trends in tertiary education funding

1. This annex gives an overview of general data on financing of tertiary education in the United Kingdom and in the selected countries for this report (Australia, Belgium, Denmark, the Netherlands, Spain, Sweden and the United States). As the number of students is also very relevant for educational costs, some data on student access are presented. For this annex we have used OECD data (Education at a Glance, 2008) because that is the most comprehensive and reliable collection of data on education. OECD uses the term "tertiary education" which includes Universities, other Higher Education institutions (in countries with a binary system) and also post-secondary vocational programmes such as further education programmes in the UK. The Higher Education programmes (excluding further education) are named "type-A" programmes and only this type of programme will be presented in the second section on access.

2. Table 12 shows the level of annual expenditure on tertiary education institutions per student in 2005 in total, excluding R&D activities and in core educational services (that is excluding ancillary services). It reveals, with the exception of the United States, a certain similarity of levels of funding per student received by institutions of tertiary education across selected countries. It is interesting to observe that, if expenditure on R&D activities is excluded, the level of spending per student on tertiary institutions in the United States is more than twice the expenditure in all the selected countries. This huge difference in the financing of Universities makes the comparison between the United States and the rest of the selected countries more difficult. Australia is the country with the next highest funding per student excluding R&D, but with an expenditure on core educational services around half of the US one.

3. The position of the United Kingdom for the three indicators is above the EU19 average, below the United States and Australia and relatively similar to the rest of the selected countries.

Table 12 Annual expenditure on educational tertiary institutions per student (2005)
In equivalent USD converted using PPPs for GDP, based on full-time equivalents

	Total	**Excl. R&D**	**Ed. core services**
Australia	14,579	10,199	9,544
Belgium	11,960	8,046	7,725
Netherlands	13,883	8,719	8,717
Spain	10,089	7,182	7,182
Sweden	15,946	8,281	8,281
United Kingdom	**13,506**	**8,842**	**7,793**
United States	24,370	21,588	18,656
EU19 average	10,474	6,990	6,707

Source: Adapted from Education at a Glance, 2008

4. Tables 13, 14 and 15 present the change in the expenditure per student in tertiary education institutions in 1995, 2000 and 2005. The tables show the change in number of students, the change in total funding and the change in expenditure per student. In the three

cases the year 2000 has been taken as the base. As indicated in Table 13 in all selected countries and in the EU19 average, there was an increase in the total expenditure between 1995 and 2000 and again between 2000 and 2005. In most countries the pace of growth has been relatively steady in both periods, but this is not the case in the United Kingdom. In the UK the growth from 1995 to 2000 was small, but the growth from 2000 to 2005 was the highest among the selected countries (49% of increase).

Table 13 Change in expenditure on educational institutions for all services, tertiary education (1995, 2000, 2005) Index of change between 1995, 2000 and 2005 (GDP deflator 2000=100, constant prices)

	1995	**2000**	**2005**
Australia	91	100	122
Belgium		100	102
Denmark	91	100	116
Netherlands	94	100	111
Spain	72	100	114
Sweden	81	100	116
United Kingdom	**98**	**100**	**149**
United States	70	100	118
EU19 average	82	100	131

Source: Adapted from Education at a Glance, 2008

5. The increase in the total funding of tertiary education in the decade considered has been used variably for compensating the increase in the number of students or for increasing the expenditure per student. Table 14 shows to what extent the funding increase was due to the growth in the number of students. The number of students grew in all selected countries in both periods with the exception of Spain (Spain decreased due to a reduction in the size of the age cohorts during this period). The growth in the number of students in the UK is similar to the EU19 average, but higher than in most of the selected countries.

Table 14 Change in the number of students, tertiary education (1995, 2000, 2005)

Index of change between 1995, 2000 and 2005 (GDP deflator 2000=100, constant prices)

	1995	**2000**	**2005**
Australia	83	100	110
Belgium		100	106
Denmark	96	100	102
Netherlands	99	100	118
Spain	100	100	93
Sweden	83	100	121
United Kingdom	**89**	**100**	**118**
United States	92	100	113
EU19 average	83	100	118

Source: Adapted from Education at a Glance, 2008

6. Table 15 reflects the consequence of the changes in expenditure and in student numbers showing the change in expenditure per student from 1995 to 2005. In two countries (Belgium and the Netherlands) the expenditure per student has decreased due to both a very low increase in funding and to a high increase in the number of students. In two countries, Spain and the UK, the increase is notable but for different reasons. In the case of Spain, the decrease in the number of students explains this figure, but in the case of the UK it is the large increase in funding between 2000 and 2005 what explains the jump in the expenditure per student.

