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Potential for using credits in the revised teaching funding method

A scoping study for HEFCE by the Higher Education Consultancy Group and CHEMS

The Higher Education Consultancy Group

Contents

Executive Summary

1 This report outlines the policy arguments for and against using credits as the unit of volume within HEFCE's funding method for teaching. It reviews possible models of funding by credit, and sets out the practical implications of seeking to implement credit based funding. The report was commissioned by HEFCE as part of its review of the funding method for teaching.

2 The use of credit in English higher education has increased considerably over the years, and most higher education institutions (HEIs) now have a credit scheme in place. The recent Universities UK report on measuring and recording student achievement[1] (the Burgess Report) encourages the adoption of an English credit framework. It is therefore timely for HEFCE to ask if it needs to change its teaching funding method to support such developments. HEFCE has previously considered this issue, and in 1999 concluded that the existing funding method was already credit 'friendly', and that at the time it was not appropriate to develop a new credit based approach to funding.

3 It is important to recognise a fundamental distinction that runs through this report: that the existence of a credit framework which enables the proposals of the Burgess Report to be implemented is not the same as a system of funding by credit. Each could operate independently, and – as discussed below – it is possible to conceive of either a national credit framework which did not relate to funding, or a method for funding by credit which did not require a national agreement about the use of credit.

4 The report identifies three questions associated with key current operational 'principles' that HEFCE needs to answer in order to provide a basis for considering the appropriateness of funding by credit:

- First, is the adoption of the recommendations of the Burgess Report important enough that the Council should now abandon a neutral policy concerning the use of credit, and move to a funding method which explicitly supports it?
- Second, current HEFCE policy is not to fund institutions for students who do not complete, a policy widely criticised by some HEIs and noted as causing concern in the recent report on the current funding method[2]. To what extent is this position on non-

[1] *UUK, 'Measuring and Recording Student Achievement', report of the scoping group chaired by Professor Robert Burgess, 2004*
[2] *SQW Ltd, 'Evaluation of the Teaching Funding Method' www.hefce.ac.uk/pubs/rdreports/2005/rd06_05/*

completion consistent with HEFCE policy on widening participation and the encouragement of non-traditional learners to enrol in higher education?

- Third, for HEIs to receive funding, students have to be studying towards a recognised HE qualification aim, or a credit that can be counted towards such a qualification. Does the Council want to maintain a qualification led funding model, or does it wish to move to an approach whereby the achievement of qualifications is only one part (albeit an important one) of higher education activity? The answer to this has major implications for the work of the Quality Assurance Agency for Higher Education (QAA) in taking forward the recommendations on credit of the Burgess Report.

5 The report reviews international developments and those in other UK jurisdictions, and finds that many countries have been, or currently are, changing the way they fund their higher education systems. Typically, they are moving away from historic cost models to those that in some way attempt to relate funding to the nature and volume of current activity. However, although funding by credit is relatively new, there is innovation. In particular in some Scandinavian countries and the Netherlands there is considerable interest in new forms of funding, including the use of credits and performance related approaches. These examples are probably most relevant to the interests of HEFCE.

6 In the UK, the Higher Education Funding Council for Wales (HEFCW) adopted a credit funding system for higher education in 2002-03, and the Scottish Higher Education Funding Council (SHEFC) is currently considering it. There is also interest in Northern Ireland. The Welsh experience provides the most useful source of information for HEFCE, and HEFCW generally regards its experience of credit funding as very positive.

7 The report identifies a number of potential advantages of funding teaching by credit. However, the extent to which they can be achieved in practice depends upon the option chosen. Some but not all of these benefits can be obtained through the current funding method with its approach to credits. The potential benefits are not likely to be experienced consistently by all HEIs, and will tend to favour those that are highly involved in widening participation, lifelong learning and related agendas, or those that intend to run accelerated degree programmes.

8 A number of potential drawbacks are noted, but in one sense these should be few, as in its simplest form credit is only another method of determining the volume of student activity. Possible drawbacks are: the instability of a new method; a possible increase in the administrative burden upon HEIs (although in practice this would depend on the option chosen); the danger of credit inflation; and the introduction of a new funding method in a period of likely financial volatility.

9 The report identifies seven possible options for the introduction of funding by credit, plus three others (involving funding students) that cannot be implemented under current legislative arrangements. It does not make a recommendation about which to choose.

- Option 1: maintaining the current funding method based on full-time equivalent students (FTEs) but being more transparent with HEIs that they could return data in the form of credits if they wished.
- Option 2: funding by credit on the basis of enrolment with an associated cap on numbers.
- Option 3: funding by credit on the basis of an amended definition of completion or a new notion of measuring participation.
- Option 4: funding by credit on the basis of outcomes and performance.
- Option 5: funding by a combination of Options 2, 3 or 4, as in the case of current funding of further education colleges by the Learning and Skills Council (LSC).
- Option 6: a hybrid system under which institutions choose a funding model most appropriate to their mission.
- Option 7: a two-stage process whereby HEFCE explicitly adopts a cautious approach based on Option 1 for implementation as soon as possible, with the intention of moving towards one of the other options at a later stage.

10 Finally, the report discusses a number of issues associated with the implementation of any method of funding teaching by credit. These include: accountability and changes in the regulatory framework; the level of granularity of measuring credit (in particular by both discipline and level); the impact on the Higher Education Statistics Agency (HESA); the adequacy of management information systems to supply robust data; the future of the current HEFCE premiums for widening participation and part time study under a system of credit funding; and issues associated with a timetable for implementation.

1 Introduction

1.1 The Higher Education Funding Council for England (HEFCE) is in the process of reviewing its funding method for teaching, and one option for this could be the use of credit. This might support the recommendations of the recent report on 'Measuring and Recording Student Achievement' commissioned by Universities UK and SCOP (the Burgess Report). HEFCE was therefore interested in scoping out what funding by credit would involve, were this option to be pursued. Accordingly it commissioned The Higher Education Consultancy Group to undertake a study, the outcomes of which are presented in this report.

1.2 HEFCE required the study to undertake three main tasks:

- To outline the policy arguments for and against using credits as the unit of volume within the teaching funding method.
- To outline the possible models of funding by credits, and the main advantages and disadvantages of each.
- To set out the practical implications of seeking to implement credit based funding, should a decision be taken to proceed with this. Amongst other things this involved: taking a view on the current extent of the use of credit in HE in England, and its suitability as a basis for funding; outlining the actions that would be required by key players to enable a move towards credit based funding; and outlining any other likely implications from pursuing this, for example any changes to the accountability and regulatory framework that might be required to ensure consistency of practice.

1.3 To address these tasks the methodology used in this study involved the following (for fuller details see Appendix A):

- A substantial literature review of practice elsewhere, including in higher education systems that have adopted a national credit system but not funding by credits (summarised in Section 5 but presented in full in Appendix B).
- Extensive discussions with a range of stakeholders and HEIs.
- Participation in a seminar of interested parties organised by HEFCE in March 2005.
- Attending a number of events run by interested bodies to ensure links with other relevant activities.

1.4 Robust evidence on the nature and implications of funding by credit in higher education is scarce, and therefore the study was explicitly commissioned as a 'think piece' which would raise issues for subsequent discussion by HEFCE and also more broadly within the higher education sector. Hence the report makes no specific recommendations, but rather presents options and issues for discussion. Should HEFCE wish to consider in detail any of the approaches presented in the report, then a pilot exercise would be needed to model in detail the likely consequences.

1.5 The study was undertaken by three consultants: Allan Schofield (Head of the Higher Education Consultancy Group) who directed it; John Fielden (Director of CHEMS Consulting and an Associate of the HECG); and Professor George Gordon (of the University of Strathclyde, and an Associate of the HECG) who has conducted a recent review of credit systems for the DfES, and contributed a small research study on progress with the Scottish Credit and Qualifications Framework (SCQF) to the work of the Burgess Group.

1.6 On the basis that this report might be read widely by those interested in the future of credit systems in UK higher education, it has been written to be readable, avoiding too much detail about the possible operation of future funding mechanisms. In Section 2 an overview is provided of: the possible use of credit in English higher education and how it might be related to funding; the main proposals of the Burgess Report; a summary of other key developments; and the context for any changes in future funding methodology.

1.7 A crucial issue for the report is the extent to which the current funding methodology could provide some of the potential benefits claimed for funding by credit, so Section 3 summarises both the strengths and weaknesses of the existing approach for the use of credit in England. This section discusses a fundamental distinction that runs through the report: that the existence of a credit framework which enables the proposals in the Burgess Report to be implemented is *not* the same as a system of funding by credit. Each could operate independently of the other, and – as discussed below – it is possible to conceive of either a national credit framework which did not relate to funding, or a method for funding by credit which did not require a national agreement about the use of credit. The section also notes previous action by HEFCE in considering the possibility of funding by credit.

1.8 As requested by HEFCE, in Section 4 the (limited although developing) use of credit funding in other higher education systems is summarised, with detailed analysis provided in Appendix B. This is followed by the main part of the report, Section 5, which assesses the potential advantages and drawbacks of funding by credit, and sets out ten possible funding models. Three of these (although interesting) would not be possible for HEFCE to fund under current regulatory arrangements. Finally, in Section 6, some of the key issues in implementing a feasible approach to funding by credit are explored.

1.9 The report does not contain broader discussion of the use and implementation of credit systems and frameworks, as an extensive literature already exists on the topic.[3]

[3] *For a useful summary see Bekhradnia B, 'Credit Accumulation and Transfer and the Bologna Process', HEPI, 2004 at www.hepi.ac.uk*

2 Contextual Issues Influencing Funding by Credit

2.1 The report on measuring and recording student achievement identifies credit as a tool for measuring the equivalence of learning achieved by an individual, and lists a number of potential advantages for using credit in higher education. Some have little or no link to funding, but others either have direct funding implications or might be achieved more quickly with supportive funding arrangements. Some institutions currently use credit as a key organising principle for their academic programmes, where a fully modularised and flexible curriculum exists; other HEIs simply use credit as a measure of student activity and not for academic purposes; and a few don't use credit at all.

2.2 The advantages of using credit listed by the Burgess Report which have significant potential funding implications are[4]:

- "Credit can be used to help ensure that programmes of learning in different disciplines or contexts are comparable in terms of magnitude and demand.
- Credit can enable students to be rewarded for learning achieved, even if they do not finish their full programme of study and therefore, at the same time, can contribute to providing a more detailed and accurate picture of national completion rates.
- Credit can enable an institution to recognise learning from very different contexts, for example accreditation of prior learning and work based learning.
- Credit can provide a secure basis for networks of further and higher education institutions to agree progression pathways."

2.3 In this report we pursue how alternative models of funding might support these advantages. The report does not consider the numerous non-funding operational issues that need to be addressed if agreed credit arrangements are to be put into place, for example the need for a robust tracking system to record student progress if transfer between institutions is to become a reality.

2.4 There is already a significant amount of transfer of students. In 2002-03 over 11,000 students who entered higher education in the UK did so having either been at a different institution the previous year or following a year out[5]. However, the majority of these probably entered in the first year of study, and did not receive any credit for their previous studies. The

[4] *See page 36*
[5] *HEFCE, 'Performance indicators in higher education 2003' at www.hefce.ac.uk/learning/perfind/2003*

intention of a national credit framework is to encourage such transfer (particularly from the FE sector) by recognising credit for previous learning. Subject to agreement on the details of the framework, this might also include recognition of workplace and other such learning. For example, the Scottish Credit and Qualifications Framework states that "any short programme, module, unit, or work based learning has the potential to be credit rated".[6]

2.5 The recent policy commitment by HEFCE to support lifelong learning networks (LLNs) could give impetus to the SCQF approach, with the emphasis on LLNs encouraging partnerships to stimulate flexible arrangements for progression between FE and HE, taking account of the needs of employers including small and medium enterprises (SMEs). As noted below, the forms of provision being stimulated by LLNs provide a challenge to the current HEFCE funding methodology, in that criteria designed to support full time, three year, traditional linear curricula with high retention levels are almost completely irrelevant.

2.6 It follows therefore that an English system of funding credit should help HEIs to implement national widening participation and lifelong learning policy, whilst not adding any unnecessary extra complexities or burdens to those institutions that still primarily recruit full time students on traditionally structured undergraduate programmes.

2.7 Of course, not all barriers to increased participation can be addressed by the implementation of a national credit framework and supportive funding. For example, in collecting information for this study we came across many respondents who felt that the primary obstacle to increased part time participation was the current DfES rules about tuition fees and student support. Indeed, many HEIs active in widening participation appear to have major anxieties about the future of part time study if they are required to charge pro rata variable fees from 2006. They fear that, if not resolved, the issue may completely undermine existing widening participation policy and the hoped for benefits of the Burgess Report.

2.8 Consideration of potential funding issues needs to be undertaken in parallel with steps by the QAA to work towards implementing the proposals on credit in the Burgess Report by 2010. A consultation exercise is planned in late 2005, and the key activities to be taken into account include:

- Determining a detailed timetable for implementation.
- Building on the current QAA framework for higher education qualifications for England, Wales and Northern Ireland[7].
- Taking account of previous and ongoing activity in England, for example the work of the Qualifications and Curriculum Authority (QCA) on establishing principles for a Framework for Achievement using credit[8].
- Ensuring linkage to the development of the European Credit Transfer Scheme (ECTS) and taking account of the implications of the Bologna Declaration.

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[6] *The Scottish Credit and Qualifications Framework, 2003*
[7] *See www.qaa.ac.uk*
[8] *A Framework for Achievement: Recognising Qualifications and Skills in the 21st Century. Stakeholder Consultation, Qualifications and Curriculum Authority, 2004*

- Where a UK perspective is required, trying to encourage collaboration with the Credit and Qualifications Framework for Wales, the SCQF, and the current work of the Council for Curriculum, Examinations and Assessment (CCEA) in Northern Ireland.

2.9 All these issues – and the potential contribution of funding by credit – need to be seen in the context of an English higher education sector where the use of credit by HEIs varies considerably. For some the concept is well developed, and a substantial element of student recruitment comes through local partnerships with FE providers. In such institutions, 'traditional' 18 year old undergraduate recruitment from schools is no longer the norm, and the test of a national credit framework will be to ensure that the needs of such HEIs can be met through a consensual inter-institutional approach to a national credit framework. Conversely there are other institutions that have yet to grasp fully the language and implications of credit frameworks.

2.10 In the light of these developments, this report addresses the question: what are the implications for the funding method for teaching currently used by HEFCE, and does it need to be changed to match the changing policy drivers? The ability of HEFCE to change its funding method is limited under the 1992 Further and Higher Education Act, and some of the options for funding by credit discussed in Section 5 would not be possible under current legislation. Nonetheless this report explores a broad range of ways for taking forward funding by credit, and leaves detailed technical questions to HEFCE.

2.11 Any consideration of a new funding method needs to take account of not just the funding issues themselves but also the likely implications, particularly any perverse incentives that might be created (see Section 5), and the administrative burden falling upon institutions. In this context we are well aware of the work of the Higher Education Regulation Review Group (HERRG), and in considering the possible options for funding by credit we have paid particular attention to the administrative burdens on HEIs.

Previous Reviews by HEFCE

2.12 HEFCE has already considered changing the volume measure for funding teaching on at least two occasions. The first review in 1994 recommended amendments to the volume measure for funding part time study, and led to the current approach whereby HEIs return part time activity pro rata to full time, depending upon the programme of study. At the time HEFCE decided that it was not necessary to change the calculation of the volume measure for full time study.

2.13 In 1999 HEFCE looked again at the issue, through its Equal Opportunities Access and Lifelong Learning (EQUALL) Committee, with a working group being established. This paid specific attention to funding by credit, although at the time there was no likelihood of agreement in the sector on establishing a national credit framework. After examining the arguments in favour of funding by credit, HEFCE reaffirmed that the funding method at the time supported lifelong learning policy because it: recognised unitised academic structures;

permitted funding for single modules of study where they were part of a programme of study; and funded institutions for the successful completion of a year of study by the student rather than making funding conditional on the student passing or achieving their qualification aim.

2.14 Accordingly, at that time EQUALL agreed that the existing funding method was already credit friendly, and that it would not be appropriate to develop a new credit based approach to funding. Nonetheless it noted that a number of issues surrounding the funding of credit required continuing discussion (such as the implications of the development of a national credit framework), and it noted that HEFCE might need to return to this issue at a later date.

Further Education

2.15 Since one of the major potential advantages of funding by credit is to enable greater linkage and articulation with FE, it is important to take account of developments in that sector. The current FE funding approach is being reviewed and consultation proposals on the new arrangements should be available in 2005.

2.16 Under current arrangements, FE funding is determined by a formula which consists of a national base rate weighted to take account of a programme weighting, a disadvantage 'uplift', an area cost 'uplift', and a modest performance related factor. The base rate itself includes assumed fee income and a 10% achievement factor conditional on completion. In general, the approach is seen to be complex, and many FE colleges are reported to prefer the current HEFCE model as used for their directly funded higher education work.

2.17 The details of the new proposals need not be set out in full here, but in summary funding will be determined on two main criteria: standard learner numbers (SLNs) not dissimilar in concept from FTEs, and a 'provider factor' reflecting differential institutional costs. Using the established notion in FE of guided learning hours, the SLN for a full time learner will be 1, assuming approximately 450 guided learning hours. Programmes with a work load above that will carry an enhanced SLN, and part time will be calculated pro rata. It has not yet been determined whether funding will be based on enrolment, completion or achievement, and some of the issues set out in Section 5 apply.

2.18 It is too soon to be clear about the consequences for linkages with HE that the new funding model would imply. But one important area for discussion is likely to be the management information implications for FE colleges of data collection, and the load on colleges caused by managing different funding systems were HEFCE to move to credit funding.

3 Issues in the Current Funding Method

3.1 This section reviews aspects of the current funding method for teaching relevant to the possibility of funding by credit. No attempt is made at a comprehensive analysis, as one is contained in a recent report for HEFCE by SQW.[9]

3.2 HEFCE operates a tariff based funding system for teaching, where the standard unit of activity (and therefore funding) is that associated with a full time equivalent (FTE) undergraduate studying over one academic year. Against this measure, HEIs calibrate all modes of part time activity, with some representing 0.5 FTE and those on shorter courses less. Funding is then allocated proportionately, and the allocation is auditable. For institutions operating a credit scheme, one FTE is pegged at 120 credits, and this means that HEIs who choose to do so can simply convert the volume of credit associated with any qualification into a proportion of an FTE in order to claim funding.

Key Operational 'Principles'

3.3 The current method is built upon three operational 'principles' that need to be made explicit, and all have important implications for considering funding by credit. In each case HEFCE needs to answer the question posed below to provide a basis for considering the appropriateness of funding by credit.

3.4 The first 'principle' is that the current funding method used by HEFCE[10] should be relatively neutral concerning the use of credits (that is, it supports, but does not explicitly encourage, credit use). It is therefore credit 'friendly' in that it enables those HEIs wishing to do so to return data in terms of credits rather than FTEs, but without any requirement that they should. In a funding sense, credit is primarily an alternative measure of the volume of student activity, with the key issues being how it is measured and at what point in the academic year. The first question that follows from this is: ***is the adoption of the recommendations of the Burgess Report important enough that the Council should now abandon a neutral policy and move to a funding method which explicitly supports the use of credit?*** This is not primarily a funding question, but a policy one that needs to be answered before a funding mechanism can be determined.

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[9] *SQW, Evaluation of the HEFCE Teaching Funding Method, 2005 at www.hefce.ac.uk under Publications/R&D reports*

[10] *For a description of the current funding method see HEFCE, Funding Higher Education in England, July 2005/34 at www.hefce.ac.uk under Publications*

3.5 Second, underpinning the current funding method is the assumption that most students have the intention of achieving a qualification when they embark upon a programme of study, and that an institution should only recruit those students capable of achieving that qualification aim. The acknowledged implication is "that institutions are 'responsible' if their students fail to complete their programme. Therefore, we do not fund HEIs for the portion of their provision already delivered if a student drops out before the end of their year of study".[11]

3.6 However, the HEFCE widening participation and lifelong learning policies acknowledge the need to recruit 'non-traditional' students, and the widening participation funding policy acknowledges the additional costs of supporting such students. It is generally recognised that recruiting such students carries a higher risk of withdrawal in the first year or non-completion (using the HEFCE definition). However, current policy is not to fund HEIs for those students who do not complete. The second policy question, discussed below, is: ***to what extent is the current funding policy on non-completion consistent with HEFCE policy on widening participation and the encouragement of non-traditional learners to enrol in higher education?***

3.7 Third, for HEIs to receive funding, students have to be studying towards a recognised HE qualification aim, or a credit that can be counted towards such a qualification.[12] Whilst it is accepted that this has been an appropriate definition for a substantial part of the HE sector, the needs of lifelong learning networks, work based learning, and the 'newer' forms of higher education, arguably challenge this policy, in that students want to accumulate learning which does not necessarily easily equate to a qualification. Accordingly the question is raised: ***does the Council want to maintain a qualification led funding model, or does it wish to move to an approach whereby the achievement of qualifications is only one part (albeit an important one) of higher education activity?*** The answer to this has major implications for the work of QAA in taking forward the recommendations of the Burgess Report.

3.8 In their recent evaluation of the current funding method, SQW have concluded that it has achieved a "good balance" between its various tensions and objectives but with three main qualifications: recent changes in premiums and price groups reducing predictability, and (more importantly for this study) the levels of the widening participation and part time premium and the treatment of non-completion. This finding was reflected in our own data collection, and both issues are considered below.

The Current Definition of Completion

3.9 This issue is central to any consideration of funding by credit, in that a decision is needed on whether funding should be based on individual credits earned or overall activity during a period of study. If the latter, then much of the flexibility of credit accumulation is removed. Accordingly, any adoption of funding by credit is likely to require either a different

[11] *EQUALL Meeting 17 March 1999 Agenda Item 3, EQUALL/credit/99/1*

[12] *See Higher Education Students Early Statistics Survey 2004-05, September 2004/31 at www.hefce.ac.uk under Publications*

measure of performance or a different definition of completion from that which currently exists. A key issue is, therefore, whether such changes could be incorporated into the current method, thereby making it more 'credit friendly'.

3.10 HEFCE is well aware of criticisms by some HEIs of its current definition of non-completion, and in a recent paper to its Quality Assessment, Learning and Teaching (QALT) Committee has sought to rebuff such comments and set out sound reasons for the policy. Nonetheless, without exception, every HEI active in widening participation from whom we sought information felt that the policy was untenable despite its possible technical justification.

3.11 For those institutions active in widening participation, the current definition of completion is reported to act as a disincentive to recruit students who have a higher than average risk of withdrawing (or non-completing) because in that case the institution receives no funding from HEFCE (although it can retain the student fee). For full time students who withdraw close to the end of year assessment this can mean an HEI receiving no HEFCE funding, despite costs having been incurred throughout the academic year. Part time students who reduce their planned study load during a year also attract no funding from HEFCE.

3.12 HEIs do, of course, receive a student fee for any period of study not completed, and practice varies between institutions as to whether it is retained or not. Some HEIs report the practice of refunding the student in such circumstances. With the introduction of variable fees this income will increase, and the financial position of the institutions concerned may be more favourable if they decide not to refund the fees to the students involved.

3.13 At its most extreme, the consequences of the funding method appear perverse and unjustifiable to HEIs as in the following hypothetical example. A student with no experience of higher education enrols in a short module in the autumn term in an HEI with a flexible part time structure, and undertakes assessment (as this is part of an award the institution can claim funding). Spurred on by success, the student enrols in another module later in the year, but finds it harder and fails to complete. However, because the student is deemed not to have completed a programme of study associated with an award, not only does the HEI receive no funding for participation in the second module, but the funding previously earned for the first one is now no longer available.

3.14 At a time when widening participation and lifelong learning are explicit priorities, all the HEIs we consulted who are active in this area were critical of HEFCE policy. In some cases the criticism was severe as the following (and typical) quotation from one institution demonstrates: "It is absurd that we have students who choose to study less intensively during a year, are very pleased with their achievements, are delighted with the support given by an empathetic university and yet we are unable to claim HEFCE grant!".

3.15 Another institution observed that the funding method appeared predicated on 'traditional' full time higher education, and failed to recognise the increased diversity of institutional activity in relation to part time and lifelong learning that HEFCE itself had sought to encourage. It concluded that: "The HEFCE guidance fails to recognise the very different circumstances of part time students as they attempt to juggle study, work and domestic responsibilities. Our greatest concern is the mixed message that the guidance... gives about widening participation and lifelong learning since the funding council gives no support to universities that attempt to help students manage those changing responsibilities".

3.16 From the perspective of HEFCE there have been good reasons for this policy including:

- It acts as a disincentive for HEIs to recruit students who have little prospect of completing.
- HEIs may in any case receive some funding for the student from the tuition fee (although in practice some institutions refund the fee).
- That government pressure is to encourage output based measures of funding (achievement), rather than input, and the current definition of completion strikes a balance between the two.
- That the accountability burden might be increased if HEIs had to identify exactly when a student dropped out (see Section 6 for a discussion of this).
- That it helps HEFCE “bear down on non-completion”, a phrase which has been in each of the grant letters to the Council from the DfES since 2000.
- That in any case a change in definition would not affect the total grant for teaching for the sector, although some modest redistribution might be involved.
- That separate funding to support retention and the operation of the +/-5% tolerance band in any case reduces the reduction of income to any one HEI.

3.17 We do not consider each of these issues in detail, although we do note that some of them – for example the impact and operation of the tolerance band – are contested by some of the HEIs involved, and others have to be addressed in the context of considering funding by credit.

3.18 Technically, addressing this issue is not straightforward even if the Council wished to do so, but there are several possibilities:

- To change the definition of completion to take account of students who withdraw (and who are therefore counted as non-completions) but who subsequently continue their studies.
- To change the current funding model so that students who pass (not complete) individual modules attract funding irrespective of any subsequent decision to withdraw.
- To change the definition of completion so that students who complete some formative assessment during a module or course of study could attract funding up to that point. This could borrow the notion of 'partial completion' from the approach of HEFCW.
- Alternatively a premium could be paid to HEIs affected by substantial non-completion. However HEFCE has recently modelled the feasibility of this and has decided not to proceed.

3.19 The difficulties with the first three possibilities are largely associated with increased complexity of data returns reported to HESA, including a possible increase in the volume of adjustments to the returns subsequently needed. In all cases the administrative burden would increase, for example HEIs might have to determine on an individual basis the point at which a student withdrew. In addition, in the first option a delay might result between the year of study and funding because of the need to reconcile data. For example, funding for 2004-05 was largely based on data returns to the HESES and HEIFES surveys for 2003-04, but if significant data reconciliation was required this might cause a delay of an additional year before funding was provided.

3.20 However, it could be argued that notwithstanding the work of HERRG, the increased administrative burden in this area would mainly fall upon that part of the HE sector that already has management information systems in place to support complex modular (and usually credit) structures, and is geared up to deal with the resulting issues. For the rest of the sector there would be no increase in the administrative burden at all. There would, of course, be an increased load on HESA.

3.21 If the current funding method were to be continued with the intention of making it more credit friendly, our view is that it would be important to find a solution to the definitional problem of completion despite its complexity. At the moment HEFCE runs a significant reputational risk amongst some HEIs which may affect the credibility of its widening participation and associated policies.

Part Time and Widening Participation Costs

3.22 Unlike the definition of completion, this is not a fundamental methodological issue concerning the current funding method to support teaching, but rather a widely held view amongst HEIs active in widening participation that the current premiums for both widening participation and part time provision do not meet fully the additional costs of provision. It does, however, raise the question – considered in Section 6 – about how the additional costs of such provision should be dealt with in a credit funding model.

4 A Review of International Developments

4.1 In this section we summarise developments outside England in the use of funding by credit. Particular attention is paid to activities in the rest of the UK (especially Wales which has adopted credit funding for all post-16 education), and a small number of countries which fund by credit either partially or totally. A fuller analysis is presented in Appendix B.

4.2 Within Europe interest in credit transfer and associated issues is being stimulated by the implementation of the Bologna Process, which amongst other things commits European signatory countries to the establishment of a common European Credit and Transfer System (ECTS). At the moment this does not have direct implications for a specific funding methodology (for example, by credit). There are numerous other issues in the Bologna Process that are relevant to the introduction of a UK credit framework (such as the credit equivalent to an FTE), but not directly to the HEFCE funding methodology – at least in the foreseeable future.

4.3 Our review suggests that outside the UK many countries have been, or currently are, changing the way they fund their higher education systems. Typically, this means a move away from historic cost models, to those that in some way attempt to relate funding to the nature and volume of current activity. The main trend evident from our survey of approximately 15 countries is a move towards performance related funding. Of course, this means different things in different systems, but the desire to increase efficiency by linking funding to outputs was a common element in many of the systems studied. In some cases such developments have been spurred on by the UK experience and the high levels of productivity for which it is known.

4.4 Appendix B notes that credit frameworks and credit accumulation and transfer (CATS) schemes are widespread, particularly in the northern European countries. However, in general, funding by credit is relatively new, and historic funding models tend to be the most widely used, with systems based on FTEs still most commonplace. However, there is some innovation: in particular in some Scandinavian countries and the Netherlands there is considerable interest in new forms of funding, including the use of credits and performance related approaches. These examples are probably most relevant to the interests of HEFCE.

4.5 In Denmark all HEIs use the European Credit Transfer System (where a full study year equals 60 ECTS), and there is significant innovation in funding, including funding by credit. Denmark is one of the few countries where teaching budgets are provided solely on the basis of outputs. These are set on the number of credits obtained per student per year, and the amount paid varies widely depending on the field of study. Every part of a programme earns a student ECTS points when they pass their assessment, and these points also trigger government funding. Thus the funding model is explicitly designed to reward universities for their output. This approach is similar to Option 4 available to HEFCE as set out in Section 5. Criticisms of the Danish system tend to revolve around the quality of the education, which some argue has been lowered by the output oriented system. However, a government sponsored review was carried out in 2001 and found that there was no evidence for a link between the funding system and declining academic standards, and concluded that the model was the best available.

4.6 There are broadly similar approaches in Sweden, the Netherlands and Iceland, although details vary. For example, in Sweden the allocation of resources depends on a combination of credits studied and student results. The weightings are 40% for student numbers, and 60% for accumulated credits. The idea behind the Swedish system was to encourage HEIs to tailor the courses they offer to meet student demand. Universities and university colleges receive provisional funds at the beginning of each budget year, and finalised amounts are determined at the end of the year taking into account student numbers and credits.

4.7 Elsewhere, the other country of most interest is the United States, although the use of funding by credit is patchy. Despite substantial use of credit frameworks within individual states, national systems of credit transfer are not well developed, primarily because public higher education is a matter for individual states. As a result there is considerable variation in practice, although many states report more attention being paid to performance based funding. Traditionally most funding has been based on historic cost models, although Appendix B describes several states where funding by credit is now well established, most notably in some of those who are members of the Southern Regional Education Board, for example Alabama and Florida.

4.8 By way of illustration, in Florida the funding formula for calculating state contributions to HEIs is based on student/teacher ratios and salary rates. In this method credit-hours are used to arrive at the number of instructional positions needed for each college or university, based on predetermined student to staff ratios, and the number of positions needed is then multiplied by the agreed salary averages. There is also a commitment to performance based funding for universities and colleges, and incentive and performance based budgeting for community colleges, although it represents quite a small proportion of state funds. This links funding to particular indicators, most commonly retention and graduation rates.

Wales

4.9 HEFCW is the only UK funding body to have adopted a complete system of funding by credits, and this was phased in between 2000-01 and 2002-03. The development of this approach was made possible by a policy requiring the development of a single post-16 framework and the existence of the Welsh Higher Education Credit Framework. We describe the operation of the Welsh model in some detail, as being of particular relevance to HEFCE.