Table 15 Change in expenditure on educational institutions for all services per student, tertiary education (1995, 2000, 2005)

Index of change between 1995, 2000 and 2005 (GDP deflator 2000=100, constant prices)

	1995	**2000**	**2005**
Australia	110	100	111
Belgium		100	96
Denmark	95	100	114
Netherlands	95	100	94
Spain	72	100	123
Sweden	98	100	95
United Kingdom	**110**	**100**	**126**
United States	77	100	104
EU19 average	101	100	111

Source: Adapted from Education at a Glance, 2008

7. Table 16 presents the expenditure on tertiary education institutions as a percentage of the GDP in total and from public and private sources. The data in the first column highlights the high percentage of resources for tertiary education in the United States (2.9% of the GDP): more than double the average of expenditure in the EU19 (1.3%). The large expenditure in the US is due to

both the high number of students (with a high level of access as we will present in the next section of this chapter) and the high expenditure per student as we have observed in Table 12. Australia and the Nordic countries in Europe also have a high level of expenditure, but nowhere near the level of the US expenditure. Belgium, the Netherlands and the United Kingdom are around the EU19 average and Spain slightly below.

8. In the case of the UK it is noteworthy that, although total expenditure is similar to the EU19 average, the expenditure per student is higher (in Table 12: 13,506 in the UK and 10,474 in the EU19). This is due to a proportionally lower number of students as a consequence of shorter duration of studies in the UK than in most EU countries.

9. The second column in Table 16 shows the expenditure on tertiary education from public sources. In this case, the difference between the US and EU19 is almost insignificant. The Nordic countries and also Belgium have the highest levels of public funding. The public expenditure in the UK is below the EU19 average, but also below the US expenditure.

10. The third column in Table 16 presents the tertiary education funding from private sources. In this column the figure of the US is very high: 1.9% compared with 0.2% of the EU19 average or with the 0.4% in the UK (which has the highest percentage of private funding in the EU19). In Nordic countries with no tuition fees (but a high level of taxation on incomes) the funding from private sources is very small. Australia, with a 50-50 distribution between public and private sources is between the US and Europe.

Table 16 Expenditure on educational institutions, tertiary education, as a percentage of GDP (2005) Total, public and private sources

	Total	**Public funding**	**Private funding**
Australia	1.6	0.8	0.8
Belgium	1.3	1.2	0.1
Denmark	1.7	1.6	0.1
Netherlands	1.3	1.0	0.3
Spain	1.1	0.9	0.2
Sweden	1.6	1.4	0.2
United Kingdom	**1.3**	**0.9**	**0.4**
United States	2.9	1.0	1.9
EU19 average	1.3	1.1	0.2

Source: Adapted from Education at a Glance, 2008

11. Finally, Table 17 presents the distribution of funding on tertiary institutions from the three main sources: public, private from households (that is, tuition fees) and private from other entities (enterprises, donations and so on). The US once again has totally different proportions of funding to the other countries with a similar level across all three sources. Australia, with only half of its funding from public sources is the country most similar to the US, but with considerably lower amounts coming from other private entities. Among the European countries, the United Kingdom and Spain have the highest levels of funding from households. Sweden, the Netherlands and the UK have, among European countries, the highest levels of funding from other private sources.

Table 17 Proportions of public and private expenditure on tertiary education institutions (2005) Distribution of public sources (Public), household expenditure, (Hous.) and expenditure of other private entities (Other)

	Public	**Hous.**	**Other**
Australia	47.8	36.3	15.9
Belgium	90.6	5.0	4.4
Denmark	96.7	• 3.3	• 0.0
• Netherlands	• 77.6	• 12.0	• 10.4
• Spain	• 77.9	• 18.7	• 3.4
• Sweden	• 88.2	• 0.0	• 11.8
• **United Kingdom**	• **66.9**	• **24.6**	• **8.4**
• United States	• 34.7	• 36.1	• 29.2

Source: Adapted from Education at a Glance, 2008

Access and graduation in Higher Education

12. In addition to the financial data it is also important to have an overview of the data on students' participation in Higher Education (the main variable of cost in Higher Education) and on data on completion (an indicator of the efficiency of the Higher Education system).

13. Table 18 presents the level of participation in Higher Education (or tertiary education type A, in the OECD denomination) by gender for the selected countries. Australia, Sweden and the United States lead this list. The United Kingdom is around the EU19 average and above Spain and Belgium. That means that the high increase of students in the UK over the past few years was necessary to reach levels similar to other European countries. There is a difference between male and female demand for Higher Education. In all countries selected there is a considerable gap in favour of females. In some countries like Australia the female participation is almost universal.

Table 18 Entry rates to tertiary education type A (2006) *Sum of net entry rates[23] for each year of age, by gender*

	M+F	Males	Females
Australia	84	74	94
Belgium	35	32	38
Denmark	59	47	71
Netherlands	58	54	62
Spain	43	36	51
Sweden	76	65	87
United Kingdom	**57**	**50**	**65**
United States	64	56	72
EU19 average	55	48	63

Source: Adapted from *Education at a Glance, 2008*

14. One of the key variables for assessing the whole cost of the Higher Education system in a country is the average duration of studies. We do not have this variable, but we have others that are proxies. One is presented in Table 19: Proportion of graduates from different types of first degree programmes: below five years of duration and five years or longer. The data shows that the UK has the highest proportion, among the selected countries, of graduates from short programmes (97%) with only Sweden and Australia at comparable levels. In countries like Spain the proportion of graduates of longer programmes is even higher than the proportion of shorter programmes (this was a typical situation in most continental European countries before the Bologna reforms). This factor has an important effect on the cost for "producing a graduate". In this sense the UK model is comparatively efficient and explains why with an average expenditure as proportion of the GDP the UK is able to have a high level of expenditure per student.

[23] Entry rates are expressed as net entry rates, which represent the proportion of people of a synthetic age-cohort who enter the tertiary level of education, irrespective of changes in the population sizes and of differences between OECD countries in the typical entry age. The net entry rate of a specific age is obtained by dividing the number of first-time entrants to each type of tertiary education of that age by the total population in the corresponding age group (multiplied by 100). The sum of net entry rates is calculated by adding the net entry rates for each single year of age

Table 19 Proportion of graduates by duration of programmes in tertiary education type A – first degree (2006)

	3-4 years	**5-6 years**
Australia	95	4
Denmark	63	37
Spain	45	55
Sweden	96	4
United Kingdom	**97**	**3**
United States	55	39
EU19 average	54	46

Source: Adapted from *Education at a Glance, 2008*

15. Table 20 is complementary to the previous one. It shows the completion rates of graduates from all type of tertiary education programmes. The completion rate in the UK is among the best, at 79%. This is also another indicator of the efficiency of the system and it is related to a low level of dropouts. Only Denmark (with a particular system of funding related to performance that will be presented later) has a better performance than the UK.

Table 20 Completion rates in tertiary education (2005)

Number of graduates from the programmes divided by the number of new entrants to these programmes in the typical year of entrance

Australia	72
Belgium (Fl)	76
Denmark	81
Netherlands	71
Sweden	69
United Kingdom	**79**
United States	56

Source: Adapted from *Education at a Glance, 2008*

16. Finally, Table 21 shows data on the proportion of international students in the selected countries, something that has a bearing on funding as international students tend to pay higher tuition fees. The United Kingdom has the second highest percentage of international graduates next to Australia, especially in second degree programmes (Master's programmes).