4.10 HEFCW's current teaching funding method was developed in consultation with the sector in 1999. It succeeded a method that had been in operation since HEFCW made its first funding allocations. The underlying objectives of the current method are: to be responsive to need, demand and government policy; to promote cost effectiveness; to support quality; and to be flexible and straightforward in operation.

4.11 Like its predecessor, the current method has two main elements: formula and non formula. The formula element delivers base level funding each year, taking account of any identified policy priorities at the broad level; the non formula component addresses specific issues and policy objectives to which the formula would be insufficiently sensitive. The balance is weighted heavily in favour of the formula (typically 98% or 99%) in order to provide institutions with a reasonable measure of year on year financial stability within which to plan and manage.

4.12 The formula element of the current teaching funding method was used for the first time for funding allocations for 2000-01. It operates for funding student numbers in three dimensions: level, mode and subject. There are three levels: undergraduate degree, undergraduate non degree and postgraduate taught; three modes: full time/sandwich, part time and part time franchised out; and 11 academic subject categories (ASCs), some subdivided. The collective term for a given level, mode and subject is a 'funding cell'. Separate arrangements apply for funding postgraduate research training.

4.13 There are three categories of numbers – core, addition and recovery – and they are established in that order. Core numbers are based on the current year's funded or actual (enrolled) numbers, whichever are the lower; addition numbers are those provided above the core; and recovery numbers are those made available to offset a one year's dip or drop in enrolment. Core numbers in each institution are maximised by making adjustments as far as possible in line with the pattern of the current year's enrolment. Within limits, and taking account of policy priorities, funded numbers unfilled in one funding cell may be moved to another where numbers have been exceeded. Funding cells are assigned to one of several policy priority groups, and numbers are moved by the funding model to cells of equal or higher priority.

4.14 Additional numbers are allocated taking account first of the scope in terms of the funding and numbers available to HEFCW, and then of policy priorities, that is any priorities in terms of ASC, mode or level. Recovery numbers are allocated pro rata to the amount of the shortfall in enrolment apparent in a funding cell after core numbers have been established. There is a cap on recovery at the numbers which bring funding in that cell up to the current year's level. Since recovery numbers are intended to offset a dip in enrolment in one year, they cannot be made available in a cell where funded numbers have not been met two years running.

4.15 Numbers are funded on the basis of HEFCW's standard unit of resource, less fees, for the ASC in which they are located. For full time/sandwich provision, fee levels are assumed to be those set by government; for part time provision, fees are assumed to be pro rata to full time fees. In addition, two other kinds of payments are made: as there is no part time premium, a per capita payment derived from a fixed overall sum for the sector is made for all students enrolled for more than 10 credits; widening participation (and other) premiums are paid on a fixed sum basis (£200 for 2004-05 for widening participation).

4.16 HEFCW adjusts funding at the end of the year where the numbers actually enrolled by an institution fail to support the funding allocation made to it. In line with government policy, adjustment for over enrolment was discontinued in 2002-03. Adjustment is carried out on the aggregate of numbers in non quota controlled ASCs, and within an ASC for those subject to quota. There is a threshold below which no adjustment is applied. Currently this is £50,000 or 10% of the institution's total grant for teaching, whichever is the lesser, across all ASCs.

4.17 For 2004-05 the unit of resource per credit value ranged from £25.80 (ASC 8 Social Science) to £111.50 (ASC1 quota controlled Medicine and Dentistry). Institutions have to declare student activity by module according to each ASC and not by programme (for example, a language module in a science programme is returned as being in the Language ASC). With 11 ASCs (two of which are broken down into three sub-categories) this provides a detailed level of granularity, and potential efficiency gains. Institutional returns are audited by HEFCW to ensure accurate completion of data by ASC category.

4.18 The definition of completion used by HEFCW is broadly similar to that of HEFCE (that is, undertaking end of year assessment). In addition, for full time students taking full year modules, half the credits can be counted if the student completes the first semester (or the first four months if not semesterised), with all assessment during that period being taken.

4.19 In discussion with HEFCW officers, some of the main issues arising from the use of the system were:

- The funding method is regarded as particularly beneficial for encouraging part time study and supporting the accreditation of prior learning through the general adoption of credit.
- The need to limit the funding of credits (120 on average for one full time undergraduate place) to stop over teaching.
- Minimum funded part time activity is 10 credits, which is approximately 3% of an FTE and equivalent to one week of study.

- HEIs were given a long lead time to prepare for the new funding method which aided its introduction.
- HEFCW believes that there is not a significantly greater administrative burden on HEIs, as data would have to be prepared for HESES returns anyway, and, in the main, simply required a multiplication of each module by a fixed number of credits. HEIs were already returning comparable data to HESA. Most HEIs had already moved to modular courses when the new model was introduced, and those that had not could treat each year of the course as a single module of 120 credits.

4.20 The point relating to the burden on HEIs may be contestable. Although we have not in any sense evaluated the Welsh approach, we have encountered some institutional criticism of the workload associated with completion of the complex funding cell model used by HEFCW and the fine granularity required. However, this is not a comment on funding by credit but rather on the decision of HEFCW to stick with its system of ASCs.

Scotland

4.21 SHEFC first consulted on the possibility of adopting a credit based funding model in 1999 but decided not to go ahead at that time. It has now returned to the issue to support the implementation of the Scottish Credit and Qualifications Framework (SCQF) and to make the use of credit more visible. Currently, SHEFC funds on the basis of FTE using December institutional returns. It operates tight controls over student numbers and actual enrolments. The level of tolerance ranges from +/- 1.5 to 3.0% depending on the categorisation of the subject.

4.22 In discussion with SHEFC, the view was expressed that whilst funding by FTE may seem out of step with trends towards more flexible learning and its delivery, it is a system which is understood. It is possible in the existing system for SHEFC to support a wide range of part time delivery, and it seeks to avoid unhelpful uncertainty and turbulence in the funding. These factors will be weighed carefully when considering any change. It is also SHEFC’s practice to consult over changes and to plan the phasing of any changes.

4.23 As a trial, in 2004-05 SHEFC asked institutions to do their statistical returns on the basis of credits as the measure of activity. Institutions did not have to modularise and they could return a complete year of undergraduate study as 120 credits. SHEFC made this decision to promote the lifelong learning agenda in Scotland through greater use of flexible transfer routes and exit awards in higher education using the SCQF. However, it has not yet made any decisions on future funding by credit.

4.24 Accordingly, institutions were asked to return credit based data in the Early Statistics Return for undergraduate and taught postgraduate provision from academic year 2004-05 on the basis of the subject(s) of the programme of study rather than the module of study. This was in line with SHEFC's approach to collecting FTE numbers.

4.25 A recent paper produced for the SHEFC Board[13] notes that the returns received were variable in quality and completeness. Data presentation issues identified include many instances of large differences between the ratios of credits to FTEs, both from cell to cell at the same level of study on individual returns and for corresponding cells across institutions, which raises questions about accuracy. These differences suggest that translation of FTEs into credits by HEIs is not as simple a task as it might appear, and that a substantial margin of error is likely unless it is carefully phased in.

4.26 The SHEFC's Institutional Group on Statistics met on 29 April 2005 and discussed issues that arose out of the collection of credit based information, in particular whether funding should be based on the students' subjects either at programme or at module level. The initial collection of data was based on programmes in line with current FTE data collection. However, the collection of this information has caused difficulties for some institutions because of the way their records are organised. If SHEFC were to move to a modular based return this would present difficulties for other HEIs, and might require changes to institutions' information systems. More importantly, however, the data would be fundamentally different from programme based information.

4.27 Some members of the Group therefore would like guidance on the longer term aim of credit based measurement and whether or not this should be moved to a modular return, with funding possibly being determined at the level of modules rather than the present system of funding programmes of study. This is, of course, the approach of HEFCW as outlined above.

4.28 The view of the SHEFC Executive is that any move towards a modular return rather than a programme based return would have to be considered very carefully and consulted on. The ongoing presumption is that SHEFC will continue to want information based on programmes, and those institutions which have difficulties making statistical returns on this basis will need to resolve the underlying problems.

Northern Ireland and Ireland

4.29 There has long been interest in enhancing the operation of credit in Northern Ireland, initially stimulated by the work of the Northern Ireland Credit Accumulation and Transfer System, NICATS (now replaced by the Council for Curriculum Examination and Assessment, CCEA). Indeed in 2001 there were proposals for the full implementation of a NICATS framework, and a study on the possibility of funding the post-18 sector by credit. This was not put into practice but the work has been influential in informing the relevant practitioner community throughout the UK. Amongst other issues, it was concluded that major computer problems particularly in the FE sector would need to be addressed if appropriate tracking and management information systems were to be developed. Partly as a result, no further steps towards implementation were taken at the time. Discussions are currently taking place on the proposals in the Burgess Report, and these may stimulate new attention to credit schemes.

[13] *See HE/2005/43 Agenda Item 25, 13 May 2005 at www.shefc.ac.uk*

4.30 Separately in Ireland, the Irish Credit Framework was launched in October 2003 and is intended to promote credit accumulation. A wide variation in institutional use of credit is reported, with on the one hand one HEI being fully modularised and allocating resources internally by credit, whilst on the other hand some barely use credit at all. In such a context the national adoption of funding by credit may be some way off.

5 Possible Options for Funding by Credit

5.1 In this section the key issues concerning the possibility of funding by credit are identified under the following headings:

- The potential benefits of funding by credit.
- The potential drawbacks of funding by credit.
- Who could be funded?
- What could be funded?
- The criteria for assessing the options for funding by credit.
- An analysis of the options for funding by credit.

The Potential Benefits of Funding by Credit

5.2 A number of potential benefits are claimed if funding by credit were to be adopted and these are considered below. We distinguish here between funding methods based on requiring HEIs to specify credit as the volume measure of student activity, and other approaches which (as in the current HEFCE method) are simply 'credit friendly' in that institutions can use credit if they wish. Some of the potential benefits of credit funding can only be achieved if implemented sector wide, and others would require substantial changes in HEFCE funding assumptions. We use the word 'potential' deliberately here in that some of the benefits can only be achieved by some of the options, and other benefits might require additional measures to create the conditions for them to be realised.

5.3 Discussion of the potential benefits of funding by credit is also confused by the criticism by many HEIs of the definitions of completion and what constitutes an award in the current funding method. This was considered in Section 3, and it is important to note that addressing these perceived weaknesses is *not* the same as identifying the positive benefits of funding by credit. In some HEIs there was considerable confusion about these two different issues, and in general we found most support for addressing the perceived problems in the current funding system.

5.4 For many HEIs (not all) the traditional volume measure of FTE students is becoming increasingly inappropriate with the rapid growth of part time provision and lifelong learning.

For example, we visited one HEI where a majority of undergraduates do not complete within the minimum three year period, but switch between full time and part time attendance to suit their personal circumstances. Even where full time provision is the norm (and notwithstanding DfES regulations), what actually counts as full time appears to vary, as the recent data produced by SHEFC confirms (see Section 4). In practice, within many HEIs full time and part time students are indistinguishable, with substantial joint participation in programmes, and this trend is likely to increase.

5.5 In many such HEIs the notion of a 'traditional' full time linear programme is felt to be increasingly inappropriate, and it is therefore being replaced by the internal use of a modular credit structure. It follows that making institutional funding returns to HEFCE on the basis of FTEs is seen as increasingly artificial, and as one respondent (in a research oriented university) noted: "If you were developing a funding method from scratch you wouldn't now use FTEs". Adopting an explicit national approach to funding by credit would be more credible for such institutions, and provide better linkage between HEFCE funding and internal resource allocation. Of course, the same may not be true for those universities with few part time students and where most students complete within the minimum period.

5.6 In order to support the continued expansion of higher education and implement government policy on widening participation and lifelong learning, it is argued by some HEIs that the current approach of HEFCE in basing funding on awards and qualifications is too restrictive (see Section 3), and that what is required is funding based upon smaller credit earning modules or units. Although this can to some extent be undertaken within the current model, the same HEIs argue that funding based on credit achieved (rather than qualifications) is a more flexible and transparent approach, and that it may also appeal to employers. As one HEI responding to us noted: "In principle the concept of a credit based funding system is attractive. Each course is organised into modules and credit is attached to the successful completion of a module. Students could enrol on as many modules as they like in a year and universities receive grant for modules completed". We consider the issue of completion and how it might be defined below.

5.7 Some of those who advocate such an approach also consider the need for assessment under current arrangements to be a hindrance to participation, and implicitly favour an enrolment based funding model. Others – sympathetic to the adoption of funding by credit – resist such an approach and see assessment as one of the defining characteristics of higher education. Clearly this argument is also closely related to the debate about the funding of continuing education.

5.8 Credit based funding also potentially encourages widening participation and lifelong learning by creating the opportunity for consistent approaches to funding post-18 cross-sector provision stimulated by flexible credit transfer routes and the accreditation of prior learning

(APL) and work based learning (WBL). Indeed, as noted in Section 4, this was the motivation for the adoption of a credit funding approach in Wales, and is one of the main reasons why it is being reconsidered in Scotland. More specifically it is argued that it would be possible to introduce more consistent and transparent arrangements for recognising the funding implications of cross-sector APL within a credit funding approach (see Section 6). Because of this, credit funding may offer one solution to the criticism recently noted by SQW that the current funding method "may have inhibited the provision of innovative programmes incorporating features such as part time (and mixed mode) attendance, work based learning and APL".

5.9 A different potential advantage is the stimulus that credit based funding might give to the provision of accelerated programmes of study, with students obtaining additional credits over the summer vacation. With possible long term escalation in both variable fees and the costs of undergraduate education, demand for such programmes may well increase and could be dealt with in a transparent way in a credit funding model. However, this potential advantage could only be achieved if changes took place in the DfES definitions of what constituted full time study.

5.10 The impact of funding by credit on efficiency – as measured by successful completion and length of study – is difficult to determine, but there may be a potential benefit. On the one hand, some HEIs argue that funding by module completed is likely to reduce drop out rates, in that a student who might withdraw under current arrangements might in future be classified as successfully completing a module(s) and thus obtaining credit. This view is closely associated with those HEIs who seek to prize what students (particularly non-traditional learners) achieve, rather than labelling those who withdraw as failures. However, if credit funding were based on the student rather than the institution (see below) there is a risk that this might lengthen the amount of time taken by some students to obtain a qualification, although DfES regulations would have to change to bring this about.

5.11 Some, but not all, of these benefits might be achieved by adapting the current approach of HEFCE to credits, but a further reason for introducing a national credit based model is the enhanced transparency that would be achieved. Under current arrangements each HEI can work out its own ratios between credits and FTEs, and (notwithstanding the need for returns to HEFCE to be auditable) it is likely that there is considerable institutional variation. This has recently been confirmed by the SHEFC study reported in Section 4, which concluded that "there are many instances of large differences between the ratios of credits to FTEs both from cell to cell at the same level of study on individual returns and for corresponding cells across institutions". This benefit cannot be realised until a national credit framework is in place, and goes well beyond the current approach of HEFCE.

5.12 From the perspective of those HEIs who perceive that they suffer from the consequences of the current HEFCE definition of completion, one widely assumed potential benefit of credit funding would be a redistribution of resources. However, the finite amount of money available for the total support for teaching, plus the current application of the +/- 5% tolerance band, and possible future additional funding on accelerated programmes, means that for most institutions the redistribution is likely to be relatively modest, although a small number might gain substantially. Any such redistribution would, of course, have implications for all other HEIs not in this category.

5.13 Finally, a possible benefit of the early introduction of credit based funding would be to encourage the parallel introduction of the agreed national credit framework noted in Section 2. Put simply, a funding model which required all HEIs to return data to HEFCE using credits (even if only a simple formulaic calculation of 1 FTE = 120 credits for 'standard' undergraduate courses) would, it could be argued, speed the introduction and acceptance of the general adoption of credit.