Table 21 Proportion of international and foreign graduates in total graduate output (2006). Tertiary-type A programmes

	First degree	**Second degree**
Australia	23	56
Denmark	5	7
Sweden	3	10
United Kingdom	**13**	**36**
United States	3	11

Source: Adapted *from Education at a Glance, 2008*

ANNEX C: Glossary, acronyms and abbreviations

Accreditation: Accreditation is the establishment of the status, legitimacy or appropriateness of an institution, programme or module of study.
Access: Access is the process of enabling entry to Higher Education. Access has two linked, but distinct, meanings.
1. The general concept that relates to making Higher Education accessible.
2. A shorthand for programmes that provide preparation for entry to Higher Education, such as the UK Access to HE courses.
ARCC: Performance framework for Community Colleges in California.
BAMA: Bachelor's, Master's structure. Bachelor-master's is the shorthand for a two-cycle system of Higher Education that is being introduced across the European Higher Education Area as part of the Bologna process.
Bachelor's degree: A Bachelor's degree is the first-level Higher Education award, usually requiring three or four years' study, but more in some medical subjects.
Binary system: A binary system is one that has Higher Education taught in two different types of institution, traditional (academic) Universities alongside more vocationally-oriented institutions.
Acronyms
Block grant: Block grant is a term used to refer to the core funding provided by a national government (via a funding council) to a Higher Education institution.
Bologna Process: The Bologna Process is an ongoing process of integration and harmonisation of Higher Education systems within Europe.
Community College: A Community College, in the US, is an intermediate college between compulsory education and Higher Education, although it offers some programmes that may be defined as Higher Education.
Contestable funding: A system of allocating funding based on competition between the eligible institutions.
Core funding: The money allocated (from government) to an institutions for teaching, research and related activities.
Credit: Recognition of a unit of learning, usually measured in hours of study or achievement of threshold standard or both.
Credit-based funding: A funding formula that uses academic credits for learning in order to allocate funds.
CGS: Commonwealth Grant Scheme in Australia, given to institutions.
Credit transfer: Credit transfer is the ability to transport credits (for learning) from one setting to another.
DEEWR: Department of Education, Employment and Workplace relations (Australia).
EHEA: The European Higher Education Area**.**
ELICOS: English Language Intensive Course for Overseas Students.
European Credit Transfer System (ECTS): ECTS is a system for recognising credit for learning and facilitating the movement of the recognised credits between institutions and across national borders.
FEE-HELP: This is a loan in Australia given to all eligible fee-paying students to help pay part or all of their tuition fees.
Fees: Fees are the financial contribution made by students to their Higher Education.

Full-time equivalent (FTE): Full-time equivalent is the proportion of a nominal full-time student in Higher Education that a non-full-time student is judged to constitute.
HAVO: Dutch vocational school leaving certificate.
HBO: Hoger Beroepsonderwijs – The Universities of Applied Sciences also known as Hogescholen in the Netherlands.
HELP: Higher Education Loan Programme in Australia – for students.
HESA: Higher Education Statistics Agency.
HEFCE: Higher Education Funding Council for England.
HEI: Higher Education institution.
Högskoleverket: Swedish National Agency for Higher Education.
Hogeschool/Hogescholen: A non-University Higher Education institution, in the Netherlands and Belgium, focusing on vocational education.
LPTF: Learning and Teaching Performance Fund (Australia).
MBO: Dutch pre-vocational school leaving certificate.
Non-traditional students: Non-traditional students are those entrants to Higher Education who have population characteristics not normally associated with entrants to Higher Education, that is, they come from social classes, ethnic groups or age groups that are under-represented.
NVAO: (Dutch Flemish accreditation organisation).
OECD: Organisation for Economic Cooperation and Development.
Performance indicators: Performance indicators are data, usually quantitative in form, that provide a measure of some aspect of an individual's or organisation's performance against which changes in performance or the performance of others can be compared.
Performance funding: A funding formal where all or part of the money is allocated based on an institution's performance measured by performance indicators.
PBM model: PrestatieBekostigningsModel – the name of Dutch funding model.
PFE: Partnership for Excellence (California).
Targeted allocation: Funds given for a specific priority area such as non-traditional groups.
TRAC: Transparent Approach to Costing (TRAC).
TRAC(T): TRAC for teaching in England (a national framework for costing teaching, based on TRAC principles).
Taximeter: Name given to the Danish funding model.
LTPF: Learning and Teaching Performance Fund in Australia.
Unitary system: Unitary system is one that has Higher Education located in a single type of institution.
VWO – Dutch pre University school-leaving certificate.
WO – Wetenschappelijk Onderwijs – Dutch Research oriented Universities.