5.14 Taken overall, these potential benefits are significant and would support the introduction of a national credit framework. However, the extent to which they can be achieved in practice depends upon the option chosen, and these are set out below. Moreover, the benefits do not fall consistently on all HEIs, and tend to favour those that are highly involved in widening participation, lifelong learning and related agendas, or intend to run accelerated programmes. The alternative approach of amending the current funding methodology is also set out below as an option.

The Potential Drawbacks of Funding by Credit

5.15 As noted in paragraphs 5.2 and 5.3 there is a need to distinguish between the advantages of maintaining an amended version of the current funding model and the explicit drawbacks of funding by credit. In one sense, the drawbacks should be few, as in its simplest form credit is only another method of determining the volume of student activity. Nonetheless there are some potential drawbacks, and the following paragraphs consider only those related to funding, with no mention made of broader issues on the educational desirability of credits.

5.16 The review recently undertaken by SQW (see Section 3) concludes that with the exception of premiums (both part time and widening participation) and the definition of completion, the current funding method for teaching "has achieved a good balance" between the various tensions inherent in any funding model. Since any revision of this approach is bound to give rise to some instability (although the extent will vary depending upon which option is adopted) it is reasonable to identify the difficulties caused by such instability as a potential drawback of a new method. Quite simply, as one person said to us: if it ain't broke don't fix it! As the advantages of credit based funding are only likely to be significant to one part (although a large part) of the higher education sector, the disturbance caused to the rest is a potential drawback.

5.17 One potential weakness of concern to many of those consulted is a possible increase in the administrative burden falling upon HEIs. This could vary widely depending upon the particular options proposed, and the amount of additional effort required from HEIs. At its simplest, merely returning the volume of student activity to HEFCE by credit rather than FTEs is unlikely to add greatly to the burden in institutions that have a comprehensive credit scheme and associated management information system in place. On the other hand the more information that is required by HEFCE (and the more radical the funding option), the greater the likely burden on HEIs. Specific issues in implementing funding by credit are considered in Section 6.

5.18 A further potential weakness raised by some HEIs is the possibility of credit inflation, whereby the need to account in detail for the credit profile of each student might encourage every activity to be credit rated – even small amounts of what currently might be optional activity. This might reduce flexibility and encourage increased administration.

5.19 A number of those consulted expressed reservations not so much about credit funding itself, but about the timing of its possible introduction. There are two main issues here:

- First, some HEIs questioned whether the time was right for a change in funding in a period of considerable financial volatility.
- Second, others felt that it was important to ensure adequate consultation and not to underestimate the difficulties of even the simplest of the options presented below, a view reinforced by the experience of SHEFC in relation to its first steps in credit based data collection.

The date for introducing a credit funding system will vary depending upon the option chosen, and the more radical the option the longer the preparation time that is likely to be needed.

5.20 As with any funding method, some of the options for credit funding might have perverse consequences. Where these can be identified they are set out below. For example, encouraging fine granularity in allocating the subject of modules to an increased number of subject bands would be likely to result in a small notional efficiency gain. However, this might be outweighed in some HEIs by all non-core discipline teaching in lower cost subjects (what used to be called 'service teaching') being replaced by additional discipline specific material (in higher cost subjects), thus reducing choice and narrowing the curriculum.

5.21 In addition to these general potential drawbacks, each option has its own specific drawbacks set out below.

Who Could Be Funded?

5.22 There are two possible approaches here: funding institutions or funding students. Under current arrangements it is only possible for HEFCE to fund the former, and even if this legislative restriction were removed then moving from institutional funding would create substantial (and arguably undesirable) volatility. However, as noted below, there are a number of potential advantages in changing the basis of funding to the student, and any report on credit based funding would not be complete without considering them.

5.23 Within the approach of funding institutions by credit, a secondary issue is the extent to which it is necessary to treat all HEIs in the same way. A hybrid model whereby institutions could choose which of (say) two funding models to adopt is considered below.

5.24 The needs of further education colleges which teach higher education must be borne in mind. As noted in Section 3 the LSC is in the process of changing the funding method for FE, and there is much to be gained by trying to achieve as much alignment as possible in post-18 funding whilst recognising the difficulties involved.

What Could Be Funded?

5.25 In general, there are three approaches to what could be funded, and all have advantages and drawbacks. In summary they are funding enrolments, funding completion/participation, and funding learning outcomes. Each is discussed below.

a) *Funding Enrolments.* Many, but not all, of those arguing for funding by credit implicitly support a model based on enrolments, on the grounds that this is the most flexible way of encouraging lifelong learning. According to this view, the value of the learning to the student (and, where relevant, to the employer) should be the key measure of effectiveness, irrespective of whether learning is assessed or is part of a broader award or programme. The only realistic way of funding such an approach is by enrolments, with a cap on enrolment targets so that HEIs have no incentive to over-recruit.

   Other HEIs question the desirability of enrolment based funding because of the perceived risk of encouraging applicants who are not able to cope with higher education, and the likelihood of higher rates of withdrawal. There are important issues of educational philosophy here, especially the policy identified in Section 2 concerning whether a qualification and award led funding model should be maintained, or whether a module and credit led approach should be adopted.

b) *Funding completion/participation.* As noted above, the current funding model is based on completion, defined as a student undertaking assessment, but not necessarily passing. This approach could be maintained under a credit funding system, with completion defined as the completion of a module or other credit bearing period of study. This could mean HEIs being funded for modules completed by students even though they later withdrew. However, whilst suitable for most of higher education, this definition of completion assumes that the student intends to undertake assessment, which for some lifelong learning activities may not be realistic.

An alternative would be to measure participation in a credit bearing period of study, however defined by an HEI. This would provide assurance that a student had attended (and therefore that an institution should be funded), but without the requirement to undertake assessment. HEIs could therefore be funded up to the period that a student withdrew, rather than receiving no funding if a student fails to complete. The key issue here is how to measure participation, and an approach would have to be agreed. There are a number of possibilities, including, for example, the last registered log-on to a student email account.

c) *Funding learning outcomes.* We found some support for the idea of basing funding on learning outcomes achieved, presumably as measured by assessment. As noted in Section 4, this approach to funding is becoming increasingly popular in other higher education systems. The funding model would work by basing funding on the number of students passing assessment, but could also go further and be used to provide a performance related incentive of some kind. This could be against some benchmark of performance, possibly calculated on a value added basis to ensure its appropriateness to all kinds of learners. However, we found some concerns about the possible threats to quality resulting from the adoption of an outcomes model of funding. Although those who advocated it believed such threats would be attributable to a failure of institutional management rather than the funding method as such.

5.26 Each of these three approaches applies to the funding of postgraduate as well as undergraduate teaching.

Criteria for Evaluating the Options for Funding by Credit

5.27 The recent paper produced by HEFCE on the background to any new method of funding teaching[14] identifies six high level aims that need to be met: ensuring capacity, promoting high standards, enabling responsiveness, encouraging innovation, supporting accessibility, and value for money. In general, changing the volume measure of funding will tend to have little impact on these aims, but there may be implications associated with particular options of funding by credit and where relevant these are identified below.

5.28 More directly relevant are the operational funding 'features' which apply to the current model, and (perhaps in an amended form) would also need to apply to any new approach. These are: openness and transparency, predictability, flexibility, fairness, and efficiency. We consider these in relation to the options for funding by credit set out below. In addition we add three other criteria:

- The likely impact on the accountability burden and regulatory framework.
- Any likely unintended consequences insofar as they can be predicted.
- The appropriateness of the funding option to the whole higher education sector rather than one part of it.

Options for Funding by Credit

5.29 There are at least seven feasible options available to HEFCE in encouraging the greater use of credit through funding, plus three others that are of interest but cannot be funded under current legislative arrangements. Each is considered against the evaluation criteria set out above, but in summary they are:

- Option 1: maintaining the current funding method based on FTEs but being more transparent with HEIs that they *could* return data in the form of credit if they wished.
- Options 2, 3 and 4: funding HEIs based on credits, that is in each case HEIs *would be required* to return credit based data to HEFCE and HESA. The three options involve funding on the basis of: enrolments, completion or participation, and outcomes. Each option would be very different in practice, and have different implementation requirements, and there is considerable variation in the extent to which they could be put in place quickly.
- Option 5: is a combination of Options 2, 3 or 4, as in the case of current LSC funding.
- Option 6: a hybrid system is possible under which institutions choose a funding model most appropriate to their mission.
- Option 7: a two stage process whereby HEFCE explicitly adopts a cautious approach based on Option 1 for implementation as soon as possible, with the intention of moving towards one of the other options at a later stage.

[14] *Review of the funding method for teaching: aims of the new method and progress of the review, May 2005/21 at www.hefce.ac.uk under Publications*

- Options 8, 9 and 10: involve funding students rather than HEIs through the use of credit. Currently these options would not be possible under current legislative arrangements, but in some ways they are a logical consequence of credit funding and are therefore included for completeness.

Each option is explored in turn below.

Option 1: Maintaining the Current Funding Method

5.30 This is the easiest option in terms of implementation, and makes no substantial changes to any of the current funding features. In our judgement, in order for it to be credible with many HEIs (and to meet the fairness criterion in the funding features) the weakness in the current definition of completion would have to be addressed (see Section 3). As a 'credit friendly' approach, the main advantages of this option are continuity of the benefits of the existing funding method, and recognition of institutional diversity in providing a choice of ways to return data to HEFCE. Since it would be optional for institutions to return data in this way, the method could be introduced by 2008 if required by HEFCE.

5.31 The weakness of this approach is that it does little positively to encourage the adoption of credit by HEIs, or to bring about some of the potential benefits of funding by credit noted above. In Section 2 we asked the policy question: does HEFCE want to adopt a neutral policy to the widespread adoption of credit or does it specifically want to encourage its adoption? If it wants to be neutral then this option appears to be appropriate, but if it wants to encourage use of credit then this option fails to stimulate much change.

Option 2: Funding Institutions by Enrolment Credits

5.32 Figure 1 shows three different options for funding HEIs by credit. In Option 2 HEIs would be funded on total credits enrolled during a full year up to an agreed limit.

Figure 1 Options for funding HEIs by credit

What is funded?	The HEI
Option 2: Enrolment	HEI funded on total credits enrolled during a full year up to an agreed limit
Option 3: Completion/ Participation	HEI funded on total credits earned by those 'completing' assessment (the current model) or participating
Option 4: Outcomes/ Achievement	HEI funded on assessed learning outcomes achieved during a full year

5.33 Using this approach all HEIs would have to return data to HESA by credit volume, although this would not necessarily involve the adoption of a national credit framework. Students could enrol for any period of study they choose, not necessarily as part of an award (and although this could be stipulated it would reduce the potential flexibility of the approach). Universities who did not wish to adopt a credit system would only need to return each FTE as 120 credits and part time pro-rata. In order to capture enrolments after the December statistical return, a second return would be needed at the end of the academic year. Because student choice of subsequent modules or courses of study during the year would be unknown at the time of enrolment, a relatively high level of granularity or subject banding (as in the current HEFCE funding model) would probably be most appropriate in this approach.

5.34 The potential advantages of this option include:

- It provides encouragement to HEIs to adopt credit and maximise the use of credit frameworks (assuming that HEFCE wishes to provide such encouragement).
- Subject to appropriate student recruitment methods, it encourages innovation (a stated HEFCE aim) and risk taking, particularly in the area of widening participation and lifelong learning, in that institutions are not being penalised for failure.
- It would probably enable those HEIs that currently have difficulty in filling their places to do so. This may be a significant advantage to some institutions faced with the likely volatility in student demand in the next few years.
- Funding is predictable and unaffected by student withdrawal.
- It does not add to, and may potentially reduce, the administrative burden on HEIs.

5.35 The potential disadvantages of this option include:

- It would probably only stimulate innovation in HEIs that did not expect to recruit to target over the next few years.
- The lack of institutional penalty for failure might mean that student withdrawal rates would increase with a consequent pressure on retention.
- Institutions might be encouraged to recruit students who were not able to benefit from higher education.
- Institutions that had large numbers of students who failed to complete would receive more funding than those that had high completion rates through careful selection and support.
- In the past it has been argued that enrolment based funding discourages institutions from looking at educational outcomes and increasing efficiency, and this has been a serious drawback. However, with variable fees and other market pressures there will be much greater student pressure to graduate as soon as possible, and therefore we suspect that this potential drawback will reduce.

5.36 One possible condition for this option to be implemented is that there would need to be a cap on enrolments to ensure that institutions did not over-recruit.

Option 3: Funding Institutions by Credits Based on Completion or Participation

5.37 One version of this option is basically that adopted by HEFCW. In paragraph 5.25(b) we set out the main rationale: that it funds on the basis of evidence that a student has either completed (as defined by completing assessment) or participated, however measured. The assumptions about completion behind this approach are therefore similar to the current funding model, but the main difference is that all HEIs would be expected to use a credit based approach. In this case the funding model is explicitly going beyond being 'credit friendly' and is stimulating the use of credits. As in the current arrangements, completion (if adopted) would be defined as completing a defined amount of learning, usually a module but possibly a year long course for HEIs not using modular structures.

5.38 This change in the definition of completion would mean that, as a minimum, institutions would be funded for all modules completed even where a student subsequently withdrew from a period of study. However, HEFCE could go further and seek to apply the broad principle that institutions should be funded for the time and effort undertaken in teaching and supporting the learner. This could be measured in at least two ways:

- First, by defining completion as undertaking not end of module or course assessment, but any prescribed assessment during a period of study. (For example, a student undertaking required formative assessment halfway through a module and then withdrawing would attract 50% of funding to an HEI.)
- Second, by replacing the notion of completion with one of participation, with an HEI being funded for a learner up to the moment that he or she withdrew, however that was defined.

Either of these two approaches would provide a more equitable basis for funding in those HEIs affected by significant non-completion rates, but would require more detailed record keeping.

5.39 Associated with this option is the level of granularity of the funding bands which determine the level of funding per student (see Section 6).

5.40 The potential advantages of this option include:

- It provides encouragement to HEIs to adopt credit and maximise the use of credit frameworks (assuming that HEFCE wishes to provide such encouragement).
- Funding is predictable and minimised by student withdrawal and non-continuation.

- Whilst changing the volume measure, it is broadly compatible with the current funding model.
- It does not inhibit innovation and the recruitment of 'high risk' students.
- It defines completion in a way that is arguably more easily understood by students: that is, completion means what they have completed rather than the arguably artificial construct of undertaking a longer course or programme of study.

5.41 The potential disadvantages of this option include:

- Failure to address the demand for lifelong learning for non-assessed work (assuming this is felt to be appropriate for funding at a higher education level).
- The danger of over-assessment of students, in that HEIs may require formative assessment to be completed in order to register attendance rather than for educational purposes.
- An increase in the administrative burden on HEIs in that data would need to be kept on completion (or participation) by module. Moreover, some methods of monitoring participation (such as student registers) are extremely labour intensive.

5.42 This option would involve little change to the current funding 'factors', but for it to be implemented there would be a significant advantage in ensuring that there was a common credit tariff by which HEIs declared credit returns to HESA. This is the exercise that SHEFC is currently engaged in, as reported in Section 4. Failure to do this would not undermine the benefits of this option but would lead to some variation in funding between institutions for effectively the same volume of student activity. HEFCE would therefore need to decide whether to wait for the adoption of the proposed national credit framework before proceeding with this approach.

Option 4: Funding Institutions by Credit Achieved and Learning Outcomes

5.43 In this approach, funding would be based on outcomes, of which the most obvious are learning outcomes as defined by credit achieved through successful completion of module assessment. It is closely related to the funding models introduced in some Scandinavian countries, as described in Appendix A. As noted in paragraph 5.25(c), this option could go beyond this initial output approach and provide additional rewards in other ways, for example by providing a performance related incentive of some kind to institutions or by penalising those HEIs whose students fail. Such performance could be determined against previous institutional performance; against some sector benchmark related to mission; or by some aspect of value added.

5.44 The potential advantages of this option include:

- It would enable students to demonstrate the value of their study undertaken without achieving a complete qualification aim. The certified learning gained could then be used to negotiate appropriate exemptions from any future programme of study they might decide to undertake.
- Potentially it could reward HEIs that perform particularly well in relation to agreed indicators, and conversely encourage those that do less well to improve.
- Rather than focussing performance on end of year assessment, as now, if based on modular learning outcomes then indicators of performance would have to take account of measures collected throughout the student's period of study. This would encourage institutions to pay ongoing attention to the student learning experience.
- It provides a way of obtaining the potential benefits outlined in the Burgess Report of credit schemes providing a more exact measure of student achievement. In turn, this may also help to challenge the criteria of press league tables on what constitutes performance, by adopting more refined measures than are currently used.

5.45 The potential disadvantages of funding on the basis of achievement include:

- Institutions might seek to avoid recruiting students who had a higher than average chance of academic failure, thus possibly undermining aspects of widening participation policy.
- Some institutions might drop their standards to ensure that students achieved their learning outcomes.

5.46 The disadvantages of possibly going further under this option, and providing performance incentive funding for HEIs based on learning outcomes achieved, include:

- The obvious difficulties in trying to define and seek agreement on measures of performance.
- Assurance mechanisms are already in place providing quality indicators that are broadly accepted, and to introduce a different approach in the funding methodology would cause confusion.
- The approach may not meet all the criteria in the current funding features, for example it reduces predictability.
- Within the sector it would be divisive.

Although these drawbacks are significant they should not mean that the option is rejected out of hand since, as noted in Section 5, internationally attempts at introducing outcome based funding are gaining credibility.

5.47 There is some opportunity in this approach for perverse behaviour, in that in order to score more highly some HEIs might be tempted to recruit students to subjects that are perceived to be 'easier' and conversely to reduce enrolment to more 'difficult' but high priority subjects. Institutions might also be tempted to increase the amount of assessment given to students to try to avoid the consequences of end of course failure.

Option 5: A Combination of Options for Institutional Funding

5.48 This option closely resembles the current funding model of the LSC and also higher education funding in the Netherlands, and would consist of elements of two – or perhaps all three – of Options 2, 3 and 4. In the current LSC approach the majority of funding is on the basis of completion of a course of study, plus a small percentage on enrolment (to address the drop out problem), and a very small additional amount of performance based funding. Interestingly the LSC is currently reviewing its own funding methodology, and seeking to move away from this approach to something less complex.

5.49 The advantages and drawbacks depend entirely upon the combinations of options chosen within this approach, but in general the potential advantage is that by basing funding on multiple factors it might be possible to encourage fairness in allocation. The general drawback would be that it is likely that such a funding model would probably fail the openness and transparency test in the current funding factors, as it would be complex and not easily understood within the sector. Moreover, multiple criteria almost certainly mean more complex data collection and returns, and therefore are likely to increase the administrative burden on institutions.

Option 6: Providing HEIs with a Choice of Approaches

5.50 It could be argued that not all HEIs would want to adopt funding by credit, and therefore at least two different systems could be run, with one based as now on FTEs and a second based on credit. However, although superficially attractive, in terms of a funding mechanism alone there are few advantages. Just as the current method based on FTE has been used by HEIs who internally use credit, so a simple credit funding mechanism could be used by institutions preferring to retain FTEs. After all, as noted several times above, credit is just a different measure of student volume. Moreover, in practice we think that it would be difficult to run two methods that resulted in broadly similar funding consequences when mission was taken into account.

Option 7: Sequencing the Introduction of Funding by Credit

5.51 In paragraph 5.19 we noted the views of some HEIs that it was not the time to make a major change in the teaching funding method in the light of expected financial volatility in the next few years. Accordingly in this option HEFCE could adopt a two stage process, whereby it introduced Option 1 whilst at the same time committing itself to the longer term adoption of another approach of funding by credit. This would also have the advantage of allowing very long term planning to enable HEIs to be ready for any major change. In the short to medium term the advantages and drawbacks would, of course, be identical to those in Option 1.

Option 8: Funding Students by Enrolment Credits

5.52 This and the next two options as set out in Figure 2 cannot be funded by HEFCE under the current legislative environment, however they deserve attention.

Figure 2 Options for Funding Students by Credit

What is Funded?	The Student
Option 8: Enrolment	The student has a credit entitlement which is 'cashed' on enrolment
Option 9: Completion/ Participation	The student has a credit entitlement which is 'cashed' on completion
Option 10: Outcomes/ Achievement	The student has a performance based credit entitlement gained on assessment success

5.53 In many ways it can be argued that this option is the one which maximises the potential of credit transfer to be student centred, and it is similar to the funding model being introduced in Colorado (see Appendix B). As noted in Section 2, one of the key advantages of a credit framework is that it enables the learner to accumulate credits in a flexible way that meets his or her needs in an increasingly diverse higher education landscape. Funding institutions to do this inevitably constrains choice, and an option which funds the learner has obvious appeal (although not perhaps to many HEIs).

5.54 In this option the student would receive a higher education learning entitlement which (given changes in government policy) could include an additional lifelong learning entitlement. These could be 'cashed' at any HEI in return for services provided, and would be exchanged for credit for any period of study that the learner wished to purchase. This approach provides a currency to enable the debate about student voucher schemes to resurface; and the advantage of credit is that it enables a much wider 'menu' to be available to the learner. Students would therefore be able to 'cash' their learning entitlement as they wished on enrolment, in exactly the same way as any other service is purchased. As customers, whether they attended, undertook assessment, or were involved in any other activity would be entirely a matter for them.

5.55 The advantages of this option (if it were feasible) are themselves highly contested: that is, the advantages from one perspective would be major drawbacks from another. They would include a major diminution of the role of HEFCE. Perhaps the most significant advantages that might get broad acceptance are the reduction in the accountability burden; and also that with the introduction of variable fees (and their possible increase in the years ahead), higher education will increasingly be a market place where students as customers choose the higher education experience they can afford (and are qualified for). A system of part funding the student rather than institutions would be compatible with this position.

5.56 The drawbacks (also highly contested) would include substantial system instability, and the likely restructuring of part of the current higher education sector.

Option 9: Funding the Student by Credits Based on Completion or Participation

5.57 This is not as radical as Option 8 but still impossible for HEFCE to pursue at the moment. Using this approach the student would not be as explicit a customer as in Option 8 but would still have a personal learning entitlement. However, in order to maximise participation and to encourage retention, the student would only be able to 'cash' the entitlement after completing a module or course using the same definitions of completion or participation as set out in Option 3. This process would act as some constraint on student behaviour, and also help to ensure acceptable value for money for public funds.

5.58 Some of the advantages and drawbacks of Option 8 apply to this approach also, but there is one additional difficulty. Since the student's learning entitlement could not be 'cashed' until completion, either an agency would have to act as guarantor, or the HEI would have to incur the financial risk of non-completion: in other words the HEI would be in exactly the same position as now when a student does not complete.

Option 10: Funding the Student by Credit Achieved and Learning Outcomes

5.59 This option would mean that the student could only 'cash' the learning entitlement after successfully achieving credits based on assessed learning outcomes. Potentially this could act as a significant incentive for the learner to remain within the system and to perform well. However, the need for a guarantor would also apply in this approach, and the greatest drawback would be dealing with the financial implications of withdrawal and failure: who would fund the HEI?

5.60 This approach could be taken further and explicit performance based incentives could be applied, whereby students achieving high marks could gain additional rewards, perhaps most logically in the form of additional lifelong learning credits to be used as the learner wished. So far as we are aware, no other higher education system uses such an approach, and its radical nature is likely to make it inappropriate to consider seriously. However, incentivising the student (as opposed to the institution) would seem logical if the idea of performance related reward is deemed to have general acceptability.

6 Issues in Implementing Funding by Credit

6.1 In this section some of the key issues in implementing funding by credit are examined. The list is not exhaustive, and any proposed new funding method will need to be modelled and tested before implementation.

Accountability and the Regulatory Framework

6.2 The adoption and use by HEIs of any credit framework is bound to some extent to increase the accountability and administrative burden. Almost by definition, choosing to move from a 'traditional' linear curriculum to a modular one increases administrative and reporting effort. However, the use of credit is an institutional choice, and its administrative implications will be one factor addressed by HEIs in determining their approach to it.

6.3 So far as funding by credit is concerned, in some cases HEIs might choose to return data to HESA using the simple conversion of 1 FTE = 120 credits (or whatever tariff is adopted). In such circumstances the additional administrative burden will be minimal.

6.4 Many of those HEIs wishing to gain the full benefit from an agreed credit framework and associated funding already have modular and credit rated schemes in place, with associated student records systems. The additional burdens here are likely to arise from matching these systems to any new funding model. But most institutions of this type that we spoke to were confident that, assuming appropriate consultation and testing of a new system took place, the burden on institutions would not be too great.

6.5 The nature and extent of the accountability burden in terms of data reporting to HESA would be heavily influenced by:

- The funding option adopted. From those presented in Section 5, systems based on enrolment (Option 2) and achievement (Option 4) would appear to require less administrative effort than an approach based on module completion (Option 3).
- The level of granularity required by HEFCE in data provision, particularly in relation to the number of funding bands and levels (see below).
- The auditing requirements put in place by HEFCE to assure the accuracy of the data returned.

6.6 Under current arrangements, HEIs are responsible for determining the volume and level of activity on any academic programme, including (subject to funding body and DfES guidelines) what counts as full time or part time study. This is, of course, subject to a range of quality assurance and auditing requirements. The question is would anything different be required if funding was by credit?

6.7 It is likely that any national credit scheme would require participating HEIs to identify the credit value of modules or other amounts of learning, both by volume (that is how much is undertaken) and by level (see below for a discussion). Such information could also form part of institutional returns to HEFCE and HESA for funding. The resulting regulatory issue is whether institutional self-declaration would be the basis for such returns, or whether it would be necessary to establish mechanisms to ensure that all HEIs were reporting credit data that were broadly compatible. The experience of Scotland (reported in Section 4) is that considerable variation exists in institutional conversion of FTEs into credits, and if such differences were widespread then funding inequities could result.

6.8 In considering the nature and extent of any regulation associated with credit funding the work of the HERRG is obviously important, as is the general commitment of HEFCE to lighter touch regulation. In the circumstances, HEFCE probably would have at least two options: first, to provide special guidance to HEIs on the calculation and declaration of credit values backed by the existing procedures for auditing returns; second, to increase the auditing burden on HEIs.

The Granularity of Funding by Discipline and Level

6.9 The granularity of funding by credit and associated institutional data provision also has significant implications for auditing and the regulatory regime. Such granularity is of two main kinds:

- Funding by discipline, that is the extent to which the subject of individual modules or the overall programme should determine funding.
- Funding by level, that is the extent to which funding should vary depending upon the level at which a module is provided.

6.10 So far as funding by discipline is concerned, currently HEFCE has four funding bands. One issue concerning implementation is whether there would be any reason for reviewing the bands if funding by credit were to be introduced. We came across arguments for and against doing so. The reason for keeping the current approach is partly based on operational simplicity and minimising the administrative burden on HEIs. However, introducing finer granularity (as in Wales) is possible in a credit system because funding can be based on module rather than programme.

6.11 There are several reasons why this might be desirable. Most obviously it enables the cost of 'chunks' of learning to be more easily identified. It may enable modest savings to be achieved by pricing modules of 'cheaper' subjects at an appropriate price level when they are part of more 'expensive' subjects (for example business studies modules on engineering programmes). And if variable fees increase in the future it is possible to envisage the situation where differential fees are charged for different modules to reflect the cost of provision in different subjects. Conversely, there is an inevitable increase in the administrative burden in operating a system with fine granularity, and where the costs associated with each student have to be individually assessed and allocated to funding groups.

6.12 There is also a danger that the introduction of a more complex banding structure might encourage perverse behaviour by institutions, in that it is generally more efficient for what used to be called 'service teaching' to be undertaken as far as possible in cross-discipline groups (for example, optional courses in business studies taught by business studies staff for students from a range of other disciplines). However, there would be a strong funding incentive for HEIs to abandon this approach and have host departments teaching such subjects so as to claim a higher credit value (for example, engineering departments teaching optional business studies at engineering rates).

6.13 So far as funding by level is concerned, in theory this could be potentially advantageous and enable HEFCE to collect more detailed information on the costs associated with different levels of teaching. This would seem to be compatible with the continued development of the Transparent Approach to Costing (TRAC) and moves towards the identification of full economic costs. Most credit frameworks are organised around levels of study or attainment, and implicit in such frameworks is the expectation of increasing difficulty of learning outcomes. If this was related to the need for additional resources to be invested in learning, then it would be reasonable to consider calibrating funding accordingly.

6.14 Several approaches to defining level are possible, ranging from a broad categorisation (sub-degree, undergraduate, taught postgraduate), to a more granular one which might specify year of study. This latter approach could accommodate year zero in foundation degrees and other study based access routes. Any fine grained approach to funding by level would need to address the provision of HE in FE, both in terms of what could be funded and the level at which funding was provided.

6.15 However, there are several potential drawbacks of funding by level:

- The increase in complexity involved would probably add to the administrative burden on institutions.
- There is currently no robust information that distinguishes the costs of teaching by year of study, and it would need to be demonstrated that significantly different costs were incurred to make the approach valid.

- There would have to be general agreement in the sector about some of the educational 'principles' that might underpin funding. For example, should first year (level) credits in a degree programme attract more funding because of additional widening participation costs, or should third year (level) or taught postgraduate credits attract more funding because of increased specialisation?

6.16 Overall, funding by level would change existing HEFCE policy, which has previously largely resisted distinguishing between levels in relation to funding. Moreover, since the total amount of funding for teaching is fixed, any substantial changes in funding for one level would have a consequent effect on other levels. In such circumstances it is difficult to see broad support from HEIs for such consequences, particularly in a period of financial volatility.

6.17 Any fine granularity immediately brings with it the question of how the monitoring of institutional statistical returns should be undertaken, in that the more complex the data return the greater the likelihood of institutional error. For example, if fine granularity were to be sought by both discipline and level, then a complex data matrix might be created by which institutions had to return credit numbers both by multiple subjects and at multiple levels. In such circumstances the temptation to increase monitoring and regulation would be considerable. Conversely, HEFCE could decide that as a matter of principle it did not wish to increase regulation in this area. This would almost certainly lead to a decision not to adopt a fine grained approach but rather to keep to the current funding bands, and not to fund by level.

The Impact on HESA

6.18 We have not approached HESA to discuss the detailed implications of the funding options set out in Section 5, and assume that this needs to be done after initial consideration of this report by HEFCE. In any case there is little point in having detailed discussion of data management issues for options that are not likely to be pursued.

6.19 However, there are likely to be important and difficult issues of data management arising from the adoption of flexible credit frameworks. So far as funding is concerned, most problems would seem to be caused by flexible part time provision, with enrolment potentially taking place throughout the year. This would require either forward estimates to be agreed with HEFCE, and subsequently reconciled against actual enrolment, or for actual year end returns to be made with a one year delay before funding.

Management Information Systems

6.20 There is concern that institutional management information systems (MIS) may not all be able to provide the data required to operate a credit funding model. (The broader, and much more complex, issues of the availability of student tracking software to enable credit transfer to be achieved is beyond the scope of this review.) The conclusions from available data on the current suitability of MIS for funding by credit are mixed, and the main information sources that we have been able to discover are as follows.

6.21 We consulted several HEIs with well established credit schemes who were all confident that their MIS could provide data in any reasonable form required by HEFCE or HESA. By definition, those institutions without comprehensive credit systems would not be able to generate the information required except by using the most straightforward conversion of 120 credits = 1 FTE (or whatever tariff was chosen).

6.22 The experience of SHEFC, reported in Section 4, is that substantial variance exists between HEIs in translating FTEs into credits, although it is not clear whether this is because of MIS difficulties or for other reasons.

6.23 The JISCInfoNet service was established to provide advice to HEIs on MIS implementation, and we asked its view on the likely readiness of institutional systems to support credit funding. Although the service does not have exact data on this issue, its advice is that all commercial products for student records are likely to be capable of recording the necessary information. However the key factor 'on the ground' will be where it is not mandatory to hold this level of detail within a product, and how many institutions have chosen not to. In addition, there will still be numbers of institutions using in-house bespoke applications, and there is no way of knowing their suitability for credit schemes. However, since they are presumably tailored specifically to an individual institution's needs, compatibility with credit schemes cannot be assumed.

6.24 JISCInfoNet believes that linkage between the student and finance systems is likely to be the weakest aspect of MIS for credit funding, as there is often no representation of funding or resource allocation by credit in the finance system as such. Apart from 'pick and mix' part time provision, there tend to be few models of charging fees on a credit basis given the current flat rate fee. The redistribution of 'course' charges to departments involved in teaching modules is normally achieved through an institution's internal resource distribution mechanism, which may also address issues of top-slicing, for example for course level administration.

6.25 Suitable MIS need, of course, to be available in further education colleges if higher education funding by credit is to take place in that sector, and this may cause additional complexities. There is little current evidence to draw upon here and, in any case, much will depend upon the exact approach adopted by HEFCE. The only study undertaken on the topic was conducted for NICATS in Northern Ireland in 2001,[15] on the MIS implications of the possible implementation of a credit framework. This showed that whilst the systems in the two universities were felt to be adequate those in most further education colleges were not. However, the availability of new student MIS systems in the last few years may have changed

[15] *PricewaterhouseCoopers, NICATS Credit-Based Funding Report, 2001, NICATS*

this pattern.

6.26 The conclusion appears to be that any decision to adopt funding by credit needs to be subject to a substantial pilot programme in a variety of institutional environments using a suitable sample of available software.

Accreditation of Prior Learning (APL)

6.27 There are several technical issues about how APL should be treated in a funding approach based on credit. Currently a student is counted as full time even where significant APL has been awarded, largely on the basis of the institutional costs involved in establishing what credit can be given for existing learning. In many cases it is reported that this process does not work well, and it is easier for the student to repeat modules that may have been studied before.

6.28 At the moment several HEIs with modular structures allocate a dedicated module to APL as a way of operationalising the work involved in identifying equivalence. If funding by credit were to be introduced, it is likely that HEFCE would have to provide guidance on how to deal with this issue, and the volume of credit that might be awarded. Further guidance might also be needed on how to avoid the dangers of double funding, under APL arrangements whereby a student had previously been funded to undertake a similar programme of study.

Premiums

6.29 The issue of whether funding should be 'mode blind', and if so how the additional costs of some activities should be funded, is a significant factor in considering funding by credit.

6.30 Currently HEFCE provides a number of premiums, usually based on a percentage of current funding. Those concerning institutions (for example, historic buildings) cause little problem, but it is by no means clear that such payments related to students are appropriate in a credit based approach. Put simply, if modules are being taken by both full time and part time students who are effectively indistinguishable, is there any justification in one set of students attracting higher funding than another? Of course, this is not to argue that the costs to institutions of part time students are not higher, but rather to query whether the current form of premium is the appropriate way to deal with such costs in a credit environment.

6.31 The options appear to be:

- Provide a part time premium based on a headcount (as in Wales).
- Provide a part time premium based on a percentage of the total volume of part time credits.
- Provide a part time premium linked to those students for whom a widening participation premium is paid.

- Require HEIs to recognise the additional costs of part time students in the fee that they charge.

6.32 Similar considerations apply to other student related premiums, for example widening participation, with a key issue being whether payments should be on the basis of the volume of activity or on a simpler headcount basis (again as in Wales).

The Impact on Further Education Colleges

6.33 Some of the issues concerning funding by credit for HE in FE have been discussed elsewhere in the report. However, in considering the implementation of a system of funding by credit it will be important to take account of the impact on further education colleges, and particularly their ability to provide data in a required form. Currently, it is reported that, in general, colleges have no difficulty with the HEFCE funding approach, but as noted in paragraph 6.16 there is a lack of data on the extent to which MIS in colleges could deal with the precise requirements of specific credit funding options. Accordingly any piloting of a preferred new funding model should involve testing it in an HE in FE environment. Continuing discussions with the LSC will be important to ensure collaboration in this area.

Timetable for Implementation

6.34 A final key question concerns a possible timetable for the implementation of funding by credit. Several questions need to be answered:

- Is it necessary to wait for the introduction of a national or regional credit framework before introducing funding by credit?
- Is it necessary to wait for clarification of developments in the implementation of the Bologna Process and the use of the ECTS before introducing funding by credit?
- Is it desirable to wait for the work of the QAA in taking forward the recommendations of the Burgess Report before introducing funding by credit?

6.35 To some extent the answers to these questions depend on the funding option concerned, and an indication of the implications for each has been provided in Section 5. An extension of the current 'credit friendly' approach (Option 1 in Section 5) could probably be introduced speedily and does not need a credit framework to be in place. However, the recent experience of SHEFC suggests that if HEFCE required institutions to measure credit volume in a broadly consistent way across the sector (as in Option 3) then considerable guidance would be required to avoid significant differences in institutional practice, and thereby get some notion of similar funding for similar activity into the HEFCE funding model.

6.36 Whether this should wait for either the QAA to take forward its work, or for the implications of the Bologna Process to become clearer, is a matter of judgement largely unrelated to funding. On the one hand the introduction of a model of funding by credit would be likely to give impetus to the introduction of a national credit framework; on the other hand it runs the risk of some aspects of the funding model being changed if unforeseen circumstances arise.

6.37 Finally, as noted in paragraph 5.19, some HEIs questioned whether the time was right for a change in funding in a period of considerable financial volatility. Others felt that it was important to ensure adequate consultation over any proposed change and not to underestimate the difficulties of even the simplest of the options presented above.

A Methodology

1.1 The methodology used in this study involved four main activities, undertaken in Spring 2005. They were:

a) Undertaking a literature review of practice elsewhere, including in those higher education systems that have decided to adopt a national credit system but not funding by credits (summarised in Section 5 but presented in full in Appendix B). The literature review surveyed activity in more than 20 countries, of which details are provided for 12. In the US, activity in six states was sampled on the basis of advice from those who have expert knowledge of US higher education.

b) Extensive discussions with a range of stakeholders and senior staff in HEIs. In all, 29 discussions were held, including with:

- Eight universities heavily engaged in widening participation.
- Four research intensive universities.
- One specialist college of higher education.
- Officers in all four of the main higher education funding bodies in England, Wales, Scotland and Northern Ireland, plus officials in the Irish Department of Education.
- Representatives of the main UK credit consortia.
- Key agencies: UUK, SCOP, NIACE, QAA, the LSC, and Foundation Degree Forward
- The Manchester Strategic Alliance.

c) Participation in a seminar of interested parties organised by HEFCE in March 2005.

d) Attending a number of other events run by interested bodies to ensure suitable linkage with other relevant activities.

B International Review

1.1 This appendix explores the use of funding by credit in a selected number of other countries and jurisdictions. The main conclusion is that, overall, whilst credit frameworks and CATS schemes are widespread, historic funding models tend to be the most widely used, with systems based on FTEs still the most commonplace. However there is some innovation, in particular in some Scandinavian countries; and in the Netherlands there is considerable interest in new forms of funding, including the use of credits and performance related approaches. These examples are probably the most relevant to the interests of HEFCE. In Denmark, credit based funding is purely on outputs (exam results); in Sweden, the Netherlands and Iceland a combination of inputs and outputs is used as the basis for funding. All these countries now use a credit system compatible with the European Credit Transfer System (ECTS) and have made some linkage to funding.

1.2 Elsewhere the other country of most interest is the US, although the use of funding by credit is patchy. Despite substantial use of credit frameworks within individual states, national systems of credit transfer are not well developed, primarily because public higher education is a matter for individual states. As a result there is considerable variation in practice, although many states report more attention being paid to performance based funding. Traditionally most funding has been based on historic cost models, although this review describes several states where funding by credit is now well established, most notably in some who are members of the Southern Regional Education Board (SREB), for example Alabama and Florida.

1.3 The following analysis is presented in alphabetical order by country, and does not include the various jurisdictions in the UK, whose funding models are described in Section 4 of the main report.

Australia

1.4 Credit schemes and transfers are a matter for individual institutions although a national qualifications framework exists, and the Australian Vice-Chancellors Committee has been active in developing credit articulation arrangements between universities and the vocational sector. So far as funding is concerned there is no widespread use of credits. In the policy report 'Backing Australia's Future' [16] the government set out proposed reforms to the previous historic block grant method of funding.

1.5 This involves an FTE enrolment based system with numbers agreed with the Department of Education, Science and Training. Penalties apply to HEIs enrolling beyond a 2% limit. In addition to discipline based weightings, a regional loading applies because of the higher costs of operating in rural and regional settings. The new system also provides for the introduction of a personal 'Student Learning Entitlement' for all Australian and New Zealand citizens, giving them access to seven years' equivalent full time study in a Commonwealth supported place.

Canada

1.6 As the federal government does not have jurisdiction over education in Canada, each province manages its own education system. Federal funding transfers to the provinces (in the form of equalisation payments) may be used by provincial governments to supplement their tertiary education allocations, but this does not directly constitute federal support for education. There is no national system of credit recognition. All the same, many Canadian institutions have come to recognise the value of credits from within the province, although curriculum harmonisation has not been a part of this. This recognition functions without a harmonised plan and remains ad hoc, entirely dependent on the judgement of the individual institution.

1.7 However some work has been done nationally on enhancing the use of credits. The 1995 Pan-Canadian Protocol on the Transferability of Credits recommends a removal of barriers to post-secondary student mobility between provinces and territories, including the transferability of credits. However, there remains varied uptake by HEIs and there is no central system or authority. Partly as a result, credit values are not necessarily consistent across provinces; and within provinces, any credit agreement has often come through government recommendation and endorsement but not legislation. Institutions are free to refuse recognition of external credit, though this is increasingly rare for many common programmes.

1.8 So far as the individual provinces are concerned in **British Columbia**, the Ministry of Advanced Education describes its own credit transfer system as "one of the more advanced in North America". On average, 40% of students who enter university do so as transfer students from elsewhere in the college sector. Over 70 different articulation committees exist – one for every discipline or programme offered by British Columbia institutions. Beyond this, 28 public, tertiary education level institutions have established 47,000 transfer equivalencies and 600 block transfer agreements.

1.9 The transfer system is part of the reorientation of the tertiary sector to include the creation of university colleges. University colleges do not have any graduate studies or

[16] *See www.backingaustraliasfuture/gov.au*

research capacity, but would offer credits for courses directly transferable to university level. The University Colleges of British Columbia (UCBC) has argued that, partly as a result of the province's six-year tuition freeze (unfrozen three years ago), it has not had the capacity to raise funds to the same proportion that larger universities have, despite the inter-operability of many credits. As such, UCBC lobbied for higher ceilings on university college tuition fee rises in order to allow them to recruit and retain staff, upgrade facilities, and maintain libraries in order to compete effectively with other HEIs in the province. The acquisition of cheap university college credits, it is argued, has resulted in a lopsided HE funding system.

1.10 The British Columbia Council on Admissions and Transfer (BCCAT)[17] estimation is that, overall, the province's elaborate credit transfer capacity is positive, and has led to substantial increases in the number of students enrolled at university level. Between 1989 and 2000 the number of students in university transferable programmes had risen by nearly 40%. The criticism from BCCAT, though, resembles that from the UCBC – that the government's student-based HE funding mechanism has not advanced in step with the increasingly equivalent university college credit system. It recommends a new funding system to better reflect the modern institutional realities. While BCCAT does not act as an accreditation body or a comprehensive credit-recognition authority, the BCCAT Declaration sets out agreed principles of operation for the province's credit transfer system.

1.11 There is no credit funding mechanism. The British Columbia government provides higher education funding according to an FTE model which considers student numbers without weighting by discipline. After lifting the tuition fee freeze set by the previous government, the new administration has capped tuition fee increases at the rate of inflation – roughly 2% over the next three years. Core funding is not projected to increase, and student-based FTE funding is projected to drop from CDN $8,659 in 2005-06 to CDN $8,131 in 2007-08.[18]

1.12 One peripheral way in which the government has addressed funding issues in a non-systemic way is through an 'accountability framework'[19] which outlines new strategies for the supplemental funding of HEIs, but this is not linked to credit-based funding. The framework explicitly promotes "a stronger system context so post-secondary partners are encouraged to view institutions as interdependent parts of a coherent system".

1.13 The accountability framework seeks to incorporate student input into funding mechanisms, reflecting elements of a performance based funding mechanism that has been used in Alberta (see below). Performance measures are used to gauge progress towards achieving set goals, with the government introducing incremental, direct, formula-based

[17] http://www.bccat.bc.ca/
[18] *Norma Wieland, "Budget 2005: Déjà Vu All Over Again," Confederation of University Faculty Associations of British Columbia, February 18, 2005*
[19] http://www.aved.gov.bc.ca/accountability/framework.htm

'incentive funding', which amounts to a small percentage of operating funds for institutions that approach the goals and objectives as outlined in the framework.[20]

1.14 In **Ontario t**he College University Consortium Council (CUCC) promotes and coordinates joint projects and ventures between the two HE sectors (university and collegiate). The CUCC publishes an online Ontario College-University Transfer Guide composed of a central database linked to institutional websites, which in turn includes information about agreements and programmes with institutional partners outside Ontario. All universities in Ontario have transfer arrangements that "recognise the achievements of college graduates".[21] Transfer agreements are arranged between colleges and universities through the CUCC, yet this is not tantamount to the establishment of a common credit system.

1.15 Ontario universities are reported as receiving significantly less per student than universities in British Columbia – indeed, as of Spring 2004, Ontario per capita funding for universities was the lowest of ten Canadian provinces.[22] Colleges receive more government funding per capita than universities, signalling large differences between college and university tuition fees. Ontario universities charge an average of CDN $4,100 per academic year in a general arts or science programme, whereas colleges will charge an average of CDN $1,786 in regulated diploma programmes such as health care, business, and technology.[23]

1.16 These calculations, however, are based on institutional averages, and do not distinguish funding amounts per department or discipline. This is significant in Ontario because, as established in the Ontario Operating Funds Distribution Manual, the province funds its universities through a basic income unit (BIU) system. A BIU is an FTE unit multiplied by a disciplinary weight. While the FTE is an attendance classification for funding, the BIU multiplies this over disciplinary costs. As such, one undergraduate student in a full time normal course load would equal 1 FTE. In the BIU calculation, this FTE unit would be multiplied by a factor depending on both the discipline of the student and whether the student is undergraduate or graduate. For example, in Ontario, undergraduate education BIUs multiply the basic FTE by 2. Weights range from 1 to 1.5 for general arts, 1.5 to 2.0 for general science, and 6 for doctoral work. As will be explored below, this formula applies to universities and not to colleges – a point of contention in the increasingly collaborative, transferable, inter-institution HE environment.

1.17 Regarding the unit of the model, each student's BIU count is attributed to the department where the student is registered. Thus, a nursing student registered in the School of Nursing and taking the equivalent of a normal full time study load would generate 2 BIUs (2 being the weighting factor for an FTE student in nursing) for the School of Nursing. At the

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[20] *Resource Summary, Ministry of Advanced Education. Budget 2004, Service Plan 2004/05 – 2006/07, Province of British Columbia (2004), p. 8*
[21] *"Ontario College and University Fact Sheet," Council of Ontario Universities document, May 2004*
[22] *"Enhancing Ontario's Competitiveness through Investment in Higher Education," Council of Ontario Universities document, February 2004, p. 3*
[23] *"Ontario College and University Fact Sheet," Council of Ontario Universities document, May 2004*

graduate level, the FTE is based on the student's attendance classification during an academic session; a full-time attendance classification is equal to one FTE, a part-time attendance classification is only 0.3 FTE. Summer session graduate students, regardless of the attendance classification, are always equal to 0.5 FTE.

1.18 FTEs are the single measure of activity upon which the formula funding monies are distributed. The operating activities (instruction, research, community service, administration, building maintenance, libraries, etc.) that are provided through this envelope are funded according to this measure of activity.

1.19 A system resembling credit-based funding would move from this approach towards something called in Ontario "Teaching BIU Counts". The BIUs generated by each student are attributed to each academic department according to the proportion of total course credits taken by the student. Thus, the nursing student would generate BIUs exclusively for the department of nursing, as this would be the department that grants the diploma or degree to the student. However, if the same nursing student takes 50% of his/her course-credits in nursing, and 50% in biology, one teaching BIU would be attributed to nursing, and one to biology. This is the case because this student takes courses in both departments. While the student would graduate with a nursing award, the teaching BIU system contributes funds to other departments based on the study taken in those areas. The University of Ottawa uses a system of so-called blended BIUs as a mix of registration BIUs and teaching BIUs, counting 75% of the teaching ones and 25% of the registration ones. In this case, if a department has 100 teaching BIUs and 200 registration BIUs, the calculation would be (0.75 x 100) + (0.25 x 200) = 125 blended BIUs.

1.20 As seen, and as affirmed by the Confederation of Ontario University Staff Associations (COUSA), per student funding has lagged behind all other Canadian provinces. This is perhaps partly due to a 'double cohort' tertiary education enrolment stemming from the reshuffling of the secondary education system, which created two graduating classes in the same year.[24] COUSA's data indicate that "25,000 students are unfunded by the province (at a) shortfall of $150 million dollars". It goes on to report that it will require an injection of $1 billion to bring tertiary education funding to pace with student unit cost.[25] Former premier Bob Rae, in a recent report tabled to the provincial government, recommended a multi-year average recalculation of BIU funding, committed within this framework to eliminate the phenomenon of "unfunded" students.[26]

1.21 In Alberta the province's credit transfer authority (the Alberta Council on Admission and Transfer - ACAT) has increased cooperation with the British Columbian credit system authority. As one example of this, British Columbia and Alberta are discussing providing an interoperable credit transfer system for aboriginal people in Northern communities. ACAT is

[24] The elimination of Ontario's OAS ("Grade 13") in 2003 resulted in two separate graduating classes from the high school sector, and both were eligible for immediate enrolment in colleges and universities.
[25] Robert Bell, "Confederation of Ontario University Staff Associations and Unions Response to the Post-Secondary Education Review," COUSA, November 5, 2004.
[26] Bob Rae, "Ontario: A Leader in Learning, a Report and Recommendations," February 2005

becoming a mediator between institutions that enter into dispute as to the value of credits in a potential transfer arrangement. At the same time, ACAT stresses that individual institutions have the primary responsibility for the definition of their credit awards and the appropriateness of transferability in given circumstances, and does not publicly position itself to become the precursor to stronger (institutionalised) harmonisation between institutions.

1.22 While transfers between institutions are well-established, they must be undertaken in the same academic year that the credits were originally earned. This is in contrast to the British Columbian framework, which generally allows up to 10 years to pass since credit was first earned (with exceptions for ICT and selected disciplines, as noted earlier). The Alberta framework allows for up to two years of transferable credit between college and university level.

1.23 Alberta funds its HEIs through a mixture of base funding grants, and pots for access, infrastructure renewal, and performance-based funding. The province introduced a Performance-Based Funding Mechanism (PBFM) in 1999, divided into a teaching and a research component. The method of measuring performance was determined based on a set of key performance indicators as outlined in a White Paper by Alberta Advanced Education and Career Development (AECD) in 1994. These indicators were devised by achievements in 'responsiveness', 'affordability', and 'accessibility'.

1.24 The Learning Component of the PBFM funding formula is determined by benchmarks in areas of: graduate employment rate (responsiveness); graduate satisfaction (responsiveness); change in FTE over three year period (accessibility); administration expenditures as percentages of total expenditures less ancillary services (affordability); enterprise revenues (affordability). Institutions receiving a high score (90%) on the Learning Component 'Report Card' become classified as Tier 1 institutions, which results in additional incentive grants. For the University of Calgary in 2000, which was the only Tier 1 institution in Alberta this round, the award amounted to an additional CDN $1.6 million.

1.25 The system has been criticised by many stakeholders, who claim that the government has offloaded responsibility for fostering access and responsiveness in the tertiary sector, and has devised the benchmark system systematically to underfund universities. In 2001, CDN $25.1 million was made available through the PBFM.

1.26 The access funding is provided through FTE calculations approaching the Ontarian method of BIUs. However, the Albertan system is quite different in key respects: first, it targets key priority subject areas of government interest, not areas of the highest per student cost. Institutions submit proposals to the Alberta Ministry of Learning indicating how they will expand access to credit programmes in priority areas that respond to student and labour demand.[27] In 2000, CDN $69.8 million was made available through the access pot in this fashion. Secondly, while Ontario's BIU system weights certain programmes to make up for the additional expenditures (in dentistry, agriculture, etc), Alberta's direct FTE system reacts

[27] *Rob Renner, "Report of the MLA Post-secondary Funding Review," Alberta Learning, October 2000, p. 6*

only to enrolment brackets, while access envelopes are directed to subject areas in which the government would like to stimulate growth. This means that cost intensive (and low priority) programmes such as agriculture have not received weighted funding from the Alberta government.

1.27 According to a report commissioned by Alberta Learning, [28] there was little discussion of a credit-based funding system, but widespread support for moving to a longer term funding cycle which takes into account more than one year's worth of indicators. Funding through pots, rather than base grants, has meant less predictability for HEIs in terms of year-to-year funding. Also, it was of concern that the PBFM and the system of funding pots emphasised competition rather than collaboration between Albertan universities, which did not foster collaborative goals such as the transferability of credits or the harmonisation of aspects of programmes. As in Ontario, stakeholders have expressed dissatisfaction with what they see as enrolment-insensitive funding.[29]

1.28 While Albertan HE stakeholders are certainly engaged in debate surrounding funding reform, Alberta is the furthest behind on the approach toward credit based funding, given the high degree of institutional autonomy (even competition) that has been nourished through funding systems of the past decade.

Denmark

1.29 All institutions in Denmark use the ECTS, and both credit transfer and accumulation are widespread. There is significant innovation in funding (including funding by credit) which is of interest to this study.

1.30 Around 90% of funding for higher education comes from central government, and teaching and research are funded through two separate ministries. Teaching activities do not generate the bulk of funds.

1.31 Denmark is one of the few countries where teaching budgets are provided solely on the basis of outputs. These are set entirely on the number of credits obtained per student per year, and the amount paid varies widely depending on the field of study.

1.32 The 1993 Act authorised block/lump sum payment to universities, giving them freedom to administer funds. Funds are allocated on a so-called 'taxi-meter' model whereby the level of funding is determined according to activities and student performance – funding is dependent on the number of students passing their exams. There is a planned introduction of a 'bachelor bonus' in 2004 whereby a tariff will be included for each bachelor degree a university confers. A higher tariff (worth twice as much) will be applied for more expensive

[28] *Ibid., p. 11*
[29] *Ibid*

and resource intensive programmes – scientific, technical, medical and veterinary science programmes.[30]

1.33 All programmes use the ECTS system, where a full study year equals 60 ECTS. Every part of a programme will earn the student ECTS points when they pass their assessment, and these points also trigger government funding. Resources obtained in this way can be freely used by universities. As such the funding model is explicitly designed to reward universities for their output, partly as a way of reducing the length of academic study.

1.34 Criticisms of the system tend to revolve around the quality of the education, which some argue has been lowered by the taxi-meter system. The basic premise of this argument is that institutions have a vested interest in awarding credits and qualifications in order to secure adequate funding, and thus academic assessment of student output is not as rigorous as it should be. A government sponsored review was carried out in 2001 and found that there was no evidence for a link between the taxi-meter system and declining academic standards and concluded that the taxi-meter system was the best model available.

1.35 Informally a representative of the Danish Rectors' Conference (DRC) told us that there is no objective evidence of declining quality. However it is the view of the DRC that any lowering of the quality could be the result of a cut in the spending per student. On average funding has been cut by 10% over the last 10 years since the taxi-meter system has been in place. The DRC would be happy to discuss their model further with HEFCE.

France

1.36 There is no system of funding by credit in France, where higher education funding is primarily based on the number of students enrolled. Programmes are weighted according to a system that calculates overall costs per student. The level and type of the programme determine the weighting, taking into account diverse considerations including actual floorspace available for lectures/labs, equipment required, and market demand for graduates.

1.37 There are 18 different cost categories, established through the Système Analathique de Réparation des Moyens. This formula does not include any fixed costs, but is adjusted depending on the number of enrolled students. Nearly all educational staff are funded separately from university funding, as instructors are considered employees of the Ministry of Education, not of the university. As such, the ministry determines salaries, and adjusts staff numbers when deemed necessary.

Germany

1.38 Educational legislation is the primary responsibility of the 16 Länder (regional state authorities) – each with its own ministry for education – with the federal government taking

[30] *2004 Study on the financing of higher education in Europe. http://europa.eu.int/comm/education/policies/2010/study_en.html*

responsibility for the general educational framework. The HE system is divided between the universities and the non-university Fachhochschulen sectors. Germany is working to implement the ECTS, and by 2000 185 institutions had introduced ECTS into 1,340 programme areas.

1.39 Movement towards a coherent and standard credit based framework has begun by: introducing a two tier degree structure (bachelors and masters) for all new programmes; converting the German grading scheme into ECTS credits; and establishing a national accreditation body to monitor and shape the new framework. However, difficulties are reported with implementation due to lack of coordination between institutions, differentiation across Länder, and the system of examination regulation not being uniform in relation to the use of ECTS credits.

1.40 So far as funding is concerned, it is administered by the Länder – who are also the source of the majority of funding, with around 17% coming from the federal state. A report by the European Commission on the financing of higher education reported that funding in Germany "is not in most cases the result of using a formula for calculating budget components. The funding is based on institutional budget requests, each approved in a process of budget negotiations by the authorities on the basis of institutional assessments"[31] However, it did report that in some Länder formula and performance related funding has been introduced for increasing parts of the budget.

1.41 Until recently funding was dominated by line-item funding whereby the state allocates defined and non-transferable budgets for specific functions and determines funding by previous expenditure. Some states have begun to introduce block or lump sum funding where formulas are used to determine the sums allocated; and some states have developed formulas that include input factors and take account of key performance measures, for example counting students who graduate within a certain time limit. Eleven Länder have incorporated block funding into their systems, whereby state funds to institutions reflect the institutions' commitment to provide facilities for specified levels of student activity in specified programme areas.

1.42 In several German states (including Lower Saxony and Berlin) universities and the state have negotiated fairly explicit sets of teaching and learning development targets which the universities are committed to achieving in order to receive secure multi-year funding allocations. This reflects a serious debate about the measurement of desirable outcomes as a basis for funding, including completion rates, research productivity, the employment record of graduates, and number of scholarly awards.[32] Staff in German HEIs are considered to be civil servants and are therefore not accounted for in institutional budgets.[33]

[31] *2004 Study on the financing of higher education in Europe. http://europa.eu.int/comm/education/policies/2010/study_en.html*
[32] *ibid*
[33] *Public Money for Private Providers: An Examination of Funding Channels and National Patterns in Four Countries. Paper prepared for 2002 CHER conference. www.iff.ac.at/hofo/CHER_2002/pdf/ch02sale.pdf*

Hong Kong

1.43 A major review of higher education in Hong Kong in 2002 (undertaken by Professor Stuart Sutherland) proposed a number of reforms, including the adoption of a qualifications framework to assist student movement between the numerous institutions. It also observed that "funding by credit units as an alternative to funding by student numbers will have to be further examined".

1.44 Partly as a result of that report, a number of changes in funding have been introduced, but the idea of funding by credit is not one of them, and appears to have been dropped. However, an element of performance funding has been introduced, with 10% of grant being held back to the end of the year until institutional performance against agreed indicators can be assessed.

Iceland

1.45 Iceland uses a national credit system whereby 30 credits normally correspond to an academic year – 1 credit unit is equal to 2 ECTS. Funding was traditionally based on a historical and incremental model, but following a decrease in state funding by 7% and an increase in student enrolments by 30% the University of Iceland decided in 1994 to develop a funding tariff model similar to Sweden's.

1.46 Seven discipline categories were generated as a basis for the funding tariffs: humanities, theology, law, business and economics; social sciences; nursing; mathematics and computer sciences; sciences, engineering and pharmacology; medicine; and dentistry. Funding tariffs were based on blocks of 30, 15, 10 and 6 credits (categorised as A-box, B-box, C-box and D-box). Funding was then calculated on the basis of the number of hours required to provide teaching services to the different blocks in order that the students achieved 30 credits over the course of the year. The main difference between the University of Iceland model and the Swedish system was that cost adjustments would be used to account for the small number of students in many disciplines.

1.47 However, in 1998 the Ministry of Education decided that it wanted to use one model to determine state contributions for all institutions, because the model developed by the University of Iceland was too complex and custom-tailored for the University of Iceland. It proposed the Swedish system with minor adjustments – not taking into account the small number of students. The current model is still based on seven discipline categories (as above, except social sciences was placed in the humanities category, and a new category for education was created). Contracts are signed with the Ministry of Education for three years.

Netherlands

1.48 The Netherlands had a well established credit system in place before a new two tier structure was introduced in 2002. Under the previous system one credit represented 42 hours of study, with most undergraduate programmes comprising 168 credits requiring 4 years of full time study.

1.49 Universities have now restructured most of their traditional integrated (doctoral) programmes to conform to a two tiered system of Bachelors and Masters; but the old long, first degree programmes still exist in parallel with the new programmes in some fields (medicine and dentistry).[34] Since 2002 an ECTS-compatible system of 60 credits per year has been introduced, replacing the old system.

1.50 The funding model in the Netherlands is similar to that of Denmark and takes account of the student performance framework. The income of universities and hogescholen (vocational schools) derives from three so-called flows of funds: the basic block and allocated funding provided by the Ministry of Education, Science and Culture; teaching funding and research funding (the latter through the Netherland Research Organisation); and funding for agricultural institutions (one university and six hogescholen) through the Ministry of Agriculture, which is not subject to the same formula as other HEIs.

1.51 Funding for teaching in the Netherlands is a mix of output and input orientation, but primarily output oriented.[35] Since 2003 the 'BaMa' (BA/Masters) model has been adopted. This provides a basic allocation for each university which is supplemented by an allocation for Bachelors and Masters degree – Bachelors degrees being funded at twice the rate of the Masters degree. The tariffs differentiate further between humanities/social studies, science/engineering and medically oriented sciences. An important factor in introducing this system was to facilitate the compatibility with foreign education systems and create a funding framework that was conducive to the harmonisation of HE, and open enough to allow students to study abroad as well as to allow foreign students to enter the Dutch system.

1.52 In the Dutch PBM (performance based) system, 50% of core teaching funds are distributed accorded to the number of degrees conferred, 13% on the basis of new entrants, and the remainder as a fixed, historically based allocation.[36] The system appears to be working but is still operating on a half/half basis, with provision for stable recurrent funding in place as well as the taxi-meter system. Students and diplomas have been grouped into two cost categories, roughly broken down as social sciences, arts, and humanities, and all other disciplines.

New Zealand

1.53 Although many New Zealand universities use credit, there is no national system in place and no mechanism for funding by credit. From 2004 New Zealand adopted a new integrated funding framework which replaced the previous FTE based system with an

[34] *WENR. The Netherlands: http://www.wes.org/ewenr/04March/Netherlands.htm*
[35] *Ben Jongbloed and Hans Vossensteyn, "Keeping Up Performances: an international survey of performance-based funding in higher education," Journal of Higher Education Policy and Management, 23:2 (2001) p 134*
[36] *2004 Study on the financing of higher education in Europe. http://europa.eu.int/comm/education/policies/2010/study_en.html*

approach which includes a performance element[37]. Funding for teaching consists of a number of elements of which the largest is the so-called 'student component'. The unit of measure continues to be student volumes weighted on the basis of course workload, but also takes into account a small performance element (small so as not to place funding at risk). Interesting innovations are also taking place in the funding of research and permitting greater participation by private HE providers, but these developments are outside the terms of reference for this study.

Singapore

1.54 There is no credit funding in Singapore, but with universities about to become autonomous the Ministry of Education is reviewing funding mechanisms that encourage a focus on graduate output numbers rather than enrolment. It is proposed that HEIs be allowed to decide on their own enrolments and policies such as student transfers, whilst continuing to be mindful of the need to ensure quality. The funding system that is likely to be adopted will include weighted elements to ensure equitable distribution by discipline. There may also be two funding streams, one for recurrent activities and the other for strategic priorities.

Sweden

1.55 In Sweden all programmes and courses are measured in credit points. One credit point corresponds to one week of full time study, and an academic year normally corresponds to 40 credit points. One credit point corresponds to 1.5 ECTS.

1.56 Funding for Swedish HEIs is based on three year contracts between the HEI and the Ministry of Education. The teaching section of the contract stipulates the minimum numbers of students and credit points in particular fields for that period, and the resource available for teaching cannot exceed maximum funding calculated in the annual budget. Therefore institutions do not benefit from over-recruitment of students. The three year contracts stipulate particular 'educational assignments' for HEIs, objectives which are to be achieved before the following round of funding negotiations. For example, the assignment may stipulate that the number of students in a given discipline should decrease or increase compared with the preceding three year period.

1.57 At HEIs all programmes are classified by subject area and this classification determines the funding that will be received.[38] Teaching and research are budgeted separately; between 1997 and 2002 national expenditure on teaching increased by 41.2%. This increase was a result of the government set objective of enrolling 50% of young people in higher education.

[37] *See Excellence, Relevance and Access: an Introduction to the New Tertiary Education System at www.minedu.govt.nz*
[38] *The Changing Face of Higher Education in Sweden. 2003. www.sweden.se/upload/studyinsweden_se/ Publications/pdf-files/changing%20face2003.pdf*

1.58 The allocation of resources depends on a combination of credits studied and student results. The weightings are 40% for student numbers, and 60% for accumulated credits.[39] The teaching grant is calculated on the basis of two factors. The size of the state grant varies from institution to institution. The idea behind the Swedish system was to encourage HEIs to tailor the courses they offer to meet student demand. Universities and university colleges receive provisional funds at the beginning of each budget year, and finalised amounts are determined at the end of the year taking into account student numbers and credits.

1.59 The formula for the annual teaching budget is calculated according to two predetermined tariffs: the student tariff and the performance tariff (per 40 study credits) which vary according to disciplinary category. These correspond to six clusters of disciplines: humanities, theology, law, and social sciences; natural sciences, engineering, pharmacy, and health studies; dentistry; medicine; education; and miscellaneous. The formula for the teaching budget multiplies the number of students in a particular discipline cluster by the appropriate student tariff, and then adds this to the number of credits accumulated divided by 40 and multiplied by the performance tariff. In this way the performance tariff is calculated as a proportion of the 40 credits that normally correspond to a complete academic year.

1.60 In 2000 a report by the Swedish Government recommended that the higher education system should focus more on outcomes, and that the funding system could incorporate an examination bonus. It was also suggested that the tariffs could be re-weighted more heavily on the side of the outcome based performance tariff. However, no evidence can be found to check if any of these recommendations have been implemented.[40]

United States

1.61 A brief description of the funding system for higher education in the US has been provided for HEFCE in a recently commissioned paper on quality assurance and is therefore not repeated here.[41] However, in summary, key issues included:

- That individual states have responsibility for the funding of teaching at public institutions. As a result there is widespread variation in practice, and it is impossible to talk about a US system of funding.
- The federal government has a prime responsibility for student support (financial aid).
- Allowing for substantial variations by state, annual tuition fees have increased substantially in recent years; however this has been mitigated by increasing financial aid.
- There are major concerns about the quality of teaching in some institutions, and about the performance of universities. Many state legislatures are now intervening very directly in public universities' funding, with increasing criticism of poor value for money and public spending by the neo-conservatives.

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[39] *Ben Jongbloed and Hans Vossensteyn, "Keeping Up Performances: an international survey of performance-based funding in higher education," Journal of Higher Education Policy and Management, 23:2 (2001) p 138*
[40] *ibid.*
[41] *Clark T and Brown N, How the Public Interest in Teaching Quality and Standards is Secured in US Higher Education, HEFCE, April 2005, www.hefce.ac.uk under Publications/R&D reports.*

1.62 Accordingly, a limited number of six states have been examined in relation to credit funding: Alabama, California, Colorado, Florida, Texas and Wisconsin (sources are in most cases footnoted).

1.63 The use of credit is widespread in the US, and although tertiary education falls under the jurisdiction of individual states, national bodies (such as the American Council of Education) encourage cooperation and inter-institutional transfer of credit. However, differing modular and semester structures across the country restrict the potential for a national framework. This absence of national activity is raising concern, and a recent Congressional Sub-Committee took evidence on the need for a more proactive programme to encourage national credit transfer[42]. At state levels there is greater consistency, and some states are well advanced in credit transfer. However, in general funding by credit is not well developed, with historic cost models being the 'traditional' form of meeting the funding imbalance between student fees and state support.

Alabama

1.64 Alabama has been selected for study because of its use of credits in funding. It has a well established system of credit transfer and accumulation in place, and courses are measured by credit hours. In all institutions operated by the Alabama Commission for Higher Education (ACHE)[43] funding is linked to credit hours in a complex formula. For example, at the University of Alabama credit hours are a significant measuring tool, and are the basis for charging tuition fees to students. In addition, they are used to create teaching load data.

1.65 In comparison to UK approaches, the funding formula looks odd, and is very detailed. Its basis is a calculation of average regional faculty (academic salaries) adjusted by an estimated departmental expense rate multiplied by an assumed measure of faculty productivity of 630 credit hours. To the resulting measure, other budget items are added as a proportion, for example academic support is 5%. Some other – not all – funding elements are also calculated on a credit hour basis, for example library support costs. From available documentation it appears that the funding model has previously been based on enrolment. However, as in other US states the ACHE appears to be encouraging performance aspects of funding, but at a macro level in encouraging institutions to agree forward objectives and making funding conditional on their achievement. As a member of the Southern Regional Education Board (SREB) the Alabama system has some similarities with those of Florida and other neighbouring states.

California

1.66 The public HE system in California, as in most states, is divided between the lower level community colleges and the higher level four year institutions. Credits can be transferred

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[42] See http://edworkforce.house.gov/hearings/109th/21st/creditmobility050505/wl050505.htm
[43] See www.ache.edu

between the two, and most courses in academic subjects are transferable. At the University of California transferable community college courses are considered to be comparable to those offered to University of California freshmen and sophomores.

1.67 However, the use of funding by credit does not appear to exist. Previously a state wide funding model was used, with a set of formulas related to mode and level of instruction. However, following reduced funding allocation in the mid 1990s, this method was discontinued as institutions saw little sense in making needs based requests that were significantly and repeatedly reduced. Instead the State University, the University of California, the State Department of Finance and the Legislative Analysts Office negotiated a new approach based on a percentage increase in the previous year's amount, plus a specific amount per student for enrolment growth. This 'marginal costs formula' is currently in place in California, however it has been criticised by the academic senate of the California State University for being inadequate. In particular it is argued that it fails to recognise the costs of programmes requiring greater faculty resources such as nursing, agriculture, engineering and graduate education. The 2004-05 Governor's budget aims to penalise students who exceed required credit hours. The budget proposed that taking more than 110% of credit hours required for graduation will incur a higher fee, eg a non-resident rate or the full cost of instruction.

1.68 At community college level, funding is allocated by programme based funding (PBF). This calculates a district's base funding by dividing its operations into six programme areas, applying a standardised workload measure to quantify each area's activity or need, and codifying standard cost rates. It then applies a single state wide cost of living adjustment and calculates the growth rate for each district based on four factors: the district's adult population, the number of high school graduates, the size of its 'under-served population' and the capacity of its facilities. In practice the PBF formula for allocation assumes a standard of service delivery that has little relationship to the actual funding colleges receive from the state, and in 2000-01 the legislature funded 54% of what the PBF formula assumed was necessary to meet standards.

Colorado

1.69 In 2003 the state governor convened a 'Blue Ribbon Panel' to evaluate funding mechanisms within the state. The panel proposed a system of funding higher education by providing students who attend a two year or four year institution with a 'savings account' based on credit hours. In this system the intention was to create a 'student centred' approach that would shift from funding the institution to funding the student. The panel argued that the new model would:

- Shift power within higher education from institutions to students.
- Introduce competition into Colorado higher education to enhance quality for both students and institutions.
- Increase access by lower income students.

- Allow for greater flexibility by institutions as they work to respond to more market driven forces.

1.70 Under the recommendations, undergraduates would receive a stipend of $133 per credit hour and Masters students $267 per credit hour (capped at 140 credits for undergraduates and 60 for masters levels graduate students). Since the model is not based on time limitations the system would accommodate both full time and part time students. Under this model it is calculated that community college tuition fees would be reduced by 25% and thus increase access to low income students.[44] There is no available data on implementation.

Florida

1.71 Florida has a reputation for a strong state-wide commitment to community college transfer through credits, and actively promotes common course calendars, transcripts, the sharing of resources and joint facilities. The Articulation Coordinating Committee governs and oversees articulation and transfer policies. The 'State-wide Course Numbering System' provides the backbone for the state's transfer system. Courses are classified according to subject matter with the same numbered courses offering a guarantee of transfer between institutions.

1.72 A total of 120 units are required for the baccalaureate and 60 for the associate degree – 36 of which must be in a general education core. These requirements were implemented in response to concerns that students were taking longer to earn degrees and were accumulating increasing numbers of credit hours. The Southern Regional Education Board (SREB) reported that SREB states (including Florida) have tackled this problem in two ways: strengthening academic policies related to credit accumulation, and creating financial rewards and penalties for students. In Florida, aside from scaling back credit requirements, a tuition fee surcharge was added for students exceeding credit-hour requirements.[45] Whilst Florida uses student-to-faculty ratios and salary rates as the basis of its funding formula, other SREB states (Alabama, Oklahoma, Texas and West Virginia) use dollars per unit funding.

1.73 Funding by credit also plays a role in the resource allocation system. Florida has a single state wide board of education with policy and budgetary authority over 28 community colleges and 11 public four year institutions and community colleges. The private sector consists of: 41 two year and 61 four year institutions.[46] In 2004-05 it was estimated that the state will pay around 69% of the cost of education: Florida has low tuition fees compared with

[44] *www.state.co.us/cche/blueribbon/final/report.pdf. Final report by Panel. See http://www.studlife.com/news/2003/03/14/News/Colorado.Could.Become.First.State.To.Offer.Students.Vouchers.For.College-393075.shtml and http://www.dailynebraskan.com/vnews/display.v/ART/2003/04/03/3e8bceb93fcab?in_archive=1 for commentary on the proposal*

[45] *SREB. Funding Public Higher Education in the 1990s. 1999. P.10-11 http://www.sreb.org/main/Publications/Finance/FundingPublicHigherEd.asp*

[46] *Jane V. Wellman . Sate Policy and Community College–Baccalaureate Transfer. August 2002. The National Center for Public Policy and Higher Education and the Institute of Higher Education Policy. http://www.highereducation.org/reports/transfer/transfer10.shtml*

other states and was ranked 49th in the Washington Higher Education Board's annual survey. Aside from general funding, the state provides around $260 million on scholarships and financial aid.[47]

1.74 The formula for calculating state costs in Florida is based on student/teacher ratios and salary rates. In this method credit-hours are used to arrive at the number of instructional positions needed for each college or university based on predetermined student to faculty ratios, and the number of positions needed is then multiplied by the agreed salary averages.[48] There are also commitments to performance based funding for universities and colleges; and to incentive and performance based budgeting for community colleges (although this represents quite a small proportion of state funds), linking funding to particular indicators, most commonly retention and graduation rates.[49]

Texas

1.75 The Texas higher education system has a well developed credit system that allows for a significant volume of activity in any one year. In the late 1990s a revised funding methodology was introduced which replaced the previous historic formula approach which had been in existence for nearly 40 years. The new formula[50] is based on trying to assess the cost of delivering a semester credit hour per student, and it makes no difference for funding purposes if the student later drops or fails the course.

1.76 For 2004-05 the basic semester credit hour is calculated and a variety of weights is provided to take account of 21 disciplines and 5 levels (undergraduate, masters etc). Using a matrix (called Instructions and Operations) a possible 105 funding cells are created, each expressed as a weighted credit hour. These weighted credit hours are then supplemented by additional weights for teaching experience (10% added weighting for tenured faculty); infrastructure support; and additional non-formula items.

1.77 For 2006-07 the Texas Higher Education Coordinating Board (THECB) is proposing the adoption of a cost based methodology for determining the relative weights contained in the Instructions and Operations matrix, as the current weights have been in place since 1997. In the first year of funding it is proposed that no institution incurs a loss in funding of more than 3%, and since it is estimated that costs are substantially higher than income, it is proposed that in the first years the relative weights be provided on the basis of 75% of the full costs. Full implementation is proposed to start from 2010 onwards.

1.78 Modest incentive funding is used in the THECB approach. For example, tuition fee incentives are provided for students who complete baccalaureate courses in a minimum

[47] *Who is Paying for Florida Student's Education? Florida Board of Governors. Oct 2004. www.fldcu.org*
[48] *SREB. A Primer on Funding of Public Higher Education. P.7 http://www.sreb.org/main/publications/finance/primeronfunding.asp*
[49] *Jane V. Wellman . Sate Policy and Community College–Baccalaureate Transfer. August 2002. The National Center for Public Policy and Higher Education and the Institute of Higher Education Policy. http://www.highereducation.org/reports/transfer/transfer10.shtml*
[50] *See Texas Higher Education Cooridnating Board, General Academic Institutions Funding Formulas, April 2004*

number of hours (a $1000 rebate),[51] and there is a results based payment for dramatic growth in defined subject priorities. However, funding of this kind is a very small proportion of overall spending.

Wisconsin

1.79 Wisconsin has a highly developed credit transfer system which facilitates mobility between the Wisconsin Technical College System (WTCS, 16 colleges) and the University of Wisconsin System (13 universities and 13 colleges). Over 500 programme agreements have been established under which students enrolled in specific WTCS programmes can transfer not only general education credits but additional occupational credits that apply to a related University of Wisconsin major. Broad agreements involving multiple institutions and/or programmes have also been established. The largest proportion of transfer students come from within the University of Wisconsin system (in 2001-02 23% transferred between four year institutions, 15% from colleges to universities and 4% from universities to colleges, 18% came from WTCS and 30% from out of state).[52]

1.80 However, there appears to be little use of funding by credit. Each of the University of Wisconsin's institutions manages its own budget – there is no system wide procedure. The WTCS system appears to be based on standard budget adjustment plus specific requests for additional funding for specific programmes or projects in the system in the annual budget request. Tuition paid by Wisconsin undergraduates covers 39%, the state pays 61%,[53] and planned cuts in funding of $250 million are proposed between 2003 and 2005 to the University of Wisconsin System.

[51] *SREB. Funding Public Higher Education in the 1990s. 1999. P.10-11 http://www.sreb.org/main/Publications/Finance/FundingPublicHigherEd.asp*
[52] *www.uwsa.edu/tis/resources/trcpolicy/ www.uwsa.edu/tis/admin/enhtransbroch.pdf*
[53] *http://www.uwsa.edu/univ_rel/govrel/engage_wisconsin.htm*